THE CANADIAN NATIONAL PARKS:
today and tomorrow

Edited by
J. G. Nelson and R. C. Scace

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today and tomorrow

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Edited by
J.G. Nelson and R.C. Scace

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Department of Geography, The University of Calgary, Alberta.

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THE CANADIAN NATIONAL PARKS:
today and tomorrow

Volume I
Introduction

The Conference on The Canadian National Parks: Today and Tomorrow grew out of thinking which developed independently in Calgary and Toronto. Certain members of the Geography Department at The University of Calgary became interested in national parks problems in the course of geomorphological and glacial research in Banff National Park. We passed Banff townsite quite often and observed the great crowds and the activity of the place in July and August. We became aware of the controversy over leasing policy and other problems of townsite and park management. We watched old roads being widened and new ones being constructed and wondered what the Park would be like in twenty years.

In Toronto a group of citizens became interested in national parks problems largely as a result of the concern expressed at the Resources for Tomorrow Conference, held in Montreal in 1961. Their activities eventually led to the formation of the National and Provincial Parks Association of Canada, an organization devoted to the improvement of recreational opportunities and to the better management of national and provincial parks. The Calgary and the Toronto groups agreed to co-operate in organizing a conference to be held in Calgary
in October, 1968.

Essentially the Conference was to serve a twofold purpose. On the one hand it was envisioned as having general educational value in bringing many thinkers and ideas together in a locale where recreational problems and national parks are of unusual interest in Canada. On the other hand, the Conference was envisioned as being creative in the sense that it would promote interchange of ideas among park managers and administrators, scholars, conservationists, students, and citizens at large. It was anticipated that basic questions would be raised and discussed, thereby aiding in the amelioration or solution of national parks problems and encouraging necessary research.

Background Papers were prepared and distributed in advance of the Conference. Short summaries were given at the various sessions, where the emphasis was on discussion. Two field trips were organized. One of these involved spending one night and one day in Banff National Park; the second was a half-day trip to the Environmental Sciences Centre at The University of Calgary located in the Kananaskis Valley, southeast of Banff townsite.

This record of the proceedings of the Conference begins with the Opening Address by the Right Honourable Jean-Paul Chrétien, Minister of Indian Affairs and Northern Development, the cabinet minister responsible for the national parks. The Background Papers and Discussion follow, being organized by session. Also included are two Resolutions passed by the Conference delegates, the one strongly supporting the National and Provincial Parks Association of Canada and the other stressing the critical nature of national parks and related landscape problems and urging the establishment of a Royal Commission or comparable body to study and recommend on them. A copy of the field guide for the Banff National Park field trip and a list of delegates attending the Conference complete the volume.
If the response of the participants was any guide, the Conference was a success. However, much of the promise of the Conference lies in these Background Papers and Proceedings and their effect on all those involved in or concerned about national parks and related problems in Canada. If the major ideas are accepted, and if research proceeds along the lines suggested at the Conference, it can be judged to have been a true success.

Certainly the Conference would not have been possible without the generous support of its patrons, who do not, of course, have any responsibility for the various ideas and opinions present in the papers or during discussions. We owe many thanks to:

Canada Council
Canadian Council of Resource Ministers
Canadian National Commission for UNESCO
Donner Canadian Foundation
Government of Alberta
Leon and Theo Koerner Foundation
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The University of Calgary
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J. G. NELSON
R. C. SCACE

As the person charged with principal responsibility for the organization of the Conference, I am very aware of the work many people did in an attempt to make it a success. Perhaps it is rather unfair, under the circumstances, to single certain people out, but some have made especially important contributions. Mr. Gavin Henderson, Executive Director of the National and Provincial Parks Association of Canada, has given of his ideas and helped much with fund raising. The arranging of the Conference and the predistribution of the Background Papers would have been impossible without the help of Dr. Fred Terentiuk, Director, Miss B. Buchanan, Mrs. B. Todesco, and other staff of The Division of Continuing Education, The University of Calgary. Mrs. Grace
Gray carried out much of the typing, filing, and other secretarial work associated with the organizing of the Conference. I would also like to acknowledge the assistance of the staff of the Department of Stenographic Services in preparing the final copy of this volume. And Mr. Robert Scace, the co-editor of this volume, was indefatigable in helping to organize and edit the Background Papers and Proceedings, and in many other ways.

J. G. NELSON

The University of Calgary
January 30, 1969
THE OPENING ADDRESS
OUR EVOLVING NATIONAL PARKS SYSTEM
Hon. Jean Chrétien*

I am honoured to have been asked to make the opening address to your Conference. It is certainly not because of my expertise that I have been invited. As the Minister of Indian Affairs and Northern Development, I have had responsibility for Canada's system of national parks for only a short time. And so, I will talk to you today, not as an expert—-you will be hearing enough from them in the days ahead--but as a politician who has a particular political responsibility for promoting the value of conservation at the federal level.

As a citizen, I have long been conscious of the vitally important dimension national parks add to Canadian life. While I have been Minister for only a short time, I have had an opportunity to acquaint myself with some of the problems we must face in our national parks, and some of the priorities for action which we, as a government, must undertake in the future. Today, I would like to talk to you about some

*The Honourable Jean Chrétien was first elected to Parliament in 1963. He has been Parliamentary Secretary to the Prime Minister and to the Minister of Finance. In 1967, he was appointed Minister Without Portfolio and early in 1968, became Minister of National Revenue. On July 8, 1968, he was sworn in as Minister of Indian Affairs and Northern Development.
of the problems, and about some of the priorities for action in the future.

The principle of conservation and national parks in Canada originated here in the West.

The principle is a simple and important one and it is this—the natural beauty of Canada is a fundamental part of this country's national heritage. We must consciously preserve this part of our heritage so that our children, and our children's children, can share and enjoy the same natural beauty of the land which our fathers and fathers' fathers had the foresight and balanced sense of values to leave for us today.

It is clear that this principle of conservation—preserving parts of our national heritage for the benefit and enjoyment of future generations—has even more validity today than it had one hundred years ago.

For ours is a rapidly changing world. Technological advance and population growth progress at an ever-increasing pace, changing the pattern of living and the character of our land. We are continually using more and more of our land just to meet our requirements for living and working.

We must be concerned with balanced development, ensuring that human values, natural values, are not neglected in the process of technological advance, population increase, and urbanization. It is clear, then that Canadian society is rapidly changing, and that such change has altered the character of our natural environment. It is also clear that with more and more people living and working in less space, and more and more people having more time and need to change their routine living and working environment from time to time, that the need for conservation, for the development of a balanced environment, becomes even greater.
The fundamental problem, then, is one of scarcity. We value that which is scarce. And in the world of today, and in the world of tomorrow, the value of peace, of nature, of open, unspoiled space and air, will become even more important, because it will become even more scarce.

Our system of national parks in Canada has gone a long way to help meet this need. But it is becoming more and more apparent that the system, in its present state, is inadequate. The problem is best illustrated by the present situation in our national parks—particularly those in the West. These parks were established, and with great foresight, around the turn of the century.

The demand for using such parks has increased tremendously over the past ten years. There is every reason to believe that such increased demand will continue in the future.

The problem is this—with more and more visitors there is, quite naturally, a demand for more facilities to accommodate the demands of park visitors. But if development in the parks is allowed to progress without proper control, indeed without a limit to the level of development, will our parks soon cease to be parks as they were originally intended to be?

This in not only a problem of park management ensuring that development in our parks is conducted in a controlled fashion, for the problem goes deeper than that. The solution to a problem must be based on the definition of the problem. The demand for the use of national parks exceeds—not so much the availability of facilities in particular parks—as it does the total supply of parks in our national parks system.

It is clear that insofar as our national system of parks is concerned, the present system is incomplete.

The system is incomplete in two senses. First of all, it is not
representative of all the different dimensions of our country. Secondly, the system is not diversified enough—we have but one form of park to meet many different needs.

The national park system in Canada originated here in the West. But it has taken too long to extend the system to other parts of Canada—where there is just as great a need, and just as exciting opportunities to establish such parks—so that all parts of Canada can share in the benefits of what must become a truly national policy.

Great progress has been made with the establishment of national parks in the Maritime Provinces. I put a very high priority on the need to establish more such parks in the two central provinces—Quebec and Ontario. Such additional parks would meet a great need, and their role in helping to forge a richer Canadian union is of fundamental importance.

We are presently in the process of negotiating with government officials in the two central provinces—Ontario and Quebec—and I am hopeful that these negotiations will reach a successful conclusion in the near future.

We are continually investigating additional possibilities for creating more national parks, and we will have to do so now while opportunities still exist, and while land prices do not reach such levels as to put the acquisition of land for use as national parks beyond the reach of the public purse.

I would like to impress upon you my sense of urgency on this question of establishing additional national parks. It is estimated that to achieve an adequate representation of Canada's heritage at suitable scale, we would require forty to sixty new national parks in a complete system.

This means that ideally we should be acquiring two to three new national parks per year to complete the basic system by 1985. We have
a long way to go if we are to reach this goal.

What creates the sense of urgency are two factors. First of all, the increased costs of acquiring land for park use are reaching prohibitive levels. Secondly, past experience has shown that areas of natural beauty can quickly be spoiled for potential park use by different forms of economic and social development. Failure to recognize the urgent need for additional parks will mean that one day we will risk reaching the point of no return.

The very principle of conservation demands that we have the foresight and determination to take the action needed today so that tomorrow will not be a time for regretting lost opportunities, but will be a time for pride and satisfaction. I, as Minister, am conscious of the responsibility I have to uphold this principle and to give it substance.

Our national system of parks is inadequate in a second sense. It is not only by increasing the number of national parks that the problem of increased demand will be met. It is also in increasing the different types of national parks that we will be able to solve this problem.

At present, we have but one basic type of park to meet many different needs, some of which are in conflict. We must have a more diversified system. We must be creative and imaginative enough to develop new forms of parks, federal parks, to meet the need for a planned, balanced environment. Our national parks are special places. They are dedicated, not to providing artificial sources of recreation and entertainment, but to preserving, for the benefit of present and future generations, significant natural features of our national heritage. They do not meet the overall need for outdoor recreation space and they should not attempt to do so.

To do so would be to neglect the essential purpose of our
present national park system—that is, the need to preserve parts of our environment in a natural, unspoiled state.

Other kinds of areas are needed. There is a large and increasing demand for a variety of national parks. I am thinking of new national parks based on water, such as shorelines—ocean, lake, river or reservoir—and waterways—recreation river parks, scenic waterways, and wild rivers. I am also thinking, right now, of parks which are smaller than our present national parks and which will be closer to major urban centres. These parks will combine the value of conserving areas of historical value with the value of conserving the natural features of our land.

While the responsibility for meeting these needs and demands devolves upon all levels of government, the federal government has the added obligation to provide leadership in this area. Some recreational potentialities can be considered to have national significance in that their size and nature make development by the nation desirable. In some cases, development by the nation or joint development by different levels of government will be the only practicable method to realize these projects.

When I speak of joint development, I am not referring to shared-cost programs. I am speaking of the different levels of government accepting the responsibility for developing different parts of a total plan for conservation and recreation in a particular area. There will be a definite need for co-ordination and co-operation between the various levels of government for such projects, but responsibility for the particular aspects of these projects should be clearly fixed on one level of government.

We have the additional obligation, then, not only to enlarge our national park system, but to diversify it as well.

We must have an overall system which is capable of meeting
different needs and of serving different ends. These, then, are some of the proposals and some of the courses of action which I am investigating to meet the problems. I do not think that I have told you anything that you did not know before. Many of you are experts in this area, and are more aware than I am of the problems we must face, and the needs which must be met in the future. You will be discussing many of the more detailed and complex problems during the course of your Conference. I look forward to studying the conclusions you reach.

Conferences such as this one are indicative of this country's concern for the state of our environment, and they can do much to add to the level of public discussion and debate.

I hope, however, that I have given you an indication of what concerns me, as Minister responsible for our system of national parks. I am concerned, as Minister, with three main problems. First, the problem of balancing the legitimate demand for recreation facilities with the need for conservation: too much development in a park means that it is no longer of any value as a source for recreation or as a source of a conserved environment. Second, I am concerned that our system is incomplete—our park system has been concentrated in the West and must be extended to the other parts of our country so that our system of parks becomes truly national, in terms of the environment which is conserved, and in terms of the availability of parks for all Canadians to visit. Finally, I want to investigate the possibilities of diversifying our park system, so that we have different types of parks which can be established to meet particular needs in particular situations.

My responsibility as Minister consists of identifying problems and future needs and ensuring that the government will act to meet these needs. The priority now is for action, establishing more parks, making our system representative, controlling development, and creating
new forms of national parks to meet the needs of today and tomorrow. I am proud to have this responsibility, and I welcome the challenge it presents to myself, the government, and the Canadian people as a whole.
I SETTING THE STAGE
Thursday, October 10th: Afternoon

The Development of the National Park Movement
J.-P. Harroy

The National Parks Movement in Canada
J. I. Nicol

The Development of Recreation in the United States and Canada
and its Implications for the National Parks
Marion Clawson

Wilderness and Man in North America
Roderick Nash

The Doctrine of Usefulness: Natural Resource and National
Park Policy in Canada, 1887-1914
Robert Craig Brown

Man and Landscape Change in Banff National Park: A National
Park Problem in Perspective
J. G. Nelson

Summaries and Discussion
In this assembly, mostly attended by people whose daily duty is to investigate or to settle problems concerning the creation or management of national parks and equivalent reserves, the task of opening the proceedings of the first day of this Conference makes me feel rather anxious and humble.

As a matter of fact, thirty years ago, I had the diversified job of Director of Albert National Park in Kivu, and also was for some fifteen years, Director of the Institute of National Parks of the Belgian Congo. Thus, at the beginning of my career I was aware of the basic problems which are to be discussed here. But these problems vary according to the geographical context in which they belong. And numerous are the traps before me in my attempt to deal with the theme: "The development of the national park movement on a world scale."

*J.-P. Harroy is Chairman of the International Commission on National Parks of the International Union for the Conservation of Nature and Natural Resources. He is also Director of Human Ecology of the Institute of Sociology at the University of Brussels.
Let us first make an attempt at a definition.

In my first sentence, instead of referring simply to national parks, as is done in the title of this paper, I deliberately introduced a duality of expression as sanctioned by resolution 713 of the Economic and Social Council of the United Nations in 1959. The resolution requested that the Secretary-General of the U.N. establish and keep up to date a United Nations List of National Parks and Equivalent Reserves.

While this expression is perhaps not wholly harmonious or pleasing from a linguistical point of view, its official sanction has at least, the great merit of being explicit and gives added clarity to the concept.

What is a national park? What is an equivalent reserve? And, by contrast, what is a reserve which is not equivalent to a national park?

Upon re-reading the title of the paper I was asked to prepare, I hesitated for a moment before deciding to give you a circumstantial answer to these questions. Upon reflection, it seemed to me to be both necessary and opportune. Here then is my discussion of these questions.

After its decision to draw up and keep up to date a United Nations List of National Parks and Equivalent Reserves, the U.N. asked the International Union for Conservation of Nature and Natural Resources, or I.U.C.N., to undertake this task. Many of you know of this institution which was created in 1948 at Fontainebleau, and whose headquarters is in Morges, Switzerland. I had the honour of being the I.U.C.N.'s first Secretary-General, from 1948 to 1955.

The Executive Board of I.U.C.N. then asked the International Commission on National Parks to carry out the work. This Commission was presided over by Dr. H. J. Coolidge, from Washington (now Chairman of I.U.C.N.) who unfortunately, because of his state of health, cannot present a paper.

As early as 1959, I.U.C.N. and the U.N. agreed that a precise
statement should be made as to what is meant by "national park and equivalent reserve." The result of their discussion was a first memorandum, followed by a more official text issued on February 15, 1961—the introduction to the report of the Secretary-General of the United Nations presented at the Economic and Social Council.

The same basic principles were stated in this text: the term "national park" was to be applied specifically to areas possessing those criteria established for national parks by the London Convention on the preservation of African fauna and flora in their natural state (1933), and the Washington Convention on the protection of flora, fauna and landscape in American countries (1942).

The Secretary-General's report stated that the term "equivalent reserve" should designate areas which, without being specifically set aside as national parks, deserve inclusion on the international list because they are of special interest, and actually meet the requirements of the London Convention. However, the Secretary-General, Mr. Hammarskjold, indicated that many reserves which are dedicated to the protection of forests, historical monuments or some special fauna, should not be included in the list.

These definitions were sent to the member governments of the organization with an official request that each country enumerate and describe areas which might be classified as national parks or equivalent reserves, subject to the respective definitions.

The results of this enquiry were published as the first edition of the U.N. List, and, as a whole, they proved to be rather deceiving.

Of the some hundred and thirty members of the United Nations, only fifty-two had answered two years after Mr. Hammarskjold's original memorandum had been sent to them. When the First World Conference on National Parks met in Seattle in the following year, twenty-nine additional answers had been received, but the criteria of the above-mentioned
memorandum were taken into consideration in only a few of these replies. For example, the Federal Republic of Germany mentioned its "Naturparke" which did not meet the requested selective criteria. France had not responded. Austria on the other hand, did not hesitate in listing two hundred and eighty-two national parks and equivalent reserves, including half an acre protecting Crambe tataria in Lower Austria, some driftways, and half an hectare in Tenfelstein Forest, near Vienna.

Delegates at the Seattle Conference in 1962, had to express their opinions on the first U.N. List established pursuant to the Ecosoc Resolution of 1959, and although admitting that this first work was praiseworthy, they believed that it contained some gaps and a regrettable lack of balance. So it was decided to start without delay upon the preparation of a second edition. This time the International Commission on National Parks of I.U.C.N. was requested not only to carefully establish the selective criteria, but also to apply them with a view to drawing up a new evaluated list containing the first "comparative" element between the various countries.

In my capacity as Vice-Chairman of the I.C.N.P., I was requested to propose a new selective method to I.U.C.N., and then to apply it. At the General Assembly of I.U.C.N. held in Nairobi in September 1963, the criteria were selected. And from 1963 to 1967, a long and arduous correspondence was exchanged between the I.C.N.P. and many countries throughout the world, initially through the United Nations in New York, and then through direct communication. A selection was thus slowly achieved, which ended with the publication in Brussels of the United Nations List of National Parks and Equivalent Reserves. The translation into English is being prepared and will have certain improvements over the French version: some errors will be corrected, some gaps filled and new information added concerning recent creations or amendments which have occurred during these past few
months.

I will now briefly state what is considered by the International Commission on National Parks of I.U.C.N.—pending a vote of Ecosoc which is waiting for the English version—to be a national park or an equivalent reserve, as distinct from any other protected area.

Let me say again that I believe such accuracy to be necessary at the start of a conference such as this one.

The I.C.N.P. first wished to set forth the three requirements—protective status, minimum superficies and effective enforcement of status—which had to be met by an area, national park or equivalent reserve, in order to be included on the international list.

It is relatively easy to submit the last two requirements to objective criteria. An area which is too small is not included. Neither is an area which although afforded stringent protective measures by law or decree, cannot be effectively controlled, due to a lack of patrolling staff. Arbitrary numerical limits were set forth, establishing a scale of sizes for these objective criteria. In densely populated countries (more than 50 inhabitants per square kilometre) an area, to be included, should be more than 500 ha. and have at least one guard and more than U.S. $800 to ensure the management and supervision of 4,000 ha. And in countries with less than 50 inhabitants per square kilometre, the minimum size is to be 2,000 ha., with one guard and U.S. $500 per 10,000 ha.

Allowance: smaller units could occasionally be listed if, after requests for these areas had been received from national authorities, the Commission deemed it advisable to include them on the list. The special reasons permitting their inclusion were briefly stated in the list itself.

The first criterion, i.e., the protective status, was much more difficult to apply without being subjective.
A priori, the I.C.N.P. stated that as a basic principle, the title "national park or equivalent reserve" could only be applied to areas which had been accorded a legal status protecting them from all natural resource exploitation by man and from any other threat to the quality of the area. When exceptions may in very special circumstances be made in regard to this principle, it is emphasized that they must invariably be regarded as exceptions.

Those natural resource activities which should normally be excluded from national parks and equivalent reserves are cultivation, cattle breeding, hunting, fishing, lumbering, mining operations and dam construction. On the other hand, those threats to the quality of the area which should be avoided are residential developments, commercial or industrial enterprises and the building of roads, railroads, airdromes, ports, power lines, telephone lines, etc.

One can easily understand how difficult it is to ask that these principles be strictly applied everywhere in the world.

Local exceptions had to be admitted for a variety of reasons which can only be briefly stated here: buildings (offices, lodges, roads, etc.) necessary to the life and activity of the staff, tourist facilities which, in some cases, were highly developed; some pre-existing rights also had to be recognized in a few areas. Sport fishing had to be admitted as a general policy. This activity has been accepted in many national parks and equivalent reserves in North America.

Finally, two remarks must be made concerning management or "control," and the zoning principle.

The first one is related to the fact that protective measures must deal with biological balances which correspond to ecosystems that are considered to be interesting and therefore deserve protection. These balances could be destroyed if measures of strict non-intervention were applied. For instance, in many areas the prohibition of hunting
would result in an overpopulation of ungulates which would probably cause pastoral overload and in consequence, destroy the ecosystem which one wished to preserve.

In Germany, the European Diploma was recently awarded to Lüneburger Heide Naturschutzpark where the remarkable Calluna heath would soon disappear if sheep grazing were to be prohibited. The principle of "controlled" reserves has therefore, been officially recognized by the I.C.N.P. in its selective criteria.

The second remark concerns the "zoning" principle which had to be included so as to avoid absurd exclusions from the list. For instance, in densely populated areas such as Japan, the name "national park" has been given to large areas only a fraction of which meets the I.C.N.P. criteria. Daisetsuzan National Park, on Hokkaido Island, has in its 231,929 ha., both inhabited and cultivated areas, as well as five sanctuaries totalling 35,193 ha., in which the protective status really does meet the I.C.N.P. criteria. Had Daisetsuzan National Park to be eliminated from the United Nations List because some of its sectors were exploited? Of course not.

The zoning principle allows this National Park to be included, although only about fifteen per cent of its superficies met the requirements of the I.C.N.P. This same principle had often to be utilized in a task which lasted four years and which ended with the selection of 1,205 national parks and equivalent reserves for the United Nations' "Roll of Honour."

These then, are the characteristics of the national parks and equivalent reserves, the latter, as stated by Mr. Hammarskjold, enjoying as much protection as the national parks.

Let us now see what is the difference between the two. The I.C.N.P. has proposed the following definition:

A national park is an area where (1) the central legislative
authority (2) takes steps to ensure that the three requirements: status, superficials and effectiveness as defined hereabove, be duly enforced and (3) where tourism is authorized and even organized.

In an equivalent reserve, the three basic requirements must be applicable but one of the other two characteristics of the national park will not be present: if tourism is prohibited, it is a strict nature reserve; if it has not been created by the central legislative authority, it can be a provincial park such as Crimson Lake, a state park, such as Itasca, or a private reserve such as those administered by the National Audubon Society or The Nature Conservancy in the United States of America.

Finally, a resolution in the final report of the Intergovernmental Conference of Experts on the Scientific Basis for Rational Use and Conservation of the Resources of the Biosphere, held quite recently, in Paris, is of interest in this connection:

National parks and reserves

The discussion on this question emphasized that national parks and nature reserves are of great economic and scientific importance.

The Conference

Considering that the creation of such parks and reserves often implies a choice between conflicting national interests, and that this choice should be preceded by widespread consultation that can only be held at a national level,

Believes that wherever there is yet no national organization to select, establish and manage a network of national parks and nature reserves as part of an integrated plan, such an organization should be set up in the near future; this organization, whether already in existence or yet to be created should work out or further elaborate a national programme for national parks and nature reserves, endeavouring as far as possible to conform to the selection criteria and standard nomenclature set up in accordance with the resolution 713 (XXVII) of ECOSOC and in accordance with the principles laid down by the Secretary-General of the United Nations; these are the criteria and standards which IUCN recently used for the publication of the second edition of the United Nations List of National Parks and Equivalent Reserves.

Having discussed the revised procedure, which the I.C.N.P. is
continually attempting to improve, and towards which the Calgary Con-
ference will be of great assistance, let us refer to our basic theme:
"The development of the national park movement," bearing in mind that
we are considering national parks as well as equivalent reserves but
not any other type of area.

Let us look at our subject in another way, with a brief histori-
cal review.

The national park concept, as defined above, does not seem to be
more than a century old.

If we delve further back in history, we find that several cen-
turies ago there were areas which corresponded to the special reserves
set forth in Mr. Hammarskjold's memorandum and which were dedicated to
the protection of forests or of specific fauna. Among these former
special reserves, the most common was the seignorial game preserve.

A lord seeing that the growth of hunting activities would lead
to such a reduction of game that it would detract from his pleasure,
used his political power to set aside a domain where only he and his
friends could hunt. The result was an abundance of game which contras-
ted to those neighbouring zones where game was either exterminated or
emigrated to the reserved area. In addition to these foregoing protec-
tive measures, poachers were heavily punished and guards were appointed.
In Europe, we still hear of Robin Hood who hunted the King's deer, of
the hunting parties of the King of France, of the domain of the Duke of
Savoy, which became Gran Paradiso National Park. And in Rwanda, near
Kigali, I recently found traces of Itshyania, a forested area of some
ten thousand hectares, where not only hunting was prevented by Pygmies
guards but also all movement, and where there was an annual ceremonial
hunting party, led by the Mwami himself.

The idea of setting aside an area with a legal status affording
it general protection from all natural resource exploitation, and from
other aspects of man's detrimental effects upon its inherent qualities, seems to have been set forth *expressis verbis* for the first time in 1872, when Yellowstone National Park was established.

It is not necessary to add any further details about the significance of this important step before an assembly such as this.

Within the framework of the pattern or thought I am trying to develop before you, I will only venture upon the opinion that the basic concern upon the occasion of the Madison campfire seems to have been the purpose of preserving for the sake of preserving. The nineteenth century was for the United States of America, as well as for Europe and some other countries in the world, a period when industrial and urban developments suddenly occupied the landscape and there was a sudden exploitation of many natural resources. This exploitation and settlement quickly brought about the erosion of resources, deforestation, the slaughter of buffalo and the deterioration of a formerly beautiful landscape. A few shrewd and generous citizens began to fear that continued uncontrolled exploitation and settlement might deprive contemporary and future citizens of several types of "satisfaction"--aesthetic, cultural, recreational, educational, etc.,--which everyone, like themselves, would find in beautiful scenery. Hence Yellowstone National Park was created especially to preserve something "living" and "beautiful" and thus, preserve for the sake of preserving.

Little can be found in nineteenth-century Europe to compare with this. The two underlying causes behind this initiative were less important in the Old World than in the new one, i.e., the rate of development and the existence at that time of large areas which were either uninhabited or inhabited only by pioneers and remnants of primitive autochthonous populations. The United Kingdom only reacted in 1895, and in a modest way at that, through the private initiative of the National Trust. The Netherlands followed, just as unpretentiously and
through private initiative, in 1905.

The initiative of the Tsar should be mentioned, for at the beginning of this century he organized the Bialowieja Reserve on a firm basis. Afterwards, before the First World War, the only countries in Europe creating national parks worthy of the name were Sweden which in 1909, set aside three of the great national parks in Lapland and an important park in central Sweden; and Germany which created its best protected area, Lüneburger Heider Naturschutzpark, also in 1909. But, as a whole, before 1914, it seems that the Old World, which did not experience the explosive developments which shook opinions and authorities in America as early as 1872, did not feel the need of taking important official measures.

This was not the case in British overseas countries. The English, although slow in taking steps in their own island, acted much earlier in their Empire. In this very country, Glacier National Park was created in 1886, and Banff in 1887. In Australia, Royal National Park was set aside in 1886; in New Zealand, Tongariro National Park was established in 1894. Umfolozi Reserve in South Africa dates back to 1897 and Sabie, now Kruger National Park, to 1898. India's start was at the beginning of this century with Kaziranga in 1908.

In the years before 1914, a new concern was added to the basic principle of 1872. It originated in the scientific world where the Swiss, led by Paul Sarrasin, played a remarkable pioneer role. To the theme: "Preserve for the sake of preserving because it would be regrettable that these natural beauties and wealth be destroyed," was added an important concept: ecosystems, totally protected against the disruptive actions of man should be set aside for scientific purposes. Such scientific investigation of pristine nature was obviously of the utmost importance to basic biological research (the term "ecological" was not yet used). Proper utilization of natural resources requires
that we have a knowledge of their natural cycle in a pristine environment. Where could these original vital balances be investigated if some untouched samples were not preserved, once everything had deteriorated, been altered or even destroyed by human occupation and exploitation?

In 1914, the Swiss National Park was established, its main purpose being scientific. This example was soon followed in Sweden, where the management of national parks was entrusted to the Academy of Sciences. The same thing occurred in Dutch and Belgian overseas countries. In Indonesia, a strong scientific development was fostered by the Dutch, especially in Krakatau Reserve (1919), Udjon-Kulon (1921), and Tjibodas (1925). In the Congo, Albert National Park was created by the Belgian authorities in 1925, and its management entrusted entirely to an independent scientific institute which was to become in 1934, the Institute of National Parks of the Belgian Congo.

It would be too long and tiresome in this historical introduction to give the analysis of the present situation, to give a description of the "movement" creating national parks and equivalent reserves. However, slowly but surely, it gave the world an even denser network of natural sanctuaries until about World War II, and whose main purpose was, in my opinion, first to "preserve for the sake of preserving," and then to serve for either scientific research or tourist development.

For, in order to simplify, I have left the factor of "tourism" used in the highest sense of the term--somewhat behind, not because this element did not exist at the beginning of the national park movement, but because, in my opinion, the incentive value it possessed then was far less important than today.

Nobody is disputing, of course, that at the start, in 1872, the basic idea, "let us preserve for it would be too bad if our successors
were to be deprived of these beauties and wealth" implied the principle, "and let us open these national parks to visitors." It must even have been because of this implied purpose of tourism that the term "park" was chosen in the expression "national park." And later, it would not be true to say that the severe control requested by scientists meant that visitors were to be excluded from entering the Swiss National Park or Albert National Park. I only wish to point out that at that time, the tourism factor in national parks was but one of the three usual components of common policy in a protected area; sometimes a strict non-intervention principle was predominant (in Congolese national parks or in Mt. Nimba); sometimes tourism in company with conservation and research was the main concern of promotors and administrators.

But here is the point that I wanted to come to: the "possible organization of tourism" is becoming one of the main purposes and justifications, as well as causing concern and fear, amongst the promotors and administrators of most national parks and equivalent reserves.

The phenomenon which you are living with every day in this part of the world, the rapid development of "social tourism" in this civilization of leisure, is becoming general everywhere: increasing spare time, higher standards of living, the wish to leave the places where one lives and works and where living conditions are unsalubrious and disagreeable: polluted environment, noise, agitation, etc. Infatuation and perhaps, social ambition, are other elements which induce many people to leave their homes during their spare time to go to green spaces in nature. Amongst the natural areas available to this mass desire are the national parks and equivalent reserves. This is understandable and one can only be glad about it as long as a saturation point is not reached.
In nearly all developed countries, the problem is now showing the same pattern of evolution: a rapid and massive increase of affluent tourists to national parks and equivalent reserves, rather more obviously than to other green areas maintained to satisfy people's need for escape. I will refer to this point later, the importance of which is clear to everyone. This general evolution is causing overcrowding and equipment problems which are ever more serious. This will be one of the main talking points at this Conference, which explains why in my statement I reminded you that tourism is now one of the main purposes, justifications, as well as sources of concern and fear, of the promotors and administrators of national parks and equivalent reserves.

As I told you before, this is especially the case in industrialized countries. You know better than I the enormous numbers entering and being accommodated in Canadian and American national parks. The same occurs in Japan, where more than three hundred and fifty million people entered the national parks and quasi-national parks in 1966. In Poland, Czechoslovakia, Rumania, Bulgaria, the same rapid increase is claiming our attention, as well as in South Africa—especially in Kruger National Park—or in Australia with Ku Ring Gai Chase near Sydney. But the problems are not the same when we leave the developed—shall we say industrialized or simply "wealthy"—countries to look at the Third World.

These countries must a priori, be divided into two main categories which, schematically, can be defined as on the one hand, former colonies which recently became independent and have in many cases inherited national parks created by the colonial governments, and, on the other hand, countries which have been independent for more than a century or which, like Ethiopia and Thailand, have not been occupied for a long time.

In countries, especially those in Africa, which became independent some ten years ago, local authorities show a deep concern for their
sanctuaries and wish to keep them in good order. This is the case in the former British territories as well as in the French ones (where statutes have been reinforced), in Congo Kinshasa as well as in Indonesia, the Philippines, India and Ceylon.

But the tendency in nearly all these sanctuaries is for officials to show interest in assigning priorities to tourism even if at the start the basic reason for setting the sanctuaries aside was to preserve them for the sake of preserving or to preserve them for scientific research. This is understandable in many respects. Some of these national parks, in Africa especially, and mostly those where wildlife is plentiful, constitute an important attraction for international tourism, bringing strong foreign currencies which are most welcome in the national balance of payments. Another reason is that the so-called developing countries are living within the framework of extremely tight public finances and few politicians would ever dare voting for a budget giving rather important appropriations to national parks if they could not prove that these parks are supporting the national economy. And I would even say that in many countries—I have the names on the tip of my tongue, but you can understand that I do not wish to be more explicit—people in favour of conservation for the sake of conservation—and they are numerous, especially in universities and museums—and especially in favour of preserving a species from extinction or of conservation for scientific research, must emphasize the tourism argument—social and national tourism, and international tourism, a source of strong foreign currency—and contrary to their wishes, hide their real purposes. As a matter of fact, there are many, let us say, poor countries, where effective protection of ecosystems can only be achieved without the knowledge of public opinion and politicians; for instance, by organizing with much publicity, social tourism in some sectors of the national park and carefully forgetting to establish paths, roads, or any of the usual
facilities in other sectors.

I made a difference in the Third World between countries which recently became independent and those which have been independent for more than a century. South America, of course, belongs to the second category and it is in that continent that the examples are most numerous.

There, also, the tendency is clearly to show a preference for tourism. In countries where national tourism can increase, politicians are supporting programs providing for small national parks near the towns and a few larger ones a little further away. A question which is often heard is: "Do you believe that a national park, for instance in the Andes, would attract foreign visitors"? Here as well, the argument "protection and research" is unfortunately, too weak and, without the hope of successful tourist development, decisions, and especially official actions, have to be awaited for a long time. A deserving effort is being made, through a variety of means and with foreign assistance, to strengthen the national parks and equivalent reserves network in South America. The above-stated factors might explain why this network is generally most inadequate and is only slowly growing.

In conclusion, it might be stated that the world is now divided into two groups of countries corresponding to industrialized countries and developing countries, and that in almost all of them the tourism factor is now playing an ever more important part in the evolution of the "national parks and equivalent reserves" phenomenon as defined at the beginning of this paper.

In the Third World, the creation of new parks and the maintenance of those already in existence are not easily achieved, due to public opinion and national finances. Almost everywhere, the advantages given by the development of tourism are about the only arguments accepted by politicians and public opinion when appropriations are
requested for park maintenance or creation.

In industrialized countries, apart from a few remote and therefore, privileged sanctuaries, social leisure and the increasing mobility of citizens are causing problems which are different, but just as serious and related also to the "tourism" factor. These problems must be settled by far-seeing authorities who wish to reconcile within their parks, the needs of conservation and research with the requirements of increasing tourism. You are just as convinced as myself that the solution must be found outside the national parks and equivalent reserves for when these reserves meet the selective criteria of the I.C.N.P., their status will be so strict as to place them beyond that which normally satisfy citizens who are looking for fresh air, calm, green spaces and beautiful scenery.

As they are also aiming at conservation and scientific research, national parks and equivalent reserves have a status so strict that they cannot absorb the social tourism which is now rushing into them. Sectors with a less severe status, where for instance, the usual cultivation activities could very well be admitted under control, might meet this need. Governments have already taken steps for this purpose. The recreation areas in the United States of America, and the German Naturparke, are nothing else. They receive considerable numbers of people on holiday and hikers. These areas are rendering valuable services to conservation, especially of landscape, but they are not a national park or an equivalent reserve. Therefore, I shall say no more about it.

This paper has now come to an end. Some of you will perhaps regret that I did not investigate in detail, the part played by every country in the national park movement. I know some speakers will do it, for instance when Kai Curry-Lindahl will talk about Europe. If you wish to have further data, I can only refer you to the French edition of the United Nations List of National Parks and Equivalent Reserves.
which will soon be followed by an English version, and where all the necessary information can be found on this movement, country by country.

FOOTNOTES


2 [See footnote 6 in J. I. Nicol "The National Parks Movement in Canada"—eds.]
"The capacity to use leisure rightly is the basis of a man's whole life." Aristotle

INTRODUCTION

It is quite clear that Aristotle's observation quoted above is becoming increasingly significant in our times. In previous centuries when the struggle for food and shelter took most of a man's time, the capacity to use leisure rightly had less significance.

As a result there has been a vast change in thinking and concepts, particularly over the past fifteen years, first among those concerned with land use and outdoor recreation resources, and later among the better informed citizens. Fortunately, thinking and discussion about the wise use of leisure and the best use of outdoor recreation resources is increasing, aided by conferences such as this one.

In Canada, national parks and the national park concept have a key role in our consideration of outdoor recreation resources. In recent years three points have become more generally recognized and accepted.

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i) Firstly, the public now recognizes more clearly, a collective responsibility for the management of our environment and preservation of its values.

ii) Secondly, the power of man and machines to alter the landscape is now so great, and change so rapid, that few opportunities to preserve large areas of natural beauty will be available fifty, or even thirty, years from now. Reservation and preservation of the larger resource-based parks, whether national or provincial, should be done soon, before the opportunities disappear or become prohibitively expensive.

iii) Our objective is the best possible living standard for every individual. In relation to this objective there is a growing realization that nature sanctuaries of solitude and repose where people can find "re-creation" of body and spirit are essential to provide a change from the pace and demands of modern civilization. Therefore, provision of suitable land for outdoor living space now deserves a high priority in considering potential land uses.

The principle that outdoor recreation space is a desirable and necessary public service has now been well accepted. But whose responsibility is it to preserve, develop and maintain it, or how are these responsibilities to be shared? This is one of the questions which remains to be worked out.

The nation has long since fully accepted responsibility for national parks, but what distinguishes national parks from other parks? I think two principles indicate the place of national parks in the field of outdoor recreation resources. The first principle is the concept of national significance and national heritage. By this we mean that national parks have significance for all the citizens of Canada
and should be preserved as part of our common heritage. These areas are each a part of the original face of Canada, or they preserve a reminder of some significant event in our national history. They have been set aside in the firm belief that to preserve such lands and features as a national inheritance is important to our stature and development as a country. This common heritage is a most important part of our "social capital." The second principle is that national parks are single-purpose areas, so important for the benefit, education and enjoyment of present and all future generations, that use for these purposes and no other is justified.

Canadians have accepted and endorsed the principle of a particular (special) kind of park system based on national significance and maintained by the citizens of the whole country for Canadians and the world at large. Thus, our national park system comprises the areas which have such broad significance either for their natural or historic features that their preservation is deemed a proper responsibility of Canadians as a whole, and it is through the preservation of these features that future generations will benefit by contact with the natural environment and the historic remnants of our colourful past.

THE HISTORY OF THE NATIONAL PARKS SYSTEM

No doubt people in other countries regard Canada as extremely fortunate in that we had in the past, and still have, unique opportunities to establish a well-rounded National Parks System. It is true that the National Parks organization was the first to establish large areas for public recreation in Canada. However, owing to our circumstances and history, and the general availability of the outdoors which formerly prevailed, it should be recognized that parks to Canadians came pretty much as an afterthought, not as a high priority.

In the broader meaning of the term, it is doubtful if one could
say that there has been a national parks movement in Canada. Since 1867, Canadians have been occupied with political and economic questions: the development of trade and industry; the settlement of the West; two World Wars; and now northern development. It is not surprising then, that although national parks were recognized as a good thing, the growth and support of the system did not loom large in the thoughts of political parties or the public.

It is only in recent years with the establishment of the National and Provincial Parks Association and the interest and leadership shown by this and other conservation groups, that we can be said to have had a national parks movement, i.e., a significant body of public opinion expressing informed views on national parks.

Canada's first national park or prototype of a national park was created in 1885, only fourteen years after the bill establishing Yellowstone National Park was signed by President Grant. An area of ten square miles around the hot mineral springs at Banff Station, Alberta, was the core of the first Canadian national park, established by order in council of November 25, 1885.¹

This first dedication of land as a public amenity read as follows:

His Excellency by and with the advice of the Queen's Privy Council for Canada has been pleased to order, and it is hereby ordered, that whereas near the station of Banff on the Canadian Pacific Railway, in the Provisional District of Alberta, North-West Territories, there have been discovered several hot mineral springs which promise to be of great sanitary advantage to the public, and in order that proper control of the lands surrounding these springs may remain vested in the Crown, the said lands in the territory including said springs and in their immediate neighbourhood be and they are hereby reserved from sale or settlement or squatting.

It is interesting that public sanitation was cited as the reason for reserving and preserving the core of our first national park. However, in a pioneer era, it did no doubt make sense.
Two years later, the Banff Hot Springs Reserve, enlarged to an area of 260 square miles, officially became Canada's first national park. The act establishing the Rocky Mountains Park of Canada specifically cited the words "national park" in its preamble and reserved the area as "a public park and pleasure ground for the benefit, advantage and enjoyment of the people of Canada." The Rocky Mountains Park Act also spelled out the protective aspect, stating that no leases, licences or permits that could "impair the usefulness of the park for the purposes of public enjoyment and recreation" would be issued.

In 1886, an area in the Selkirk Mountains of British Columbia was established as Glacier National Park, and 507 square miles on the west slope of the Rockies as Yoho National Park. Waterton Lakes and Jasper, established as national parks in 1895 and 1907 respectively, brought the number of parks to five by 1911 when the next legislative step was taken.

Prior to 1911, there was no distinctive national parks administration in Canada. The Superintendent of Forestry, the senior official of the Forestry Branch of the Canadian Department of the Interior since 1908, had looked after national park matters. However, the Dominion Forest Reserves and Parks Act of that year, detached parks administration from the Forestry Branch and made a Commissioner of Dominion Parks the responsible official. This Act also authorized the establishment of areas within forest reserves as Dominion Parks, "maintained and made use of as public parks and pleasure grounds for the benefit, advantage and enjoyment of the people of Canada."

The first Commissioner of the National Parks of Canada was J. B. Harkin, who believed that national parks meant a new "Declaration of Rights"--the right of the people to share in the use and enjoyment of the noblest regions in their own land. He also believed that they constituted another expression of the great principle of conservation--
the duty of a nation to guard its treasures of art, natural beauty or natural wonders for the generations to come.  

While Mr. Harkin was an idealist, his idealism was tempered by hard-headed realism. He realized that his problem was an economic one — how to get the money to preserve, manage, and develop the parks. Many Members of Parliament knew nothing about parks; others would regard them as "frills," all right as long as they did not cost much.

Mr. Harkin's solution was to stress and publicize the point that tourist traffic was one of the most satisfactory sources of revenue. In an era of railway tourism impressive figures were not hard to establish and by the standards of the times, Mr. Harkin was reasonably successful in obtaining monies to run the parks.

By 1930, the National Parks System had expanded to seventeen areas, fourteen of which had been formed from forest reserves and other tracts administered by the federal government in western Canada. Of the other three parks, all in Ontario in eastern Canada, one was acquired by purchase and two by transfer from other federal government departments. Of the total area of 29,359 square miles, the three parks in eastern Canada contributed only eleven square miles.

In that year an act was passed formally recognizing the national parks as a distinct administrative entity and setting out the provisions under which they were to be managed. The National Parks Act of 1930, as amended, is the legislation under which the parks are administered today. In Section 4, the general purposes of the national parks are stated:

The Parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment, subject to the provisions of this Act and the Regulations, and such Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.

The basic legislation then is not an involved or restrictive act. It
leaves considerable scope regarding policies and initiatives to successive ministries and governments.

From 1930 onward, the pace of development was slow. After new national parks were established in Nova Scotia and Prince Edward Island in 1936 and 1937,\textsuperscript{12} eleven years elapsed before the next park, Fundy National Park, was established in New Brunswick.\textsuperscript{13} Nine years later in 1957, Terra Nova National Park in Newfoundland came into being.\textsuperscript{14} In 1965 the Province of Nova Scotia turned over to Canada the land for Kejimkujik National Park. Physical development of this new park is now well under way, although the park has not yet been formally established by Act of Parliament.

It should also be noted that our basic legislation, the National Parks Act, also provided for the establishment of National Historic Parks by order in council.\textsuperscript{15} There are now 19 National Historic Parks, 15 major National Historic Sites operated and administered by the Branch and 8 major National Historic Sites leased to local bodies for operation. In addition, 613 areas of national historic significance are marked. Although the actual area encompassed by these historic parks is small, approximately forty-eight square miles, they receive very intensive use, far out of proportion to their size. The Branch has been engaged in the gradual restoration of many historic sites, buildings and landmarks such as the Halifax Citadel. In addition, the Branch is carrying out what is currently the largest historical restoration project in North America—the partial restoration of the Fortress of Louisbourg, the French fortified city which was captured and demolished by British and New England forces in 1758. This project will take at least ten to twelve years to complete and will involve large expenditures. I have no doubt the Fortress of Louisbourg will become Canada's prime historical attraction.

It is clear that until recent years there was no clear definition
of the concept of a "National Park" or a "National Historic Park." The term "benefit, education and enjoyment of the people of Canada" was, therefore, interpreted according to the economic needs of the times and a large degree of public misunderstanding as to the real and unique purposes of national parks. In the minds of a great many Canadians, the "public park, and pleasure ground" mentioned in 1887, was interpreted as meaning a scenic resort, recreation area and tourist attraction.

This is not really too surprising. The mountain parks comprising by far the largest and most important units in the system, came into being when railways were the basic transportation. The construction of the railways and the building of the new nation meant severe financial and political problems. It was therefore natural for the government and the railways to seek the development of an international tourist trade. This was the era of resort hotels at Banff, Lake Louise, Field, Glacier and Jasper, catering to guests of prestige and financial standing.

Keenly aware, like the railroads, of the tourist potential of the national parks, the Dominion Parks Administration plunged into an energetic travel promotion program which offered the parks as the main Canadian tourist attraction. During this early period, the "playground" view of national parks was sedulously fostered and numerous concessions and compromises were made. Types of commercial development and visitor use not consistent with the principles of national parks were allowed. The effort to meet two sets of objectives, those of tourism and national parks, laid the basis for many of our present problems. It is symptomatic of this period that the tourist division of the National Development Bureau was incorporated into the National Parks Branch in June 1933, and stayed there until February 1935, when it was absorbed by the new Canadian Government Travel Bureau.16

Two results of this exuberant period were the establishment of
permanent townsites within some of the national parks and a general misunderstanding by the Canadian public of the purpose national parks were really intended to serve in national life. Both problems remain with us today.

Prince Albert National Park in Saskatchewan and Riding Mountain in Manitoba were established just prior to the depression of the 'thirties. In view of their location and the conditions of the times, the tendency was to develop them to serve the recreation needs of a region rather than the nation, and their use has continued to be predominantly regional. Many people in the area used these areas as summer resorts and in the depression years no doubt it seemed justifiable to give these people special consideration in order to encourage use at a time when visitation was low and it appeared there was ample space for summer residences of various types and tenure. Of course this means problems for us now.

Looking back upon the development of the National Parks System, we find that it has been shaped by the constitutional factor, by the economics of the times, and by practice and precedent. The constitutional factor is largely responsible for the drastic imbalance in the system. Disregarding the 17,300 square miles in Wood Buffalo National Park, ninety-four per cent of the remainder is in the western provinces, which have about twenty-six per cent of Canada's population. In heavily populated eastern Canada we have less than one-tenth of an acre of national park land per person. This unequal geographical distribution of national parks, by number and extent, is explained by the constitutional situation in western Canada to 1930.

By the British North America Act, legislative powers are distributed between the federal and the provincial governments. The provincial governments have exclusive jurisdiction over natural resources, including lands, that lie within provincial boundaries, while the
federal government has exclusive jurisdiction over natural resources that lie outside provincial boundaries, in such areas as the Northwest Territories and the Yukon Territory.

However, in western Canada the federal government retained jurisdiction over the natural resources of the Railway Belt in British Columbia, and in the provinces of Alberta, Saskatchewan and Manitoba until 1930, with the Department of Interior being the administering department. Thus the federal government was free to establish national parks in western Canada until May 31, 1930. In fact, the only free land in Canada available for national park purposes was in these four western provinces.

In eastern Canada national parks could be created only by the rather involved process of gaining provincial government approval and active co-operation. After the Transfer of Resources Agreements of 1930, this situation became the same for all provinces and an area within a province could only become a national park if the provincial government transferred the title and resource rights to the federal government free of all encumbrances. Only in the federally-administered northern territories, where federal jurisdiction is maintained over all resources except game, could the federal government act independently in creating national parks. As the National Park System developed then, it was an unbalanced system without any geographical relation to the heavily populated regions. As population, disposable income, leisure and the ability to travel increased, attendance rose dramatically and undue strains and demands were placed on national parks. For many years there was little expansion of the System. Its slow growth did not keep pace with the development of the nation and the demands for outdoor recreation space. There was a tendency to look toward national parks to meet most of the demand for outdoor recreation space, without full recognition of their unique role as national heritage areas.
The Impact of Visitation

It has become abundantly clear that national parks are but one segment of our outdoor recreation resources. Like other parks and outdoor recreation areas, national parks have been under steadily mounting visitor pressures since a few years after the end of World War II. Visits to the national parks have been increasing at about ten per cent per year or doubling about every seven and one-half years.

In general, visitation in both federal and provincial parks grew by 30 per cent between 1962 and 1965, while the population growth was 5.3 per cent. Certain popular activities such as camping and skiing increased 15 per cent and 20 per cent per year.

By 1985, we will likely have about four times the national park visitation we had last year and perhaps five times as many campers if they can be accommodated.

What is the Solution?

One solution would be a vastly increased scale of development. This would generate more demand and pressure for more activities. It would lead to overdevelopment and impairment and it would, in part, defeat the purpose of national parks.

We could acquire and develop more and more varied types of national parks. This is clearly necessary but it is not the complete answer.

We could take a look at our nation as a whole, at our outdoor recreation needs and resources; and then try to evolve and agree upon broad policies to guide and co-ordinate the management of our extensive but not unlimited outdoor recreation potentialities. The place of National and Historic Parks in the total complex of outdoor recreation lands would then be clear.
What Should a Nation Spend on National Parks and Outdoor Recreation?

Obviously the national budget is a matter of priorities among many desirable objectives. Clearly national parks objectives must be related to financial feasibility. Nevertheless, we should have some idea as to how much we should spend as a nation, some sort of benchmark.

The total federal budget in the field of outdoor recreation is in the neighbourhood of forty million annually, or 0.4 per cent of the total budget. Some authorities have suggested that a nation should be spending about two per cent of its national budget on outdoor recreation if it hopes to keep up with the demand. Others have suggested one per cent of national productivity.

The estimated total federal outlay in the United States for outdoor recreation is about twenty times the Canadian expenditure and twice as much per capita as in Canada.

This suggests to me that we need to think about specific national objectives and to outline them very clearly in the hope that an adequate percentage of the national budget will be allocated for their achievement. This will be even more vital as space and opportunities decrease, while at the same time we are increasingly in a more leisure-oriented society.

Developments in Recent Years

For a number of years it has been fully realized that the National Park System was quite incomplete. Only 0.8 per cent of Canada's area is dedicated to national parks and over half of this small percentage is located in the one park, Wood Buffalo National Park (17,300 square miles).

As a result the Department has joined provincial authorities in co-operative investigations and surveys of areas suggested as potential sites for new national parks. Every province has joined in one or more
of these joint surveys. Over eighteen major possibilities have been investigated and reports and proposals prepared for consideration. As a result, Kejimkujik Park in Nova Scotia is well under way and a substantial development program has been undertaken. In some cases it has not been possible to arrive at a mutually acceptable proposal for a new national park, but I think it would be fair to say that four to eight new national parks are likely to be established in the next two or three years.

As the Honourable Arthur Laing pointed out in his speech to the Canadian Symposium of Recreation in June 1967;

it will require forty to sixty new National Parks to round out the system and achieve adequate representation of Canada's heritage on a suitable scale. Ideally we should be acquiring two to three new National Parks each year. If we are to complete our system by 1985, this is what we will have to do.

In the interests of future Canadians, I hope we can achieve this goal.

Policy Development and Trends

A very significant milestone in the development of the National Parks System was the announcement of a comprehensive statement of National Parks Policy by the Minister in the House of Commons, September 18, 1964. This overall policy statement complements the National Parks Act and Regulations. It will be revised and amplified from time to time by additional policy statements such as that on "Winter Recreation." A similar policy statement covering National Historic Sites was also tabled in the House of Commons on March 4, 1968. Consideration is being given to methods of expanding and diversifying the National Parks System to make it more flexible and more attuned to present and anticipated needs and conditions. The area of particular concern is major shorelines which park authorities recognize as the most critical element in preserving areas of national significance.

Means must be found to facilitate and hasten the establishment of
important major shorelines as national parks.

In the Yukon Territory and the Northwest Territories the principle of establishing "core areas" as national parks has been proposed. This idea would involve establishment of "core areas" as full-fledged national parks, plus reserved areas which could be added to the core areas decades later if no significant mineral development took place. In this way, it should be possible to preserve the key areas while leaving the maximum area possible available for mineral exploration and development.

The Broader Aspects

It seems to me that we need to take a whole new look at parks and outdoor recreation resources in Canada with the objective of arriving at general agreement on policies in parks and outdoor recreation geared to the needs of the next fifty years. Compartmentalization is no longer good enough. Parks and conservation people have recognized this in their efforts to achieve informal liaison and co-operation through such media as the Federal-Provincial Parks Conferences and the National and Provincial Parks Association. At this point I simply wish to mention some of the sectors which need consideration and discussion.

i) Clarification of the role of national parks in outdoor recreation.

ii) Is there a need for major national recreation areas such as those established in the United States of America?

iii) Co-ordination of the efforts of those federal agencies with an involvement in outdoor recreation.

iv) How can prime outdoor recreation space which will be needed for national, provincial, regional, and large urban parks, be reserved for use as required?

v) Should there be a federal organization to co-ordinate and
encourage nation-wide efforts in parks and outdoor recreation?

Note: From the federal standpoint there is a growing federal involvement in outdoor recreation, not only because it plays a larger role in the social, cultural and economic life of the nation, but because of the related involvement of federal agencies dealing with resources or with primary objectives such as rural redevelopment, urban renewal, regional economic development, etc. While the responsibilities of the National and Historic Parks Branch are clear, there is no organization with responsibility for a co-ordinated approach to development of the nation's outdoor recreation potentialities.

From both the provincial and federal standpoints there may be a case for an organization devoted to research, technical assistance, planning, liaison and co-ordination.

vi) How can private enterprise play a more significant role in outdoor recreation, thus relieving some of the pressure on national and other parks?

I hope this review will stimulate discussion in depth of some of the basic questions I have raised.

FOOTNOTES

1 Order in council, P.C. 2197 of November 25, 1885.
2 Rocky Mountains Parks Act, Chapter 32, 50-51 Victoria (1887).
3 Order in council, P.C. 1880 of October 10, 1886.
4 Order in council, P.C. 1621 of May 30, 1895.
5 Order in council, P.C. 1323 of September 14, 1907.

Although the areas at Glacier and Field actually were reserved in 1886 and were loosely termed parks, they were not given national park status until 1911 under the Dominion Forest Reserves and Parks Act. Perhaps it would be more accurate to say that the nuclei of Glacier and Yoho National Parks were reserved in 1886. Waterton started as the Kootenay Lakes Forest Park in 1895 and Jasper as the Jasper Forest Park of Canada in 1907. All these reservations were made under the Dominion Lands Act.

7 The Forestry Branch took over administration of the parks in 1908 (Annual Report for that year). In reality the Deputy Minister of the Interior, assisted by the Law Clerk and the Secretary of the Department, were the responsible officers in Ottawa prior to 1908.
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8Dominion Forest Reserves and Parks Act, Chapter 10, 1-2 George V (1911).


11National Parks Act, Chapter 33, 20-21 George V (1930).

12Pursuant to the Nova Scotia and Prince Edward Island National Parks Act, Chapter 43, 1 Edward VIII (1936).

13Pursuant to the National Parks Act, Chapter 35, 1 George VI (1937).

14Pursuant to an Act to Amend the National Parks Act and to Establish a National Park in the Province of Newfoundland, Chapter 37, 3-4 Elizabeth II (1955).

15National Parks Act (1930), Part II.


17Transfer of Resources Acts: (a) Manitoba Natural Resources Act, Chapter 29, 20-21 George V (1930); (b) Saskatchewan Natural Resources Act, Chapter 41, 20-21 George V (1930); (c) Alberta Natural Resources Act, Chapter 3, 20-21 George V (1930); and, (d) Railway Belt and Peace River Block Act, Chapter 37, 20-21 George V (1930).

18Hansard, September 18, 1964.

LEGISLATION RELATING TO THE NATIONAL PARKS OF CANADA


   *Dominion Lands Act*, Revised Statutes of Canada 1886—Chapter 54.

   *Dominion Lands Act*, Revised Statutes of Canada 1906—Chapter 55.


   Amended by Chapter 31, 1902

   Amended by Chapter 44, 1906.


   Amended by Chapter 18, 1913.

   Amended by Chapter 32, 1914.

   Amended by Chapter 15, 1916.

   Amended by Chapter 4, 1918.

   Amended by Chapter 49, 1919.

   Amended by Chapter 13, 1923.

   *The Dominion Forest Reserves and Parks Act*, Revised Statute of Canada—Chapter 78.

   Amended by Chapter 20, 1928.


   *National Parks Act*, 1937—Chapter 35 (an Act respecting the establishment of a national park in the province of New Brunswick and to amend the Nova Scotia and Prince Edward Island National Parks Act, 1936).


   *National Parks Amendment Act*, 1949—Chapter 5.

   *National Parks (Amendment) Act*, 1950—Chapter 45.


   *National Parks (Amendment) Act*, 1956—Chapter 31 (to amend boundaries of Cape Breton Highlands National Park).
National Parks (Amendment) Act, 1958—Chapter 8 (to amend boundaries of Cape Breton Highlands National Park).
Recreation, even when limited to outdoor recreation, is a term with several meanings, and a general activity with many specific special interests. A brief review of the historical origins of outdoor recreation is necessary to understand present activities grouped under this general heading, and to understand the diverse professional and other interests in the field.

Hunting and fishing are outdoor activities in the United States and Canada, found from the very earliest settlement until the present. At one time, they provided important sources of food, especially on the frontier. For many decades, they were unregulated, and often proceeded to lengths which reduced the stock of game and fish. Gradually, season and bag limits and other controls were imposed, some measure of science was applied in their management, and in at least some instances recovery in numbers resulted. Today, hunting is solely for sport, with meat supply highly incidental; and fresh water fishing

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is nearly so. But the numbers of persons who engage in each is high and probably more common relative to the whole population today than in the age when hunting and fishing contributed importantly to food supply.

The wilderness or frontier excursion was a special form of outdoor recreation in a much earlier period, in each country. Indeed, Yellowstone National Park and thus the whole national park concept grew out of one such frontier excursion. While the numbers of persons partaking of this type of experience was small, yet perhaps such experiences were deep and moving to those who did engage in them. Dr. Nash, in his paper, describes the attitudes of some of these early explorers, toward the wildernesses which they saw.

Beginning in the early nineteenth century, the summer vacation in the mountains, at a lake, or at the seashore began to be a common activity for the more well-to-do portion of the total population. At first, travel to such areas had to be by railroad, ship, or stage coach; and the vacationist, once at the spot, was severely limited in the distance he could walk or ride a horse. Such visitors nearly always stayed at a hotel or other public accommodation. Later, the individually owned cottage or cabin became more popular. About the time of World War I, and continuing with mounting volume, travel to such areas by private auto became possible. For a generation, this has been an important activity in some localities in Canada, as Roy Wolfe has shown in his studies, and in several parts of the United States. The owners and users of such vacation homes are mostly city folk.

A parallel development was that of the city park and city playground. While some examples of each existed in the early nineteenth century, each really began in the latter nineteenth century. By 1880, most of the presently larger cities in the United States had
one or more parks, although many were comparatively undeveloped. Since that date, city parks have expanded in acreage more or less proportionately to growth in city populations. Interest in playgrounds and playing fields for children and youth, particularly those in the poorer sections of cities, began among social workers and other interested in welfare of city people, and began to be a major factor toward the end of the nineteenth century. Since 1900, and at an accelerating pace, city park recreation areas have expanded in facilities, or in numbers of workers, or in patronage, or in all three. One major origin of professional interest in outdoor recreation is this "activity" oriented background.

Other speakers will trace the origin of the national park idea and the rise of the national park system in the United States and in Canada. In the United States, the national forests have been a somewhat similar kind of outdoor recreation area. In each case areas of good to superb quality (for recreation) are included, and in each emphasis is upon the natural environment. The national parks are exclusively for recreation, broadly defined; the national forests are multi-purpose in use, with recreation ranging from the most important use to a relatively unimportant use. Although the emphasis in each is upon the natural environment, the relatively high level of attendance in most attractive areas forces a number of management actions. Sanitation facilities, water supply, fuel for campfires, access roads, and other facilities must be provided; and garbage must be collected, fires controlled, and other management actions undertaken. A special part of each is the wilderness area; much public attention has been focused on these in recent years, and usage, while still relatively very low, is climbing and threatens to destroy the wilderness more than does commercial exploitation.

Mass outdoor recreation began before World War II but really
reached its stride after the war. The private auto opened up for use many areas which had previously been generally inaccessible; higher incomes permitted more use of such areas; more paid vacation or weekend time provided for their enjoyment; and better roads made them more easily accessible. A host of specific activities have been involved—picnicking, camping, merely driving for pleasure, hiking, horseback riding, boating, swimming, fishing, and many others. Among the public areas, state parks and federal reservoir areas in the United States and provincial parks in Canada have been the chief forms of public areas of this type. The postwar period has seen the development of a mass market for many kinds of goods and services, and the developments in outdoor recreation are part of a larger economic and social change.

The park (and forest area used for recreation) administrators have provided another broad stream of professional personnel, at least in the United States, contrasting with those of playground or activity orientation. These have been resource-oriented, to a considerable degree, although increasingly they are coming to pay more attention to their visitors, as human beings, and less as objects within their area of management. Some, but perhaps inadequate, dialogue has begun to develop among recreation professionals with these differing origins.

OUTDOOR RECREATION IN THE UNITED STATES TODAY

As the United States moves forward into an age of truly mass outdoor recreation, it is necessary to classify and briefly describe the various kinds of such outdoor recreation areas. The Outdoor Recreation Resources Review Commission established a sixfold classification of such areas, based primarily upon management criteria: I, high density recreation areas, usually within or near major population centres, for intensive use; II, general outdoor recreation areas, somewhat more remote but still readily accessible, primarily for day
and weekend use; III, natural environment areas, to be left largely undeveloped, for extensive weekend and vacation use of popular types; IV, outstanding natural areas, such as many of the national parks, managed to preserve their natural charm and value, for extensive use; V, primitive areas, the more remote back-country, for very extensive use; and VI, the historic and cultural sites. I have found a different, but somewhat related, classification more useful for economic analysis; user-oriented areas, whose major characteristic is their close proximity to homes of users, for intensive use, frequently on an after-hours basis, such as many city parks; intermediate areas, generally within an hour's travel time, suitable primarily for day outings, often state parks; and resource-based areas, often more remotely located, used primarily for vacations, such as national parks and national forests.

The available data on use of publicly-owned outdoor recreation areas are, unfortunately, by governmental agency administering the area, and do not conform exactly to either of the foregoing classifications. Data on use of privately owned outdoor recreation areas are still scanty. If we use city parks as typical of user-oriented areas, then the trend in use has been steadily upward since the depths of the depression of the 1930's. Since many such areas are freely open to public use, it would be extremely difficult to obtain accurate attendance data for them, and as a matter of fact such data are lacking except for certain kinds of areas and certain activities. If we assume that city governments spend money on parks only in response to a felt need, then total expenditures on city parks may be a good barometer to total use of such areas. In the ten years from 1955 to 1965, such expenditures by cities and counties rose nearly two and one half times from $375 million to $905 million. This is an annual rate of increase of about ten per cent; we assume, as an approximation, that use rose somewhat less than this, since costs (correlated with
wages and salaries) per unit of use probably rose also. Total acreage in such parks about doubled in this decade, indicating that intensity of use per unit of area did not rise sharply, if at all.

From 1950 until the mid-1960's, total attendance at all state parks increased nearly fourfold; attendance at all federal reservoirs, another common type of intermediate area, likewise rose about fourfold. Again, these are rates of increase of the general magnitude of ten per cent annually. As with local parks, substantial additions of new units and of acreage, and of expenditures to improve and manage such areas, occurred during these years.

Total attendance at recreation areas within the national forests and national parks have also risen by about four times in the same 1950-mid-1960 period, partly as a result of somewhat more areas in the national park system but primarily as a result of increased attendance at existing areas, and greater expenditures were incurred in recreation management of these areas. I had estimated, in Land for the Future and in other writings, that the rate of increase would be greatest for the resource-based areas, because the effect of rising incomes would be especially marked here, would be large but more moderate for the intermediate areas, and would be least for the user-oriented areas. Thus far, this projection has generally not been realized, for the rate of increase at each of the three major types of areas has been remarkably similar.

In the mid-1960's, the mythical average person in the United States spent somewhat more than one day at a publicly-owned resource-based area, about three days at a publicly-owned intermediate type area, and probably visited a city or county park a dozen times or more during the year. Since a significant proportion of the total population is unable or uninterested to use any kind of area, and a larger proportion is unable or unwilling to visit the more distant areas, it should be
evident that the annual participation by those who participate at all is much higher than these averages. In addition, a substantial but largely unmeasured use of privately-owned outdoor recreation areas occurred.

Every reasonable indication is that the trend in use of outdoor recreation areas will continue upward. Although an indefinite upward continuation of past trends leads to absurd figures in time—such as spending more days annually at Corps of Engineers reservoirs in 2000 than there are days in the year—there is no evidence yet of a slowing down in the trend toward more attendance at these public areas. A doubling in present attendance may easily take place over the next decade, and further increases in ensuing decades. While numbers and acreages of public outdoor recreation areas may increase, it seems unlikely that these increases will parallel increased attendance; more usage per unit of area seems inevitable.

Whatever classification system is used for the extremely wide variety of outdoor recreation areas in the United States, it is apparent the types are not sharply differentiated, one from another; rather, there is a continuum of kinds, sizes, and locations of areas, and a continuum of kinds of uses, from the smallest local playground or park to the most distant and remote wilderness area. Some kinds of areas typify the categories established, while others are more nearly transitional between kinds of areas. In any event, a system aspect is evident. The use of one park or one kind of park is greatly affected by the availability of other parks and other kinds of parks. An outdoor recreation system has many similarities with an electric power system: generators of supply, load centres or points of demand, interconnectors or highways, and a shifting of load from one source of supply to another, as supply capacities or demand requirements change. The addition of a new electric generator changes the operation
of all existing generators in the system; so does the addition of a new park change the demand and use of all present parks in the system. The strength of the interconnection, or the degree to which one park is a substitute for another, depends in part upon the physical characteristics of each area, but basically upon its location. A national park may be a poor substitute for a local playground, and vice versa, but a chain of substitutability may exist between them, and will be strongest for units similar in kind and location.

Given this system aspect of outdoor recreation areas, and given a number of basic social and economic forces common to all of them (discussed below), then a somewhat similar rate in increase in use of different kinds of areas is quite natural.

FACTORS UNDERLYING DEMAND FOR OUTDOOR RECREATION

Any economic or social indicator which exhibits a persistent upward trend of the general magnitude of ten per cent annually has strong and usually diverse underlying forces. In the case of outdoor recreation, every serious study of its demand has shown one or more of the following factors as causal: population increases, real income increases, more leisure, and improved travel facilities.

The increase in population is too well known to require elaboration; more people obviously mean more demand for outdoor recreation, other factors being equal. City people use public outdoor recreation areas more than do rural people, hence the rural-urban migration has also affected demand for outdoor recreation. Since young people participate in outdoor recreation more than do middle-aged and old ones, a high birth rate tends to increase the demand for outdoor recreation one to two decades later.

Outdoor recreation nearly always costs money, hence higher incomes permit greater participation. As real income per capita rises,
a smaller percentage is required for the necessities such as food and shelter, and more is discretionary. Although data are inadequate, such data as do exist suggest that the proportion of personal incomes spent for outdoor recreation is rising—and the higher proportion applies to larger incomes. Increasing proportions of the total population can afford a trip to a national park, for instance.

Outdoor recreation takes time, and the availability of leisure time, especially of paid vacations, is a major factor in rising trends in outdoor recreation attendance. In future decades, the availability of time may well be more of a limiting factor, conditioning the amount of outdoor recreation per person, than the availability of income. The timing of leisure is perhaps even more important than its amount; an increase in daily leisure would hardly affect the demand for national parks, for instance. The near-universality of the paid vacation, and the tendency toward longer paid vacations, is particularly important for the national parks and other resource-based areas.

Improved transportation facilities reduce the time and discomfort in travel to outdoor recreation areas. The rise in attendance at national parks for several decades was closely related to the rise in automobile ownership; the near universality of the auto, among urban families, makes travel to outdoor recreation areas easier and cheaper. Flying to major cities and renting of cars is one way by which more distant population can get to the popular outdoor areas, and will almost certainly increase in the future.

In my judgment, it has been the combination of these four factors of population, income, leisure, and travel which has been particularly important, rather than any one of them alone. During the war, for instance, visitation to United States National Parks fell by two-thirds, under the impact of travel restrictions and the urge for maximum time on the job as part of the war effort, in spite of much higher incomes
per capita than had prevailed until then. The outlook for each of these four factors is upward—more people, higher real incomes per capita, more leisure, especially at certain phases of the life cycle, and still faster transportation. Thus, the upward trends in attendance at each major kind of publicly-owned outdoor recreation area have a substantial causal base, and will continue.

NATURE OF MASS OUTDOOR RECREATION

We have made several references to mass outdoor recreation; it seems essential that we make clearer what we have in mind. The term may be used in either of two interrelated senses.

On the one hand, many, perhaps most, people partake of outdoor recreation of some kind, at some time during the year, on some kind of an area. It has become common to speak of a mass market for many commodities; in the same sense, it is possible to speak of a mass market for outdoor recreation. On a pleasant summer Sunday afternoon, as many as fifteen per cent of the total metropolitan population may be in the city and metropolitan parks at one time, according to some studies made in Detroit a few years ago. It seems highly probable that as many as half of the total population visits a national park, national forest, or state park sometime during each year. Although inequality of income still persists among households, perhaps relatively as much so as ever, and certainly other socio-economic factors unfavourable to outdoor recreation exist, yet in both the United States and Canada it is possible to speak of mass markets for many commodities and for outdoor recreation. Mass markets have major implications for the national economy, and for the dominant life style of a country.

Mass outdoor recreation exists in another sense of the term. It is the popular or common types of outdoor recreation which are most in demand. Most people wish to drive or walk for pleasure, to
have a picnic, or to camp, hike, or swim. A few will spelunk, backpack, or mountain climb, but not a large proportion. Hordes of people visiting an outdoor recreation area create opportunities of several kinds, and have economic values, but impose severe problems and costs. The popular outdoor recreation activities are not highly demanding in terms of their natural resource requirements; such activities can be carried out on some rather ordinary outdoors areas. But people will seek out the unusual outdoor areas, for their common types of outdoor recreation, if an adequate supply of the more common types of areas, conveniently located, is not available.

Those engaging in mass outdoor recreation will not only tolerate relatively high degrees of what recreation specialists will call "crowding," but often they will demand it. Picnics where several hundred persons may be found on an acre or a very few acres, or camping where—as one common wisecrack has it—you use the other fellow's tent pegs for your own, swimming where one unavoidably bumps into other swimmers, and similar examples of many persons in a limited geographic area are common for mass outdoor recreation. As Knetsch and I noted in our book, *The Economics of Outdoor Recreation*, for every type of outdoor recreation there is some optimum number of persons per unit of area—a very few persons per million acres in a wilderness, but dozens or hundreds per acre in popular spots in mass recreation areas. Every park and campground manager has had the experience of seeing some people crowd into part of his area, when other less crowded parts were available; some people want multiple close human contact in their outdoors. Many of us working professionally in outdoor recreation tend to decry this type of "crowding," but we certainly must realize that it is a typical response of many users of outdoor recreation.
To me, the rise of mass outdoor recreation has several significant implications for the national parks of the United States and Canada:

1. Mass outdoor recreation is likely to invade the national parks; as total participation in outdoor recreation increases, there will be powerful forces pushing a more or less constant proportion of the ever-rising total toward the national parks.

2. There is grave danger that the national parks will be perverted from their original purposes by the flood of visitors. If the national parks are truly unusual and outstanding, then they should not be used for purposes and in ways where more common types of natural resources would do equally well. Top grade veneer walnut might make good firewood, but this would be a wasteful use of a scarce resource.

3. The flood tide of visitors or potential visitors to national parks must be coped with effectively in one or more ways, if the parks are not to be overwhelmed:
   (a) Use capacities must be established, and adhered to;
   (b) Non-essential services, such as lodges, campgrounds, gasoline service stations, and others, must be eliminated from within the parks;
   (c) The use of private autos must be reduced or eliminated, as total attendance reaches some critical level in each park;
   (d) Adequate management of national parks in the future
will take vastly more manpower, in relation to area and perhaps in relation to numbers of visitors, than has been necessary in the past;

(e) And, lastly and more difficult, national park managers must conceive their jobs in different terms than in the past.

4. National park administrators and lovers of national parks must be directly concerned with other types of outdoor recreation, where some of the demands for mass outdoor recreation must be absorbed. National parks cannot be planned and managed as if they were the only kinds of outdoor recreation areas; their place in the whole park system may be critical, in planning their management.
Last spring the friendly folks at Hertz Rent-A-Car placed a two-page colour advertisement in many of the leading American periodicals. "Even before a single resort was built," the caption to the sweeping photograph began, "there was an America worth seeing. Before there were dude ranches and skyscrapers and Olympic-size swimming pools, there were mountains and valleys and rivers and lakes and forests and prairies. Before there was a New York, there was the Hudson. Before there was a Miami, there was the Everglades . . . Before there was a San Francisco, there was Big Sur. Even before anything was built on it, there was an America. And," the ad continued, "it's still there. Despite all the square miles of steel and concrete, much of the country looks just as it did when the first explorers first set eyes on it." Then came the soft sell: "this summer, when you fly somewhere for a vacation . . . you can

* A faculty research grant from Resources for the Future, Inc., Washington, D. C. made this study, part of a larger comparative history of Canadian-American conservation, possible.

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rent a Ford or some other good car from Hertz. With one of our cars . . . you can drive out to where the Points of Interest don't have signs hanging on them."¹

Advertising such as this is an index to culture. A successful ad, like a popular novel or motion picture, tells much about a people's values and tastes. When an advertising agency is willing to stake a million-dollar account on a particular theme, you can be sure they make every effort to choose a winner. And when North America's major purveyor of rented cars, not just an ambitious number two company, puts its money on the desirability of seeing what civilization has left untouched, you can be sure appreciation of wilderness has, in a sense, come of age.

The Hertz ad and the other indications that wilderness is increasingly appreciated in Canada and the United States (including this Conference!) are remarkable in view of the extent and intensity of previous antipathy. A hundred years ago there was very little enthusiasm for wilderness in North America. Apart from a few individuals, whom their contemporaries regarded as cranks, no one cared about preserving wild country. The emphasis was all the other way--on conquest and development. Even fifty years ago--one might say ten or less for Canada--the advocates of wilderness preservation were small in number and weak in political muscle. Yet today we find a wilderness "movement," flourishing in the United States, incipient in Canada. Indeed if "Wilderness" had an entry on the securities exchange, I would tab it a growth stock of exceptional potential!

I wish here to trace this rise of wilderness appreciation against the darker background of hostility and fear. I will discuss and compare the wilderness movements in Canada and the United States; then conclude with some suggestions for park personnel charged with the administration of wildland. Hopefully, there will be something in the historical
perspective of value in coping with park and wilderness problems of the present and the future.

The Dark Background

Up until the seventeenth century a notable absence of appreciation characterized Western thought on the subject of wilderness. In Wilderness and the American Mind (Yale University Press, 1967) I attempted an exploration of this bias against wild country. I argued that wilderness was "wild-deor-ness," the place of wild beasts, the environment that did not serve man's material needs and, moreover, threatened his survival. Just as the domesticated dog was considered "better" than the wolf in early Western value systems, so the cultivated, pastoral, tamed land was preferred to the wild. In early Christian thought wilderness was associated with evil. It was the cursed land, made desolate by God's will; the abode of evil spirits. Furthermore, the attitude of the ancients toward nature as a whole was selfish and exploitative. Man, it was thought, had been given dominion over all the earth. There were simply no grounds on which the existence of wilderness could be defended.

Prejudice against wilderness crossed the Atlantic to the New World. The first immigrants were reduced to the condition of primitive men, cringing in tiny clearings while the virgin, seemingly-limitless forest (wilderness in the purest sense of the word) pressed in upon them. Understandably conquest of the wilderness was the uppermost concern of the pioneer. On every frontier, Canadian or American, 1620s or 1920s, it was the same: the pioneer regarded the transformation of wilderness into civilization as his mission and criterion of progress.

After sending the final draft of Wilderness and the American Mind to the publisher, however, I have been haunted by the thought that the roots of hostility toward wilderness run back further in time and in the
human psyche than I had assumed. "History," I suspect, did not begin with the Old Testament or even with agriculture but rather some million years ago when the brain of a precocious ape developed sufficiently to be considered human. And I have become intrigued with the idea that the most basic explanations of man's attitude and behavior lie not in the 4,000-year veneer we smugly call history but in the mind-boggling millennia that went before.

Man's relationship to wilderness has, I now think, such ancient roots. Until roughly fifteen million years ago our monkey-like, prehuman ancestors dwelt in trees. They were at home in the forest or jungle (wilderness in the traditional sense). Consequently there was no dichotomy between these prehumans and wild country: the creatures that evolved into men were part of the wilderness. But approximately fifteen million years ago, anthropologists and geologists tell us, climatic changes began to reduce the area of forest in central Africa and other seedbeds of man. Some apes left the arboreal environment and began to adapt to life on the open grasslands. There vision, sight, assumed an importance it lacked in the dense, dark forest. To survive on the plains the man-apes needed and developed, among other attributes, remarkable visual ability. In part this compensated for the superior sense of smell and hearing and the speed and strength of other animals.

It followed that early man preferred an open environment, where he could employ his vision and his brain, to the shadowy wilderness. In the latter keen sight was of little advantage; in the forest or jungle the race usually went to the smellers, the hearers, and the physically powerful. Thus once man had forsaken the wilderness he was loathe to return to an environment that stripped him of his ability to see. For the same reason he feared the night. Conversely, he preferred openness—a room with a view! At night he sought the security of a cave and, in time, of fire which I do not think has been sufficiently understood as
an aid to vision as well as a means of warming and cooking.

Millions of years of life in open places stamped a bias against wilderness on the mind of preman and man himself. This attitude ran so deeply that it proved difficult to erase even after the advent of civilization. The instinctive fear of forest and night persisted. It is evident, for instance, in the experience of man in North America. In the thick forest of the Atlantic coast, he felt uneasy. The wilderness hemmed him in, frustrating his vision and seeming to conceal a host of dangers both real and imaginary. The pioneers spoke of this environment as "dark" and "gloomy"; they rejoiced when the oppressive trees were removed and light flooded the clearing. Then there was the security of sight. This bringing of light into darkness by transforming wilderness into pastoral land was inevitably used as a metaphor to express the advance of Christianity on a pagan continent. Everywhere in early North American letters one finds this manichean orientation with wilderness on the side of devils, demons, and darkness.

In this connection it is interesting to note that many accounts of westward migration in North America contain expressions of relief on emerging from the Eastern greenwood wilderness to the openness of the Great Plains. All at once the pioneer could see, and his spirits brightened immediately. In rhapsodic language accounts such as James Hall's Notes on the Western States (1838) described the waving grass, the profusion of flowers, the brilliant sunshine. The Plains, to be sure, were just as devoid of civilization as the Eastern forest, but from the pioneers' perspective they were a different kind of environment. The term "wilderness" was seldom applied to the grassland of the Middle West; "garden," on the other hand, was frequently employed. In a way the emergence from forest to plains in North America repeated the process of fifteen million years before that resulted in tree-dwelling apes becoming both plains-dwelling and the ancestors of man.
If the foregoing suggestion that wilderness is instinctively fearful to man as the result of millions of years of struggling for existence has validity, it should explain present attitudes. I mean that in spite of the recent rise of appreciation of wild country, some remnants of the old bias should persist. And I think they do, even if unconsciously, in our environmental preferences. Have you ever wondered why sites with views bring higher prices on the real estate market? One could simply say it is a matter of aesthetics or happiness or prestige, but, probing deeper, perhaps the reason for these feelings is related to the ancient association of security with seeing and, consequently, with views. Coming closer to my concern today, the same predilection for openness influences our choice of camping sites. Isn't it true that we prefer meadows and lake shores and river banks and ridge tops? Don't we avoid camping in the dense forest, the old wilderness, when we can? I may be more primitive than most, but I have always felt vaguely oppressed and discomforted when obliged to camp in the deep woods. I noticed, before I understood, how vision and security are linked.

One final illustration: we have a five year old daughter. By day her room is a cheerful place and she plays there contentedly. But at night, with the lights out, terrifying creatures of the imagination suddenly emerge and populate closets and corners. So we have screams in the dark and the peculiar, revealing phenomenon of the nightlight. Primitive men would have understood, even if sleepy fathers don't! But we are all to some extent afraid of the dark and, for the same reasons, of the dense forest. If you doubt it, try camping alone in one. You may not become crazed with fear, but the anxiety will be there no matter how you try to rationalize or flashlight it away. The ancient ways are hard to shake.

The point of all this is simply that our attitude toward wilderness is far older and more complex than we usually assume. Wilderness
appreciation, moreover, is something quite revolutionary, something still not complete. Friends of national parks should be aware that in terms of the entire history of man's relationship toward nature they are riding the crest of a very, very recent wave. Ambivalence, a blend of attraction and repulsion, is most characteristic of the present conception of wilderness. In view of the past, we should be astonished, not depressed, at the amount of enthusiasm for wild places today. The depth of the previous antipathy suggests it will require at least centuries more for public opinion to embrace wilderness.

The Beginnings of Appreciation and Preservation

Ironically, civilization was the basic reason for the rise of wilderness appreciation. Primitive man and his counterpart, the pioneer, were obliged to live in and wrest support from wilderness, and consequently they felt little but hostility toward it. But as more and more people made their homes in cities, an intellectual context developed in which enthusiasm for wilderness could grow. For city-dwellers wild country was novelty rather than threat. It was, moreover, a novelty with considerable appeal to those discontented with a constant diet of civilized life.

Writers, artists, and philosophers, men closely associated with cities, led the way in the seventeenth and eighteenth centuries in articulating enthusiasm for wilderness. Romanticism and one of its major offshoots, primitivism, did much to invest wild country with excitement and appeal. So did deism and other varieties of the religion of nature which reversed several thousand years of thought by associating God with uncivilized places. Aesthetic theory, particularly through the concepts of the sublime and the picturesque, enlarged to include the beauty in raw nature. Especially in the United States an elaborate argument for wilderness arose on the grounds of cultural nationalism--wild country was a distinctive and desirable American possession. Yet
the crucial factor in bringing on a favourable attitude toward wilderness in America was the disappearance of the frontier in the latter part of the nineteenth century. Wilderness, apparently, is one of those things that is not appreciated until it teeters on the brink of extinction. And here, let it be said for the first time in this paper, is where the American and Canadian experiences with wilderness differ.

Appreciation of wilderness in the United States led easily to sadness at its disappearance and concern for its preservation. Starting with George Catlin's 1832 call for a "nation's Park, containing man and beast, in all the wild[ness] and freshness of their nature's beauty," and including the subsequent pleas of Thomas Cole, Horace Greeley, Henry David Thoreau, Samuel Hammond, and George Perkins Marsh, the American crusade for wilderness had gained some momentum by the late nineteenth century. It must be said, however, that the first acts of wilderness preservation in the United States had nothing to do with wilderness. The initial advocates of Yellowstone National Park (established March 1, 1872) acted to prevent private acquisition and exploitation of the region's geysers, hot springs, and waterfalls. Wilderness was not mentioned in either the literature supporting the bill, the Congressional debate, or the text of the act itself. In 1885 the State of New York designated a 715,000-acre "Forest Reserve" in the Adirondack Mountains with the stipulation that it "shall be kept forever as wild forest lands." But here too, wilderness was preserved unintentionally. The chief reason for the Adirondack reservation was the maintenance of an adequate water supply in New York's commercially-vital canals and rivers. In neither Yellowstone nor the Adirondacks did the rationale for action take account of the aesthetic, spiritual, or cultural values of wilderness which had previously stimulated appreciation. Only later, in the 1890's, did a few people begin to realize that one of the most significant results of the establishment of the first national and state park had
been the preservation of wilderness.

The first national and provincial parks in Canada had beginnings remarkably similar to their American counterparts. Again wilderness preservation was not an object of the initial action. The 1885 reservation of ten square miles around the mineral hot springs at Banff seems to have been directly in response to the attempts of David Keefe, Frank McCabe and William McCardell to acquire and exploit the area. Just as Cornelius Hedges and Nathaniel P. Langford advocated the reservation of Yellowstone to prevent private ownership of natural curiosities, so William Pearce, a Superintendent of Mines and author of the Banff order in council, had in mind the prevention of "sale or settlement or squatting" on land that promised "to be of great sanitary advantage to the public." Nor was preservation an issue two years later when the Rocky Mountains Park Act enlarged the original Banff reserve to 260 square miles. William Pearce, who also drafted this legislation, had been inspired by the Yellowstone National Park Act (the wording of the dedicatory paragraphs are almost identical) which did not imply the protection of wilderness. The Arkansas Hot Springs, a national reservation in the United States since 1832, also influenced Pearce. Indeed an 1886 visit to these springs by John R. Hall, and his subsequent report to the Interior ministry of the private concessionaire's misuse of them, helped fix Prime Minister John A. Macdonald's determination to avoid a similar mistake in the management of his country's resort. And this was precisely the idea—a resort. To the extent Rocky Mountains Park was thought about at all in Canada, it was as a great tourist mecca. No one wanted a wilderness!

In the case of Ontario's Algonquin Park, established in 1893, considerations of preserving wildland were also lacking. To be sure Alexander Kirkwood and James Dickson, the prime movers in this first provincial park reservation, had some sense of the aesthetic values of
the region. Their arguments for the reserve, however, stressed the maintenance of water supply, the desirability of government-regulated logging, wildlife protection, and the potential for hotel-and-cottage-style vacationing. Lumbermen were consistently enthusiastic about the park, a fact suggesting that no one conceived of it as wilderness preservation.

The Wilderness Movement in Canada and the United States

The early history of parks in the United States and Canada thus followed parallel paths in ignoring wilderness. Divergence however, came quickly. Many Americans moved toward recognition and defence of their national parks as wilderness; Canadian parks on the contrary were not conceived of as wilderness reserves until very recently and then only by a handful of people. The Canadian public's sensitivity to and enthusiasm for wilderness values lags at least two generations behind opinion in the United States. Canada, that is to say, is currently at a posture regarding wilderness that the United States occupied in the late nineteenth and early twentieth centuries.

I hope that smugness and malice have not crept into these remarks and the ones I will shortly make because appreciation of wilderness is not so much a virtue as a product of time and circumstance. Canadians are in no way to be "blamed" for their attitude; it would be surprising if they thought any differently about wilderness from what they do. And the lag of which I speak, while a half-century long, can, I think, be closed in far less time. As an American I only hope that the conduct of my country toward wilderness will serve as both inspiration and warning to Canadians.

American concern for wilderness took shape in the 1890s and was clearly evident in 1913 when John Muir marshalled the Sierra Club (founded in 1892) and widespread public opinion in a protest over the
damming of Hetch Hetchy Valley in Yosemite National Park. This unprecedented defence of wilderness in the face of civilization's demands initiated the American wilderness movement. It fed on the disquieting feeling that both Americans and their environment had passed their periods of youthful exuberance and were entering an uncertain maturity. Civilization had become dominant; the wilderness era in American history was over. Frederick Jackson Turner's 1893 "thesis" only put an epitaph on what everyone knew, instinctively, firsthand—the frontier had vanished and with it one of the great, shaping influences on the American character. Many suddenly became nostalgic about pioneer days. A cult of the primitive took shape in popular thought and provided fertile soil for the growth of the movement to preserve wilderness.

National parks were among the first beneficiaries. As early as 1900 a few wilderness enthusiasts argued that there should be a clear, legal difference in purpose between national parks and forest reserves (later "national forests"). Wise utilization of resources might determine policy in the latter, but preservation should be the purpose of the parks. Many, to be sure, disagreed. Indeed by 1910 the use-versus-preservation issue had produced a major schism in American conservation with the two giants, John Muir and Gifford Pinchot, glaring across the chasm. In general Progressive conservation favoured the Pinchot emphasis on efficient development, but the supporters of the national park idea proved vociferous and persistent. They argued that commercialization had already gone too far in the United States at the expense of the "finer things of life" such as beauty and morality. National parks would help set right the balance, it was thought, proving that Americans did not have to exploit every possible resource. In 1916 park proponents received a major boost when the passage of the National Parks Act recognized preservation as the function of the parks and recreation as
their legitimate use.

In Canada, on the other hand, there was no Sierra Club, no John Muir, and nothing resembling the American struggle to keep Hetch Hetchy Valley wild. There was not even a controversy between the use and preservation schools in principle. No one seemed aware that wilderness was at stake in the national parks. Development, both economic and recreational, carried the day. It is true that Canada's Dominion Forest Reserve and Parks Act passed in 1911, six years before the National Parks Act in the United States, but the Canadian legislation imposed no preservation function on the parks and did not even distinguish between them and the commercially-oriented forest reserves. Not until the National Parks Act of 1930, in fact, were the Canadian parks distinguished from the reserves and defined as areas where nature was to be left "unimpaired." Throughout this early period the fact that townsites and a host of highly unprimitive recreational activities were permitted and even encouraged in Banff and other parks suggests that the administrators had something other than preserving wilderness in mind as their guiding policy. A clue to what it was slipped into a 1922 address of James B. "Bunny" Harkin, first Commissioner of the Dominion (later "National") Parks. "The mountain parks," he pointed out, "are worth $300,000,000.00 a year to the people of Canada in revenue from the visiting tourists." Harkin personally had a clear conception of the aesthetic and spiritual value of wilderness. Indeed he verged on the mystical in his belief in "emanations" from nature "which elevate the mind and purify the spirit." But Harkin was also a good salesman. He knew that Canadians and their legislators would not support the parks on aesthetic grounds alone. As he stated in the 1922 address, "we . . . stand very closely . . . by the economic view in order to secure the whole-hearted interest of the people of Canada in the conservation of the forests and the wild life . . . and we have to show that the movement will
pay for the efforts many times over."

From the standpoint of preservation, the problem with such arguments is that they make it easy to chip away at the wilderness in the parks. The crowd's taste in holidays becomes the criterion for management decisions. As a result motels, cocktail lounges, ultra-modern swimming pools, golf courses, and tennis courts appeared in the parks.

On the state side Stephen T. Mather, Harkin's counterpart who assumed direction of national parks in 1915, also angled for the tourist dollar. He operated, however, in a different context. Large numbers of Americans had already expressed their desire that the parks not be "spoiled" by overdevelopment during the Hetch Hetchy controversy. The fact that Hetch Hetchy was developed as a water supply and hydropower facility only made these people madder. The Sierra Club and the National Parks Association (founded in 1919 under Mather's leadership) constituted a watchdog for the parks.

In the 1920s and after, friends of national parks in the United States repeatedly engaged in battle those hostile or indifferent to wilderness values and generally succeeded in keeping them outside park borders. Meanwhile the wilderness movement as a whole gained momentum. In 1924 the United States Forest Service broke from its traditional utilitarian orientation to establish a wilderness reserve in New Mexico's Gila National Forest. Within a decade and a half some 14,000,000 acres of the national forests were protected from roads, settlement, and economic development. The prime movers in this development were Aldo Leopold and Robert Marshall. Leopold proposed the Gila reserve and constructed a philosophy of ethical behaviour toward the environment that kindled a deeper appreciation of wild country. Marshall not only fought for preservation in the Forest Service but in 1935 organized the Wilderness Society "for the purpose of fighting off invasion of the wilderness and of stimulating . . . an appreciation of its multiform
emotional, intellectual, and scientific values." This small group of crusaders established itself in Washington D.C., where the fate of most wilderness in America is determined, and created an effective lobby. Indeed the act designating the National Wilderness Preservation System (1964) owed much to the late Howard Zahniser, tireless executive secretary of the Wilderness Society.

"A society was recently formed in Washington D.C.,” James B. Harkin wrote in the mid 1930's, "with whose aims I am deeply in sympathy.” He then proceeded to quote from the creed of the Wilderness Society and, with a combination of wistfulness and anger, to reproach Canadians for their "blindness" in not likewise taking steps to protect wilderness. "What is needed,” he concluded, "... is an informed public opinion which will voice an indignant protest against any vulgarization of the beauty of our National Parks or any invasion of their sanctity.” But public sentiment such as Harkin desired did not emerge in Canada even in a limited way for several decades. As late as last year Gavin Henderson, executive secretary of the National and Provincial Parks Association of Canada, gloomily confessed that Canadians were still not ready for the preservation idea. Henderson regards himself as one of a handful of men in Canada trying to do something for wilderness in the face of massive public indifference.20

The Canadian wilderness movement lags behind the American for the reason that Canadians (in general, the typical Canadian) still regard themselves as a pioneering people with an overabundance of wild country. From John Macdonald's National Policy to the current passion for roads, mines, "instant" towns, and American investors, the emphasis has been on national development, not wilderness preservation. Even the first Canadian National Parks, as Craig Brown observes in his contribution to this volume, fitted the utilitarian pattern. In recent decades attention has turned from westward to northward expansion, but the pioneering
mentality is the same. For most Canadians, highly conscious of the need to strengthen their economy, the bulldozer is a symbol of man's proper relationship to nature. While the northland is very central to the Canadian identity, the existence of mind-boggling millions of square miles without civilization has dampened Canadian enthusiasm for preserving wilderness in any part of the country.

These various threads jelled in my mind on a dark, windy day in the summer of 1967 during a visit to the National Library in Ottawa. I had just been reading some literature on the Northwest Territories, trying to comprehend the meaning of one and one-quarter million square miles and 25,000 people. Then, taking a break, I walked to the window of the beautiful new library. I could see the endless stream of pulpwood floating down the Ottawa River and on the northern horizon, just under the scudding clouds, the whale-backed ridge of Gatineau Park where I had watched beaver at lunchtime the previous day. Looking north, my mind wandered 150 miles further to La Verendrye Provincial Park and its sprawling wilderness. Only the C.N.R. and two minor highways interrupted the flow of wildland from there to Hudson's Bay. And then, standing in that modern reading room, I had a vivid sense of what a wild, young, undeveloped nation Canada really was. For an American unaccustomed to a frontier and prepared to find his wilderness in isolated chunks, surrounded by roads, this was a revelation. I understood that Canada and the United States had for the last half century operated on different wavelengths so far as wilderness was concerned. Americans had passed through its frontier era to an increasing awareness of the value of wilderness; Canadians were still a pioneering people who retained the old attitudes toward undeveloped places.

With this new awareness of what I had only known as a fact before, I was better prepared to understand Canadian indifference to wilderness. After that moment by the window in the National Library, I checked the
card catalogue under "wilderness" and found nothing. On remarking about this to an attendant, I was told that wilderness was not anything special in Canada because "we have so much here." In one form or another, this is a typical Canadian response. Most often the suggestion of preservation is greeted with humor: "Wilderness!? That's one thing we've got plenty of!" In precisely the same way a Kentuckian of the 1790's or a Californian of the 1860's might have responded, and the opposition today to wilderness preservation in the United States stems from the remnants of this traditional, pioneer point of view.

The effect of this attitude on the Canadian National Parks up to the present decade is that they have been regarded and managed as places for holidays—not as wilderness preserves. Occasionally, there was a hint of guilt about this, but the policy continued. In 1939, for instance, park director R. A. Gibson wrote a memorandum to F. H. H. Williamson, a member of his staff, on recreational facilities in the parks. "We have been building golf courses, tennis courts and the like," Gibson observed, "and it seems that to ensure a large number of visitors there must be some holiday attraction for each member of the average family." But a pencilled notation on the memorandum raised the nagging doubt: "Our emphasis of tourists' interests may be detrimental to Parks principles and interests." Yet the pressure of public opinion and the fear of making the parks unpopular overrode such uncertainties.

The most striking example I have seen recently of the dominant Canadian attitude toward national parks and wilderness appeared last in an advertisement for Banff National Park that the C.P.R. placed in numerous magazines. The full-page spread featured a magnificent colour photograph of the mountains behind Lake Louise. The head caption read, "Ah, wilderness." With excitement I turned to the paragraph that followed expecting to find evidence of Canadian appreciation of the
wilderness qualities of its parks. It read: "at Banff Springs Hotel, we have to put fences to keep the elk off our championship golf course ... At Chateau Lake Louise, you can swim in a pool filled with water melted from a 50,000-year-old glacier, and warmed to a languorous 72°. At Banff--and at Lake Louise . . . two of the continent's finest resort hotels await you . . . There's tennis and shuffleboard. There are movies and cocktail lounges and concerts. There's Continental dining and ballroom dancing. Ah, wilderness."²³

Perhaps this was intended as a jest at wilderness lovers. But I rather think it represents the view of an ad writer who has sensed the public appeal of wild country and, at the same time, the public distaste for contact with wilderness. The ad represents, in other words, a very primitive form of wilderness appreciation but one that I think is characteristic of the bulk of visitors to the Canadian parks which, I hasten to add, includes many Americans.

In spite of a series of recent policy statements to the contrary, Canadian park administrators continue to drag their feet in the matter of wilderness. J. R. B. Coleman, the recently-retired director of the National and Historic Parks Branch, for instance, is sensitive to the "leave them unimpaired" charge in the National Parks Act of 1930, but still points with pride to the hot showers, electricity, and laundromats in park campgrounds. Such facilities he states with pride, are unmatched in American parks. When reminded that such things had little relevance to the preservation of natural qualities, he countered with the feeling that crowds had to be served--"diapers have to be washed." In regard to golf in the parks like Banff, Coleman confessed his personal disapproval but admitted that he feared the storm of protest the proposal of their removal would arouse. When pressed about the golf courses, however, it appeared that the root of Coleman's opposition was their expense and the administrative headaches they entailed. He did
not appear to regard golf as contrary to park purposes or aesthetically displeasing in the context of a park.\textsuperscript{24}

Having said this, it is only fair to note that since the late 1950s a small number of Canadians have been working to build public awareness of wilderness values. In spite of the fear of its executive secretary that it might fail for lack of support, the National and Provincial Parks Association (founded in 1963) continues its vigorous championship of wilderness preservation. "The essential wildness of the parks . . . is their chief attraction," the Association's president, Alfred P. Frame, told a government committee in 1966. He went on to praise the United States' Wilderness Act of 1964 and to recommend that the townsites in Banff and Jasper National Parks be removed from the park and reclassified as National Recreation Areas.\textsuperscript{25} Several provinces have taken significant steps on behalf of wilderness. In 1959, for instance, Ontario passed a Wilderness Area Act. More than forty such areas have been established, but the designated land is not closed to economic development and may, in fact, be closed to public entry for recreational purposes of any kind. Still Ontario's 1967 scheme of classifying provincial parks recognizes "the psychological need, of many people, to know that unspoiled wilderness areas exist" and provides for the reservation of large "primitive parks" exclusively for wilderness recreation and research.\textsuperscript{26} But the lumbering that continues in Algonquin and Quetico Parks, among others, suggests the gap between intent and practice.

On the national level in Canada the 1964 formulation of an official National Parks Policy included pointed reference to the inappropriateness of many of the activities currently permitted in "scenic and nature" (as opposed to "family and holiday") parks and bluntly stated that their primary purpose is preservation.\textsuperscript{27} To this end, a new zoning system has been employed to help recognize and safeguard
wildness areas in the parks. These policies, and the articles on "spoiling" the national parks that are beginning to appear in newspapers and magazines, reflect a growing interest in wildland, but Canada is still at least a half-century behind the United States in this respect. There are no equivalents of the three recent milestones in the American wilderness movement: the defence of Dinosaur National Monument from Echo Park Dam in the early 1950s, the passage of the Wilderness Act in 1964, and the apparently successful fight of the last few years to prevent the damming of the Grand Canyon. Each of these issues elicited intense, nationwide expressions of public sentiment which were crucial in influencing political decision. On the Canadian side, in contrast, the flooding of a large part of the wilderness in Tweedsmuir Park, British Columbia, in the early 1950s to create hydropower for the aluminium smelter at Kitimat created scarcely a ripple of protest. The proposal that Banff host the 1968 or 1972 Winter Olympics occasioned slightly more controversy but still much less than even a minor row in the United States such as that involving the dehydration of Florida's Everglades, the construction of a transappalachian road across Great Smoky Mountains National Park, or open-pit mining in Washington's North Cascades.

The inescapable conclusion is that in Canada a wilderness movement on a broad, citizen level does not exist. In its absence, the political effectiveness of the few Canadian preservationists is and has been slight. Men like James B. Harkin gradually learned to their sorrow how much of a minority they were. In 1954, a year before his death, Harkin reacted to the receipt of the Wilderness Society's publication, Living Wilderness, by declaring his pleasure "that many in the U.S. are seeing the light and are willing to work in accordance with it." But then reviewing the Canadian situation, his mood darkened. "I fear there is no hope for success in Canada," he lamented to a former staff member.
"All who were schooled in the proper principles are out [of government service] and the newcomers seemingly can see nothing but tourist biz."\(^{29}\)

For a man who might have become the leader of a national wilderness crusade had his countrymen been more receptive to his ideas, this was especially distressing. While Harkin would undoubtedly feel there was more hope for Canadian appreciation of wilderness now than in 1954, his pessimism still has considerable justification.

*Wilderness Stations*

Unquestionably the biggest problem in North American park administration today is how to square the recreation and preservation functions of the parks. How, in other words, to accommodate the ever-increasing numbers of visitors without impairing the natural and scenic values they come to find. In concluding this paper I would like to suggest an administrative policy for park officials that would help alleviate some of the problems of popularity and, at the same time, further the ideals of national parks. My idea is premised on a fact and an assumption:

The *fact*, widely known, is that most visitors to national parks in Canada and the United States do not leave the roads and developed areas. Meanwhile, even during the peak visitor seasons, back-country use is light.\(^ {30}\)

My *assumption* is that a good many of the people who now crowd the developed portions of the parks would go into the wilderness areas if they were provided with equipment and encouragement.

The point is that the growing popularity of wilderness could be translated into increased back-country visitation with the resulting decrease of visitor pressure on the mechanically-accessible areas. To bring this about, it is not sufficient just to provide wilderness and nature "interpretation" programs as they are currently conducted. The parks would have to go into the outfitting business, for one thing, and,
for another, to work aggressively at overcoming the hesitancy (perhaps the remnants of the ancient fear) that holds the typical park visitor back from fulfilling his interest in wilderness.

What I am suggesting is being done, and with great success, but not, unfortunately, by the national parks in either Canada or the United States. Around the Quetico-Superior canoe country shared by Minnesota and Ontario, private entrepreneurs have entered the business of getting people into wilderness. At Ely, Minnesota, alone there are a dozen outfitters, and they don't just cater to the experienced outdoorsman. One of the largest concerns advertises in its brochure that "everyone . . . whether the novice . . . or the trailwise veteran . . . housewife or grandmother . . . school teacher or accountant . . . sales clerk or board chairman . . . all may partake of the memorable experiences of a canoe trip." A competing outfitter boasts that you can enter their establishment stark naked and within two hours be paddling away from their landing fully equipped for a two-week trip. And all this is done without the assistance of guides. At the outfitters' headquarters clients are given maps and carefully briefed in regard to routes, portages and campsites. They receive instruction in catching a fish, pitching a tent, and cooking a meal over an open fire. Most important of all, the clients are not treated with the intense and discouraging kind of snobbery old woodsmen reserve for greenhorns and tenderfeet. The emphasis is on the grandeur of the canoe country. Even families with young children are encouraged to make short trips. People seem to wander into the intriguing outfitting stations with no thought other than buying a postcard but, after chatting with the staff, find themselves preparing to go out for at least a few days.

I am calling upon the national park administrations of Canada and the United States to get into the business of promoting wilderness travel either by operating Wilderness Stations themselves or leasing the
opportunity to a private concessionnaire. The Stations would be places into which a man could walk with little more than a dream and from which he could go prepared to enjoy wilderness camping. They would bridge the gap between desire and the surprising amount of expertise we often forget is needed to enjoy travel in wild country. Equipment would be available for rent or sale, the proceeds going to support and expand the program if the government conducted the operation. The personnel (preferably rangers) staffing the Stations would have one central purpose: helping visitors find and enjoy wilderness. It seems feasible that the college boys who bus dirty dishes at Jackson Lake Lodge or the Prince of Wales Hotel could serve in this capacity. Some could guide parties, if requested, and in slack periods they could all do trail and sign work in the back-country. I believe that properly-publicized Wilderness Stations would not only attract first-time park visitors but would soon accumulate a sizeable returning clientele.

The Wilderness Stations should specialize in the short trip of one or two nights and one to ten miles. Even a hike of three hundred yards might be sufficient in some situations. There is a crying need in the parks for short and intermediate-range camping trips. Roadside camping facilities have been overstressed in both Canada and the United States. By a curious logic it is assumed that since the existing campgrounds fill up, they are popular. We err, however, in assuming that what people do at present in the parks is what they like to do. The fact is there are few alternatives to car camping and the tent-stake-to-tent-stake arrangement. I am convinced that there are many who detest the crowded car-camping sites even while swelling the crowd. Many are not going to the parks, as we sometimes naively assume, just to do the same things they do at home. Chatting with the neighbouring tenter over a Coleman stove is not what they had in mind in coming to a national park.
The tragedy is that the parks have given them little choice to do otherwise. Wilderness Stations would provide that choice and help visitors obtain the experience the parks were created to make possible.

Certainly it would be more difficult for park officers to keep track of visitors under the Wilderness Station system. There would be fire and garbage headaches and still the problem of crowding. But the Wilderness Stations could dispense a land ethic as well as sleeping bags and dehydrated foods. Parties could be asked to be careful with fire and to pack their garbage out, and I suspect that being in a wilderness rather than in a well-trampled campground would contribute to the success of such requests. As for crowding, at the very least the deplorable existing conditions could be improved. Campers would be diluted, and if some were willing to dry camp (i.e., carry water) the possible campsites within even a mile of a road are almost unlimited. In addition, Wilderness Stations could keep track of where parties go and direct later groups to other areas. I think that everyone close to parks and outdoor recreation in Canada and the United States today is aware that some kind of quota-reservation system is inevitable. Incompatible as this concept is to the feeling of freedom that defines wilderness, it is nonetheless true that without it the pressure of numbers will detract even more from the wilderness experience. Democratic objections have been raised to quotas in public parks, but I believe illogically. We accept the fact that one hundred people can't squeeze onto a tennis court, even a public one, because nobody would enjoy the game played under those conditions. So we wait our turn.

To give these ideas some substance, let me remind you of several steps in the right direction and several parks that are missing the boat. Ontario pioneered in encouraging wilderness canoeing when it designated eighty-seven canoe routes in the northern part of the province. One can obtain a listing, a map, and instructions for securing
more detailed information. Some campsites have been cleared along the routes and portages cut. In the case of Quetico Provincial Park substantial work of this type has been completed. Now this is grand for the men or women who have equipment and know-how; it doesn't help the novice very much. Yet it is a start and perhaps private enterprise will provide Wilderness Stations at key roadheads.

Another suggestion of what might be done is the High Sierra Loop Trail in Yosemite National Park. Here the National Park Service and the local concessionaire have combined to provide six seasonal tent camps and sixty miles of trail. Ranger naturalists lead periodic fifteen-man groups around the loop or you can hike alone. Perhaps the six camps furnish too much in the way of conveniences (they offer hot showers, prepared meals, and regular beds), but they do entice park visitors away from the congestion of Yosemite Valley. The fact that the High Sierra Camps have for years been filled to capacity months in advance bodes well for the success of Wilderness Stations. The demand, in other words, is there; it has been elicited by the program.

A final illustration of a step in the right direction is the effort of the Quebec Department of Tourism, Fish and Game to get park visitors into the wilderness. Beginning in 1966 a group of college boys began to cut a series of portages between lakes in the southern portion of La Verendrye Park. When I visited their operation in 1967 three circuitous routes of ten to thirty-five miles had been established and mapped. Twenty new canoes were available for rent, and I was happy to see a sizeable list of reservations.

For the most part the national parks in Canada and the United States have missed opportunities to translate appreciation of wilderness into recreational use of wilderness. One of the most pathetic spectacles in the North American outdoors is Bright Angel Trail in Grand Canyon National Park on a summer afternoon. Visitors in unbelievable attire
walk down the trail to Indian Gardens in the morning, and most have a
good time--going down. But attempting to complete the twelve-mile hike
up the famous switchbacks later in the day, they die a thousand deaths.
There are, to be sure, signs warning of this possibility at the start
of the trail, but the park needs more than signs. It needs a Wilderness
Station at the trailhead which could issue equipment and encourage
visitors to break the hike with a night at Indian Gardens or on the Tonto
Platform or along the Colorado River. Many people want to know the
Canyon away from the scenic overlooks and the paved walks, yet no one is
around to tell them how to do so safely and happily. The park personnel
are too busy directing traffic and closing filled campgrounds, and so
the afternoon pathos on Bright Angel continues. A Wilderness Station
could serve another purpose at Grand Canyon's South Rim. Crowds are so
large in the peak season that the park superintendent has recently
called for mini-trains or mini-buses to move people efficiently along the
rim. I propose a simpler solution and one more in keeping with national
park purposes: extend a deal-end spur road west along the rim but at
least a half mile back from the edge of the Canyon. Then use a Wilderness
Station at the start of the road to show people how a short drive and
a very short hike would enable them to dry camp at the rim without their
cars. As a refinement, water could easily be pumped along the rim for
the required distance.

What, after all, is the reason for the obsession with car-camping
in national parks? We don't tolerate cars in museums, where a visitor
often walks a mile, or in a Disneyland or World's Fair or Expo, where
he may walk ten! Why not oblige park visitors to abandon civilization
temporarily if they want to stay overnight and then accept the challenge
of educating the public in wilderness recreation? As it is the
national parks, like stripteasers, provide temptation without fulfillment.

I hope this plea will not be taken as a deprecation of nature
trails, museums, scenic turnouts and other activities that go under the name of "interpretation." They are fine, and they will continue to be popular. Likewise it is important to have some accommodations for those who don't care for backpacking, although I would prefer to see such development take place outside the park in the manner of Gatlinburg, Tennessee's relation to Great Smoky Mountains National Park. The point is that there are more people around who would use the back-country of the parks than park administrators suppose. Assuming that the horse won't drink, park personnel have neglected leading him to water. If they did, through Wilderness Stations, they would be surprised. And I can imagine no more appropriate direction for park development than helping visitors enjoy wilderness camping. It may be the most appropriate.

FOOTNOTES

1 The advertisement may be found, for instance, in Sports Illustrated, 28:50-51, May 20, 1968.

2 Clarence J. Glacken's Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century (Berkeley, 1967) abundantly supports these ideas.

3 I have discussed this at length in Wilderness and the American Mind (New Haven, 1967), Ch. 3.

4 Nash, Wilderness, Chapter 4. I have also developed this idea in "The Significance of Wilderness for American Culture," an address delivered to the Sierra Club's Tenth Biennial Wilderness Conference which will be published in the Conference's proceedings.


7 As quoted from the order in council in William Pearce, "Establishment of National Parks in the Rockies," Alberta Historical Review, 10:12, Summer, 1962. In making this analysis and that which follows I have relied on Pearce's article along with W. F. Lothian's "A Brief History of National Park Administration in Canada" (mimeographed issue
of the National Parks Branch, Department of Northern Affairs and National Resources, 1955); J. R. B. Coleman's "The National Parks of Canada" (mimeographed paper submitted to the First World Conference on National Parks, 1962); and historical records in the National and Historic Parks Branch, Department of Indian Affairs and Northern Development, Ottawa. I anticipate a more informed and sophisticated analysis of the meaning of the first Canadian parks in the paper of my colleague at this Conference, R. Craig Brown.

8 Mabel Berta Williams to W. Fergus Lothian, May 29, 1967, in the possession of Mr. Lothian, National and Historic Parks Branch, Department of Indian Affairs and Northern Development, Ottawa: interview with W. Fergus Lothian, August 26, 1967, Ottawa.


10 For a full discussion of the seminal Hetch Hetchy controversy see Nash, Wilderness, Ch. 10; and Holway R. Jones, John Muir and the Sierra Club: The Battle for Yosemite (San Francisco, 1965).

11 I have analyzed this development in "The American Cult of the Primitive," American Quarterly, 18:517-537, Fall, 1966.


13 As quoted from the Act in Coleman, "National Parks," p. 4.


15 M. B. Williams (comp.), The Origin and Meaning of the National Parks of Canada, extracts from the papers of the late Jas. B. Harkin, first Commissioner of the National Parks of Canada (Saskatoon: H. R. Publishing Co., 1957), pp. 13-14. See also A Spring of Mountain Heather: Being a Story of the Heather and some Facts about the Mountain Playgrounds of the Dominion (Ottawa, 1914), 9ff., which was written by Mabel B. Williams, longtime assistant to Harkin, on the basis of her chief's ideas.


23. The advertisement may be found, for instance, in *Sunset*, 140:59, June, 1968.


29. James B. Harkin to Mabel B. Williams, August 6, 1954, in the possession of Robin Winks, Department of History, Yale University.


31. The brochure is that of Canadian Waters, 111 East Sheridan Street, Ely, Minnesota.

32. I was pleased to see that the road-policy statement issued last May by the U.S. National Park Service Director George B. Hartzog, Jr., accepted the principle of refusing to go further in accommodating the car and motel habits of park visitors. See Robert Cahn, "'Parkinson's Law' in the Parks," *Christian Science Monitor*, May 22, 1968, p. 9.
The importance of the exploitation of natural resources to the history and development of Canada is unquestioned. Indeed, it has been such a continuous and primary feature of Canadian life that one interpretation of Canadian history is posited upon the existence of an abundance of natural resources. The "staples approach" in Canadian economic history and the more general "Laurentian thesis" trace the main lines of Canadian development, political, economic and social, through a series of exploitive staple trades from fish and fur to lumber to wheat and minerals. Whether or not one fully accepts the tenets of this interpretation of Canadian history, it is worth noting that neither the export of a staple product nor the development of a metropolitan area and its hinterland--both central phenomena in Canadian history--was possible without pre-existent natural resources capable of exploitation.¹

The historians who have suggested this approach to Canadian history have ample evidence to support their case. To cite the most

¹Robert Craig Brown is an Associate Professor of History at the University of Toronto.
obvious example, the National Policy adopted by the Macdonald Government after its return to office in 1878, and carried on with but minor variations on the theme until at least 1930, was a set of economic policies and programs designed to develop a national economy based upon the use of Canada's natural resources. The Canadian Pacific Railway was built to open up new resource areas. Immigrants would come to those areas to develop the resources and the tariff would protect industries which would process the extracted resource products. In all three cases the Policy pre-supposed the existence of plentiful resources capable of use.\[^2\]

Western Canada was the key to the success or failure of the National Policy; as H. G. J. Aitken puts it, "agricultural expansion in the west was basic to the whole design."\[^3\] That being so, it is interesting to note how the framers and practitioners of the National Policy assessed the resource potential of the Canadian west. One of them, Sir Charles Tupper, introducing the Canadian Pacific Railway Bill in 1880, referred to "the fertile valleys of the North-west" and "that magnificent granary of the North-west" that would "build up Canada into a great, prosperous and progressive country." The west, of course, had not always been so happily regarded; the concept of an "arid desert" emanating from the Palliser Expedition survived at least until the railway surveys commenced. But much of the survey work, albeit as generalized for this purpose as Palliser's strictures, pictures the desert in bloom. Tupper told the House of Commons that:

> Now we find that Professor Macoun, who is one of the most able explorers and one of the best qualified men to form a judgment upon the matter, and who has spent the last season in going over the country, found that the great Missouri section of barren country which was supposed to extend into Canada in the North-west, was in a great measure valuable and fertile land. He found that the idea that it was a desert was an entire delusion . . . this land has been very much underestimated.\[^4\]
Two decades later the railway had been built and more railways were building, the west had been opened and was booming. If anything, the view of the resource potential of the region was brighter still. In 1904, the Minister of the Interior, Clifford Sifton, speaking on the role of the west, told his audience:

   We look forward to the production of natural wealth of all kinds. In this great country we expect to see the wealth of the field, of the forest and of the mine exploited in vast quantities, furnishing remunerative occupation to large numbers of our people. We expect to see cities and towns springing up, in which the comforts and refinements of civilization will be within the reach of all. 5

Nor were these optimistic visions confined to the seemingly luxuriant prairie grasslands. Sifton's reference to the forest and the mine obviously meant to include the mountains in the region of abundance. And much earlier Macdonald pictured the mountainous areas of the Canadian west as overflowing with potential wealth. Returning from a trip across the west to Victoria on the just completed Canadian Pacific Railway in the summer of 1886, he reported to a Winnipeg audience that the scenery of the mountains was unexcelled and the riches of the mountains unsurpassed.

   There may be monotony of mountains as there is of prairies, but in our mountain scenery there is no monotony. You go up from Calgary and climb to the summit of the first range of the Rocky Mountains, and you see one description of grandeur. You plunge into the valleys, and rise up another range, and you have quite a different character, equally sublime. You plunge into another valley, and there come the Selkirks, of unsurpassed beauty and grandeur, of magnificent and almost eccentric changes. You plunge into the valley of the Fraser and the magnificent canyons. The mountains are rich in gold, and silver and all descriptions of minerals, and clothed with some of the finest timber, an inexhaustible means of supplying the treeless expanse of prairies in the Northwest. 6

An "inexhaustible" supply of timber, myriad mineral deposits, and, most of all, boundless varied scenery, such were the great untapped sources of wealth of the Rocky Mountains. Could anyone in Macdonald's
audience, anyone who knew John A., believe for a minute that the tapping was not about to begin?

But how should these vast resources be exploited? About this most important matter there was little question. The Government firmly rejected both the alternatives of completely free and unregulated exploitation and of rigid state control in favour of what amounted to a system of partnership between the state and private enterprise. Undeniably, the Canadian Pacific Railway would not have been completed without the encouragement and benevolent sustenance of the Canadian Government. State action through judicious—or injudicious, depending upon one's interest in the matter—application of tariff schedules and subsidies encouraged investment in primary and secondary industries. And again, in land and settlement policies, the Government, the Railway and eventually other railway and land companies worked hand in hand. In all cases the regulating influence of Government, in greater or lesser degree, was evident; not least in the control of the natural resources themselves which, in western Canada, were reserved to the federal Government for "the purpose of the Dominion."

It is in the context of the general assumptions and principles of national natural resource policy that the origins of national parks policy in Canada might most properly be examined. And it is the purpose of this paper to suggest that the original parks policy of Canada was not a departure from but rather a continuation of the general resource policy that grew out of the National Policy of the Macdonald Government. Underlying parks policy was the assumption of the existence of plentiful natural resources within the reserves capable of exploitation and the principle of shared responsibility of government and private enterprise in the development of those resources.

The immediate object of the Rocky Mountains Park Act of 1887 was
to provide legislative sanction for the reservations of lands at Banff Springs and the surrounding area set aside by order in council since 1885, and for the expenditure made in 1887 to put the springs to use. The basic purpose of the legislation however, was summed up in Macdonald's assertion that "the Government thought it was of great importance that all this section of country should be brought at once into usefulness." The intention is," the Minister of the Interior added, "to frame such regulations as will make the springs a respectable resort, as well as an attractive one in all respects." The springs were, of course, the most easily exploitable asset in the reservation and to them were attributed the most marvelous of curative powers. One Government member testified that "when I was there I saw invalids carried down to the springs in chairs by friendly hands, and when I returned from the Pacific coast I saw these same people able to walk down themselves, and they were basking in the sunshine on the mountain side." If such were true, the Government was certain that the park would soon be "attracting the population, not only on this continent, but of Europe to this place," as Macdonald put it. As a resort the park would become a financial asset to the Government and the country.

It has all the qualifications necessary to make it a great place of resort. There is beautiful scenery, there is prairie sport and there is mountain sport; and I have no doubt that that will become a great watering-place, and that there will be a large town on the south side of Bow River, where the Government have laid out a town plot. I have no doubt that ex necessitate, there will grow up a very considerable town at that place. Then there will be a rental of the waters; that is a perennial source of revenue, and if carefully managed it will more than many times recuperate or recoup the Government for any present expenditure.

Mr. Mitchell. Recuperate, too, I hope.
Sir John A. Macdonald. Yes, recuperate the patients and recoup the Treasury.

All of this, of course, assumed fundamental landscape changes—
"parkmaking" one senator called it—or, as the Government leader in the Senate explained, "in order to make a park of this tract of land, of course, it becomes necessary to improve it to a certain extent." The point is worth noting: the reservation in its "wilderness" state was not a park as that term was understood in the 1880's. With the construction of roads and bridges, the establishment of a townsite and the provision of tourist facilities from baths to elaborate hotels, the reservation would become a park. And special care was going to be taken to ensure that it would not become just another spa, "the resort of a very doubtful class of people." Discussing the leasing terms for townsite lots, Macdonald suggested that the "doubtful class of people" would probably not find an overly gracious welcome at Banff.

a portion of the park offers some beautiful sites for villas, and I believe in the plan the architect lays these out, to be leased to people of wealth, who will erect handsome buildings upon them. These buildings will have to be subject to the approval of the Government, to prevent any monstrosities being put there to destroy the general beauty of the park.

Interestingly enough, there was no opposition expressed in the debates in either the House of Commons or the Senate to the idea of setting aside the Banff Springs area as a national park reservation. Most of the criticism of the Bill in the House of Commons was levelled against the expenditure of $47,000 for "improvements" by Governor-General's warrants before Parliamentary sanction while the Senate appropriately worried over a proper name for the reservation. But two more important points were raised in the House of Commons. First, two members expressed fundamental objection to the Government's financial involvement in the Banff Springs enterprise. Both argued that on grounds of principle and efficiency the Government should have turned the whole operation of the park over to private enterprise. Mr. Jones noted that in his opinion only the Canadian Pacific Railway would
benefit from the reservation and therefore the company should bear the costs. Mr. Kirk went further:

I am opposed to this enterprise altogether. I cannot see for the life of me why the Government should undertake to prepare hotels for tourists. I do not see that the Government should go into the hotel business at all... for whom? Not for the people of Canada, not for the people who pay the taxes, but for the wealthy people of the cities of the Dominion and the cities of other countries... If the Government have grounds up there which can be made into convenient parks for public resorts for the wealthy people, let them leave to individuals the business of doing so... I protest against the whole thing, and I say the Government should leave the whole matter in the hands of private speculators and to private citizens.\textsuperscript{14}

"Private enterprise," Jones added, "always manages such undertakings much more economically and systematically than does the Government."\textsuperscript{15}

In reply, Macdonald allowed as how "the Canadian Pacific Railway Company would be only too glad to take the land and make 1000 per cent out of it" but he asserted that "there is only one way of making that portion of the country what it ought to be, and that is by the scheme of the Government, undertaken with a full knowledge of their responsibility." The reservation was to be made "useful" in terms of the interests of Canada, under government regulation, and not in terms of the interests of the Canadian Pacific Railway alone. The park was clearly intended to be a showpiece for Canada, deliberately modelled to be superior in planning and execution to the Hot Springs in Arkansas, and hence promising "much prestige to the whole country." Given this, it was inevitable that the Government of Canada take a direct hand in the administration and operation of the park.\textsuperscript{16}

The other major criticism of the Bill came from one or two members who saw an implicit contradiction between reservation of the area as a public park and provision in the Bill for the Minister of the Interior to allow, by order in council, grazing, lumbering and mining within the reservation. One member observed that:
You cannot have a public park, with all the wild animals preserved in it, and have mining industries going on at the same time; you cannot have trade and traffic, involving railways going to and from the mines and at the same time keep the place for sport. If you intend to keep it as a park, you must shut out trade, traffic and mining.  

Such would seem to be plain common sense. But general attitudes towards resource policy in the latter part of the nineteenth century did not so regard the matter. Indeed, in terms of a fundamental premise of "usefulness," grazing, lumbering and mining would enhance rather than depreciate the usefulness of the reservation.

Peter Mitchell conceded that it was unfortunate that anthracite coal deposits were found within the park boundaries, but "we have to deal with them as we find them" because "it is in the interest of the country that they should be developed and become one of our most important industries." Macdonald, remarking on the varied topography of the reservation, thought that "there may be places where the property may be used for industrial purposes without interfering with the beauty of the park as a whole." Nor is it even surprising to find the Park Superintendent extolling the virtues of Bankhead, the coal town on the road to Lake Minnewanka opened by the Canadian Pacific Railway in 1904, in his annual report in the following year:

The acquisition and development of this property by the Canadian Pacific Railway Company marks a new era, not only in the history of the Rocky Mountains Park, but in the industrial life of the district of Alberta . . . . The new village of Bankhead, instead of being a detriment to the beauty of the Park, will on the contrary add another to the many and varied attractions of the neighbourhood . . . nesting under the shadow of Cascade, with its beautiful homes and its teeming industrial life it has already become a popular stopping place for tourists.

Again in the following year, Superintendent Douglas proudly reported the beginnings of operations of the Western Canada Cement and Coal Company—in which the Canadian Pacific Railways had an interest—at Exshaw:
The industrial assets of the park have been increased since last year by the establishment of a Portland cement mill of large capacity . . . an important step in the building up of western Canada . . . . The new town of Exshaw, the centre of a great manufacturing industry, has arisen out of the Bow River.21

In short, in the establishment and in the "development" of Rocky Mountains Park, the basic policy aim was to turn the natural resources of the area to "usefulness," an "important step," as Douglas said, "in the building up of western Canada." And that, in turn, was "in the interest of the country."

The basic assumptions of natural resource policy as it related to parks were seldom discussed at length in Parliament after 1887, until the introduction of the Forest Reserves Bill in April, 1911. At that time the Minister of the Interior, Frank Oliver, explained that "provision is made for placing all present forest and park reservations under the provisions of the Forest Reserves Act and then setting apart, within those forest reservations, park reservations with regard to which the regulations look to the enjoyment by the people of the natural advantages and beauties of those particular sections of the reserves."22 Generally, parks policy, as such, was not discussed in the debate on the Forest Reserves Bill. The parks, apparently, were serving the recreational function for which they were established and no essential policy changes were made. The Minister did observe, however, later in the debate, "that it is not proposed that these parts of reserves set apart for purposes of recreation shall be primarily places of business. There will be no business there except such as is absolutely necessary for the recreation of the people."23 This was an important shift of emphasis and implied a greater commitment in the future to governmental regulation of activity within the park reservations than was present in the 1887 legislation.

But the main business of the 1911 legislation was to reorder and
more clearly distinguish between the hodge-podge of forest and park reserves that had been acquired since 1887 and especially to provide more definite purpose in the regulatory powers of the Government in the forest reserves. As in 1887, resources within the reserves for mining, lumbering and grazing were to be put to use and prior rights were not to be interfered with by the Government. Oliver explained that:

> it is not the intention of the government to interfere with rights existing at the time of the inclusion of a certain area within a forest reserve. If a man has a homestead right, he holds it—even if he is a squatter before survey, he holds his right. And the timber-limit holder keeps his rights to his limit as if the reserve had not been created, with this difference, that under the Act, in the handling of his business on his limit he must conform to the special regulations which the government considers it desirable to enforce within the forest reserve.\(^\text{24}\)

Especially noteworthy about the 1911 debate is that what might be called the doctrine of usefulness as it was applied to natural resource policy had taken on a somewhat greater degree of sophistication and, with that, the assumption of abundance of natural resources had been modified. I have suggested that in 1887 natural resource potential was considered unlimited and that the resources must be made "useful" because this was publicly desirable and promoted the progressive development of the country. But each natural resource appears to have been treated as an unrelated entity within the environment. In the 1911 debate, the interrelated nature of resource use, the realization that the exploitation of one resource affected the whole environment, was evident. In a sense, "usefulness" of natural resources, the 1887 term, implied relatively unregulated exploitation. In 1911 the more frequent term was "utilization" which at once suggested a more cautious and more rational use of natural resources. Lip service was even given to the recognition of the interrelated effect of resource exploitation upon the environment when the Minister acknowledged the "primary object" of the forest reserves to be "to conserve the sources
of water supply by the protection and production, or re-production, of timber or wood around the sources of water supply."

'We do not propose,' Oliver continued, 'to hold the timber which is in these forest reserves from use, but we propose to inaugurate a policy which will look to the utilization of the timber and to the reforestation or continued forestation of the land. We have not arrived at that point yet but we hope to do so . . . our purpose, in dealing with the timber in the reserves is, first, the economic utilization of the timber which is useful for commercial purposes and, next, the reproduction of timber so that there shall be a continuous supply.'

This shift of emphasis in the doctrine of usefulness was the result of many influences which may generally be summed up as the growth of conservationist sentiment in Canada. As early as 1892 Alexander Kirkwood had borrowed ideas and practices from New York State for inclusion in the report of the Royal Commission which he chaired which led to the establishment of Algonkin National Park (as it was originally called). He noted, among other things, the importance of forest reservations to the protection of Ontario's water resources. In the new century Gifford Pinchot had lectured to enthusiastic audiences in Canada, the Dominion Forestry Association had been founded in large part to promote more rational use of Canada's timber resources, a School of Forestry had been established at the University of Toronto, and the Laurier Government had set up the Commission of Conservation with Sir Clifford Sifton, former Minister of the Interior and prominent businessman, as chairman. Historians of the conservation movement in the United States have observed that the growing awareness of the depletion of American resources led to two streams of conservationist thought. The first, championed by a reform-minded public, argued for a cessation of exploitation and preservation of natural resources. The second, advocated by technical experts and resource users, called for more efficient and scientifically-oriented resource use.
The conservation movement did not involve a reaction against large-scale corporate business, but, in fact, shared its views in a mutual revulsion against unrestrained competition and undirected economic development. Both groups placed a premium on large-scale capital organization, technology, and industry-wide co-operation and planning to abolish the uncertainties and waste of competitive resource use.28

This observation is strikingly reminiscent of the growing conservation movement in Canada between 1890 and the beginning of the First World War. Indeed, the main thrust of conservationist sentiment in Canada was assuredly toward an adoption of the scientifically-oriented "usefulness" stream of conservationist thought.29

By the 1900's the concept of an unlimited abundance of natural resources had been modified although few were yet ready to admit of serious depletion. Moreover, the experience of the past few decades led to a recognition on the part of resource users of the potential danger of completely free and unregulated exploitation of resources. Sir Clifford Sifton, as Chairman of the Commission of Conservation, told the Canadian Club of Montreal in 1911 that:

Our natural resources are not illimitable. No matter how great the natural resources of any country may be, when a large and active population sets itself to develop them it very soon becomes evident that they are far from being illimitable. At the same time our natural resources are not yet seriously depleted.

It was the Commission which had recommended to the Government the reservation of the eastern slope of the Rockies and in the acceptance of that recommendation Sifton saw the future fate of the prairie west he had done so much to develop.

Unless active steps are taken to assure the permanence of these waterways the eastern slopes of the Rockies will be bleak and blackened within a few generations and the Provinces, now the pride of an Empire, a wasted wilderness.30

Of the work of the Commission, Sifton reflected in 1915 that "it has been one of the characteristics of our meetings that we have not wasted
much time in discussion of general principles."

The main principles in our action, in all the branches of our work, has been to get the people together who know most about the subject and to remove as far as possible, by personal contact and discussion, the misunderstandings and difficulties which prevented progress and, as a result, to bring about co-ordination along certain lines which is likely to produce practical results.31

Clearly, the objective of the conservationists was not the halting of utilization of resources but the encouragement of regulation and technical efficiency to ensure continued utilization. This had been so from the beginning. Robert Borden, moving the establishment of a select standing committee of the House of Commons in February, 1909, provided the accepted operational definitions of "conservation" and "development" of Canada's natural resources.

'development' and 'conservation' . . . should be the watch words of the country with regard to its natural resources. Conservation does not mean non-user; on the contrary, it is consistent with that reasonable use of these great resources which is absolutely necessary for their development. And, on the other hand, development does not imply destruction or waste; it ought not to imply destruction or waste, but these great resources should be both developed and conserved, so that they may be of the greatest possible advantage to the present generation and may also be handed down as a continuing heritage to those who come after us in the work of upbuilding this Dominion and the British Empire.32

And Sifton re-emphasized the point at the first meeting of the Commission of Conservation.

I have heard the view expressed that what Canada wants is development and exploitation not conservation. This view, however, is founded upon an erroneous conception which it must be our work to remove. If we attempt to stand in the way of development our efforts will assuredly be of no avail either to stop development or to promote conservation. It will not, however, be hard to show that the best and most highly economic development and exploitation in the interests of the people can only take place by having regard to the principles of conservation.33

I have suggested in this paper that the origins of Canadian national parks policy are to be found in the expansionist, exploitive
economic programs of the National Policy of the Macdonald Government after 1878. In contrast, there is little evidence to suggest that national parks policy originated in any conviction about preserving the "wilderness" on either aesthetic or other grounds. Indeed, the term "wilderness" was scarcely used in discussion of parks policy and then only to suggest a primitive condition demanding "improvement" in order to "make a park." These espansionist economic programs assumed abundant natural resources capable of exploitation in the interest of the country at large. This is what Macdonald and his colleagues had in mind when they spoke of "usefulness." In other terms, it meant the conversion of natural resource wealth into an expanding Canadian Gross National Product, or, as Macdonald put it with particular reference to Rocky Mountains Park, to "recoup the Treasury."

There were, of course, sections of the 1887 legislation capable of a "preservationist" interpretation. But it is not enough to say that the "preservationist" goals failed simply because of a lack of funds for proper administration and execution of the legislation—though that was all too true. Nor can we be content with the observation of a contradiction within the law and in the administration of parks policy between the preservationist and exploitive clauses of the 1887 statute. Rather, it seems that there was an evident choice of priorities in the policy: the preservationist sections were there to enhance the function of the Park as a playground for the Canadian people—to restore the depleted wildlife, for example—but these sections were not to conflict with the exploitation of other resources within the park reserve. Or, to put it another way, some parts of the legislation were administered with "preservationist" intent when, at a later date, it was realized that the uses people wished to make of the Park would be met by such action and, therefore, the "usefulness" of the Park would be increased.
Inevitably this led to confusion of purpose in the decades following 1887 though it is significant that as late as 1905 this confusion was not apparent to the Park Superintendent who happily regarded the Bankhead coal town as a tourist attraction of growing importance. By the end of the first decade of the new century the confusion was evident in the growing parks system and the 1911 legislation was an attempt to distinguish between park reservations and forest reservations. For the former, there was no major legislative change. After all, they were serving a useful function as recreation grounds and scenery, the prime resource of the park reservations, was being "utilized." Within the forest reserves, where Oliver said the Government "look rather to the exclusion of people [i.e., tourists]," the significant change was not an abandonment of the doctrine of usefulness but the introduction of a more sophisticated administrative machinery guided by conservation techniques designed to ensure continuous utilization of natural resources.

In short, Canada's national parks policy was grounded on the belief that the parks were a natural resource themselves, or a composite of natural resources, capable of exploitation under government regulation in a partnership of government and private enterprise. Parks policy was entirely consistent with, indeed, grew out of general natural resource policy and, like the latter, by applying the doctrine of usefulness, was designed to serve the "purposes of the Dominion" in the development of the Canadian nation.

FOOTNOTES

Careless, "Frontierism, Metropolitanism, and Canadian History," in Approaches to Canadian History Ramsay Cook, Craig Brown, Carl Berger, editors (Canadian Historical Readings, I, Toronto) pp. 63-83.


6 The Daily Manitoban, August 26, 1886, in Public Archives of Canada, Macdonald Papers, vol. 113, #46040.


8 House of Commons Debates, April 29, 1887, p. 194. See also Debates of the Senate of the Dominion of Canada, 1887, pp. 106-107 for the same argument as presented by the Honourable J. J. C. Abbott in that House.

9 Ibid., May 3, 1887, p. 228.

10 Ibid., p. 233. A few months later the Minister of the Interior reported to Macdonald from Banff that "there have been wonderful improvements here since last year" and that the various churches were selecting their lots in the townsite. Two weeks after he wrote that "applications are being made pretty rapidly for the leasing of lots on our townsite at Banff. The annual rental for the townsite, according to the prices we have fixed, will amount to over $4,500, which will pay the interest upon $200,000 expenditure, and leave the Park itself, with all its incidents, to pay the cost of management, which I am quite sure it will do." Macdonald Papers, vol. 296, White to Macdonald, 31 July and 10 August, 1887. On the development of Banff townsite see R. C. Scace, "Banff: A Cultural-Historical Study of Land Use and Management in a National Park Community to 1945" (unpublished M. A. thesis, The University of Calgary, 1967).

11 Debates of Senate, 1887, pp. 109, 106.

12 House of Commons Debates, Mr. Mitchell, April 29, 1887, p. 195.

13 Ibid., May 3, 1887, p. 245.

14 Ibid., p. 232.

15 Ibid.

16 Ibid., p. 233.

17 Ibid., April 29, 1887, pp. 195-196.

18 Ibid., May 3, 1887, p. 228.

19 Ibid., p. 246.

20 Cited in A. R. Byrne, "Man and Landscape Change in the Banff National Park Area Before 1911" (unpublished M.A. thesis, University of
Alberta, Calgary, 1964) p. 102. Mr. Byrne has a discussion of parks policy and industrial development in Chapter VII ff. He concludes that the policy followed was "governed by frontier values. It was part of the process of free enterprise exploitation of natural resources that had already changed the face of much of the United States and eastern Canada." p. 93. I do not agree. The values here represented were those of an entrepreneur-politician partnership which accepted large elements of governmental regulations and originated in the metropolis rather than in the hinterland.

21 Cited in Byrne, op cit., p. 105.
22 House of Commons Debates, April 28, 1911, p. 8085.
23 Ibid., p. 8614.
24 Ibid., pp. 8619-8620.
25 Ibid., p. 8610.
26 Though, as in Rocky Mountain Park, lumbering was to be permitted, indeed, in this case, even encouraged, and the park was also to provide recreational facilities. Kirkwood believed that "the rights of the [timber licence] holders . . . must of course be fully respected," arguing that "the other species of trees are so numerous and grow so thriftily there that even were the pine wholly removed the utility of the forests in their climatic, water-maintaining and other aspects would probably not be impaired. In one respect, indeed—the preservation of animal life—it is the opinion of those conversant with the circumstances, that a growth of the smaller deciduous trees, such as usually takes the place of the coniferous varieties when the latter are removed, would be preferable to a pine forest, in affording a larger supply of edible buds which form the staple food of many birds, such as the partridge, and of leaves and bark, the favourite sustenance of such animals as the moose and beaver." Ontario, Legislative Assembly, Sessional Papers, 1893, No. 31, pp. 20-21. See also R. S. Lambert, with Paul Pross, Renewing Nature's Wealth (Toronto, 1967) Part III, passim, and A. P. Pross, "The Development of Professions in the Public Service: The Foresters in Ontario," in Canadian Public Administration (September, 1967) pp. 376-404.
28 Hays, op cit., pp. 265-266.
32 House of Commons Debates, February 1, 1909, p. 356.
33 Cited in Thorpe, op cit., p. 4.
34 House of Commons Debates, April 28, 1911, p. 8084.
INTRODUCTION

With improvements in transport and income, and other changes, the inhabitants of many North American cities stream out in ever greater numbers to spend their leisure on distant recreation grounds, often national parks. An example is Yellowstone National Park, now so clearly in the recreational watershed of many American cities that its use is soon to be rationed. Visits to this park increased from about 1,300,000 in 1953 to over four million in 1965, with 3,841,700 of these being concentrated in the summer, notably in the months of July and August.¹ Visits to the Canadian National Parks also are increasing very rapidly. Table 1 shows the remarkable growth in visitors to Banff, Jasper, Kootenay and Yoho National Parks during 1950–1966.² Increases are particularly pronounced after 1960 and probably are

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¹I am grateful to the National and Historic Parks Branch, Western Regional Office, Calgary, for providing certain information and to the National Research Council for grants in aid of some of the research upon which the paper is based.

²J. G. Nelson is a Professor of Geography and Vice-Dean of the Faculty of Arts and Science, The University of Calgary, Alberta.
### TABLE 1

**VISITS TO CERTAIN WESTERN CANADIAN NATIONAL PARKS**

<table>
<thead>
<tr>
<th>Period</th>
<th>Banff</th>
<th>Jasper</th>
<th>Kootenay</th>
<th>Yoho</th>
</tr>
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<tbody>
<tr>
<td>1950-51 (Calendar Year)</td>
<td>449,888</td>
<td>85,633</td>
<td>97,195</td>
<td>50,871</td>
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<td>1951-52 (Calendar Year)</td>
<td>483,356</td>
<td>99,374</td>
<td>103,190</td>
<td>47,173</td>
</tr>
<tr>
<td>1952-53 (Calendar Year)</td>
<td>602,729</td>
<td>104,002</td>
<td>159,031</td>
<td>23,016</td>
</tr>
<tr>
<td>1953-54 (Calendar Year)</td>
<td>654,655</td>
<td>132,200</td>
<td>221,653</td>
<td>26,336</td>
</tr>
<tr>
<td>April 1 to March 31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-56</td>
<td>701,149</td>
<td>159,541</td>
<td>289,113</td>
<td>-</td>
</tr>
<tr>
<td>1956-57</td>
<td>717,799</td>
<td>264,596</td>
<td>336,397</td>
<td>28,164</td>
</tr>
<tr>
<td>1957-58</td>
<td>767,667</td>
<td>242,792</td>
<td>371,395</td>
<td>41,248</td>
</tr>
<tr>
<td>1958-59</td>
<td>883,028</td>
<td>234,199</td>
<td>418,216</td>
<td>53,450</td>
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<tr>
<td>1959-60</td>
<td>979,997</td>
<td>339,627</td>
<td>465,128</td>
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<td>1960-61</td>
<td>1,077,170</td>
<td>370,209</td>
<td>523,719</td>
<td>72,342</td>
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<tr>
<td>1961-62</td>
<td>1,069,623</td>
<td>372,546</td>
<td>533,163</td>
<td>117,653</td>
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<tr>
<td>1962-63</td>
<td>1,347,576</td>
<td>413,734</td>
<td>598,487</td>
<td>410,341</td>
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<tr>
<td>1963-64</td>
<td>1,650,257</td>
<td>495,905</td>
<td>625,407</td>
<td>727,384</td>
</tr>
<tr>
<td>1964-65</td>
<td>1,605,784</td>
<td>510,142</td>
<td>611,429</td>
<td>707,414</td>
</tr>
<tr>
<td>1965-66</td>
<td>1,797,333</td>
<td>553,186</td>
<td>696,994</td>
<td>741,369</td>
</tr>
<tr>
<td>1966-67</td>
<td>2,044,437</td>
<td>629,965</td>
<td>773,337</td>
<td>925,289</td>
</tr>
</tbody>
</table>
strongly related to the development of the Trans-Canada Highway, and the Rogers Pass route across the Selkirk Mountains. Since 1961 the number of visitors to Banff National Park has approximately doubled. Some time in the early 1970's, visitors should reach four million, roughly comparable to Yellowstone today.

A great proportion of these visits do not involve back-country travel. However, certain studies do suggest that this type of use is increasing quite rapidly. Although this is almost certainly a considerable underestimate of actual use, about 1,700 mountaineering and overnight camping parties registered in Banff National Park during the summer of 1967, as compared to about 650 in 1965.\(^3\) The 1967 parties involved over 4,000 people. Ski touring in 1967 accounted for another 828 parties and a total of about 3,000 people in Banff National Park alone.\(^4\)

The growing use of Banff and other western Canadian National Parks has caused a number of changes in landscape and promises to cause a great many more, not only as a result of pressure by developers and the public, but also through the actions and plans of the National and Historic Parks Branch (hereafter called the National Parks Branch) itself. There is considerable controversy about these changes. Many are discussed and judged on the basis of historical or historical-geographic considerations. Thus some people believe that the national parks were established to preserve "wilderness" or "nature" in the general sense and so argue that downhill ski runs and similar facilities should not be constructed in national parks. Others believe that the national parks are "untouched" or have been preserved "in their natural state," whatever these terms mean precisely. On the basis of such beliefs they argue against more service centres or the construction of more roads, seeing these changes as further encroachments on the small amount of "untouched wilderness" that remains in Canada. In contrast,
others argue that the national parks represent a very large reserve of "untouched wilderness" which will not be reduced significantly by the introduction of a few roads or downhill ski runs.

Historical geographic studies of settlement, land use and landscape change demonstrate that parks such as Banff are not "untouched" landscapes, nor are they "portions of the original North America . . . just as it was when the first white man saw it."\(^5\) Wildlife and vegetation have been changed considerably since the coming of the white man and his culture. Indeed the first changes undoubtedly preceded his actual entry into the area, being caused by the introduction of the horse and the gun to the Indian by the European.

**Wildlife**

Late eighteenth and early nineteenth century observations by fur traders indicate that wildlife was plentiful both in kind and number. For example, David Thompson travelled up the Red Deer to the vicinity of the present eastern boundary of Banff National Park in the fall of 1800 and observed many buffalo, elk, moose, deer and also small fur-bearers such as the fisher. The numbers of the grizzly were not estimated directly but Thompson did say that there were "too many" of them.\(^6\)

Later travellers also saw much wildlife. James Hector, a member of the British Exploring Expedition, passed through various parts of the contemporary park area in the late 1850's. He recorded the presence of large numbers of moose, deer, mountain sheep and goats and referred to other animals such as the cougar. While in the Pipestone Valley near Lake Louise and the headwaters of the Red Deer River, Hector saw hundreds of "white goats" on the upper grassy slopes of the mountains. A native guide also told Hector that he had seen a band of seven bison, 2 bulls, 4 cows and a calf nearly two years before. In recent
Fig. 1 Location of Banff National Park
years a number of bison bones and skulls have been found in the moun-
tainous upper Red Deer about twenty miles east of the Pipestone. (Figs. 1 and 2).

By the 1880's the Mounted Police and others were complaining about the high toll that railwaymen, miners, Indians and others were taking of wildlife. According to a wildlife survey conducted in 1886: "Large game and fish once various and plentiful in this mountainous region are now scattered and comparatively scarce. Skin-hunters, dynamiters, and netters, with Indians, wolves and foxes have committed havoc." Early settlements on the eastern slopes of the Rockies were said to be surrounded by belts of country, perhaps twenty-five miles wide, in which all forms of "big game" had become extinct.

Hunting was carried on as sport and recreation for a number of years after the establishment of Rocky Mountain Park (later Banff National Park) in 1887. Fines amounting to thousands of dollars a year were accumulated by certain packers and guides. Nevertheless, illegal hunting seems to have continued until well into the twentieth century. Government policy also favoured the reduction of predators and so-called noxious animals. An early wildlife study recommended that "wolves, coyotes, foxes, lynxes, skunks, weasels, wildcats, porcupines and other animals be destroyed . . . ." The predator control policy is often said to have continued into the 1930's, the implication being that the program died off thereafter. The latter idea awaits the confirmation of detailed studies. Certainly, pressure from Banff townsite residents and from increasing numbers of tourists still works to eliminate coyotes and grizzlies today.

Protection for many animals did increase, however, in the years after 1910. Game and fire wardens were appointed and park appropriations increased. As a result, a varied and numerous wildlife population can be found in Banff and other nearby national parks today,
Fig. 2  Part of Banff National Park
although this population differs in kind and number from that in the area when it was first observed by the white man. For example, the bison is gone as a wild animal and the wolf is very rare. On the other hand, elk are quite numerous and place heavy pressure on the vegetation. Their numbers are managed through control programs conducted by the park wardens.

Vegetation

Just as strict fire control policies have had profound effect on the vegetation in the last few decades, so their absence in earlier days resulted in widespread conflagrations and forest destruction. The role of the natives in causing fires prior to the arrival of the European is uncertain. The remarks of George Dawson, a geologist who worked in the Rockies in the 1880's, suggest that they may not have caused many fires. To quote Dawson:

Large quantities of valuable timber are destroyed and whole, regions became so blocked with tangled burnt woods and windfall as to be practically inaccessible, while the fine mountain scenery is seriously marred. These destructive fires in most cases arise through sheer carelessness or wantonness and the most stringent measures should be taken to prevent them before it is too late. ... It is often stated that the Indians are responsible for much of this destruction, and it is doubtless true that since they find the whole region in process of being ravaged by fires which they can not prevent, they have become more careless than before. They would not, however, willingly destroy their own hunting grounds and the best evidence of their care is found in that fact that, while along the North Kootenay Pass (which so far has been scarcely used, except by the Indians) the woods are generally unburnt, those in the vicinity of the parallel Crows Nest Pass, which has now been for a few years a route used by the whites, are entirely destroyed and represented only by bleaching or blackened trunks. 12

On the other hand, natives who used the mountains farther south are known to have deliberately set fires for reasons of superstition. Thus, in June, 1806, while returning from their transcontinental journey to the west coast, Lewis and Clark saw Indians start forest fires. "The natives told us that their object for setting those trees on fire was to bring fair weather for our journey."

12

13
Early white fur traders and prospectors seem to have caused a considerable amount of burning. The routing of the railroad up the Bow Valley and through the Kicking Horse Pass in the early 1880's certainly had profound effects. The railroad surveyors caused extensive fires, as did sparks from the early wood and coal burning engines. Cutting of the forests also began on a large scale. Wood was used for such things as track ties and pit props in coal mines opened at towns such as Anthracite, Bankhead and Canmore. Timber berths were established in parts of the present park area and settlers undoubtedly cut large quantities of wood for personal use.

Study of old and modern photographs gives an idea of the vegetation of the late nineteenth and early twentieth centuries as compared to the present. Much present-day vegetation is fire-following lodgepole pine or poplar, which developed along with a policy of protectionism after about 1910. (Fig. 3).

Only a few areas seem to have escaped burning or other changes associated with the coming of the white man. One of the largest, if not the largest of these areas, is the upper Red Deer valley, located in the east central section of the contemporary National Park. George Dawson, one of the first geologists to use a camera extensively in his work, travelled west up the Red Deer valley in 1883. He was followed by two surveyors, A. O. Wheeler (c. 1900) and M. P. Bridgland (c. 1920), who also took photographs. Comparison of some of these with recent pictures of the same sites demonstrates that relatively little burning and associated vegetation change has occurred in the last few centuries in that part of the Red Deer valley lying within Banff National Park. (Fig. 4). A large area of climax forest, therefore, has escaped the destruction so widespread in the nineteenth and early twentieth centuries.

Present-day travel in the Red Deer valley reveals that lodgepole
Plate 1: A view of Mount Eisenhower (formerly Castle Mountain) and Silver City, as they appeared around 1887, some years after the copper mining boom had collapsed. (Glenbow-Alberta Institute).

Plate 2: Taken from approximately the same position in 1964. Apart from the obvious disappearance of the buildings the most striking change is the increase in tree cover. The difference is particularly noticeable on the terrace slopes, but is also clearly evident on the lower slopes of Mount Eisenhower and on the terrace surface itself. At present the predominant tree species is the lodgepole pine although from the earlier plate it is impossible to determine what trees were then present. (J.S. Marsh).
Plate 3: Taken in 1885. The Rundle Massif provides the background, while the Cascade River flows from right to left along the foot of the terrace in the middle distance. The coal mining settlement, Anthracite, hardly provides a park-like view. This plate shows a relatively thin tree cover and evidence of recent burning. (Geological Survey of Canada).

Plate 4: Taken in 1967. Apart from the disappearance of the settlement, and the innovation of the Trans-Canada Highway, the main contrast between Plate 3 and Plate 4 is the change in forest cover. (B. Kenny).
Plate 1: A photograph taken by Dawson in the early 1880's in the upper Red Deer Valley about midway between the eastern boundary of the Park and Lake Louise. The forest is largely spruce, apparently largely affected by fire. (Geological Survey of Canada).

Plate 2: A duplicate of Plate 1 which was taken in the summer of 1964. Very little change is apparent from the 1880's and earlier years. But the vegetation and other aspects of landscape would be changed consider­ably by the construction of the proposed Red Deer road. (J.G. Nelson).
Plate 3: This photograph was taken by Wheeler (c.1900) from Oyster Mountain, approximately six miles east of Lake Louise. The view is to the east, showing much of the upper Red Deer Valley. The quality of the photograph is not good, but most of the vegetation clearly has not been burned, the occasional dark patches in the middle foreground being cloud shadows. (Dept. of Energy, Mines and Resources).

Plate 4: A duplicate of Plate 3 taken in the summer of 1967, showing that vegetation and other aspects of landscape are much as they were about the turn of the century and earlier. If constructed, the Red Deer road would cause the first large-scale changes in vegetation and other aspects of landscape in hundreds of years within this relatively unique area. (J.G. Nelson).
pine do occur, but they tend to be concentrated in a burn of a few square miles near the eastern end of the Park, along an old trail passing through the valley, and at prairies scattered along its length. The trail and the prairies have been frequented for many decades by natives, trappers, and more recently by guides who take fishermen into the valley. The lodgepole pine may be due to fires caused by such men or perhaps by lightning.

Cultural Activities and Facilities

Although the preceding discussion has focussed on wildlife and vegetation change, it clearly indicates that trapping, mining and a variety of other cultural activities were carried on in Banff National Park during the course of white settlement. These activities have largely been terminated as a result of voluntary cessation of operations or because of national parks policy. Buildings and other facilities have been removed or allowed to merge into the forest. Some artifacts can, however, still be seen here and there in the Park. An example is the old coal mining town of Bankhead, located just east of Banff.

Recreation—Banff Townsite

Other cultural activities and facilities have been encouraged or permitted to grow within the confines of the National Park, notably those connected with recreation. One such facility is the townsite of Banff. The townsite is often said to have originated as a railway town, with the implication that it was difficult or impossible to remove from the Park. Actually it was established as a spa associated with the hot springs around which the original ten-mile park reserve was created in 1885. The hot springs were set aside because of their promise "of great sanitary advantage to the public." Sir Thomas White, then Minister of Interior, expected that "a large number of people, both from
Canada and the northern United States, would be attracted to the Banff springs, not only by the virtue of its waters, but also by the beauty of the scenery and the excellence of the climate . . ." He thought it very important therefore that "the springs be managed from the beginning in the best possible manner."\(^{17}\)

The townsite of Banff began as a planned one. George Stewart, a civil engineer, was commissioned to carry out the initial surveys and the layout of the townsite. The arrangements and dimensions of some lots are said to have resembled contemporary planned spa communities in Europe, although an immediate American model was Arkansas Hot Springs in the United States. In other words, at the time of its establishment, the townsite of Banff was thought of as a recreational facility in its own right. However, in 1887, the original hot springs reserve was enlarged and Rocky Mountain Park established. The townsite then took on the functions of a service centre for this Park and eventually for its successor, Banff National Park.

In the years up to 1910, the federal government and the Canadian Pacific Railway both became involved in providing a variety of services for the townsite, its visitors and inhabitants. A number of these services were of some significance from the standpoint of landscape change. Tote roads were constructed near the townsite, primarily for the benefit of tourists. Many of these eventually were upgraded, hard-topped and incorporated into the present road pattern in the area. Water supply, sewage and other services also were constructed. Curiously, despite these beginnings, the government still has not seen fit to support the installation of sewage treatment facilities. Today raw sewage is dumped into the Bow River near scenic Bow Falls, a landmark of considerable attraction to tourists.

Primarily as a result of changes in communications, Banff townsite grew considerably in population and in size between 1911 and the
end of World War II. Prior to about 1910 transport was by horse and carriage or by railway. However, after that date, the automobile was introduced and increasing numbers of visitors began to come to the area. A road was built to Calgary and that city became a major source of Park visitors. New functions were also added as the townsite became a summer home colony and an entertainment centre particularly for residents of nearby areas.

Much residential development took place before 1930, mainly in the form of single family dwellings. Many of these buildings still sprawl over the townsite, making for low building and population density. No restrictions were placed on the people who could take up residence in the townsite, with Park employees, businessmen and retired persons making up most of the population. A variety of commercial enterprises were allowed to develop, many not being essential to the enjoyment of the hot springs, the scenery or the outdoors, but providing traditional rights of residence and of livelihood for families whose presence and numbers now cause management problems. To imply that the National Parks Branch or others should have foreseen these problems is not my intention. On the other hand the long-term implications of land use changes should be thoroughly studied today.

A variety of other changes were made in the landscape around the townsite in line with its emerging resort image. Some ideas for change never reached fruition. For example, it was proposed that an airship station be constructed on Sulphur Mountain, a railway on Cascade Mountain and also that the townsite be enlarged and made the provincial capital. The following changes were introduced: the Banff Springs Golf Course (1911); the Mount Rundle Campground (1914); the Banff Recreation Ground (1914); the Banff Airfield (1930's); the Mount Norquay Ski Area (1930's). Each of these projects could be looked on as a relatively small one in itself, but cumulatively they led to extensive
<table>
<thead>
<tr>
<th>Year</th>
<th>Banff Townsite Population</th>
<th>Banff Park Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>271</td>
<td>508</td>
</tr>
<tr>
<td>1911</td>
<td>937</td>
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</tr>
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<td>1921</td>
<td>2,062</td>
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<tr>
<td>1931</td>
<td>2,519</td>
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<td>1941</td>
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<td>1951</td>
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<tr>
<td>1956</td>
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</tr>
<tr>
<td>1961</td>
<td>3,429</td>
<td>4,101</td>
</tr>
</tbody>
</table>

changes in the landscape. Attempts also were made to combat mosquito and insect problems. Beaver depletion programs were carried out to prevent construction of more dams, ponds and ill-drained habitats. Drainage was also used as a control measure.

In the years after 1945, as the tourist boom grew, the government has attempted to introduce a variety of measures to control the burgeoning effects of Banff townsite. For example, attempts are being made to control land use patterns and also to contain historical developments that now have become serious management problems. An example of the latter is the Banff School of Fine Arts, permitted in the Park as an interesting but small project during the 1930's. However, the educational boom today rivals--indeed is a part of--the recreational boom. Great pressure therefore exists to allow continued growth of the School and its fine arts and management programs.

The Service Centres

Today service centres are being developed in Banff National Park, at least in part as a method of controlling the growth and effects of Banff townsite. The intent seems to be to make these regional service centres, which will be home only to a small number of branch personnel and a few entrepreneurs whose businesses are located nearby. Whether these restrictions can be held to and the population kept down is a question. At the most controversial of the centres, Lake Louise, one entrepreneur thinks residences for employees are necessary if downhill ski facilities are to be maintained properly and a high level of service provided for the skier.

There is an obvious risk that the service centres will simply create smaller duplicates of the Banff townsite problem in various parts of Banff National Park. At some point, too, their number and size will have to be controlled. Moreover, the need for more service centres is rather difficult for some people to understand. Gas and other supplies
can be readily obtained at Banff, Field, Jasper and other stations just outside the Park. Automobiles today are such that the visitor can travel through the Park from these sites.

Winter Sports

Another type of recreation which is becoming more and more apparent in Banff and other national parks is winter sport. In the 1930's ski runs such as those at Mount Norquay were cut and the trend begun to modern resort-type skiing with its assemblage of motels, restaurants, places of entertainment, roads, parking lots and other facilities. As visits to the National Park increased after the war, and the population of the nearby city of Calgary rose sharply with the oil boom, certain segments of the public and some park planners began to see a need for the further development of skiing and other winter sports. Whether the planners or the public were leaders in discovering this need is not clear. Nevertheless, a winter sports policy evolved in the 1950's and early 1960's and the national parks administration supported development of certain facilities at sites such as Mount Norquay, Sunshine Valley and Lake Louise.

The Winter Olympics

Not long after World War II some people in Banff and Calgary became interested in the possibility of holding the Winter Olympic Games in Banff National Park. Vigorous, well-organized attempts were made to secure the games for 1968 and 1972. These attempts failed for a variety of reasons, among them the attractions of other competitors and other sites and the uncertainty of suitable snow conditions in Banff. Another factor was the opposition of "Conservationists." Their arguments were various, including the idea that the games and the associated facilities were contrary to the original purpose of the national parks, a position difficult to subscribe to wholeheartedly in view of the variety of
recreational and cultural facilities that have been introduced in the vicinity of Banff townsite, as well as in other parts of Banff National Park, since its establishment in the 1880's. Much more meaningful was the argument that the introduction of the Winter Olympics would mean an increase in facilities in the Banff area, perhaps small when considered individually, but large when thought of in terms of the many other possible changes resulting from contemporary and future pressures for summer and winter recreation in the Park.

In the last few years a new type of winter sport has appeared in the form of the motorized ski-doo, a machine which permits a number of people to travel long distances into the back-country. Informal and formal groups and associations have been organized and access gained to certain trails in the Park. Whether the decision to open these trails resulted primarily from public pressure, or because planners saw a recreational need that should be met, is uncertain inasmuch as no public hearings or discussions over the advisability of admitting ski-doos were ever held. But the consequences are clear: a demand for more trails by the rapidly increasing number of ski-doos; conflict with skiers; worry about the welfare of users who are often ill-clad and unprepared for weather and misfortune; and a growing concern about the suitability of the noisy machine in Banff or other national parks on a long-term basis.

Back-country Recreation

Certain other recreational activities, which require few or no facilities, have a long history in Banff and other national parks. Among these are mountain climbing, hiking, overnight camping, and cross-country skiing. The number of people who engage in these activities, especially some distance into the back-country, is small proportionate to those who come to Banff townsite and the National Park for other purposes. Nevertheless, as we have seen earlier, the number of people
who wish to use the back-country is growing and so, therefore, is the demand for large areas of land where urban or cultural influences are minimal or absent and contact with other humans unlikely.

Although the effect that these environmentally-oriented activities have on vegetation, animals and other aspects of landscape is small, it nevertheless exists and has attracted the attention of national parks planners and administrators, particularly where pertinent associations with relatively large memberships are involved. Among these associations are the Alpine Club of Canada, the Y.M.C.A., the Y.W.C.A. and the Canadian Youth Hostels.

About two years ago the National Parks Branch called a meeting in Calgary of representatives of such associations. The stated purpose of the meeting was to obtain views and opinions on group camping and related activities in the Park. National parks planners and administrators obviously were concerned about the number of chalets, cabins and other facilities controlled by the associations. They saw further development of these as causing problems, especially as there seems to be a tendency not to share facilities among associations and groups. In the course of the discussion, however, it also became quite clear that the national parks people were concerned about the complaints of commercial operators over relatively cheap club-sponsored accommodation and services.

While some members of the National Parks Branch are concerned about the growing use of association-operated recreational facilities, others are interested in the further development of hiking, camping and other similar uses of the back-country. In one of the few studies of such activities in the western Canadian parks, James Thorsell, until recently a member of the research section of the National Parks Branch, advocates "a very comprehensive (but not relatively costly) program to encourage wilderness travel in the parks, i.e., a wilderness plan."
Thorsell calls for a better trail system, an adequate information system, provision of some basic facilities, and a recognition by senior management of the need for attention to back-country use. In his 1967 report and an earlier 1966 report, Thorsell makes it clear that the maintenance of trails has fallen off over the years as recreational style in the parks has switched from tally-hos, walking, camping and climbing to downhill skiing, driving for pleasure, and other facilities-oriented activities.

In his 1967 report, Thorsell supports the idea of developing a Great Divide Trail. Apparently, this idea was first put forward by the Girl Guides of Canada, who recommended that a trail be built to run the full length of the Alberta-British Columbia boundary. Since then the idea has received the support of various groups. Thorsell surveyed about 105 miles of a feasible route in Banff National Park in 1967. He suggests that huts be located along the trail at intervals of ten miles or approximately one walking day. He has drawn up a list of numerous trips that could be taken in one, two or three days, along the Banff Park section of the trail. To walk over the entire trail in Banff National Park would require perhaps ten days—a period available during many a normal vacation—with about twenty days being necessary to cover the approximately 220 miles through both Banff and Jasper National Parks.

**Transportation**

Another facility which has developed, in association with, as well as independent of recreation, is the modern transportation system of Banff National Park. The Canadian Pacific Railroad originally was laid out as a transit route across the mountains. But its presence helped to lead to the establishment of the original hot springs reserve and, eventually, the National Park itself.

As has been suggested earlier, many of the roads now in Banff
National Park were originally trails set out for casual travel or for recreation. Indeed, the progression from a well-defined trail to a gravel and then a paved road is a rather consistent one in the Park. The first automobile road from Banff to Calgary was officially finished in 1914. Roads from Banff to Radium Hot Springs and Yoho National Park were completed in 1923 and 1926 respectively. The Mount Norquay and Banff-Jasper roads were initiated in 1931 as depression-relief projects and were completed in 1936 and 1940 respectively. In the 1940's, 1950's and 1960's a series of programs were undertaken in Canada which eventually led to the construction of a major highway across the Dominion. A portion of this highway passes through Banff National Park. Its conversion from a two-lane to a four-lane highway is now in progress.

Another highway, the David Thompson, has just been completed along the North Saskatchewan River in northern Banff National Park. Political pressure for construction of this road has been very heavy for decades. The Chamber of Commerce, other organizations and a number of residents of the town of Red Deer and central Alberta have been anxious to have an all-weather link with the Banff-Jasper Highway and eventually with the British Columbia interior. Each year for a number of years a large, well-publicized trip has been undertaken westward along the North Saskatchewan River and the David Thompson route to the Banff-Jasper Highway and on over the Rockies via the Howse Pass into British Columbia. This pass is a relatively easy one which was used by fur traders such as David Thompson who carried supplies and furs between the Columbia River country and Rocky Mountain House and the posts on the plains. Pressure will continue to be applied to extend the David Thompson Highway across the Howse Pass, even though the mountains can be crossed by driving south about thirty miles on the Banff-Jasper Highway to its junction with the Trans-Canada at the Kicking Horse Pass.

In addition to the foregoing routes, the surge in tourism in the
post-war years has led planners to set forth proposals for a net-work of scenic roads in Banff and other national parks. These roads seem to be intended to provide access by auto, rather than by foot or horse, to areas of outstanding beauty as well as to ease heavy automobile and tourist pressure in Banff townsite and other congested areas by spreading traffic and visitors over large "undeveloped" areas of the Park. Initially facilities such as public campgrounds are envisioned along these scenic roads. But historical precedent suggests that motels, restaurants, gas stations and other services would soon be demanded by and/or provided for the public.

It is very difficult to obtain firm information on these scenic roads. Parks planners and administrators state that planning is still proceeding and that no final decision has been taken as to date of construction. The planners undoubtedly are also aware of potential opposition to such projects on the grounds that they will cause vegetation, wildlife and other landscape changes in the parks. Then, too, there is no tradition for public discussion of such projects prior to their commencement.

What scenic roads actually are being seriously considered is, therefore, unknown. However, preliminary planning statements and conversation with national parks personnel indicate that at least one major scenic road is definitely being considered for construction in Banff National Park in the near future. The Red Deer project will involve the paving and improvements of about forty-five miles of the present Cascade Fire Road. From the junction of that fire road and the Red Deer River, a new road will then be driven west for about thirty miles through the isolated upper Red Deer River valley, meeting the Trans-Canada Highway near Lake Louise.

The proposed Red Deer road is especially interesting because it will cause extensive changes in vegetation, animal life, and other
aspects of landscape in a valley that is unique in Banff National Park. Studies of land use history and landscape change indicate, as has been suggested earlier, that this valley has not been burned, cut-over or modified by man in the same manner as the Bow, the Spray, the Cascade, or other valleys in the Park during the nineteenth or twentieth centuries. The Red Deer River valley is, therefore, a large area in which vegetation is still very similar to that extant at the time of the coming of the white man. And, although wildlife has changed considerably since the late eighteenth or early nineteenth centuries, it still seems unusually varied and plentiful in this valley in comparison to others in Banff National Park.

Although up-to-date and detailed wildlife studies are lacking, the upper part of the valley is generally recognized as "grizzly country," in which cougar, mountain sheep, goats and other animals still occur in numbers. During one walk up the valley on a late June day in 1964, I saw a number of elk, about twelve mountain sheep, a moose and, more unusual, a herd of about seven goats which had come down the mountain slopes to some salt-licks along the Red Deer River.

To build what I understand will be a highway costing millions of dollars, as a scenic and ring road, that will, after all, eventually lead back to the congestion of the Trans-Canada, Lake Louise, and Banff, and, in the process, disturb, damage and destroy a unique landscape that is relatively close to the romantic ideal landscape of early European days, would, in my opinion, be an economic, ecological, aesthetic, and planning error of the first magnitude.

Science

Scientists such as James Hector of the British Exploring Expedition were among the earliest Europeans to visit the Banff area so that research has a land use claim that pre-dates tourism or similar uses.
Work in such disciplines as biology and geology has been carried on for decades with disciplines such as physics, archaeology and geography becoming involved in more recent years. Much of this research does not involve facilities, but trail and road construction, sample collection and the like can cause landscape change. Moreover, scientists often wish to change the landscape in the interests of their research, although parks policy does not always allow them to do so. Scientific use of Banff and other national parks is increasing, as also are conflicts with other users, for example, research equipment and experimental situations are damaged or disturbed more frequently.

SUMMARY AND CONCLUSIONS

The previous survey of land use and landscape change in Banff National Park is brief and incomplete. No information has been presented on such things as the development of hydro-electric facilities and their effects on the landscape of Banff Park. Indeed, the necessary research on this and other topics has not been completed. Nevertheless, sufficient information has been presented to provide for the following summary and conclusions.

Summary

1. Banff National Park and other national parks are not "untouched" landscapes nor "portions of the original North America . . . just as it was when the first white man saw it." On the contrary the Banff National Park area was trapped, prospected, mined, cut-over and burned in the same manner as most of western Canada and the United States in pioneer days.

2. The first federal reserve in the Banff area was set aside around the hot springs in 1885. Banff townsite was established shortly afterwards as a spa associated with the hot springs.

3. Rocky Mountain National Park, the forerunner of Banff
National Park, was established in 1887, more or less as an extension of the hot springs reserve.

4. In the years after 1900, economic activities such as mining and lumbering declined or were phased out of the Park.

5. In approximately the same period, fire control, wildlife management and other policies were introduced and the idea of the National Park as a natural reserve began to develop.

6. Recreation was the major exception to the exclusion of commercial industry from the National Park. Mountain climbing, hiking, overnight camping and other environmentally-oriented activities were provided for, as were driving for pleasure, downhill skiing and other facilities-oriented activities. A system of roads and highways was constructed in the Park and Banff townsite assumed the character of a North American resort town and service centre.

7. After World War II urbanization, population growth, rising incomes and other influences led to large-scale growth in recreational demand which is expected to continue in future. Plans are being made to accommodate to it by providing more recreational facilities in Banff and other national parks.

8. It has become increasingly difficult, however, to accommodate the level and kind of recreational demand without causing large-scale changes in the National Park landscape. More scenic roads are proposed along with new service centres, more downhill ski runs and other facilities. As a result, a conflict has developed between those who favour more facilities-oriented recreation and those who are opposed to meeting these needs and demands within Banff and other national parks.

9. To argue for or against the development of more service centres, scenic roads and the like, in terms of inaccurate conceptions of the purpose of the national parks or of their land use or landscape
history seems fruitless. Banff and other national parks have not been managed in rigid adherence to one policy. All kinds of cultural activities have been permitted and/or encouraged in the parks. This is not to say, however, that the National Parks Branch has not achieved great things. The slow removal of large areas of land from extractive activities such as lumbering and the resulting creation of a reserve of reforested wildland is a remarkable achievement.

However, studies in land use history and landscape change do show the contemporary trends quite clearly. Recreational erosion is gaining momentum. Some contemplated land use changes are very large in their own right. Other proposals for change seem small in themselves, but cumulatively are very large. As a result of these considerations many people are beginning to look on facilities-oriented recreation as the same kind of threat to the landscape of Banff and other national parks, as lumbering, mining and similar enterprises were in the past.

Conclusion

At this point we face the basic question of what to do about the problems of Banff and other national parks. To answer this question comprehensively obviously is beyond the scope of the paper. However, some general remarks can be made about the present situation, its problems, and future possibilities.

The lack of a publicly-known "master" plan. At present Banff and other national parks are managed, as in the past, without any overall, formal, and publicly-understood "master" plan. Preliminary plans are known to exist for Banff and other national parks which apparently are being used on an informal intra-agency basis in making land use decisions. But these plans have not been discussed at public hearings in the manner that is now commonplace in the United States. Moreover, when questions are raised about proposed land use changes, by extra-agency sources, the reply is often made that the plans are not final and
A high level of uncertainty therefore exists about the status of proposed changes. Moreover, in an informal and interim situation like the present one, a considerable amount of specific planning on service centres, scenic roads and the like, clearly can be implemented without public discussion or even public knowledge. In other words, large-scale changes can be made in national park landscapes which are contrary to the wishes and needs of much of the public and also may turn out to be planning errors when the "master" plan has been prepared in as final form as is possible for such a document.

The national parks and zoning. What approaches can be taken for the planning of Banff and other national parks? One approach is to continue to accept the idea that national parks are one philosophical, operational and administrative unit, i.e., one type of public land or enterprise. The soundness of such a procedure is questionable in view of what we know about the land use and landscape history of Banff National Park. A variety of changes have been or may soon be introduced under a philosophical umbrella which suggests that the national parks are both natural preserves and recreational areas. However, it is possible to attempt to continue operating and administering the national parks within this thought framework by separating the various types of land use on a park-to-park basis or by zoning. This approach is used in national parks in other countries and the Canadian National Parks Branch apparently intends to introduce it in future, once the studies necessary to the establishment of the zones are complete.

However, there may be problems with the zoning approach. For one thing, as the use of zoning in urban and suburban areas demonstrates, it is difficult to resist pressure for changes in zones. Secondly, there is also a tendency to set up large transitional zones—as recent American examples show—which then can be developed if the pressure is
judged to be great enough. In other words, a carrying capacity is not set and rationing and other procedures are not seriously considered, although it seems that these concepts and practices are about to be introduced in some national parks in the United States. At some point, if zoning adjustments continue, the principle of saturation, so ably enunciated by George Macinko in a recent article in *Science* would catch up with the planner and the administrator.

In the third place the act of zoning involves formally designating certain areas for service centres or other "non-wilderness" uses: the amount of land to be so designated is subject to much argument, especially from those groups who see it as a loss of land originally intended for "wilderness." As the land use history and landscape change studies show, this often is not an historically accurate position to take, a variety of facilities-oriented activities having been present in parks such as Banff from the beginning. On the other hand, historical inaccuracies aside, concern about the extent of service areas and transitional zones is a very legitimate one in view of the growing demand for large amounts of land for environmentally-oriented recreation, scientific research and other activities where few or no facilities are deemed to be the desirable condition.

Another problem with zoning is the need for large amounts of ecological, geographic, geological and other information prior to establishing the zones; otherwise there is a risk that some area or feature of natural value will be adversely affected by the introduction of facilities. An obvious difficulty arising from the foregoing is that of deciding when sufficient information has been collected to make it possible to delimit zones with a reasonably high level of confidence. Admittedly, this is a serious problem, especially when planners and administrators are faced with great pressure or the feeling of great pressure for change. However, it would seem better to delay decisions
and go beyond what might appear to be a reasonable level of research, rather than act too quickly and create changes that are not desirable and which cannot be corrected for long periods of time, if ever. Moreover, in doing research, greater use could be made of the scholarly expertise that is available outside the National Parks Branch, for example, in the universities.

The possibility of redefining and restructuring the national parks. The previous discussion does not cover all possible approaches to national parks problems. The possibility also exists of redefining and restructuring the National Parks System. For example, national parks could be redefined as areas in which facilities are excluded. One could imply the same thing by stating that the parks are "natural preserves" or "wilderness" but these terms are imprecise and do not seem to have been adequate safeguards against encroachment and change, particularly in recent years. One man's wilderness is another man's garden.

To emphasize the exclusion of facilities would put the stress on what seems to be the basic problem, the development and spread of culture, the "trappings" of man. To adopt such an approach would not denigrate such elusive but valuable concepts as "wilderness," but might be more likely of success.

A restructuring of the national parks around the explicitly stated idea of exclusion of facilities could mean separating some parks or parts of parks from others. Some separation already exists in the form of historic sites. The Banff townsite area and similar regions could be managed by an administrative unit devoted to the operation of reserves intended primarily for facilities-oriented recreation and related uses. Indeed, the suggestion already has been made that Banff be placed in a National Recreation Reserve. The possibility of federal scientific reserves also comes to mind. Scientists claim more space is
needed where instruments and facilities can be installed, and activi­
ties such as controlled burning carried on, without disturbance or with­
out servious conflict with other uses or management philosophies.

A number of questions and problems arise in thinking about a
restructuring of the System. What are the roles and responsibilities
of the federal and provincial governments in the planning and manage­
ment of national parks and related reserves? To point the previous
question up, should the federal government continue to be directly
involved in the provision of facilities-oriented recreation? What uses
seem desirable and appropriate for the various types of federal and
provincial reserves? What kind of administrative arrangement would be
desirable overall? For example, could and agency managing, say National
Recreation Reserves be quite distinct from a National Parks Administra­
tion or would a series of divisions within one strong overall adminis­
tration be a better mode of organization? The actual division of the
contemporary national park area into one land use and administrative
category or another would be difficult. Finally, would restructuring
really be a significantly different approach than through one National
Park System and zoning—or is it all a matter of degree? Is either
alternative—or others—likely to diminish problems of land use conflict?

Increasing the amount of land. This leads to the point that some
method must be found of increasing the amount of land available for all
uses now thought of in connection with the national parks. Hopefully,
the provincial and local governments will take much more responsibility
for facilities-oriented recreation. More land is certainly needed for
non-facilities-oriented recreation, for science and for the preserva­
tion of representative and unique elements of the landscape. The
federal government seemingly should take a leading role in organizing a
comprehensive study of lands of outstanding scenic, biological, geologi­
cal, archaeological, and comparable significance in Canada, even though
these lands might be reserved and managed by provincial governments or on a co-operative basis. The National Parks Branch and others are known to have made studies of some of the appropriate lands, with a view to making them national parks, yet failing because of financial, political or other difficulties. However, this national park research is not as comprehensive as that required at this time. Moreover, the results are not available to the public. Land of unique or representative value is being changed or is likely to be changed before many people are aware of its significance. Thus, in spite of the efforts of the National Parks Branch, there is no national park or comparable reserve in the Cypress Hills of southern Alberta and Saskatchewan. Nor do many people realize why such a park should even be considered.

In this connection, the time for establishing a system of World Parks, embracing land or features of truly outstanding significance, seems to be upon us. Existing parks such as the International Peace Park seemingly merit this kind of designation, which would add strong protection against misuse. An international agency such as the International Union for the Conservation of Nature would seem a logical organizing force, perhaps in co-operation with U.N.E.S.C.O.

Greater participation by the citizen. Finally, greater opportunity should be provided for the participation of citizens in land use decisions. Plans for the various national parks should be presented and discussed at public hearings. Comment and criticism should be invited from appropriate groups, such as the National and Provincial Parks Association of Canada. After any possible revision resulting from such hearings and comments, the plans should be made available to all interested in the national parks. Moreover, any subsequent specific proposals for major land use changes should be announced and discussed in advance in relation to the "master" plan. Such a procedure should certainly be followed for proposals like that for the Red Deer road.
Research. I would like to end by stressing the importance of and the need for more historical-geographic research on land use history and landscape change in our national parks and elsewhere. Our memory of what we have done with the land is remarkably short. Historical-geographic research helps to dispel the fog and provide the basis for a more rational approach to contemporary land use problems. The results of the research can obviously be of value in the making of specific land use decisions, as the discussion of the proposed Red Deer River valley highway should indicate. Moreover, information on land use history and landscape change casts a very interesting and instructive light on any area and should be used more often in interpretation programs. Many citizens will get a better appreciation of landscape if the approach is made through the effects of man and his culture. Appreciation of the value of national parks, related reserves and their problems will also be enhanced through such studies. Indeed, more research of all kinds would be most helpful in solving national park and related problems. Elsewhere I have suggested an advisory group or National Parks Conference as one means of implementing this work, but other approaches may be more desirable or effective.

FOOTNOTES

1 G. Ironside, "Canadian and American Experience of problems of land use planning with particular reference to commercial facilities and the margins of National Parks in the Western Cordillera" (unpublished manuscript, table at back).

2 Source, Western Regional Office, National and Historic Parks Branch, Calgary.


4 Ibid., p. 3.

5 A. R. Byrne, Man and Landscape Change in the Banff National Park

6 Unpublished Journals, 1800, David Thompson, Glenbow Foundation Library, Calgary.

7 United Kingdom, The Journals, Detailed Reports and Observations Relative to the Exploration by Captain Palliser of that Portion of British North America, which in Latitude, lies between the British Boundary Line and the Height of Land or Watershed of the Northern or Frozen Ocean Respectively, and in Longitude, Between the Western Shore of Lake Superior and the Pacific Ocean During the Years, 1857, 1858, 1859 and 1860 (London, 1863), p. 148.

8 Cited in Byrne, op. cit., p. 98.

9 Cited in Byrne, ibid., p. 117.

10 Scace, op. cit., p. 56 and p. 73, footnote 131.

11 Byrne, op. cit., p. 118.

12 Cited in Byrne, ibid., pp. 96-97

13 Cited in Byrne, ibid., p. 38.

14 Cited in Byrne, or Nelson and Byrne, op. cit.


18 Data from Western Regional Office, National and Historic Parks Branch, Calgary.

19 Scace, op. cit., pp. 104-105.


21 Ibid., p. 53.


23 The Director of the Canadian National Parks Branch has recently been reported as seeing a need for more visitor interpretation services
in Banff National Park, pointing out that present services do not compare favourably with those in the United States National Parks. The Director is said to have stated that expansion in interpretation services would go ahead "as quickly as staff and funds permit" (Calgary Herald, July 31, 1968). In the opinion of many, it would be better to divert funds from projects such as the Red Deer road and accelerate the expansion in interpretation services as much as possible.


Summaries and Discussion

Chairman: H. P. Oberlander


SUMMARIES

HARROY: (Dr. Harroy summarized his paper on The Development of the National Park Movement.

OBERLANDER: (Dr. Oberlander, Chairman, introduced Mr. Reeve who attended the Conference on behalf of Mr. Nicol, Acting Director of the National and Historic Parks Branch.)

REEVE: (Mr. Reeve spoke on The National Parks Movement in Canada, illustrating his summary with slides of areas administered by the National and Historic Parks Branch.)

CLAWSON: (Dr. Clawson presented a summarized version of his paper on The Development of Recreation in the United States and Canada and its Implications for the National Parks.)

R. C. BROWN: (Dr. Brown suggesting that he might perhaps be "the token contribution from the past," summarized his paper on The Doctrine of Usefulness: National Resource and National Park Policy in Canada, 1887-1914.)

J. G. NELSON: (Dr. Nelson completed the series of summaries with his
presentation on *Man and Landscape Change in Banff National Park: A National Park Problem in Perspective*. Slides were used to illustrate the summary.

PANEL DISCUSSION

**OBERLANDER:** We now will have an hour of discussion amongst the panelists on issues raised by the various presentations. Then we hope to have questions from the floor and this obviously is the most important part of the whole discussion this afternoon. All right sir, how would you like to start Dr. Nelson?

**J. G. NELSON:** I would like to hear Dr. Harroy talk more about the problems involved in applying a standard definition to national parks throughout the world. At first blush this sounds very reasonable, but in practice the standard which is set down on paper seems to be modified in accordance with social, economic and other conditions in the country concerned. This is often justified in the sense that one would not get a natural reserve or a national park without the recreational or tourist justification for it. On the other hand, in other areas certain kinds of recreation or a certain volume of recreation begins to no longer be the handmaiden of preservation of natural areas, but rather one of the main reasons whereby they are changed.

I wonder if Dr. Harroy would be prepared to say something more about the application of a consistent standard or standards to different parts of the world along the lines I have just suggested. Do you see any difficulties or do you think it is inevitable that you must have a standard which you seem to apply unevenly or which seems to be applied unevenly?

**HARROY:** I should start by explaining the goal of those of us trying to
use the strength already existing in the locution "national park," to develop in many of the intertropical areas, a small network, and if possible, a larger network of really preserved ecosystems. We find that many of these regions are facing a problem that people living in Canada with its very small population and large amount of undeveloped land, cannot imagine.

You have many intertropical countries facing a problem of rapid destruction of large areas of forest and other natural resources when they should be developing intensive agriculture. This means that when they double their population every twenty or twenty-five years, they have to clear new land to double the surface under cultivation. As they do this so often between the Tropics under the system of shifting cultivation, on the slopes of the Andes, for instance, and in many parts of Africa, they are very quickly destroying the last remnants of some kinds of very important ecosystems.

So people concerned with conservation try to develop the possibility of setting aside areas in these regions under the control of governments. However, it is very difficult to get these governments with their financial problems and many political difficulties, to be prepared to devote the time, the effort and to face unpopularity in setting these areas aside. That is the reason why in many parts of Africa and elsewhere in intertropical areas, the locution "national park" is combined with first, the notion that this is a situation existing everywhere in the world and many of the governments of these countries understand that they also have to have national parks because they know that there are national parks in about eighty or eighty-five countries in the world. That is why we use this expression.

Secondly, the United Nations has chosen the term "national parks and equivalent preserves" to cover just this kind of conservation area where of course, tourism is one of the main aims.
I think that we must try to assist those who are trying to develop a new impetus for conservation in Latin America, in Asia and in Africa, to keep the meaning which national parks already have. You know that the definition of a national park was given for Africa in 1933, by the London Convention and this is a fairly strict definition: "Complete preservation and tourism." You know that the same definition was given twenty-eight years ago for the Western Hemisphere by the Washington Convention. So I am a little bit afraid when I hear Mr. Reeve repeating that a national park is a "single purpose area," that purpose being development of the social utilities.

In many ways we are very distressed that the United Kingdom, having given strength to the locution "national park," especially in the London Convention of '33, has completely changed the meaning of "national park" because of the manner of land utilization inside the United Kingdom parks. You will note that the national parks of the United Kingdom are not among the national parks enumerated in the list of the United Nations, in agreement with the British authorities.

OBERLANDER: Thank you very much. Is it true Mr. Reeve, that the national parks in Canada are single purpose parks and how does that relate to the basic concept of the definition that Monsieur Harroy has raised with us?

REEVE: I think that firstly, you must look back at Section 4 of our National Parks Act, which states, and I will merely paraphrase it, that the national parks of Canada are dedicated to the citizens of Canada for their benefit, enjoyment and education, and that they are to be used in such a manner that they will be passed on to future generations unimpaired to the greatest degree possible.

Now, I think there is one other point that we must remember. While Dr. Harroy has, if I understood him correctly, emphasized the
need for protection and conservation, when one looks at many of our national parks, which are very large areas, if the general public is to be given the opportunity of visiting and enjoying and being educated from having the opportunity of seeing this great national heritage of ours, I think it follows that it is indeed necessary that there must be provided a certain amount of facilities for the general public so that they can indeed enjoy what is being provided for them. I do not know whether that is a complete answer to what you are getting at but it is an attempt to try and bring into focus what we are dealing with here in Canada.

OBERLANDER: Dr. Clawson, would you like to comment on it?

CLAWSON: It seems to me as a social scientist, that the whole concept of national parks is a social institution, a social invention, and if you read the history of national parks in the United States you see that we certainly fumbled when evolving that institution in our early years. John Ise refers to the fact that Congress created one national park in what he calls a fit of absentmindedness and I could go on in detail about what they did, why they did it and so on. Now, it seems to me that as a social institution, it must have some modifications to meet the broad economic and social environment of a particular country at a particular time.

I think part of the problem in Canada, if I understand it properly, is that parks were created at one period of time and here we are in a different period of time with a wholly different set of conditions. The same thing is true in the United States. Dr. Harroy and his associates have been most effective in trying to help some of the underdeveloped countries of the world preserve some of their heritage before it is irrevocably lost. This again is a case of working with a particular culture, a particular economy at one particular
period of time in the history of those countries with, in that case, a great deal of help, guidance, financing, stimulation, perhaps annoyance from outside.

It seems to me that within this very broad language which you have in your Canadian Parks Act and we have in our original acts, that the precise concept of the park and its role and more particularly its management, must be modified, changed and evolved over a period of time as the economy and the society evolves. If we in the United States went back to a pre-automobile age and to per capita incomes and working hours of the First World War, we would have no problem of national park management, or at least we would not have the same problems we have today—and you would not either.

National parks have always got to be viewed against the background of the broad social structure, the functioning of the economy and of life generally within the country today and as best can be foreseen for say, a generation ahead.

OBERLANDER: Thank you very much. This, I think, was a very valid point. May I ask a question on this issue?

If it is a social institution, as Dr. Clawson has now convinced us all, subject to change, how does it relate to your own implications for mass outdoor recreation? Under Item 2, you say that if the national parks are to be prevented from being "perverted from their original purpose," then obviously mass outdoor recreation ought not to occur there. Since the parks are parts of nature and therefore change constantly, why do we have to concern ourselves with this, particularly if some might feel, "What has posterity done for me?"

CLAWSON: Since I am not a park administrator, it is easy to say. It seems to me that the criteria can be stated fairly readily, it is their application that gets you into trouble. People ought to come and be helped to enjoy in a national park what is really unique to that park
and the things that are not unique there, they ought not to find there. A golf course is not unique to a national park. The opportunity to pitch a tent and camp and cook out-of-doors is not unique to a national park. It may be in that case unavoidable as a way of enjoying a national park. I think the swimming pool does not have any place in a national park, and I could go on.

Now, in the sense of the economist, I want to reserve for what I would call higher valued uses, higher quality of resources. This is why I put in my little wisecrack about top-grade veneer walnut making good firewood. The question is, "Is that the best use of top-grade veneer walnut?" I think the answer is "no." We could pave the valleys of a lot of our national parks and make some nice intensive playgrounds out of them, but I do not think this is the use of them.

OBERLANDER: Thank you very much. I wonder whether Dr. Brown, from an historic point of view, would want to comment on this. Does that reflect our historic posture? Can you explain that the parks are really a merchandisable commodity?

R. C. BROWN: Certainly. What I tried to suggest earlier, in the paper, was that the politicians who had ultimate control over policy thought of the park system as a commodity, something that could be merchandised, something that had to be packaged to be made and in turn, could be sold.

What clearly has changed, as we have been told today, more particularly since World War II is, if I can put it in these terms, that a class consciousness has gone out of parks policy. Park users are no longer the wealthy class who would have the villas that Macdonald was talking about in his day; they have become subject to mass recreational pressures, the kind of thing Dr. Clawson is talking about. The basic policy, one would suggest as an outside observer, one who is just a user himself of parks, is that utilization, the
doctrine of usefulness if you will, in fact does continue. It has just become a bit more sophisticated or more subtle.

OBERLANDER: I think we are step by step building a little fortress here.

J. G. NELSON: Could I comment on this question? I think the word "social invention" as used by Mr. Clawson, "usefulness" as used by Professor Brown and "national park" as used in the title, all reflect an inadequacy in the sense of demands that are being placed on the parks at the moment. Perhaps the best way to bring this out is by saying that eighty years after the establishment of the parks we still have only one social invention which designates areas which we may think of as for "wilderness use." And this is in part why we have all the excitement about national parks. Granted, there are provincial parks in which one designates wilderness areas as part of a zoning system but within the federal, cultural, and historical context, there is only one concept or word which embraces a social need for a given kind of land.

In the United States in contrast, there are other social inventions and social devices at the moment and we obviously have to come up with some of these. For example, we have no national forest system in Canada whereas, in the United States, there was a system of national forests and they did have "primitive areas" and this, therefore, represented a different social invention to satisfy some of the demand and fortunately, a large body of land with which to satisfy the social demand.

More recently, the Americans have invented the Wilderness Act and have created an entirely new class of land in which they try to bring together from varying political and administrative units, all those designations which are really aiming at the same type of land
or at the same social need, so that the primitive areas in the national forests and the national parks themselves, all come under the Wilderness Act.

Now, if we start grappling with this in Canada and we begin thinking about modifying our meaning of national parks, people immediately feel threatened as they do in any situation where social change is involved, because the "wilderness" is reduced immediately one begins to modify the land that lies under the designation "national park." So when you begin to talk about taking Banff out of the National Park and putting it in a National Recreation Area which is another social invention that exists in the United States, people immediately feel that this is subtraction of land from wilderness or from national parks' purposes. In point of fact, as a historical analysis presented here shows, it has always been used as a national recreational area and perhaps this should be more explicit in the nomenclature and the ideas that are used.

OBERLANDER: That was excellent. Mr. Reeve, how do you respond to this? We realize that you are here both in your own right and in the right of the civil service of the Nation, but how do you feel about the notion of, I presume, a hierarchy of public parks, including such things as explicit wilderness areas and so on?

REEVE: No, I certainly do not feel threatened by it. In fact, I think that it is the sort of thing that is needed in Canada if we are going to have—and these may not necessarily be national parks per se—a range of parks, be they federal, provincial, regional, municipal, that are indeed going to meet the needs of all Canadian demands for outdoor recreation space. This sort of thing will indeed give more protection to our national parks and will take away from our national
parks much of the pressure that is now being placed on some of them for development that could quite easily destroy the very things for which they were established in the first place.

In other words, national parks as we know them today and as we conceive the preservation, the conservation aspects, cannot be all things to all people or they just will not be national parks. Therefore, I feel this categorizing, if this is what Dr. Nelson is speaking of, rather than being a threat to our National Park System, is really going to put us where we can justifiably defend our position in preserving for all future generations.

Those of you who heard my Minister speak today should recognize --if I interpret what he was saying correctly, and I believe I do-- that there is indeed a need for more varied types of parks if we are to meet the demands. And when I say "meet the demands," I think that this is a field in which national parks cannot proceed alone to fill all the needs for recreational space. We must go forward together, hand-in-hand with the provinces. This is what we are trying to do, this is the basis of our Federal-Provincial Park Conferences. For instance, we had one in Algonquin Park last week, which I thought was very, very fruitful and is going to do much to help fill in these gaps and to make up our overall park system, and I do not mean just national parks, for Canada as a whole.

OBERLANDER: Thank you. I think this was a very forthright answer to a very interesting idea and maybe we will come back to this in due course.

Yes, Mr. Harroy.

HARROY: I just want to come back immediately to repeat that population, income, leisure and travel do not lead to the same change in social institutions--in this instance, national parks--everywhere in the world and it is very important, if you have this evolution, not to
change what is behind the name "national parks." Rather, create new systems of protected areas and recreation areas to satisfy this evolution in social needs.

But please help us in the rest of the world where we have found ideas behind the earlier national parks to be so useful in getting others either to conserve--to keep what is still existing--or to develop a new system. The problem of recreation, of masses coming to national parks, does not yet exist in those countries. It will probably come and we are telling the leaders of those countries that they must prepare areas for recreation. Some countries are slowly recognizing this fact, Kenya for example. Do not forget that many of those parks are considered in terms of attracting tourists from outside and from countries with currencies that are beneficial to the local economy.

I am very pleased with Mr. Reeve's answer. If you have new needs, try to have new words, because the problem we are discussing is perhaps a little bit the same in the United States and in one or two countries in Europe, but the rest of the world is half-a-mile behind you and I would be afraid to see you running too fast. At the moment we are ready to follow you, but if you jump forward we will be unable to go on following you.

OBERLANDER: Thank you very much for this very eloquent plea for the national park as an idea.

CLAWSON: There is some reason to think that other countries in the world imitate the United States' mistakes as well as some other aspects of our activities, and to some extent this has been true in national parks. I have been offering the idea that for the next twenty years in the United States the most dramatic thing in the outdoor recreation field is likely to be the rise of privately-provided
outdoor recreation. I think we have arrived at a point where large firms with ample capital and real managerial competence, will be moving into the provision of high-quality, large-scale outdoor recreation. Now, I may be totally wrong. I am seeing something on the horizon and I may mistake the shape of it, but this could conceivably have quite an impact on the national parks. This ties back to what I was saying about changing times and changing circumstances bringing new problems and new opportunities for national parks.

If I am right, at some period in the future, I think you in Canada will begin to look to the possibilities of large-scale, privately-provided outdoor recreation areas. There are problems and a big one is the relation of these areas to the public areas—the management of public areas in a way that does not discourage this.

OBERLANDER: May I usurp the Chair and spend one minute to reassure Dr. Clawson that he is reading the horizon entirely correctly.

Here is one phenomenon for your consideration. Volcanoes National Park on Hawaii Island is a major international attraction. I think I am correct in saying that those who administer the National Park, and the United States federal agency concerned, are now preparing a plan to double its size and to provide new facilities and a major road through this area in response to a new resort town that is being built by private enterprise on land about ten miles from the National Park.

Here is an example where a new town is being built--its target population is 25,000, so we are dealing with a measurable community—as part of the State plan. Private initiative and private capital is providing the actual development. The response in this particular case is by the National Park, in terms of expansion and change of facilities.
NASH: (Dr. Nash who had been unavoidably delayed, joined the panel at this point and summarized his paper *Wilderness and Man in North America.*)

OBERLANDER: I wonder if Mr. Reeve would like to comment on the serious accusation by Dr. Nash that Canada lags behind the United States in the provision of wilderness areas?

NASH: Well, let's say "public enthusiasm" for wilderness.

OBERLANDER: All right. Now, true or false? Does Canada lag behind in "public enthusiasm" for wilderness areas?

REEVE: As Dr. Nash is speaking of a widespread recognition and enthusiasm for wilderness in Canada I am certainly inclined to agree with him. But I think that in his paper Dr. Nash has actually given the answer to the question that you have posed; that Canada, relatively speaking that is, can still be to a certain extent, considered as a pioneer nation. We really still have so much wilderness that it is difficult for the general public to get enthused and concerned that this is indeed disappearing. If I read your paper correctly I think this is what you were saying . . .

NASH: That is correct.

REEVE: . . . and there is a great need in Canada for a greater awareness of the fact that our wilderness areas are fast slipping away with the developments that are going on in transportation, the newer methods and approaches for finding new resources that can be developed and the opening up of more and more of our wilderness country.

In the long term, I can see that there is indeed, a threat to the preservation of wilderness in Canada. That is the very thing that my Minister was getting at when he said that by 1985, we should have set aside an additional forty to sixty national parks. These are
going to be needed and if they are not set aside as quickly as possible, they may well be gone beyond recall.

NASH: I think you have summarized my point very well. That is exactly what I was suggesting and I believe it is brought out in my paper—that Canada lags possibly half-a-century or a century behind the United States in development of its frontier. In other words Turner, 1892, said the frontier was over; we now still have northern development going great guns in Canada.

Can I add one comment that I am sure Dr. Clawson knows far better than I, in support of your plea for a system of parks? Wilderness as it exists in the very far north, in the Yukon and so forth, is meaningless to all but a very, very small percentage of the people who might seek it for recreation. The important wilderness, the vital wilderness, is that which is preserved within a day or couple of days' drive, and certainly within the economic reach, of the bulk of the people. This is why in the United States, areas like the Sierra are so important to California and its twenty million people who can reach this within a five-hour drive. It does not do much good to say that Wood Buffalo exists and if you want your wilderness, go up there. Because the average guy, living down in Sherbrooke or some place—it is quite a proposition for him, pick-up camper or not, to get to a place like that.

(Laughter)

So we need diversification along the lines you have been suggesting.

OBERLANDER: I think this is a very valid point. I must say the question of what is "wilderness," is also very much part of your position. If I look at the United States of America today as I see it through my T.V. and other news media, and then hear from an American that we lag
behind in wilderness--this makes me feel that maybe this is a good thing. There are other kinds of wilderness!

(Laughter)

Well, I was not going to be personal.

NASH: Now watch that!

OBERLANDER: We have a great tradition of hospitality in the Prairies, I think.

DISCUSSION FROM THE FLOOR

DE VOS: Mr. Chairman, I happen to be a non-resident Canadian so I may be permitted to speak with a little less bias because I look at the situation from a greater distance than resident Canadians.

It seems to me, that in the presentation of the problem, the role of the provinces was not clearly established. In our thinking we are too much biased by the problem of the United States. Reference was made to national recreation areas and the national forests, and the role that national forests play in outdoor recreation in the United States. I will be the first one to realize that important breakthroughs have been made in the United States in that regard. But I think we should recognize that the relationships between the provinces and the federal government of Canada in regard to outdoor recreation, are different from the relationships in the United States between the states and the federal government, and that the provinces should play a far more important role in meeting the demands for outdoor recreation than they have made so far.

In fact, the role of the federal government is not as important as the federal government contemplates and I would disagree with your Minister when he says that we should have forty to sixty additional
national parks in Canada. I think this is a completely unrealistic statement by the Minister. I am not saying that we should not have forty to sixty areas that serve a probable need, but I feel we should recognize that the provinces play an equivalent role to the federal government in this regard.

The provinces have far more control over public land than the states of the United States. As a matter of fact, the provinces are in the back seat insofar as park management is concerned, and here I feel, the onus should be more on the provinces. However, I would like to point out that some provinces have done a considerable amount about this and I would like to refer particularly to the Province of Ontario.

Ontario has zoned all its public land for various types of recreational use. Apart from well-established provincial parks they now have specially designated Outdoor Recreation Areas which are very comparable to the National Recreation Areas of the United States, and they have wilderness areas--wilderness areas for research purposes, and they have wilderness rivers--all zoned and specially dedicated. Now, I do not want to say that everything is just perfect in Ontario by any means; a great many improvements need to be made. I simply want to point out that the provinces serve an important function and this has been overlooked in the presentation this afternoon.

OBERLANDER: Thank you, Dr. de Vos.

K. NELSON: We in the Province of Saskatchewan are very interested in this classification system in Ontario. But I would ask this gentleman what basis in legislation, or actual protection, does this zoning exercise provide for the people of Ontario?

DE VOS: The most important aspect of this protection is that this is
zoning of public land, and as long as this land is protected as public land it is reasonably safe. There is a certain amount of legislation—Provincial Park Acts, a Wilderness Act and some other orders in council—to deal with this matter. I cannot go into further details because I am not familiar with this problem.

OBERLANDER: Yes, sir.

WILLIAMSON: As Superintendent of Jasper National Park, I feel greatly honoured to be the custodian of part of our heritage, and I think that I am fully dedicated to our National Park Act in trying to preserve this large area of land for the benefit, education and enjoyment of all Canadians. But one small problem does bother me. Along with retaining this area of land for benefit, education and enjoyment, we must hand it down in an "unimpaired" condition, and I would like to know the definition of "unimpaired."

On this hand I have an "unimpaired condition," on the other hand I talk of "conservation," "preservation" and a "wilderness program." Can these two tie in together? Can we "conserve," "preserve" and go in to our "wilderness areas," and still hand the land down in "unimpaired" condition?

To illustrate this question, we have the whooping crane. I am the first one that believes we should protect this bird from man, but should we take steps to manage this bird and to prevent it from becoming extinct?

OBERLANDER: Thank you very much. This is a very good question. Dr. Clawson would you like to respond to this please?

CLAWSON: Why should you pick on me, I am not the ecologist of this crowd? I cannot see how we can possibly keep these areas "unimpaired," if you take this in an absolute and strict sense. They are changing. They possibly would have changed even if the white man had not come
to the North American continent. They are certainly going to change.

I think in the whole of North America, we are dealing with "managed wildernesses." This may sound like a contradiction of terms. I do not see how it can be otherwise. The question is: how do we manage, with what tools, to what end and to some extent, what skill? I think some degree of disturbance is inevitable. The question is really one of degree.

OBERLANDER: Wonderful. Thank you. This is a great idea--"managed wilderness." Mr. Henderson?

HENDERSON: The definition of "unimpaired"; I would not be prepared to stick my neck out and give it!

Now, to get to the question of conservation and how we can take the heat off the national parks. When you get down to the final analysis of this whole business, we are not going to have any national parks or natural areas of any kind, unless the public is convinced that this is a necessary thing and that it wants it. But in the pressure of demand for the use of these areas, mainly for recreation now, but for other uses as well, there will be no hope in the future, in my estimation, of keeping any of them unless the public knows what it wants.

Why do we conserve the whooping crane? Why is the Canadian government and the American government spending so much money to preserve one bird that is almost extinct? The value of that bird's life is worth no more than the life of a common house sparrow. Lewis Mumford put his finger on this. He said, "We are conserving wilderness and the whooping crane because we are really concerned with conserving ourselves," and I think that is the basis of the whole thing—it is symbolic. And I think this becomes more and more important, the more we mess up the rest of our environment with pollution in our
cities and towns. The national parks, the whooping crane and other things; as long as we can preserve these, there is still hope for ourselves. But if we do not, there is no hope.

(Applause)

OBERLANDER: Thank you very much.

HELLEINER: I would like to take up Dr. Nash's challenge and suggest that the lag in Canada's attitude towards wilderness is not anywhere near fifty or a hundred years. In the settled parts of southern Ontario where a great proportion of our population lives, the consciousness of wilderness in the last three or four years has, I feel, caught up with that in the United States. As an example I would cite a project that was initiated just a year or two ago--the Buckhorn Wilderness Centre near Peterborough. Through private subscription it has acquired large areas of wilderness and is endeavouring to expand that acreage.

I would also like to ask Dr. Clawson whether his prediction about private enterprise in the recreation field includes such projects as the one I have just described?

CLAWSON: No, I think not. As I see it, private enterprise can provide only one broad type of outdoor recreation with any hope of a profit, and they will not do it unless there is a hope of a profit. I do not see them possibly acquiring and managing wilderness areas, or even anything roughly comparable to national parks--assuming that they could acquire such areas--because I think it would be very difficult indeed to operate and manage them for profit. I do not see how private enterprise can provide city parks or anything remotely resembling them, particularly in the areas of our cities that need them the most, and make a profit out of them.

What I do think you may see is the provision of outdoor recreation
areas for the day-use, weekend type of visit, of which to some extent, Disneyland is a forerunner—the new Disney development at Mineral Kings in California. Within the week I have talked with a representative of one large private company that is considering the possibility of developing a considerable number of large recreation complexes, located close enough to large cities so that people could drive out, use them and return the same day; or facilities where they could stay overnight. There would be a wide variety of activities to appeal to people of different tastes, different ages, different family compositions and the like. They are thinking of this very much as a profit type of operation. This will not compete in one sense with the national parks, but I think that a great many people might find in such areas most of what they seek in a national park. And they would find it a lot closer to home and perhaps, a great deal cheaper, in spite of the fact that they would have to pay a substantial entrance fee.

NASH: Mr. Chairman. Could I just respond to Mr. Helleiner? I am aware of the Buckhorn Centre and picked up some literature on it when I was through there in 1967. Certainly, here is an important single instance of some concern, but I am a historian of public attitude in this case. I am thinking of a general, broad, almost mythical national opinion when I talk about a fifty-year lag.

What I am saying is: go out and find the guy who is sweeping the floor here in MacEwan Hall, you ask him about wilderness, and he will say, "Forget it, we have so much here in Canada. What are you guys saving wilderness for?" He is probably looking at the sign out there right now and saying, "What are these men talking about, wilderness and parks? If they like parks that much why don't they go up to Hudson's Bay?"

Take an average American sweeping the floor and he will say, "Yea,
you got a point there. The Sierra Club have been doing stuff about that haven't they? And Bobby Kennedy went down the Grand Canyon; and so forth. He knows; there is an awareness and where it is manifest is in defence, and that is why in the United States there has been recently a very heartening public response to crises such as the road across the Great Smokies, such as the Grand Canyon Dam, such as the North Cascades. These large-scale defences which are commonplace in American conservation history, back all the way to Hetch Hetchy in 1913, are I think, almost totally absent in Canada. You have a Gavin Henderson, you have a few men working up here and the rest of it--silence, my friend, I think.

OBERLANDER: Thank you for this very spirited defence, Mr. Brown.

R. C. BROWN: Mr. Chairman, if you will forgive me an observation in pedantry, I am struck in the discussion about our purposes and our goals. It seems we are all prisoners of our own terminology, and we are very confused about our terminology. Now, Professor Nash has done a very systematic study of the term "wilderness" as it applies to the United States, and has made a very significant contribution to that particular term.

"Conservation" is a term yet to be studied in the same kind of way. Some of you may be aware that in the United States at the turn of the century, there was a great deal of confusion about this term and two basic schools of thought seem to have emerged; preservation as to a protectionist school, and a users' school.

I do not think that the question of conservation in this century--as I read its history, on the policy level--ever went through that kind of debate--quite the contrary. Significantly, if only symbolically, the Chairman of the Conservation Commission was Sir Clifford Sifton, a manager, a business man, a politician. The conservation
impulse in the political arena was an impulse towards management and utilization. The question of "unimpairment" historically, I would suggest, was irrelevant until perhaps the 1930's--which Mr. Reeve has been talking about this afternoon. It seems to me that at that point an awareness, or a change in the concept of conservation, brought about a desire for preservation, as to kind of policies. But before that time, at least--I think this lingers on and is part of our confusion--the concept of utilization or management was really at the core of our conservationists' thought.

OBERLANDER: Thank you very much. Mr. Yeomans please.

YEOMANS: I work very closely with the Parks Service and find the work quite exciting.

It seems to me that we are fighting for our lives really for the whole park concept in Canada, and I speak primarily of western Canada, because I am not too familiar with eastern Canada. I propose the possibility that a moratorium might be declared on any further development of the parks under an expediency program and that all efforts be expended towards long-range comprehensive planning of the parks system as a whole.

The problem as I see it is erosion or attrition taking place through piece-meal planning. The tools we have at our disposal to alter the landscape are beyond, or move at a greater rate, than our ability to plan. I think that Dr. Oberlander might even agree with that. The question is fairly clear. Do we have the guts, literally, or the courage to say, "Look, if we are going to save this, we are going to have to define it. What is a park?" British Columbia is losing its park heritage concept because it is watering itself down with classifications of parks--1, 2, 3. Orders in council can change the nature of these parks. In other words, is it a park or is it not?
I think it is about time we declared ourselves.

OBERLANDER: Thank you very much. Let me try Dr. Nelson on this to start with, because he started the notion of classifications.

J. G. NELSON: I did not!

(Laughter)

I referred to this somewhat in my paper, with regard to the complicated question of terminology, what people mean by different concepts, and how to plan one's way out of it. I think what has been discussed so far indicates we are dealing with terminological trappings and we are trying to infuse some modern concepts such as ecology and perhaps modern ideas of management into the system. In my paper I proposed that as likeable and loveable and interesting as words such as "wilderness" and "nature" and "unimpaired" are, we might while trying to keep them in mind as much as possible, focus on the question of facilities.

It is the facilities that are causing the problem. We should recognize this. We should begin to identify change in accordance with types of facilities. We should begin to move away from general statements, such as, "this is a wilderness area," "this is a semi-wilderness area," "this is a transitional zone," and we should begin to develop criteria which specify quite precisely in form of guidelines, what kinds of facilities and what kinds of activities are permissible in national parks, in what may be national recreational areas and so forth.

Returning briefly to the wilderness discussion, I am convinced that there is a distinct difference between the way the nineteenth-century American used wilderness and the way the nineteenth-century Canadian did. In fact, the words that the Canadian used, and which were quoted quite often, were words like "the Great Lone Land,"
whereas the American used the word "wilderness." When you think about this for a little while and try and relate it to the institutions that we used in settling the area, you very quickly realize that the Hudson's Bay Company as a massive organization, was very important in western Canada. Individuals could come out here in the late 1700's and early 1800's and they could be incorporated into that business corporation to the degree that they never experienced the single exploration or the single adventure that seems to have been so common in the United States.

OBERLANDER: Mr. Pimlott please.

PIMLOTT: I would like to address myself to this generation or two-generation gap in the understanding of wilderness, because I think it has rather important implications in terms of what will happen in Canada in the future.

First of all, there certainly is a gap. I think there is an apparent gap of fifty years but there is not a real gap of fifty years. I could perhaps deal with one or two case histories that would suggest this.

Secondly, I would suggest very strongly, that the real gap is not in the general public, but the real gap is in leadership in Canada. The scientists in Canada follow the British tradition. They are overly influenced by the quiet role that the civil service plays, and the scientists are offering no leadership whatsoever to the public in Canada. Where leadership has been demonstrated the public has quickly followed and the gap from fifty years to the present has been closed in a few minutes. Now for the examples.

In Minnesota, in the Superior National Forest, there is the last viable population of timber wolves in the United States. It is in real danger of extermination. The sportsmen of Minnesota are
coming very close to fighting a winning battle to exterminate that population. Two years ago in Ontario, a respected physician proposed that there be intensive poisoning of timber wolves in Ontario. There was leadership by individuals and by organizations. Premier Robarts said on a television program, that in all his time in the public service, he had never been snowed under by a public response as he had been by this one; the overwhelming public response in favour of the timber wolf, something that has never arisen in the same way in Minnesota.

The gap is in leadership. The scientists particularly, who understand ecological situations, should stand up and be counted; they should develop a social awareness and if this could happen, this apparent gap of fifty years would be closed in less than five.

(Applause)

WARNER: My impression of the basic issue that we are discussing today, the ramifications and permutations of which are the stuff of administrative decisions now and in the future, is a concept of "naturalness," environmental "naturalness." This is basically an ecological concept, a biological concept. Our discussions relating to wilderness, to national park, to provincial park, to recreational area, to endangered species or extinction, all focus upon the question of the degree of permissible modification of naturalness.

We are confused in our discussion of wilderness by a semantical problem. The term "wilderness" is being used as an ecological concept from the standpoint of the Canadian who says, "We have lots of wilderness." What he means is, "We have lots of naturalness, completely undisturbed areas left in our country." The American, in contrast, says, "We have wilderness." What he means is, "we have wilderness areas." I make this point because there is a basic
difference here and it shows something that has happened in our civilization. Not only have we perceived scientifically, the nature of wildness, of ecological naturalness, but we have also evolved and are still evolving cultural or social mechanisms to administer this concept of naturalness. So when the American says, "We have wilderness," what he is saying is, "We have administered wilderness areas. We have controlled managed areas of complete naturalness." The Canadian in contrast: "Yes indeed, we have the same kind of thing, but we do not administer them." Hence, comes, I believe, this conflict in the discussion here.

We are going to have to define, as is being done in America, I think with some success, what we mean by "naturalness," that is, what we accept as pure naturalness. In this case we have taken it as wilderness, as the primeval or semi-primeval state; the national park has a high degree of naturalness but with modest modifications to suit a greater degree of human impact upon the area, etc. I believe this relates to the point made by Professor Harroy that we do need some kind of international classification of naturalness.

OBERLANDER: Thank you. Yes sir.

SAURIOL: I thought I would get to my feet when I heard Dr. Nash's reference to a few voices in Canada crying in the wilderness. A couple of weeks ago we unveiled near Peterborough, a plaque to the Guelph Conference. The Guelph Conference was held in 1942, at which time practically no conservation work had been done in Ontario. Since 1942, and as a result of that conference, thirty-two conservation authorities are operating in Ontario in participation with the Province of Ontario. In Metropolitan Toronto we have acquired in the past ten years, 20,000 acres, we play host to one million guests a year, and we have a very fine definition of recreational lands combined with wilderness. We are very conscious of the value of the
outdoors to people and I think we are meeting the requirements of the people in this magnificent program which is now extending right across the southern part of Ontario.

NASH: I would like to see the wilderness in Metropolitan Toronto. I had a very nice evening at the Inn on the Park and there was a green space by it, but that is not my definition of wilderness. I appreciate what you are doing, I think it is great, but we have got to get together and straighten some things out.

OBERLANDER: Surely accept the fact that Metropolitan Toronto is a great wilderness?

(Laughter)

NASH: Indeed. The subways especially.

PAISH: I am tempted to raise to Dr. Nash’s bait about lagging the public enthusiasm for wilderness in Canada. I tend to agree with much of what he says. But there is one point I would make which does apply in British Columbia, although I do not know how much it applies elsewhere. When someone is travelling fifty miles into a virgin Douglas fir forest every morning to cut it down, it is difficult to get him concerned about saving a part of that same wilderness. I think the point of caution we should all take from what Dr. Nash has said, however, is that this fifty-year lag is a very different thing today. We have the tools at our disposal to compress that fifty years into a few months, where needs be, with helicopters, pesticides, and what have you.

I am concerned about the direction the Conference is taking a little bit already, and Tony de Vos tried to get us on track here in the very first question. We are already considering parks in isolation from overall land use policies. Early on Mr. Reeve suggested, “Parks are single purpose areas.” I take issue with this immediately.
I think when you add up the research potential, the recreation potential, the watershed preservation potential, and pessimistic though it might be, the fact that in setting aside parks we are setting aside resource banks whereby should the population pressures reach the point that parks become a luxury, we still have them there.

If you add all these up I would suggest that parks are multi-use areas—and I hate to use that cliché—far more than many of the so-called multi-use public lands outside the parks.

But what concerns me is this devotion to parks all the time. Are we not losing sight of the fact that many of the recreation pressures that you people have all spoken about will be met by adequate, proper programs? For example, the private sector comes in, as Marion Clawson suggested, outside of park lands, and there must be a continued close liaison between parks planners and the land outside the parks. I think as Dr. Oberlander is well aware, the fact that we have an absence of overall land planning in British Columbia, is the reason why our present parks program is being diluted at such a rapid pace. Ninety per cent of our recreation demands currently being made on parks, will be met by adequate programs of land management outside of park boundaries.

OBERLANDER: Thank you very much. Dr. de Vos please.

DE VOS: Mr. Chairman, with your permission I would like to feed another parameter into the hopper, and I would like to refer to world opinion about the national parks of North America. Professor Harroy, rightly so in my opinion, referred to the effect that policy changes in national parks in Canada have on the developing parts of the world. But I would also like to refer to the image that the national parks of North America have in other parts of the world.

I have talked to a great many people about that in Africa, in
Europe and in Asia, and I am personally convinced that there are a
great many people who will never have the chance to see the national
parks of North America, but yet know that this is a very important
entity to them. They have seen movies or TV shows, or they have read
books about the situation. These are very important things to them.
And I see the day coming, and this is not so very far in the future,
that through cheap mass air transportation, there will be just
simply tens of thousands of people from Europe who will be knocking
at the gates of our national parks, who want to see them as well as
the privileged people of North America. Are we getting ready for
this? And if there is a problem now of people having to wait for an
entrance ticket to Yellowstone National Park on a year waiting list
basis, what are we going to do with these Europeans who want to see
it too?

I think these are important issues that at least should be
discussed if we want to keep things in the proper perspective of
Setting the Stage, with reference to the future. Let us not talk
too much about the history; let's see what is going to happen in the
future.

OBERLANDER: Thank you very much.

HAMILL: I would like to make a comment on the point that was raised
about the concept of wilderness. The idea that there is a wilderness
that is part of our germ plasm, simply is not true. I am a very
close observer of active recreationists, of skiers, hunters, all
kinds of hikers and campers and that type of person, and it seems that
if there is one thing that is obvious, it is that there is an
increasingly urban and artificial environment of recreation. People
are not hiking, camping, skiing, and doing these other things that
they do because of any primordial urge. They are doing it because of
a very complicated intellectual, an oral, a visual environment in
which they live.

I have noticed, for example, that there has been a very significant change in the environment of hiking. Hiking is changing, is becoming popular in North America just as hunting is retaining its popularity, partly because of the highly instrumental environment of the equipment that is used and because there is a very large periodical literature, a literature of books, of television shows, of movies and so on. I just cannot accept the notion that has been presented here that we are dealing with some sort of basic natural urge. We are not dealing with basic natural urges; we are dealing with a highly complex, modern environment which we have to come to grips with.

Now the other point I would like to make is this. We have been tippy-toeing around a matter that people in the national parks business seem to want to tippy-toe around all the time; and that is the question of definitions. We have two types of definitions that we have been talking about here today and they always seem to come together and then go apart. These are, on the one hand, the ideological type of definition in which you say that it is good to have national parks because national parks are good; and on the other hand, you say that it is good to have national parks because you can use them for recreation, for natural areas, and so. That point has been demonstrated by almost everybody who has spoken. That is; that there is an urge on the one hand, to get operational definitions, and yet, we are afraid of them so we then tend to retreat to the ideological definitions.

I would suggest that we really do not have to be afraid of operational definitions and that until we drop our ideological definitions, and come up with operational definitions and programs of what we are trying to do--which are actually based on people's needs,
or at least people's wants—that we are unnecessarily skirting around an issue. The ideological definition is open to interpretation by anybody.

OBERLANDER: Thank you very much sir. I think this is a very appropriate comment upon which we have to draw to a close. This afternoon we attempted to Set the Stage. It would be quite impossible for me to attempt to summarize the wealth and variety and scope of comments and ideas that have been presented by the panel and to which the audience has now made a very important contribution. I am sure that many of the questions in your mind and many of the contributions that have been made will again be raised.

How can we discuss parks of any sort, of any definition, of any quality, of any kind, without recognizing that they are only one use of land and that the whole thing in fact, fits into the matrix of a total attitude towards, and rational use of land?

I think I am right in saying that we have a debt of gratitude to the panel this afternoon, to Monsieur Harroy from Belgium, to Mr. Reeve who brought the Canadian picture to use, to Dr. Clawson who has contributed as usual, some very sage and most constructive comments, to Dr. Nash after his safari from California, to Dr. Brown who brought us up to at least 1914,

(Laughter)

and to Dr. Nelson who not only brought us together but gave an extremely vivid picture of one of the most exciting national parks right here at our doorsteps.
II USES OF THE NATIONAL PARKS
Friday, October 11th: Morning

National Parks and Nature Preservation
W. A. Fuller

Research in National and Provincial Parks: Possibilities and Limitations
J. B. Cragg

Banff National Park--A Museum or a Laboratory? Science in National Parks
J. Gardner

Maintaining the Wilderness Experience in Canada's National Parks
John S. Marsh

Man and His Environment, the Past 10,000 Years: An Approach to Park Interpretation
B. Reeves

Education and National Parks
Douglas H. Pimlott

Recreation and National Parks
Raymond F. Daemmann

Urbanization and Canada's National Parks
H. Peter Oberlander

Summaries and Discussion
In our day the protection of nature is a very large economic and social problem because it serves for the preservation and increase of material resources, improvement in the welfare of the nation, restoration of the health of the people, and satisfaction of their cultural and scientific requirements.

Academician A. N. Nesmennov
VII General Assembly, I.U.C.N.

I have found it extremely difficult to say anything new on the subject of national parks and nature preservation. I think the best that I can hope for is to say something old in a new way, or bring old ideas into new contexts. Is there justification for saying anything at all under these circumstances? Obviously I believe that there is. The message is important, even if the words in which it is wrapped are mundane. The message will not sell itself, but rather must it be sold, and one of the ways to sell, as Madison Avenue has so ably demonstrated is frequent repetition.

I have attempted to draw on a number of sources but found myself

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continually reverting to works moulded in important ways by one man, Frank Fraser Darling, who is unfortunately not able to be with us on this occasion. Fraser Darling, along with Noel S. Eichhorn has recently prepared a report for The Conservation Foundation entitled Man and Nature in the National Parks. This report contains several examples of the special powers of observation and philosophical insight that come only to one who has devoted his professional life to the study of nature and man's place in it. Though based on experience in the United States, the report may be read with profit by anyone with an interest in national parks anywhere in the world.

The other volume that I found indispensable, Future Environments of North America, also sponsored by The Conservation Foundation, was edited by Fraser Darling and John P. Milton.

In this paper I will try to say what nature preservation means to me as an ecologist and inhabitant of this planet in the second half of the twentieth century. I will also try to define the role of national parks in nature preservation and point to some threats facing national parks, especially concerning their role in nature preservation.

I use the word "preservation" rather than "conservation" deliberately throughout this essay, not only because the word was used in the title assigned to me, but because I believe there is a case for preservation per se with no connotation of use whether wise (by whose standards?) or otherwise.

What Is Nature Preservation?

The quotation that opens this paper was chosen for two reasons. First, I wished to emphasize that the Soviet Union, which takes pride in its materialism, recognizes that at least some of the benefits of nature preservation are non-material. Second, it is a springboard from which to launch some thoughts about what nature protection is, and
what it is not.

Nature preservation does not mean protection of dickie birds, butterflies, brown-eyed deer or brown-eyed susans in isolation. Nor does it mean protecting the biggest, the smallest, the last or the onliest natural object, whether animate or inanimate. Nor is it even protection of forests from fire or soil from erosion or water from pollution. In the past, each of these has been brought under the rubric of nature preservation, and each has been emphasized at some time, by someone, somewhere. But nature can no longer be thought of only in terms of its component parts, for nature has function as well as structure and the functioning whole is more than the sum of its parts as the living body is more than a collection of organs.

In biological terms nature is the matter-energy matrix in which man lives, of which he is a part and on which he must depend for survival. In another sense nature is part of man's "cultural patrimony" along with museums and archives, art galleries and libraries. Nature is therefore part of man's standard of living, and no ecologically impoverished nation has a valid claim to a high standard of living no matter how magnificent its economic output.

If we now ask ourselves why protect nature, most of us could likely think of several anthropocentric reasons. But I wish to list first a different reason in order to give that reason special emphasis. It is time for mankind to recognize that plants and animals have an intrinsic right to exist. For some of us, acceptance of this idea may run counter to a literal belief in Genesis where it is suggested that plants and animals were created for man's use and man was given the express right to do with them as he would. It is arguable whether man has had absolute suzerainty until recent decades, although the issue is hardly in doubt now. But if man really has complete power over nature
is not one of the ways of using that power to recognize the right of other organisms to co-exist? As far as we know man is the only species capable of formulating such an essentially ethical conclusion, therefore, recognition of the inherent right of plants and animals to share this planet with us is surely one mark of our humanity.

Turning now to anthropocentric arguments, the natural environment has from earliest recorded times been considered to have power to restore health—particularly mental health. The need to preserve and restore mental health is probably greater today than it has ever been, and the importance of a period of recuperation in wild nature is still widely recognized. Again I turn to the Soviet Union for an example to show that these ideas are not restricted to western cultures. The government of the U.S.S.R. recently (1962) established the first of a series of "Natural Parks" (prirodnye parki)—large areas in pleasant surroundings which will combine nature protection with providing "the most favourable conditions for complete rest and restoration of the health of the population." \(^4\) Thirteen such parks had been established in 1967, ranging in area from 10,000 to 200,000 ha (about 40 to 800 square miles).

Next there is the historical argument which, in my view encompasses not only the past, but also the present and future. We preserve all kinds of artifacts, from the smallest trinket to a large fortress, that pertain to our early history and historical figures, but it seldom seems to occur to most of us that to preserve a little of the landscape as nearly as possible in its original condition is merely an extension of this idea. How can one truly appreciate the feats of exploration of a Mackenzie or a Thompson or a Hearne without knowing the wilderness that was their milieu?

Of perhaps even more fundamental historical importance is the
origin of man himself in the primeval habitat of paleolithic times. It was here that speech, ritual, art and morals developed, or as Mumford has said, the primeval habitat was "the foundation of all that can properly be called human."\(^5\)

Carried into our own day, we see frequent expressions of the importance of wild nature for the artistic and intellectual stimulation of modern man. In the words of Mumford again, "wilderness remains a precious ingredient of the human soul."\(^6\) There are, of course, those who can live without wild things, but the question for the future is whether man, as a biological species, can exist in a uniform, closely regulated, wholly technological environment.

If we care about the future of our own species we must face the possibility that nature, simplified beyond a certain threshold, will fail, after a time, to work. Thus, quite apart from aesthetic considerations, we are led to the very practical question of the maintenance of a satisfactory environment for the future of all life on this planet. This, in turn, points to the scientific reasons for preserving nature, which must be mentioned here even though they will be dealt with in detail by Professor Cragg.

The basic problem has been put picturesquely by Deevey:

For all animals and for man, today's material resources are tomorrow's garbage, and vice versa. Waste, therefore, does not exist. Living systems move matter around, into and out of many sources and sinks, but they do not create matter or destroy it. Eventually, plants remake what we call resources out of what we call garbage . . . . Human societies are now so large, so complex, and use resources so rapidly, that they are in danger of drowning in their [own] garbage.\(^7\)

In healthy ecosystems the processes resources→garbage and garbage→resources are in rough equilibrium. In general the first process uses oxygen whereas the second liberates it again. But technological man now uses enormous quantities of oxygen—thirty-five tons for a single jet crossing over the Atlantic for instance,\(^8\) while the
by-products of his technology, as around Sudbury, are allowed to de­
stroy the very vegetation on which restoration of oxygen depends. At
what point does disaster set in?

Unfortunately, we do not yet know in detail how a single eco­
system, even the simplest, works. In most cases we are far from having
a complete inventory of the species that make up an ecosystem. We know,
or think we know, that our agricultural monocultures produce more food
and fibre than the more complex natural ecosystems they have replaced,
but we do not know how well they perform the over-all task of rebuild­
ing resources from garbage.

We must now seriously ask ourselves the question, are we be­
queth ing our children a planet that is biologically unworkable? If
so, are we also bequeathing them the knowledge and the spare parts
necessary to put it right again? Unless we are sure that our simpli­
fied ecosystems will work in perpetuity are we not morally bound to
pass on at least representative pieces of natural ecosystems containing
the widest possible array of species? Only in this way do we leave
future generations a fighting chance to correct our mistakes.

Finally, and I have deliberately left this point to the last,
nature wields economic power. People are prepared to spend money to
visit wild country, which, in itself, furnishes proof that nature still
has a strong attraction for modern man. The economic value of wild
nature may, on one hand, be a potent force for its own protection.
Thus, for example, several East African nations have found that it pays
to preserve some of the magnificent array of large mammals in their
national parks. On the other hand, the economic motive may be a power­
ful force for destruction when it becomes paramount. There is then a
danger of converting natural landscape into altered landscape suitable
for mass-market recreation. In the long view does not this amount to
killing the goose that lays the golden eggs?
National Parks

In spite of the fact that the national park idea developed in the United States and has flourished on this continent, Fraser Darling and Eichhorn found surprisingly few people who had an appreciation of what national parks are for. The reason may not be hard to find. I believe it is because the concept has evolved so rapidly that ideas and policies that seemed compatible with the national park ideal fifty or twenty-five or even fewer years ago are now completely out of place. Unfortunately many of these early ideas and policies have become fossilized in legislation both in this country and in the United States.

Thus, in the beginning national parks were often tied to what may be described as natural curiosities—hot springs were much favored—or concern for a particular species of plant or animal (Wood Buffalo National Park). Can such a haphazard or one-sided choice of areas worthy of protection be defended today?

Also from their earliest days national parks were described as "pleasuring grounds" but it seems never to have been spelled out whether pleasure was to come from the natural magnificence of the area or from artificial embellishments. This problem is still with us.

The early park administrator encouraged visitors in order to show that the parks were being used and thus to justify a larger budget. The modern administrator must be sorely tempted to do likewise, but can we continue to look on increasing numbers of visitors as an unmixed blessing?

But it is also clear that national parks were meant to be for all time so that each generation has only a caretaking mandate and is morally bound to hand them down in an "unimpaired" condition. In spite of disagreement over the meaning of the word "unimpaired" it seems to me that the idea of preservation is at least implicit in any
question of permanence. The idea of preservation has also been ex­ pressed in the widely quoted description of national parks as "outdoor museums." But a museum implies a rather simple, static view of preser­ vation. Can such a simple view be maintained today?

**National Parks and Nature Preservation**

*For a number of reasons the national parks are not doing as good a job of nature preservation as they could do. The purpose of the pre­ sent section is to suggest how the system could be improved and to point to danger signals that could threaten even the present accomplish­ ments.*

**The System is Incomplete.** Parks should not be chosen to pre­ serve only natural curiosities, but they should be planned to include examples of every landscape zone in the country, each with its geolog­ ical, biological, historical and scenic resources intact. It is im­ plicit in this that because biological systems are dynamic rather than static the parks will require expert study and careful management. They should therefore be thought of more as laboratories than museums. We do not have in Canada a national park system that is complete in the sense that it is representative of all landscape zones. Neither the Tundra nor the Pre-cambrian Shield are represented, for example. The former Minister, Mr. Laing, announced his intention to seek ways to complete the system in the near future; so has his successor. I hope that there will be an expression of opinion from this Conference that will aid Mr. Chrétien in his task.

**Present Parks Are Not Natural Units.** Because the present parks were chosen with some special feature, or features, in mind their boundaries are, in the main, matters of administrative convenience rather than biological necessity. A given park may therefore contain only part of one or more ecosystems, and the protected part may be
unmanageable because of influences coming over the boundary from the unprotected part.

An example of the ecological inadequacy of the national park system is the scarcity of large carnivores even in the big mountain parks. Grizzly bears may still be seen, but wolves and cougars are extremely rare. This is at least partially caused by persecution on those parts of their annual ranges that lie outside park boundaries. It is certainly to be hoped that Canada will eventually have at least one park in which all the ecological requirements of our large carnivores will be met.

Natural Catastrophe. Natural catastrophes are by their nature capricious, so no piece of terrain is ever entirely free from the possibility of sudden destruction by agencies such as fire, flood, tornado or earthquake. But such destruction is not necessarily either all bad or permanent. Unpleasant as the immediate aftermath of destruction may appear, it is clear that natural ecosystems evolved in spite of occasional disasters and that occasional disturbance benefits some species. Thus, some large herbivorous mammals in the western parks flourish on leafy species of shrubs or trees, but given complete protection such leafy species will be almost completely replaced by conifers to the detriment of the large mammals. Leafy species (and the animals that eat them) will be re-established following many kinds of disturbance. Thus we have a paradox—complete protection fosters change whereas repeated disturbance produces comparative stability.

Natural systems have great self-restoring powers and if left to themselves will recover spontaneously from most kinds of disaster. Although the recovery process is usually very slow we should not be unduly concerned if we think of parks existing in perpetuity. We should move very cautiously, however, in attempts to repair the landscape following disaster lest we do more harm than good.
Perhaps the best protection from natural catastrophe is a fail-safe system. If we can have examples of every ecosystem in more than one national park the chance of some examples surviving natural disasters would be greatly increased.

Lack of Planning and Research. The belief seems to be widespread in North America that central planning interferes with the freedom of the individual, is undemocratic and perhaps even tinged with communism. But there is another way to look at planning. Only man is able to conceptualize a future and provide now for an eventuality that may or may not occur. In other words, planning is a distinctly human attribute and we would be less than human if we failed to use a gift that only we, among all living organisms possess.

Until the end of the last war there did not seem to be much urgency for park planning. Protected areas were large in relation to the annual number of visitors and immediate problems were few. However, many of today's serious problems are rooted in decisions taken during that period of topsy-turvy growth. The whole question of private leases is one example. With the advantage of hindsight we can see that establishment of a planning division lagged many years behind the need for one, and meanwhile the problems of the planners were being intensified.

Such planning as existed in Canadian parks was traditionally left to the forester and the engineer—groups not noted for their awareness of the total ecological situation or for aesthetic appreciation of the landscape. Some of these men, to their credit rose to the occasion and carried out their duties with awareness and sensitivity. Others, such as those responsible for incorporating the recessional moraines of the Athabasca Glacier into the Banff-Jasper Highway could be said to have failed the test.
Planning for Canada's parks is now immeasurably better than it has been in the past, but I am still disturbed about the heavy emphasis on providing facilities for visitors and the relative neglect of the natural features. Ecologists must have a voice in the planning process. But the mere appointment of an ecologist or two will not solve the problem because, with the exception of a few organisms in certain parks we know far too little about the ecology of our national parks. Thus an ecologist at the planning table will be severely hampered by a lack of basic knowledge on which to base his advise. Even a vigorous program of ecological survey and research could not close this knowledge gap for many years and no vigorous program is in sight.

Management of Man

Perhaps the most serious problems now facing the national parks as nature reserves have to do with the management of man. I think these can be grouped under two broad heads. First, there is still a minority that believes a mine enhances natural beauty, or that deforested slopes are not out of place in a park, or that surplus game animals should be removed by declaring an open season. I believe that threats of this nature, for direct exploitation of resources in parks, are receding year by year, but vigilance must never be relaxed. Although exploitation has been kept in check in our national parks, I suspect that most of us here have heard of Buttle Lake and the Gaspé.

The exploiters and potential exploiters have another influence on national parks. Areas of undoubted national park quality occur in the two northern Territories, but so far a comparative handful of people with mining interests has been able to prevent the establishment of a single park in all of this immense area.

The second, and certainly more difficult problem of human management arises from the paradox that although provision must be made
for people to enjoy parks, too many people can destroy the unique natural features for which the parks were established. This comes about in two ways. As Fraser Darling and Eichhorn have pointed out "even the purest of nature lovers has physical weight and boots on his feet" and "the human foot in large numbers of pairs is extremely wearing on terrain." Until a few years ago just looking at the scenery was considered a non-consumptive use of resources and the carrying capacity for scenery-watchers was thought to be unlimited. Now we know that this is not so, and that the problem is not unique to North America. The English in their National Trust properties, the Swiss in their mountains and the Norwegians in their fjords have discovered that "tourism has somehow to be prevented from destroying its own capital of beautiful scenery."

Masses of tourists also generate demands for services which, of course, can be provided at a profit. When the profit motive enters it has a tendency to dominate all other management objectives in a park, including the objective of preserving the natural environment. Smokey Bear must not stand in the way of progress (development) even if one of the basic purposes of the parks was to protect Smokey Bear. If there are enough golf courses, ski slopes and night clubs people will still come to the parks when Smokey Bear is but a memory, and the profits to be made in catering for their entertainment will undoubtedly be larger than the profit from catering for the needs of those who come merely to enjoy nature.

If we are to continue to preserve nature in our national parks in the face of increasing numbers of visitors I believe we must do two things.

1. We must distinguish between "enjoyment" of the special natural features of the parks and "entertainment" by artificial devices that can be provided equally well outside the parks.
2. We must recognize that every piece of natural terrain has a finite carrying capacity for booted feet and we must give immediate attention to devising ways of limiting the number of visitors in any park at any one time or in the course of a season. Only in these ways can we prevent visitors and those who cater for their needs from destroying the resources the parks are designed to protect.

Conclusions.

I have tried to show that for a variety of reasons—ethical, historical, cultural, practical, scientific and economic—it is essential to preserve some natural biological systems intact. It is clear that a well-planned system of national parks devoted, in part at least, to understanding and management of nature as a dynamic system would go far to meet our needs. But is is equally clear that we have neither a complete system of national parks nor adequate understanding of the nucleus we do have, magnificent as that may be in many ways.

I should like to close with a slight modification of the words Lewis B. Mumford used in closing the conference on Future Environments of North America:

... the real purpose [of a system of national parks] is to insure the existence or the replenishment of a sufficiently varied environment to sustain all of life, including human life and thus to widen the ground for man's further conscious development.13

If we can believe these wise words let us get on with the job of completing and understanding our national park system.

FOOTNOTES


6. Ibid., p. 727.


8. F. Fraser Darling, personal communication.


10. Darling and Eichhorn, op. cit.

11. Ibid.


RESEARCH IN NATIONAL AND PROVINCIAL PARKS: POSSIBILITIES AND LIMITATIONS

J. B. Cragg*

Research studies in national and provincial parks of the North American type fall into two broad classes. First, those related to the utilization of parks, for example, studies on management either of park services or on the animals and plants insofar as they are directly related to the use of the parks by the general public. Secondly, those of little or no immediate concern to the park authorities, but performed in parks because they are natural areas and offer, at least theoretically, basic facilities for many types of scientific research.

This paper will be devoted in the main, to the second category of research project, partly because such projects can be in conflict with existing policies governing the parks, partly because it is assumed by many people that since the parks are in existence, land for research is no problem.

The present-day threats to the quality of man's environment make it imperative that there must be a considerable expansion of studies on

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all types of habitats, from natural to man-made. The parks have a special role to play in efforts to maintain or improve environmental quality. It is important, therefore, that the main reasons for the continued existence of the parks should be reconciled with the demands of the environmental scientists for field facilities. To do this, a new policy must be worked out for the provision of land for research and for the teaching of those many students who are going to be the future guardians of the human habitat.

THE PRESENT SITUATION

I shall begin by examining the framework within which the parks are expected to function in order to determine the extent to which scientists can find adequate research facilities within national parks.

The 1864 Act of United States' Congress which declared the Yosemite Valley a public reserve, contained the phrase "for public use, resort and recreation . . . ." Eight years later when Yellowstone was established as the first national park, the same overall purpose was written into the Act which described it as "a public or pleasing ground for the benefit and enjoyment of the people." These words have set the pattern for all the national parks in North America, for the National Parks Act of Canada states that the parks are "dedicated to the people of Canada for their benefit, education and enjoyment."

"Pleasure" and "Enjoyment," originally conceived in pre-First World War terms, dominate the operations associated with North American national and provincial parks. Whether the founders of the parks would support the present-day interpretations of these words is doubtful. Darling and Eichhorn (1967) have expressed the concern which is shared by many others. They consider that Mission 66 has accepted too readily the view that more and still more visitors with more and still more facilities in the way of wider roads and semi-townships, larger and more
elaborate campsites, is the right approach to park management. Hartzog (1966) speaks of 120 million visits in 1965 and the possibility of 330 million in some forty years' time. What is happening in the United States' parks is an indication of what can be expected in the Canadian parks.

The idea that a park may be "enjoyed" by being relatively unvisited and allowed to exist with the minimum of disturbance, is a concept not readily acceptable in an age of mass culture. The call for "public use and enjoyment" may result in much of the wilderness being handed over to the automobile, the tourist industry, cheap camping facilities, transistor radios, and portable television sets.

It is difficult to reconcile these developments with the other major reason for the existence of national parks, namely their retention in an unimpaired state for future generations. The Canadian Minister of Northern Affairs and Natural Resources (Laing, 1964) saw the main administrative problem as that of striking a balance between maximum development or use on the one hand, and maximum preservation on the other.

Facilities for Research

The I.U.C.N. report (1967) on the ecological impact of recreation and tourism upon temperate environments clearly indicates the great need for intensive research on the effects of different types of human interference both on the vegetation and on the animals which are supposedly being preserved for posterity. As Edwards (1967) points out in that report, human feet can bring about considerable deterioration of the arctic-alpine habitat. Speaking about national parks in the United States of America, Darling and Eichhorn (1967) are concerned about the relative absence of intensive research on park problems although they agree that the recommendations of the Leopold (1963) and Robbins (1963)
reports have brought about major improvements in scientific management. For example, a post of chief scientist has been created. The Leopold report laid stress on the importance of having scientific and management staffs large enough to deal with the very complex webs of diverse ecological communities which require considerable study if they are to be safeguarded for future generations.

If research related to the management of parks has been neglected, often because of the absence of adequate funds, many studies on fundamental biological problems have been carried out in North American parks. A document on Canadian national parks policy (Department of Indian Affairs and Northern Development) states quite clearly that opportunities for research should be available in Canadian National Parks. It points out that the Banff National Park contains a Department of Public Works Soils Laboratory; a National Research Council Cosmic Ray Station; and a federal Department of Agriculture (this should read "Forestry") Entomological Laboratory. The staffs of the Universities of Alberta have been given every help by park officials on a variety of research problems from investigations in phytosociology to the behaviour of Rocky Mountain sheep and bears. Provincial authorities in Canada have been equally helpful. To quote one example, the Alberta Department of Lands and Forests are providing research sites for The University of Calgary's Environmental Sciences Centre. The policy regarding research is described as follows:

1. Scientific research for park purposes, such as management of the flora and fauna of the parks and the provision of data for park interpretation, is considered an integral part of park operations.

2. No research, other than for park purposes, should be carried on in a park if suitable areas for its conduct can be found elsewhere. If a suitable area cannot be found elsewhere and the information or service is of national importance the program should be accepted only if its importance outweighs the resulting reduction in park values. In any case the impairment and effect on the park is to be kept to an absolute minimum.
3. National utility installations should not be permitted in a park if suitable areas can be found elsewhere. If a suitable area cannot be found elsewhere and the service provided by the installation is of national importance it should be accepted only if its importance outweighs the resulting reduction in park values. In any case the impairment and effect on the park is to be kept to an absolute minimum.

The Policy statement is a generous attempt to strike a balance between the needs of the parks and the requirements of scientists. It does mean, however, that many types of experiment are ruled out. The natural appearance of the parks must be maintained and, therefore, no elaborate system of markers either on vegetation or on animals can be used. There must be limits on the way in which animal groups are moved for population studies. Furthermore, large areas cannot be destroyed or manipulated for experimental purposes. At all times the public has the right of access, thus animals under observation may be disturbed and the habitat itself may be drastically altered by the movement of people.

The Growing Demand for Research Areas

Just as the number of visitors to national parks is rising, so is the need for research sites by the growing numbers of scientists concerned with aspects of environmental science. Biologists, geographers, geologists, among others, require access to field areas for their studies. In many cases, the requirements do not depend on total control and do not involve damage or alteration of the areas. Furthermore the scientist is not asking for privileged access to rare animals or rare habitats. These require very rigid protection and not least, protection from scientists. However, there are many studies, particularly those concerned with the maintenance of environmental quality, which do require a degree of control over experimental conditions equivalent to that which is found in a research laboratory.

The demand for outside laboratories is not new and has been discussed at many conferences. It received much attention at the First
World Conference on National Parks (Adams, 1962) and several of the contributors were of the opinion that national parks in various parts of the world should become centres of biological, particularly ecological research. More recently, the demands have been repeated. In *BioScience* (1968) there is a series of papers bearing on the theme of "outside laboratories." Miller, after pointing out the fortuitous nature of the beginnings of the national parks, draws attention to the need for a planned ecological coverage of the North American continent and the high hopes associated with Bill 2282 known as Senator Gaylord Nelson's Ecological Research and Surveys Bill. This Bill, if it became law, would allow the United States' government to authorize a wide range of ecological activities, and, in particular, it would authorize the setting aside of representative samples of habitats for the purposes of investigation.

The long-term nature of many biological studies, particularly those concerned with monitoring the effects of pollution and other man-made changes, makes the problem of control and guaranteed access to experimental areas very important. Furthermore, if adequate attention is to be given to environmental problems in North America, then there are types of landscape which are not included in the present parks but which should be given protection. As Eichhorn (1966) points out, the parks in the United States of America contain less than one per cent of the country's land but more than one per cent of its mountains and three-quarters of them lie in seven states, mainly in the western parts of the continent. Thus, on ecological grounds alone, the parks fall short of the scientists' requirements. In any case, an area for study is not enough in itself. There must be access to experimental plots and laboratories. The present state of scientific agriculture and forestry owes much to knowledge gained from specialist institutions in universities, government departments, and commercial enterprises. The
comparable operations for the environment as a whole, are almost non-existent, or where they do exist, they are fragmented to the point of delaying the orderly growth of concepts and ideas.

S. A. Cain, well known for his distinguished contributions to plant ecology, particularly tropical ecology, and now Assistant Secretary of the Interior for Fish and Wildlife and Parks, in his 1968 paper *National Area Preservation: National Urgency* draws special attention to the needs for such areas and how much requires to be done. Although the United States of America (and Canada I feel should be coupled with the United States of America in this respect) has set the world an inspiring example in setting aside large tracts of land, neither the United States of America nor Canada has as yet paid enough attention to the types of area not necessarily large, that are needed for research and teaching, particularly university teaching. Under the impetus of the International Biological Programme, the necessity is being recognized of setting areas aside for preservation in some cases as representative of particular types of habitat, in others, to preserve rare species of plants or animals, and to provide adequate areas for long-term research programs of a biological nature. Many countries are now drawing up their lists of International Biological Programme conservation areas and before 1970 it is hoped that there will be a world-wide coverage of important habitat types of which some will be available for detailed research studies.

**PROVISION AND MANAGEMENT OF RESEARCH AREAS**

The setting aside of areas for teaching and research is not enough in itself. The whole process of purchase can be an involved operation, and the ownership and management of such areas demand considerable thought and attention. At present in Canada, both the federal and provincial Wildlife Services are acquiring natural areas. A
National Committee on Wildlife Lands has just come into existence. The acquisition of conservation areas within the International Biological Programme is another development. The latter is a five-year program and when it terminates some agency will have to accept responsibility for maintaining the areas taken over during its operations. A problem for the not too distant future will be to decide whether these and any other sites set aside for conservation, research, and teaching should be managed by an existing agency or whether some new organization for the management of natural areas should be created.

It can be argued that in Canada with its National and Historic Parks Branch, the federal Wildlife Service and various other federal and provincial agencies concerned with lands, there is no need to create yet another agency to deal with natural areas.

However, it is essential that the authority in charge of these lands should be sufficiently elastic in its structure to be able to cope with a variety of demands and requirements. Considerable thought will have to be given to management problems. Each site will require a management plan which will state in detail the potentialities of the site and its more obvious preservation and research values. Estimates will have to be made of the amount of disturbance that each site can withstand. For example, a simple, continuing, program in soil biology which involves the digging of soil pits on previously undisturbed land, can use up some one to two hectares per year. Complex studies such as the investigation of whole ecosystems can involve large numbers of people using a variety of techniques. For example, the Canadian International Biological Programme studies on the productivity of a grassland ecosystem will involve approximately eighty people, of whom at least twenty-five to thirty will be fully-qualified scientists. The actual area needed for the investigations is approximately 800 hectares with a considerable buffer zone surrounding it (Coupland, 1968).
Land requirements for research must be treated on the same basis as apparatus requirements for a natural science. Full attention must be paid to the specialist needs of the individual research program. Complete control of the experimental procedures must be linked with complete experimental control. In some cases, land will have to be provided for a single individual's program, in others it will be possible to accommodate several programs on one site.

It can be argued that land grants should be made to universities and similar institutions, provided that adequate safeguards are built into the agreements. Many of us know from experience that universities can take a short-term view where land is concerned. As Norris (1968) comments: "Never, it seemed did such planners realize that natural areas represented a primary University use. The parking lot, dormitory or tennis court always had priority." He was referring to the past as far as the University of California is concerned because he goes on to point out that the university is now spending some $200,000 per year on the acquisition of areas for research and teaching. Goodwin (1968) is also critical of universities in this regard for he says "some of the most distinguished universities, have frequently shown themselves insensitive to the tremendous scientific, educational and aesthetic values of natural areas and unfaithful to obligations assumed in the acceptance of gifts."

Examples from outside of Canada indicate that there are distinct advantages in having control in the hands of an organization whose sole responsibilities are concerned with the conservation of natural areas and with research on the total environment. Such an organization could initiate fresh and vigorous approaches to research and teaching concerned with environmental quality, planning and the maintenance of habitats.

Two organizations justify consideration as examples of bodies
responsible for the preservation of natural areas for protection, research, and teaching. Both carry the title Nature Conservancy; that in the United States of America is a private agency, whilst that in the United Kingdom is a government agency, originally a research council in its own right but now a constituent body within a larger council, the Natural Environment Research Council. The Nature Conservancy (United States of America) in October 1967, held some 63,000 acres in 228 preserves scattered over thirty-seven states (Goodwin, 1968). It is concerned with the purchase and maintenance of natural areas on a permanent basis. It will lease areas to other organizations, universities for example, at the same time restricting their use in order to guarantee their long-term protection.

The United Kingdom Conservancy, which began operations in 1947, controls over 230,000 acres. What is equally important however, is that the United Kingdom Conservancy established a research organization to evolve methods of management and to investigate the fauna and flora of the country. Many of the natural nature reserves established in the United Kingdom are available for teaching and research and long-term research programs, some of them forming integral parts of the International Biological Programme are now in operation. The system works and its pioneering investigations on the effects of toxic chemicals have received international recognition. The value of this close link between laboratory facilities and outdoor areas for research such as exists in the United Kingdom's organization, cannot be overemphasized.
CONCLUSIONS

Natural communities are assemblages of living organisms which have been selected through millions of years of evolution as the most effective systems for utilizing the energy and chemical materials available in particular environments for the continued production of living matter. How are these systems to be studied? Science, as P. B. Medawar (1967) has said, should be the "art of the soluble." The able scientist tackles problems which he feels he can solve. Some problems can be studied by access to natural areas without complete control but, for many studies, and this will apply even more so in the future, complete control is essential. Apparatus, particularly sophisticated apparatus, must be protected against accidental and, let us face it, wilful damage. Furthermore, the scientist himself deserves protection. Where in many parts of North America during the months of the hunting season, is it safe for a scientist to creep in camouflaged clothes or to lie still in undergrowth in order to obtain scientific information? Or if he does risk his life in this way, how can he guarantee that the animals will not be moved on by hunters working in the neighbourhood?

It can be argued that man the hunter is a predator and as such, his activities should be studied. With that I wholly agree, but there are many problems to which there is no need to add unnecessary variables and man, particularly North American mobile man, introduces the greatest array of variables with which the field scientist has to contend. There are some 3.8 million square miles in Canada and only twenty million people. In spite of that huge acreage it is probably more difficult to do long-term experiments of certain types without public interference, within one hundred miles of most of Canada's major universities than it is in the United Kingdom with its 94,000 square miles containing a population over two and one-half times that of
Canada.

Luten (1967) has stated that "It must become clear to all who are concerned for the future that the natural scene is the only conceivable reference point." The maintenance of the quality of man's total environment is dependent on an increased knowledge of natural systems. These are the most complex developments of the evolutionary process. The scientists studying them must be accepted as land users in their own right. In terms of acreage, the land they require is small in total amount. The National and Provincial Parks can provide some of the facilities for determining some of the "reference points," but not enough. If the battle for the quality of the total environment is to be won, then environmental scientists must be given the basic requirements for their type of research.

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BANFF NATIONAL PARK - A MUSEUM OR A LABORATORY? SCIENCE IN NATIONAL PARKS*

J. Gardner†

Introduction

Land use conflicts have increased in number and complexity in Canada's National Parks. During discussions of conflicting interests in national parks, scientific activities are often overlooked or placed in a special category. In this paper, science in national parks is regarded in the same manner as other land use activities. Not only do scientific research interests conflict with other activities, they also conflict with one another.

Before proceeding with the discussion, an operational definition of scientific activities is necessary. As they pertain to national parks, scientific activities include all serious attempts to describe and explain in an analytical fashion, any phenomenon of the national park environment. The phenomena include both objects and processes.

*The author wishes to acknowledge the co-operation of Mr. W. McKim, Western Regional Director of Canadian National Parks, in authorizing the perusal of collection permit records in Banff National Park. The assistance of the Interpretive Service staff in this regard was also greatly appreciated. Dr. J. C. Nelson kindly read the manuscript and offered suggestions.

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The objects and process may be individual, biological, geological, physiographic, cultural-historical and social features or systems of the same.

The presence of man in the national park environment is implied in the operational definition of scientific activities. In the past, mention of science in national parks has been virtually synonymous with biological and geological interest. The above operational definition is based on what the national park environment is today. It is not based on what some feel a national park environment should be; that is, a geological and ecological preserve.

Scientific activities may be classified along lines other than those drawn between the various academic disciplines. In this paper, an attempt is made to distinguish two research approaches in national parks. The first approach primarily recognizes the national park as a unique area. It attempts to explain an aspect of the environment in order to understand the particular unique area. This may be termed "the interpretive approach." The second approach primarily emphasizes objects or processes for their own sake. That the objects or processes are in a particular national park is of secondary importance. For lack of a better label, this second approach is termed "the systematic approach." It is recognized that the two approaches may not be mutually exclusive. They grade into one another so that their distinction is arbitrary in some cases. The classification is only presented as a tool for the analysis of science in national parks.

The Area

Banff National Park, covering an area of 2,564 square miles in the Canadian Rocky Mountains, is the focus of attention in this paper. Since 1885 when the Banff Hot Springs Reservation was established, the boundaries and the area of Banff Park have changed several times.
The present boundaries have been in existence since 1930. In examining Banff National Park from the viewpoint of scientific land use, the present area of the Park is considered.

The remarks in this paper are presented in a Canadian context and are directed primarily at Banff Park. In Canada there is still a relative abundance of unoccupied land and Canadians have not yet accepted a philosophy of limited space even though they may recognize it. Hence, some of the following remarks and suggestions will be inapplicable in areas where pressures of limited space form one of the major problems of the society.

Scientific Investigations in the Area

Numerous scientists have worked in the area now covered by Banff National Park. Prior to the establishment of the National Park, most of the observations were of an exploratory nature. They involved the interpretive approach in the sense that they were concerned with the Canadian Rockies as a unique area. The most notable contributions were made in geology and biology, particularly botany. The exploratory type of research continued into the twentieth century, long after the first park area was established.

The mountain setting, which was accessible by railway, offered unique opportunities for various types of systematic studies. In the early twentieth century detailed observations were made on several glaciers in the park area, as well as on the vertical distribution of vegetation and plant life on talus slopes. Systematic studies have continued to the present. Data have been collected on the behaviour of glaciers and on the surficial geology and glacial history of parts of Banff National Park. Geomorphic processes such as rockfalls, icefalls and avalanches as well as various elements of the high mountain climate have been studied. Biological studies in a systematic vein
have continued.\(^9\)

These examples are but a few of the many systematic studies that have used data from the Banff National Park area. In most of these studies, concern for the fact that the objects of study were located in the Park was of secondary importance. However, the information gathered in the systematic studies may be consolidated and presented in an interpretive format. It is important to recognize that the information is neither systematic nor interpretive, only the approach or format is.

Over the years, there have been several studies that have followed a very marked interpretive approach. The major concern in these studies has been for Banff National Park as a unique area. The authors have frequently availed themselves of the information gathered in systematic studies. Some of the most notable of the interpretive studies have been geological.\(^10\) In addition, valuable interpretive studies on the fauna of Banff and other mountain parks have been contributed.\(^11\)

In recent years, cultural-historical research in Banff National Park has become more significant and has been mainly interpretive in approach. The role of man in landscape change in Banff National Park has been one important focus.\(^12\) Another focus has been the past development of Banff townsite.\(^13\)

Several other scientific endeavours, mostly involving data collection, have been and still are carried on in Banff Park. These generally require the use of various types of facilities. The collection of weather data at scattered points in the Park, a Cosmic Ray Laboratory on the summit of Sulphur Mountain and entomological laboratories are examples. In addition, the Glaciology Section of the Department of Energy, Mines and Resources maintains permanent installations on the Peyto Glacier.
Trends in Scientific Activities

Much of the research has involved the removal of material from Banff National Park. In particular, geological and biological studies often require specimens for laboratory examination. In order to regulate the removal of this material, the National Park administration requires that scientists have written permission to collect specimens. In 1961 this policy resulted in the establishment of formal "permits to collect." A record of these permits provides some indication of the scientific activity that has taken place in the Park since that time. It should be noted, however, that researchers who do not anticipate the removal of specimens are not required to have these permits. As a result, a permanent record of these activities is lost until the results appear in publication.

A few regulations governing the issue of collection permits are of specific interest to this paper. One regulation states that the permittee must not impair the landscape in any way. If damage is done, the permittee is required to repair it to the satisfaction of the park superintendent. Upon the completion of his project, the permittee is required to supply a full report to the National Parks Office in Ottawa. He is not required to supply a copy to the Interpretive Service of the park in which his study was carried out. Investigators under permit are allowed to use fire roads and other facilities in the park that are generally not open to the public. Occasionally the use of aircraft for scientific purposes has been permitted. This illustrates the preferential treatment received by scientists, especially with respect to access to remote areas in the park.

The record of collection permits issued for Banff National Park between 1961 and 1967 is presented in Tables 3 and 4. In Table 3 the permittees are classified by discipline, while in Table 4 they are classified according to the type of agency they represent. Some of the
permits were for the collection of material in a number of national parks including Banff Park. Some of these permittees never actually studied in Banff Park.

The figures in Tables 3 and 4 illustrate several changes that have occurred in the seven years. First, the most marked change was in 1967 when a considerably larger number of permits was issued for Banff Park than in previous years. This increase was largely the result of an increased number of biologists, especially those in the service of the federal government. This, in turn, is due to the increased vigour of the Interpretive Service in the Park. Even though they are Park employees, the naturalists in the Interpretive Service are required to have collection permits.

Since 1962, the number of permits issued for the collection of geological specimens has remained relatively static (Table 3). The large number of geological collection permits issued in 1961 reflected the activity of oil exploration in the Park. The oil companies, which are accounted for in the "Other" column in Table 4 were primarily interested in geological exploration along the front ranges of the Rockies, some of which lie within Banff National Park. This type of research is purely systematic with very little possibility that the information will be presented for public consumption.

Another noteworthy trend displayed in Table 4 is the gradual increase in the number of university personnel working in the Banff Park area.

Because of the nature of the regulations under which the permits are issued, it is impossible to give a full account of all scientific activity in Banff National Park. A few types of research that do not require collection permits have come to the author's attention. The cultural-historical work of the Landscape Studies Group in Calgary has already been noted. With the development of a strong Department of
Archaeology at The University of Calgary, increased attention is being focussed on the prehistory of the Banff Park area largely for interpretive purposes. The recent opening of the Archives of the Canadian Rockies in Banff, and the accompanying consolidation of historical data foretells additional scientific activity in the cultural-historical vein.

### TABLE 3

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<th>Year</th>
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### TABLE 4

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<th>Provincial Gov't.</th>
<th>University</th>
<th>Other</th>
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In some respects, science in Banff National Park may be considered a by-product of other activities. Scientists have most definitely taken advantage of facilities introduced into the Park for other purposes. The presence of a railroad, an all-weather highway and various types of accommodation has attracted scientists to the area. The building of secondary roads for fire protection purposes has encouraged scientific activity in the more remote areas of Banff Park. The fact that the area is a national park and is supposed to represent a pristine landscape, encourages various types of research, especially biological or ecological studies.

While science has taken advantage of existing facilities in Banff National Park, it has introduced very few permanent facilities of its own. The previously mentioned Cosmic Ray Laboratory and the Peyto Glacier installations are exceptions. Where they do exist, the scientific facilities impair the landscape as much as other types of facilities. The only difference at the present time is one of scale. The scientific facilities have an additional disadvantage in that they are directed to one use and are not open to public use.

By taking advantage of previously existing facilities, science in Banff National Park has followed the reverse of a more rational sequence where science guides management. In Banff Park, scientific investigations of the consequences to flora and fauna should have preceded the development of the facilities that science takes advantage of today.

Justifications for Scientific Land Use in National Parks

Justifications for scientific land use in national parks and other "natural areas" are numerous. In fact, some writers have advocated the establishment of national parks and similar areas on the
basis of scientific land use alone. A few more common justifications may be listed as follows:

1. National parks and similar areas provide undisturbed natural conditions for the study of objects and processes that have been little affected by man. The information gathered under these conditions would provide a basis for a better understanding of environments where man's influence is great.

2. Scientific activity in national parks should be encouraged for the sake of knowledge accumulation alone. Since one cannot prejudge the value of knowledge, at some time in the future seemingly useless material may become invaluable.

3. Scientific activities justify themselves if the information gained is used as the basis for good management of the area.

4. Scientific activity justifies itself if it is collecting basic data on the national park environment for the purpose of interpreting that environment to the public. This justification holds a far different philosophy than that underlying research in undisturbed conditions. It carries the assumption that there will be human intrusion into the area.

5. Scientific study is justified if the phenomenon under study can only be found in the area covered by the national park.

6. Scientific activity may be justified if it involves the national interest directly.

Although other justifications for scientific activity in national parks might be cited, it is evident from those above that information collected for one purpose could be used for other purposes. Systematic studies in undisturbed natural conditions provide information that could be incorporated into an interpretive program. The same
information could also be used as a basis for management. Information collected for management purposes may be good systematic studies in their own right.

In Banff National Park this mutually beneficial situation is still hypothetical. Feedback from the systematic studies to the interpretive program has been slow. Management practices such as road building have not relied heavily on scientific information. In fact, management with the exception of wildlife management has only recently encouraged scientific activity. Increased scientific activity for interpretive purposes and more rapid incorporation of systematic data into interpretive programs, is apparent with the increased vigour and size of the Interpretive Service.

**Arguments Against Scientific Land Use in National Parks**

For obvious reasons, scientists have been reluctant to advance arguments against scientific land use in national parks. Many of the arguments against scientific activities are merely negations of the justifications and are therefore not constructive. For example, there is some ambiguity in the term "undisturbed natural conditions." In fact, such conditions do not exist in parts of Banff National Park.

Other arguments may be listed as follows:

1. Scientific land uses conflict with other land uses especially if undisturbed natural conditions are required by the scientist.

2. Scientific activities may require the collecting, displacing and removal of material from the park. This material may represent the only examples of rare species.

3. Scientific land uses may involve the construction of facilities of the sort that impair the landscape.

4. If the scientific activity is experimental it may necessitate
disturbance of the terrain.

5. Scientific land use may introduce man into areas that have not experienced such an intrusion with the resulting disruption to the ecosystem.

6. Scientific land uses of different sorts may conflict with one another. 

In Banff National Park there has not been a specific example of scientific land uses directly conflicting with other land uses. Certainly scientific interests have conflicted with other interests such as Banff's bid for the 1972 Winter Olympic Games.

Scientific activities have introduced human intrusions into areas that were otherwise rarely visited. The work of The University of Calgary in the upper Red Deer River valley is an example. Various scientific facilities, of which the Cosmic Ray Laboratory and its connecting roads are examples, have impaired the landscape.

Considerable amounts of botanical and geological specimens have been removed from the National Park. In the case of some geological specimens, such as the trilobite fossils from the Burgess Shale in Yoho National Park, this practice has led to impairment and depletion of the fossil beds. The blame cannot be shouldered entirely by science in this case however. Much of the damage is probably due to the removal of trilobites by casual visitors.

A Museum or a Laboratory?

Should Canada's National Parks, Banff in particular, be regarded as museums or natural laboratories? The original stated purpose of the national park system might provide an answer to this question.

The Parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment, subject to the provisions of this Act and the regulations, and such Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.
Clearly this statement gives a mandate to a wide range of activities including those connected with science. The most important point in the statement is that the landscape should be left unimpaired. Implied by the statement is that the national parks are to be utilized. Presumably in a society such as that in Canada, the parks are to be used in the manner that benefits the greatest number of people. If science can demonstrate that systematic studies in Banff National Park will benefit the nation in one way or another, then this type of science has a strong case for its inclusion in national park land use. However, in Canada we are still in the position where national parks are not the only places where systematic research of the natural environment may take place. In fact, national parks represent a very small proportion of the unoccupied terrain in Canada.

It has been proposed that natural areas, including national parks, should be in part outdoor laboratories. In some respects the idea that Banff National Park or part of it should be a natural laboratory is incompatible with the stated purpose of the park system. Research in the natural laboratory would presumably be of a systematic nature. Concern for the specific park as a unique area would be of secondary importance. The use of Banff National Park or part of it as a natural laboratory implies a number of things including:

1. Experimentation which might lead to the impairment of certain sectors of the environment;
2. Control of the environment by the researchers which would probably lead to the exclusion of other land uses in the laboratory area;
3. The introduction of facilities which could lead to the impairment of the landscape.

Banff National Park as a museum is more compatible with the
stated purpose of the park system. As a museum the Park would serve both the educational and recreational (enjoyment) functions referred to in the quotations. The museum approach is also more compatible with a wider range of land uses than the natural laboratory approach. Scientific activity in the Park as a museum would be interpretive in nature and concern would be for the Park as a unique area. The resulting information would be presented for public consumption, thereby reaching a much larger audience than the information derived from systematic studies. Within the framework of an interpretive approach the information could be readily available for management decisions as well.

The same effect might also be achieved through systematic studies provided there was feedback to the interpretive program. Such feedback has not been demonstrated to date in Banff Park and probably will not be in the future unless scientific activities in the Park come under more strict control. The type of control that might be necessary is demonstrated in the following suggestions.

1. Scientific activity should be interpretive in approach or else easily adapted to an interpretive program, and confined to the problems unique to the area.

2. Scientific activity should be under the strict control of a committee made up of the Interpretive Service, management people and scientists at the individual park level.

3. Control of the activity could be exercised through a system of contracts issued to universities, government agencies, private companies and individuals.

4. The nature of the individual scientific projects would be determined by the committee.

5. The projects would be put up for tender so that various groups could bid on them. A successful bid would result in
a contract.

6. Regulations governing the removal of material, use of facilities and provision of reports directly to the committee would be attached to the contracts.

If one rejects the use of national parks as natural outdoor laboratories, some provision should be made for this type of land use elsewhere. This is a problem in the allocation of public lands on a national scale. Too often the problems in national parks are taken out of this national context. Although the national parks comprise a small proportion of Canada's public lands, in the Canadian Rocky Mountains they cover a relatively large part of the region. Nevertheless, provision for natural laboratories or scientific preserves in alpine or high mountain environments could be made in areas to the north, south and west of the present mountain parks.

It is recognized that the above approach will not apply in countries where national parks are the only areas of relatively untouched land. In the same vein, however, it must be recognized that the pressures of restricted space apply to all land uses, including those associated with science. Priority should be given to those land uses which are compatible in a multiple setting and satisfy the stated objectives of the area concerned. Banff National Park as a museum rather than a natural laboratory would probably satisfy the greatest number of conditions within the present regulations governing Canada's National Parks.

FOOTNOTES


20 Nelson and Byrne, op. cit.

21 Buchinger, op. cit.

22 Nicholson, op. cit.


INTRODUCTION

Land use problems are growing in the national parks as is recognition of the need to "manage" parks and wilderness. There are external pressures tending to reduce the area of parks and wilderness and pressures and management problems within wilderness areas. It is essential to consider how such pressures and problems relate to recreation and how, in the future, the Canadian National Parks can provide for the increasing number of visitors seeking a high quality wilderness experience.

The term "national parks" is taken to embrace all parks designated as such and presently included in the system administered by the National and Historic Parks Branch, Department of Indian Affairs and Northern Development, Canada. These parks are varied in size, character and history yet have many important common characteristics. Many include unique or classic examples of scenery, flora and fauna. Though man's impact has not been excluded they owe a good deal of their

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present character to the policy of landscape preservation that has prevailed with varying intensity over a number of decades. They lie at one end of a landscape spectrum that has at the other end the largely artificial environment of the modern city. Some parts of the parks, through isolation and neglect, have retained a character almost unaltered by man. Other, larger areas have undergone some, often subtle, changes. But the absence of such permanent features, as housing, roads, industry, and major recreation facilities has left them relatively unchanged and unspoiled. For the purposes of this paper areas within the parks that exhibit these characteristics may be termed "wilderness." On this basis large sections of the national parks can still be defined as wilderness though it must be remembered that landscapes having wilderness qualities grade gradually into those without, making a precise delimitation of the wilderness very difficult.

Wilderness areas in the parks fulfill a number of functions, for example, as wildlife sanctuaries, floral preserves, and science research areas. However, the character, accessibility and management of many areas in the parks have made recreation the most obvious and significant land use. The types of recreation that can be undertaken in a wilderness area are restricted, usually non-facility-oriented and include, hiking, riding, man-powered boating, cross-country skiing and snowshoeing, fishing, camping, mountaineering, nature study, photography and painting. Such activities may be grouped under the term "wilderness recreation."

The people that engage in such recreation react to wilderness and enjoy what may be termed a "wilderness experience." This frequently comprises a mixture of feelings such as peace, solitude, surprise, fear and communion with nature. The type and quality of this experience varies with the individual, and is influenced by a number of factors such as the character of the area, the mode of travel and activities involved and the person's socio-economic and cultural background. There
are variations in the individual's concept of what constitutes wilderness and what detracts from or heightens the recreational experience. However, the sustained, repeated and increased use of wilderness in the national parks, and studies of wilderness users, indicate that the parks serve to provide most wilderness users with a satisfying, high quality experience.  

This paper is intended to indicate some of the problems and possibilities involved in providing for high quality wilderness recreation or a wilderness experience in Canada's National Parks in the future.

**PROBLEMS**

Despite a long-standing policy of land use control and preservation there are certain actual or potential land uses likely to change the parks and reduce the area of wilderness.

Resource-based industries such as lumbering and mining were established in areas that subsequently became parks. Their influence on the landscape was often quite marked and continued within the parks well into the era of preservation. In Banff, Yoho and Glacier National Parks quite considerable areas were operated or reserved as timber berths. Some of these timber berths may still be utilized today, and the possible impact of this activity, demands that such a potential land use within the parks should not be overlooked. Mining and quarrying also have occurred within many parks. For example, in Banff Park coal mines were operated at Anthracite and Bankhead as late as 1904 and 1923 respectively. Indeed, for a while, such features were regarded as an interesting and valuable aspect of the Park. Today, unsightly gravel pits continue operating in many parks. Although present legislation prohibits prospecting and the staking of claims in the parks, existing valid claims must be seen as a possible land use pressure in, and threat
to, the parks and wilderness.

Park lands have also been used for grazing livestock as is the case in Riding Mountain National Park. 6 Currently, this is a localized and minor land use pressure, but it is a precedent, and its expansion, perhaps in the form of game ranching, might influence park wilderness areas.

The potential of the western cordillera for water storage and power development was recognized early and reservoirs and hydro plants were constructed in some parks. For example, in Banff Park, Lake Minnewanka was dammed and used for power production. 7 Such water bodies may sometimes be attractive foci for recreation but they can also be a threat to the quantity and quality of the park wilderness. As demands for water and power continue to increase further pressure to develop sites in the parks can be anticipated.

Since the establishment of trails in park areas there has been a continued expansion of routeways in and through most parks. In Banff, Yoho and Glacier Parks the building of the C.P.R. in the 1880's resulted in major and permanent land uses and landscape changes. 8 Construction involved clearing and earth removal and was accompanied by widespread fires and game depletion. More recently roads, and associated features like car parks, and service stations, have become major and expanding uses and modifiers of park land. Although route development decreases, subdivides and modifies the area of park wilderness expansion of the network seems inevitable. The Trans-Canada Highway has been doubled for much of the distance between Calgary and Banff Park. With increasing traffic in the Park a similar expansion of the Trans-Canada westwards through the Park can be expected. There is also a strong possibility that more scenic access roads will be built, for example, in the Cascade and upper Red Deer valleys of Banff Park. 9 The likelihood, and influence, of such route expansion on the park wilderness should not be underestimated.
The agency administering and operating a park invariably requires land for office buildings, stores, maintenance depots and housing. Even when limited in extent such areas are often unsightly, as for example, the maintenance yards at Lake Louise and Rogers Pass. When centralized a townsite may develop and expand as shops and community facilities are required. Such development is especially likely when the town also serves as a visitor centre. Thus, there are townsites, such as Banff, Jasper and Waterton, within the parks. The expansion and multiplication of administrative centres, visitor centres and recreational facilities poses a great threat in maintaining the area and quality of park wilderness. Recreation in the mountain parks began with the arrival of C.P.R. and the development and promotion of a tourist spa at Banff. From the beginning, recreation was facility-oriented and as tourism increased places of accommodation and entertainment, trails, roads and services multiplied. Today the demand for facilities, such as motels, campgrounds, ski lifts, and access roads continues. In satisfying such demands, the area and quality of wilderness have always been sacrificed.

In the early years of the parks mechanized transport was relatively inflexible and restricted to a limited number of prepared route-ways. Access to areas away from rail and road was on foot or horseback. Today wilderness areas are vulnerable to invasion by more flexible machines, notably trail-scooters, ski-doos, power boats, planes and helicopters. Such machines, through wear and tear, pollution and noise, can soon damage wilderness areas and the wilderness experience. Some legislation exists to restrict such pressures but precedents have been established and this potential threat to wilderness and wilderness recreation does not seem to be fully appreciated. For example, use of ski-doos has been permitted recently in sections of Banff Park. This may only be an experiment, but a precedent has again been established, conflicts with cross-country skiers have occurred and the impact on wildlife is
scarcely known.

There are a large number of existing and possible land uses in the national parks. Individually such uses may seem insignificant but in total they exert formidable pressure. In competing for land within the parks they place particular pressure on the size and quality of the wilderness areas. Legislation and management techniques have not yet proved adequate to resolve conflicts and to guarantee protection of high quality wilderness areas. Precedents have been established in permitting certain uses, yielding to and encouraging others, that are not compatible with wilderness conservation.

As a result since the establishment of most national parks there has been a gradual diminution of the wilderness area. This trend seems likely to continue until public pressure or legislation halts it. Not only will the area of wilderness be less but it will be distributed in smaller units as routeways and recreational developments expand. The remaining wilderness will contain land that is largely unsuitable for other purposes, for example, high mountains, rocky shores, and its value as wilderness recreation land may also be limited.

Certain areas will no longer be viable ecological units and their size will render them more susceptible to external influences, such as noise pollution.\textsuperscript{11} Even if external pressures are restrained, and large areas reserved, maintenance of wilderness for a high quality recreational experience will depend upon the solution of many internal pressures and problems. Most national park wilderness areas have a number of functions, for example, floral and faunal sanctuaries, typical ecological units, natural science research areas, education and recreation areas. In large wilderness units conflicts between such uses may be minimal but in smaller units, especially where recreational use is intense, problems may arise.

The preservation of endangered plant and animal species may pose
many problems where wilderness recreation is intense and unrestricted. The current survival of the whooping crane can be partially attributed to the fact that it breeds in a remote and seldom visited section of Wood Buffalo National Park.12

The rarity of a species may even attract visitors thus narrowing further its chances of survival. In California, for example, some groves of trees like the giant sequoia, may be endangered by visitors compacting the ground surface and otherwise influencing the environment.13

The unfortunate incidents between grizzlies and recreationists in Glacier Park, U.S.A., in 1967 and in Banff and Jasper Parks in 1968, further illustrate the possibility of conflict between certain wilderness uses.14 Wilderness areas have a unique and essential role as natural science research areas15 but again land use conflicts may occur. The research may require certain facilities such as temporary housing, instrumentation or mechanical transport that influence the character of the area. Thus glacier research projects in the Rockies have required construction of temporary huts, and the use of ski-doos and helicopters. Restrictions on human or animal movements may also be required. Failure to note possible conflicts may reduce the quality of several land uses.

Today it is generally accepted that to achieve the many purposes of wilderness conservation a policy of management rather than simple protection of the landscape is required. While some of the ecological factors involved in wilderness management have been studied the implications for maintaining quality wilderness recreation have been neglected.

Several decades of quite effective landscape protection in the national parks have produced certain problems. In the more remote areas of parks, like Glacier, man-made fires were rare and protection has produced high proportions of mature trees and deadfall thus increasing the fire hazard.16 Where protection followed extensive burning, as in the Bow Valley of Banff Park, large areas of even-age lodgepole pine
have replaced a forest more varied in age and species. To produce and maintain a forest on a sustained basis and to prevent the eradication of certain habitats, techniques such as selective burning and logging may have to be employed in park wilderness areas. With careful management and modern control methods such practices might be used very effectively to achieve specified and ecological goals. However, the impact of these operations on wilderness recreation would require study. Logging and purposeful burning have been absent from most parks for many years and accidental and natural fires have been quenched as fast as possible. A sudden change in policy toward fire and logging could meet considerable resistance from recreationists and might initially detract from the experience of many wilderness users.

Because of habitat changes, selective protection of animals and for various other reasons it will also be necessary to manage the fauna. For example, in Banff Park elk must be culled from time to time to prevent overpopulation and the associated problems of overgrazing and disease. Because such practices influence the wilderness environment and seem somewhat contrary to the preservation philosophy their impact on the wilderness user and the quality of his experience must be considered.

It may be considered necessary and desirable to eliminate pests or diseases by spraying, as in the Grand Teton National Park, U.S.A., or by introducing predatory species. One can expect the use of such techniques to have an influence on wilderness recreation, as well as ecology, and their introduction must be considered in this light.

Many management techniques will be more directly concerned with wilderness recreation and the impact of these on the ecology will also require close investigation. For example, the impact of trails, camp-sites and horse grazing on wildlife merits study. The recreational use of wilderness areas has increased markedly in the last two decades and
the trend seems very likely to continue. As increasing numbers of recreationists concentrate on diminishing areas of wilderness the pressure on the environment mounts and the quality of the wilderness and the recreational experience are threatened. In some places and at certain times the situation is already critical, for example around Lake Louise in Banff Park. The wilderness user has a direct though often subtle impact on the environment that may not be perceived until critical. Plants are picked and trampled, grass grazed and ground compacted. Some plant communities may quickly be degraded or eradicated by even moderate pressure of this kind. Apart from exerting wear on the environment recreationists cause pollution. In particular, litter accumulates along intensively used trails and water and noise pollution may also occur. More permanent and widespread damage results when fires are started accidentally in back-country areas.

In wilderness areas managed for recreation, as in the national parks, minimal facilities are often provided. Such facilities, as trails, campsites, signs and emergency huts cause changes in the landscape but often they avert the likelihood of more drastic modification. However, as recreational use increases so does the demand for more, and often better, facilities until the area's wilderness character is completely lost. Deciding on what facilities are required to protect the environment and how many can be tolerated in a wilderness area is a difficult matter.

With or without facilities wilderness areas gradually deteriorate under recreational pressure and only careful management can maintain the quality of the environment and the wilderness experience.

Even when man's impact on the environment is minimized the quality of the wilderness experience will fall if recreational pressure causes crowding or conflicts between activities. Many people visit wilderness areas to "get away from it all," to seek peace and solitude. The quality
of such an experience will often be inversely related to the intensity of use in the area.

As wilderness use increases conflicts between recreational activities develop and threaten the quality of the experience. Thus trails used by hikers and riders, as in the Lake Louise area of Banff Park, may prove unsatisfactory to both groups when usage is heavy.

The quality of the wilderness experience can only be maintained if adequate areas are reserved where environmental deterioration, crowding and user conflicts can be minimized and counteracted.

POSSIBILITIES

The quality of the park wilderness area and the wilderness experience can only be maintained if adequate areas are protected against external land use pressures, on a long term basis. To be adequate, wilderness areas must be of a character and size that allows them to function as ecological units. To satisfy recreation needs they must be accessible and large enough to allow several days continuous wilderness travel. Such units can still be maintained in most national parks if the basic purpose of parks is re-emphasized, legislation is strengthened and zoning adhered to.

If timber berths and mining claims lie within wilderness areas, as in Yoho and Glacier Parks, such areas can only be safeguarded by buying out the owners, even if the cost is high.

The establishment of new national parks and wilderness areas is a possibility that must be regarded as essential. Such areas might be operated federally or jointly, with provincial and other agencies. An expansion of the wilderness system would reduce internal pressures on park wilderness and provide a better choice and distribution of such areas. Such areas can, however, only fulfill this role if legislation guarantees their survival and quality as wilderness. The term "wilderness
area" must mean more than land not yet required for other purposes, as so often applies today. The possibility also exists of using land outside the national parks to satisfy those land use pressures that threaten wilderness within the parks. For example, use of the Kananaskis area of Alberta for facility recreation development might reduce the external pressures on wilderness in Banff National Park.

The designation of adequate wilderness areas inside and outside the parks can only be done successfully with a detailed historical-geographic and ecological investigation and inventory as a basis. This would also provide information for deciding on use priorities, management techniques and long-term planning. It may be necessary and desirable to zone wilderness, establish priorities for each zone and manage accordingly. Such a system must, however, be flexible to respond to changing ecological conditions and land use needs.

Recreation will probably make the heaviest demands on wilderness in the future. To maintain the quality of the wilderness and wilderness experience new management techniques will be required. In determining the type and quantity of recreational use permitted in any area consideration must be given to the other uses of the area, management techniques, the capacity of the area to sustain use, and the availability of alternatives.

In some areas the present minimal facilities and regulations regarding wilderness recreation will be adequate to ensure maintenance of the quality of the environment and the recreational experience. Elsewhere and increasingly as recreational pressure mounts, greater protection of the environment and further restriction of use will be required. The development of more and better minimal facilities in presently neglected areas is a possible short-term development. For example, more trails and wilderness campsites in Glacier National Park would make the Park more attractive and help cater for the growing demand
Areal and temporal zoning may also be employed to reduce pressure and conflicts. Certain trails may be allocated to riders and others to hikers or riding may be permitted at one time and hiking at another. However, eventually it will be necessary to book in advance or pay to gain access to certain wilderness areas. Such methods are already being applied in some countries and can be expected in Canada. In areas that have deteriorated badly public access may be prohibited completely until the area has recuperated. Where other land uses, for example, wildlife preservation, have priority, access may only be permitted to organized groups with an official guide. It will be possible to maintain the quality of the wilderness and wilderness experience only if such management techniques are used and accepted. Such acceptance and support will require that the National and Historic Parks Branch expand its information and education services. More interpretive centres, park naturalists and natural history publications are required. Hopefully, other agencies, such as schools and outdoor clubs will help the public to understand the role and problems of wilderness conservation.

As the character of the wilderness, its users and problems change, there will be a need for continual research in park areas. Beginning with the basic inventory of parks it is possible that much work may be done on a contract basis using consultants and universities. Only by using current data and flexible management will the quality of the wilderness and wilderness experience be maintained in future.

SUMMARY

Increases in population, income, leisure time and mobility have led to much greater participation in outdoor recreation, including wilderness recreation. In Canada, the national parks have tried to accommodate recreation demands and other land use pressures. This has
had a detrimental effect on the area and quality of the wilderness. Land use pressures and management requirements also pose problems within park wilderness areas. To maintain the quality of wilderness and the wilderness experience in the national parks a number of measures are essential.

Following research and inventory work, wilderness areas of adequate size to fulfill their functions must be selected and their existence guaranteed by legislation and adherence to zoning. Use of land outside the parks must be considered as a means of relieving internal and external pressures on park wilderness. Within wilderness areas land use priorities must be established and flexible management evolved to maintain environmental quality and to accommodate the uses. To achieve success in developing and implementing plans and techniques greater emphasis must be placed on research and education concerning wilderness conservation and use. Trends in certain areas and other countries should serve as a warning and as a guide for those involved in maintaining the quality of the wilderness experience in Canada's National Parks in future.

FOOTNOTES

1 A case study of man's impact is: A. R. Byrne, Man and Landscape Change in the Banff National Park Area before 1911 (Studies in Land Use History and Landscape Change, National Park Series, No. 1, Calgary: The University of Calgary, 1968).


4 For Banff see: Byrne, op. cit., p. 93.


8 Byrne, op. cit.

9 Fire roads already exist in the Cascade Valley and lower Red Deer Valley, Banff Park.

10 Scace, op. cit.

11 In Banff Park, railway engine whistles can be heard up to ten miles away sometimes. In Glacier Park, trucks crossing Rogers Pass can be heard several miles away, as can the gravel extraction operations.


16 The need to manage national park forests is stressed in: D. I. Crossley, "Forest Management in National Parks" (Brief submitted to the Standing Committee on Northern Affairs and National Resources, Jasper, 1966).

17 Byrne, op. cit.

18 One study of reaction to logging is: R. C. Lucas, Visitor Reaction to Timber Harvesting in the Boundary Waters Canoe Area, U.S. Forest Service, Research Note, LS-Z, Lake States Forest Experiment
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Station, St. Paul, Minn., 1963.


22 Thorsell, (1968), op. cit., pp. 43-44.

23 Thorsell, (1968), op. cit., p. 21, notes that in Banff and Yoho National Parks there is a definite demand for improved facilities in the back-country.


26 The significance of size in defining wilderness is noted in: Wildland Research Centre, op. cit., pp. 18-19.

27 Some new national parks are being considered, for example, on the Pacific Coast and on the Prairies. More provincial wilderness areas are being established, for example, in Ontario, Polar Bear Provincial Park, a 7,000 square-mile area fronting on James Bay and Hudson Bay.

28 Many so-called provincial "wilderness areas" have been influenced by non-compatible uses, such as mining. See: "Memorandum on British Columbia's Parks Policy," Park News, 3 (2):5-8, 1967.

29 Certain recreation facilities have been provided and a ski area is being developed.

30 Whether such facilities will be regarded as adequate by recreationists is another matter.

31 Presently much of the park is inaccessible, even on foot, and there are no official back-country campsites.

32 For example in New Zealand and Poland.

33 This technique is employed in Natal and possibly elsewhere.

34 Comprehensive guides on most national parks are still not available and interpretive centres, such as have been developed in the U.S.A., are very rare.
MAN AND HIS ENVIRONMENT, THE PAST 10,000 YEARS: AN APPROACH TO PARK INTERPRETATION

B. Reeves*

The Rocky Mountain National Parks occupy a significant segment of the Canadian Rockies and consist of Waterton Lakes National Park in the south and Banff, Jasper, Yoho and Kootenay, farther north.

The parks border on three major aboriginal culture areas of North America (Kroeber, 1939): the Northern Plains, Western Sub-Artic, and the Columbia-Fraser. The Northern Plains area, located east of the Rockies and south of the Northern Coniferous Forest, is characterized by nomadic bison-hunting Plains cultures such as the Blackfoot. The adjacent area of the Western Sub-Artic is characterized by nomadic hunting-fishing Forest cultures such as the Sekani. The Upper Columbia sub-area of the Columbia-Fraser culture area to the west is characterized by semi-nomadic hunting-fishing Plateau cultures (Ray, 1939), such as the Shuswap on the Upper Columbia River, and the Kootenai on the Kootenai River system. The latter, because of geographical and historical circumstances, have a large number of Plains culture traits incorporated into their culture.

Today, most people conceive of the parks as an uninhabited

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landscape, a "living museum of nature" in which aboriginal man played little or no role. Indeed, some anthropologists (e.g. Kroeber, 1939), considered the Rocky Mountains not only as a barrier to communication between the adjacent aboriginal cultures, but as tracts largely uninhabited except for brief incursions by neighbouring tribes. This conception, in fact, reflects only the historic picture of tribal distributions, a picture that was radically modified with the introduction of the horse into aboriginal culture (Ewers, 1955). Consequently, what is true for the Historic aborigines is only partially true of their Prehistoric ancestors.

Archaeological research both in the Rocky Mountains and in the adjacent Rocky Mountain Trench is still in its infancy. Indeed, prior to 1955, when the Glenbow Foundation began its archaeological field program, little was known about the adjoining Alberta Plains. Today, some thirteen years later, through continued work by the Glenbow Foundation and since 1966, by the Department of Archaeology, The University of Calgary, the Prehistory of the Alberta Plains is coming to be more sharply defined (Wormington and Forbis 1965). The Boreal Forest is still largely an unknown area as is the Rocky Mountain Trench where Borden (1965) has conducted a general survey. The Rocky Mountain area, with the exception of Waterton Lakes National Park (Reeves, 1965, 1967), is largely unexplored. Short surveys carried out by The University of Calgary and the Glenbow Foundation in reservoir areas indicate the presence of significant archaeological resources in the area, with human occupation dating back to the recession of the last Pleistocene glaciers from the valley floors.

This work does not indicate that all Prehistoric groups were identical or that populations were evenly distributed throughout the area. Significant environmental differences influenced the nature and size of aboriginal groups. Discussion of some of the
more significant environmental variables follows.

TRANSCONTINENTAL PASSES

The transcontinental passes formed the channels of communication between the east and west slopes of the Rocky Mountains. The majority of the Canadian passes utilized by aboriginal man lie within, or directly adjacent to, the national parks.

South Kootenai Pass lies at the head of Pass Creek* (Blakiston Brook) in Waterton Lakes National Park. The pass affords the easiest and most direct route between the plains and foothills region of southern Alberta, and the Flathead and Kootenai valleys of Montana and British Columbia. Historic references (Reeves, 1965b) indicate that the South Kootenai was extensively used by the Kootenai, Nez Perce, Flathead and other Salishan groups on their bison-hunting expeditions to the plains.

In the Bow Valley area of Banff National Park are located the Kananaskis, Whitemans, Simpson and Vermillion passes. Howse Pass is located farther north in the North Saskatchewan River basin. These passes connected the foothills-plains-parkland areas of Alberta on the east, and the Columbia River system in the Rocky Mountain Trench to the west. These passes were also used by the Kootenai to travel eastern valleys,† and to trade at the forts until about 1812. At that time, the Blackfoot, who wished to maintain their supremacy and control of the fur supply forced the Kootenai to abandon these routes to the

*Original place names are used throughout. For reference current names are listed in parentheses.

† Henry (Coues, 1897) describes the driving of bison by the Kootenai at the junction of Glacier Creek and the Howse River, west of Saskatchewan Crossing in Banff National Park.
Plains. The Blackfoot themselves occasionally ventured over these passes, and the South Kootenai on raids into Kootenai territory in the Rocky Mountain Trench. The Stoney Indians, or Mountain Assiniboines, and the Shuswap are recent immigrants into the area. The Stoneys, who accompanied the fur-trade west, arrived and settled in the upper Bow Valley and North Saskatchewan in the second quarter of the nineteenth century. They hunted in the mountain valleys on the east, and occasionally made forays westward to collect nuts and berries and possibly fish on the Columbia River. Some Shuswap bands, which were primarily centred on the Shuswap Lakes in British Columbia, moved up the Columbia and settled around the Columbia Lakes c. 1840, displacing the Kootenais southward. The Shuswap occasionally travelled over the passes to hunt in the eastern valleys.

In the Jasper region, the Athabaska and Yellowhead Passes lead on the west to the Big Bend of the Columbia, and to the Thompson-Fraser River systems, respectively. Both passes provide access on the east to the Athabaska River and to the Coniferous Forest. Little is known of their use in aboriginal times, however.

GRASSLAND ENVIRONMENTS AND BISON

On the east side of the Continental Divide the amount of grassland present in the mountain valleys had a determinate effect on the composition and density of the ungulate populations that were the primary food source for aboriginal man. Waterton and Pass Creek valleys (Fig.5) are presently characterized in their lower reaches by plains-parkland vegetation which extends onto the adjacent foothills and plains. The absence of intervening physiographic and vegetational barriers allowed easy movement between the two areas by both man and bison in aboriginal times, and sizable herds of Plains bison were present in the Park and adjacent foothills until about 1860. Further, there is some evidence
Fig. 5 Waterton Lakes National Park: Archaeological Sites
(Reeves, 1967) that the present distribution of Aspen Parkland in Waterton is largely a result of the recent extermination of the bison herds. Prior to this event the grassland areas were probably considerably more extensive.

From the Bow River north, the grasslands of the mountain valleys become increasingly restricted in size. They are separated from the adjacent plains by deciduous and coniferous forest. Consequently, the ungulate populations changed both in size and composition. Although bison were still the principle food source, other mammals such as moose and sheep seem to have been more common. One of the well known grassland areas is the Kootenai Plains located just east of Banff National Park on the North Saskatchewan River.

The differential distribution of bison east of the divide would have affected the size and seasonal distribution of the aboriginal populations inhabiting the mountain valleys. In Waterton, bison were present year-round, grazing in the Alpine zones of the mountains during the summer, in the valley floors during the winter, and also grazing year-round in the adjacent foothills-plains. Consequently, the aboriginal populations could exploit large bison populations through all seasons. Because of the extensive grasslands, communal hunting techniques could be efficiently employed, thereby supplying large amounts of meat which would result in larger and more stable concentrations of human populations. Further, in Waterton the Alpine slopes are easily accessible from the valley floors, allowing year-round use of a single base camp.

The northern parks, in contrast, offered different opportunities. The aboriginal population was required to shift subsistence and settlements altitudinally, exploiting the bison on the Alpine slopes during the summer and in the valley bottoms during the winter. Because of the restricted grassland environments and distance from the plains,
more emphasis could be placed on the individual stalk and kill. As other more solitary animals were also sought, the result was smaller and more nomadic aboriginal groups than those which frequented Waterton.

Although it has not been generally recognized, the Prehistoric presence of sizeable herds of bison on the eastern slopes of the Rocky Mountains east of the divide is significant. Because they provided a large and easily accessible year-round food source for aboriginal man, larger and more stable aboriginal populations were present there than could be supported on the west slope and in the adjacent mountains and plateaux.

AQUATIC RESOURCES

Some rivers and lakes in the Rocky Mountains provided sustenance to aboriginal man. The Waterton Lakes were especially favoured with an abundant supply of native trout and whitefish. Early settlers reportedly took them by the cartload. Numerous aboriginal archaeological sites at favourite fishing localities contain netsinkers, thereby documenting the use of this resource by Prehistoric man.

CLIMATE

While snow depths are generally greater than in the adjacent Plains, the winter climate of the Rocky Mountains is generally milder. Waterton and the Kootenai Plains have especially favourable winter climates, and the latter was regarded as a favourite wintering place by the Kootenai Indians (Coues, 1897). Waterton, with its high frequency of chinooks, was particularly favourable for winter habitation by man and bison.

MINERAL RESOURCES

Certain mineral resources utilized by aboriginal man are present in the Rocky Mountains. The most important of these were cherts
chipped for use as stone tools. The adjacent glacial drift-covered plains of Alberta contain only limited amounts of suitable chert. Many flint-knapping materials were imported from elsewhere: Knife River flint from the Dakotas, obsidian from Yellowstone Park, and distinctive cherts and chalcedonies from the Rocky Mountains. Other mineral resources include pipestone from the Blue Pipestone River in Banff, and paints from the Ochre Springs on the Vermillion River in Kootenai National Park.

In summary, the Rocky Mountains offer a number of positive aspects for habitation by aboriginal man. The number of archaeological sites, over 100 in Waterton alone (Fig. 5), attests to the high frequency of occupation in Prehistoric times. These sites include winter camps, summer alpine hunting camps, bison kills, fishing stations, burials and cairns. While the environmental variables outlined above controlled to a certain extent the aboriginal cultures inhabiting the area, the cultures in turn affected their environment by the utilization and conservation of its resources. Consequently, in order to fully understand Prehistory one must also have a knowledge of the environments in which the cultures functioned.

As noted earlier, the Prehistory of the Rocky Mountains area in general, and particularly the parks north of Waterton, is very poorly known. There is no a priori reason to consider them culturally similar. Indeed, the limited data presently available, indicate some significant cultural differences between the two areas. Certainly they differ in environment and geography. Although intensive survey work in Waterton (Reeves, 1965) and salvage excavations under contract to the National and Historic Park Branch (Reeves, 1967) have yielded very significant results, there still remain many gaps in the local cultural sequence.

Paleo-environmental data are almost entirely lacking for the
Fig. 6 Cultural - Environmental Sequence in Waterton Lakes National Park
The following vegetational sequence (Fig. 6) is partially based on Hansen (1949) and Heusser (1952), and the glacial chronology (Fig. 6) is based on Richmond (1965) and Wagner (1967). The writer has also made his own observations on the latter. Finally it must be emphasized that the following sequence is highly hypothetical. It does not necessarily indicate the true nature of the major events occurring during the past 10,000 years but hopefully it does outline a cultural and environmental sequence which could be developed as a focal point for interpretation of Waterton Lakes National Park to the visiting public.

PERIOD I: BEFORE 7,000 B.C.

The mountain valleys of Waterton were last glaciated during the Pinedale Glaciation of the Wisconsin Ice Age. The Pinedale consisted of three major advances. Pinedale I glaciers flowed outside the mountain valleys, and coalesced with the Laurentide advance some eight miles outside the mountain front. The initiation of this event occurred about 23,000 B.C. The next ice advance, Pinedale II, reached the mouths of the tributary valleys, and probably lower Waterton Lake. This event terminated about 11,000 B.C. The final advance, Pinedale III, reached a position three to seven miles up valley from the Pinedale II end moraines. Complete deglaciation of the upper valleys was achieved by 7,000 B.C. Pinedale I and II deposited large masses of till and outwash which produced the characteristic topography of the lower part of the Waterton Valley. Pinedale III deposited moraines and kames up valley, and initiated the fan growth down valley and the delta development in Glacial Lake Waterton.

The lower valleys were probably colonized after Pinedale II by lodgepole pine which was replaced by a pine-spruce-fir forest. Pinedale III probably had relatively little effect on the vegetational composition of the lower valleys which, by the termination
of Pinedale III, probably contained extensive grasslands. Remnants of the Pleistocene megafauna, such as mammoth, may have been present in the Park during this period, but by the end of the period they would have been replaced by essentially modern species.

It is sometime after Pinedale II when man made his initial appearance in the area. The earliest evidence comes from two sites: DgPl-8 and DgPm-1 (The latter is located on top of Pinedale III end moraine)*. These two sites represent two archaeologically distinct cultural traditions, the Clovis-Folsom (ca. 10,000-8,000 B.C.) at DgPl-8, and the Old Cordilleran (ca. 9,000-7,000 B.C.) at DgPm-1. Elsewhere (Irwin, 1967), the Clovis-Folsom cultures are known to be Plains-adapted Big Game Hunters. Both Clovis and Folsom peoples used fluted projectile points (Fig.7). The Old Cordilleran tradition, in contrast, is characterized by a diversified hunting-gathering-fishing economic base adapted to life in the mountainous areas of the New World (Willey, 1967). Their tool kit is characterized by leafshaped Lerma points (Fig.7).

PERIOD II. 7,000-5,000 B.C.

Following the end of the Pleistocene, about 7,000 B.C., the climate became much like it is today, and the vegetational pattern probably assumed a distribution very similar to that of today. Bison probably were the dominant ungulates in the Park. The landscape saw further enlargements of alluvial fans and deltas.

Culturally the Park may once again have been characterized by the presence of both Mountain and Plains-adapted cultures. The

*Only DgPm-1 is excavated.
†Illustrated specimens in Fig. 7 are taken from the following sources. Lerma (Reeves, 1967). Clovis, Folsom, Agate Basin (Wormington, 1957) and Alberta (Forbis, 1968).
Fig. 7 Plains and Mountain Projectile Point. Types from Waterton Lakes National Park
Agate Basin and derivative complexes found at four sited (DgP-2, 4, 7, and DgPm-1) may, in this area, be characterized by primarily a foothills-mountain adaptation. Technologically, the characteristic point types are variations on a lanceolate form (Fig. 7). The Alberta culture, found at one site (DgP-7), is a Northern Plains bison hunting culture (Forbis, 1968) and it is characterized by parallel-stem points (Fig. 7).

PERIOD III: 5,000-2,500 B.C.

Around 5,000 B.C., pollen and sedimentation records from adjacent areas begin to reflect a change in the climate toward drier and possibly warmer conditions with an implied shift toward summer-dominant storms. This period, commonly known as the Altithermal, is wide-spread throughout North America and it lasted until about 2,500 B.C. Vegetational distributions probably changed considerably, with an upslope expansion of the grasslands; this condition may have resulted in a substantial increase in the bison population. The landscape itself became subject to colluvial and alluvial erosion, with increased delta development and incision of alluvial fans.

Culturally, the period may again be characterized by the presence of both Plains and Mountain cultures. The Bitterroot culture, probably the earliest, is primarily a Foothills-Mountain culture, and it is characterized technologically by side-notched atlatl points (Fig. 8)*. The other, the Oxbow-McKean complexes are primarily Northern Plains-Foothills adapted cultures, characterized by basal and side-notched points (Fig. 8) and probably were later in time than the Bitterroot culture. Both cultural groups hunted bison in the Park.

*Specimens illustrated in Fig. 8 are from archaeological sites in or adjacent to the Park.
PERIOD IV: 2,500 B.C. - 600 A.D.

By 2,500 B.C., the climate and vegetation assumed their present distribution. Around 1,000 B.C. a trend toward stormier winters and cloudy cool summers began, culminating in the reformation of glaciers inside the cirques. This is known as the Temple Lake advance. The climatic shift probably resulted in an increased rate of alluviation and delta growth, an altitudinal despression of the vegetational zones, and a decrease in the areal extent of the grasslands. Bison, however, were still present in large numbers.

Culturally, the Park is characterized by two temporally related cultures, the Hanna (Fig. 8) (ca. 2,500-1,000 B.C.) which appears to have developed out of the McKean-Oxbow culture, and the Blue Slate Canyon phase (ca. 1,000 B.C.-600 A.D.) which is a variant of the Pelican Lake culture, and which is characterized by barbed, corner-notched points (Fig. 8). The latter is, at the present, archaeologically the best-known culture in the Park (Reeves, 1967, 1968). It is a distinctly mountain-adapted culture which exploited both ungulate and aquatic resources. The Blue Slate Canyon people hunted bison by communal drives in the valley floors in the fall and winter, and in the Alpine zone in the summer. They also netted and speared fish in the Upper Waterton Lake. Their primary cultural relationships lie to the mountainous area south in Montana where they secured large quantities of a distinctive chert. They seem to have had relatively little contact with adjacent Plains and Mountain cultures.

PERIOD V: 600 A.D. - 1875 A.D.

The climate during this final period is essentially modern, but it is marked by small oscillations such as the one which produced
Fig. 8 Plains and Mountain Projectile Point. Types from Waterton Lakes National Park.
the Gannet Peak ice advance in adjacent Glacier National Park. It is doubtful that glaciers re-formed in Waterton at the time. Vegetation and ungulate distributions were essentially similar to those observed by the early white explorers in the 1850's and the 1870's.

The aboriginal groups are characterized by small side-notched arrow points (Fig. 8) and pottery. Cultures of both Plains and Mountain affiliations seem to have been present. The close of the period is marked by the introduction of the horse and guns, and by the eventual abandonment of the area by the aboriginal populations.

Some of the biotic populations at the close of the period were undergoing rapid change. Between the visits of Blakiston in 1858, and the International Boundary Commission in 1874, great tracts of forest in the Belly, Waterton and Pass Creek valleys had been destroyed by fire. The bison herds in the Park were totally destroyed by 1874, with a consequent invasion of grassland areas by Aspen Parkland, and a readjustment of the range of other ungulates. Also, the removal of the Indian population resulted not only in changes to their cultural landscape such as overgrown trails and campsites, but in a decrease in hunting and fishing pressure. This was soon compensated for by the predations of white settlement which, by 1900, were exerting new and detrimental pressures on the environment. At present, the environment of Waterton Park is moving toward a new state of dynamic equilibrium which, because of the former presence of aboriginal man and bison, had never existed since the area began to evolve some 10,000 years ago.

Finally, the above outline of the major cultural-environmental changes over the past 10,000 years indicates the presence of both Plains and Mountain-related bison-hunting cultures throughout much of post-glacial time in Waterton. Consequently, the South Kootenai Pass and the adjacent plains have played an important role in determining
the primary cultural affiliations of cultures resident in the Park. The magnitude to which these variables and environmental changes affected the inhabitants will only be revealed through a long program of archaeological and Paleo-environmental research.

The social benefits to be derived through interpretation of these events to the visiting public can be of considerable benefit in maintenance of our national parks as they are presently conceived. A large segment of the visiting public feel little emotional relationship with the parks. They tend to view the landscape as an unrelated collection of mountains, glaciers, flowers, lakes, and animals. By re-introducing the missing variable—aboriginal man—back into the landscape, one has a focal point of immediate interest to the visitor from which to interpret the Parks' present environment.

Man, regardless of his formal education is eternally fascinated with Prehistory, to which he can easily relate both emotionally and intellectually. By reconstructing for the visitor both the Prehistory and Paleo-environments of the parks, the visitor can begin to view the present environment as a dynamic system in which earlier man once lived and died, the modern form of which is only the result of processes which began some 10,000 years ago.

The worth of such an interpretive program would be the formation of a new and valuable emotional and intellectual attitude toward the preservation of national parks. However, archaeological and Paleo-environmental resources cannot be conserved by protection from natural and human destruction, but must be scientifically investigated as they are continually subject to natural internal processes of destruction.
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EDUCATION AND NATIONAL PARKS
Douglas H. Pimlott*

The values, purposes and objectives of national parks are complex. One part of this complexity is their value and the role they play, or should play, in the education of the citizens of a country and, indeed, of the world. The educational role is complex, too, because it has to do with a great many aspects of our lives, from a more satisfied feeling at the end of a day in which we have engaged in some recreational pursuit in a park, to highly critical matters which pertain to the survival of human society.

Man has had a long evolutionary history during which the forces of natural selection produced an animal that is better adapted to the quiet, wild places of the world than to the 5 o'clock traffic jam of Megalopolis. The innate need for escape from cities to more natural environments is nowhere better illustrated than in the rush of people to leave our cities whenever they are released from the compulsion of earning a living for a few days. Civilization and our cultural adaptations to it have introduced many problems and it is increasingly difficult for man to find

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the satisfaction he seeks. The stark barrenness of life in ghettos of steel, stone and pavement, the spurious claims of Madison Avenue that satisfaction comes only from the thrust and noise provided by the dissipation of large amounts of energy, the failure of our educational systems to help us to achieve an understanding of the environments in which we evolved, all stand in the way of our being able to satisfy the innate need for experiences in natural environments when we get beyond the fringes of suburbia. We require the balm of nature to make us a whole being, but the overwhelming demands and claims of a gadget-oriented culture are depriving us of our ability to commune whenever we do make our periodic contacts with it.

In addition to the individual need of men to maintain a contact with nature through access to a wide diversity of environments, there is also the matter to which I referred earlier as the survival of human society. I am one of an increasing number of ecologists (Dasmann, 1963, 1965; Ilits, 1966; Vogt, 1948, 1960) who believe that there is an absolute, immediate need to recognize that technology has not freed us and will not free us in the future from our subservience to natural laws, or from our dependence on natural functions. Ecological repercussions to the use of pesticides have demonstrated this basic truth very dramatically—if we do not recognize it soon, though we may survive as an animal species we shall not as cultural, civilized Man.

The success of our species will depend not on the increasing sophistication of technology but on our society living in harmony, part of a complete, holistic, environment. Almost the entire emphasis in our daily life is in the other direction. As Dasmann (1963) points out, "Society has attached little blame to the person who ruins the land, so long as he uses his money in socially acceptable ways."

To sum up, I believe that the success of human society will be greatly influenced by its progress in these two areas: developing the
capacity of understanding man as a component of nature and concomitantly ordering our actions so that we live in harmony and in balance with it.

Finally, there is a need to give more thoughtful consideration to the matter of the survival of other organisms, both plant and animal. Again there are anthropocentric values associated with such survival, as many authors (Allen, 1966; Cowan, 1966; Falls, 1967; Iltis, 1967) bring out in pointing to the potential scientific values of maintaining the variety of organisms that exist in nature. There are moral issues involved, too, and these are being raised more and more when the preservation of species is discussed.

I do not think of the educational aspects of national parks as something that have little or no bearing on these affairs of society. Rather, I think of the educational and scientific value of undisturbed environments, such as national parks, as vital to our understanding of the environment and of our place in it. The objective, then, of this paper is to explore aspects of the educational role and values of national parks that are of importance to society. I will do this in the light of policy, purposes and objectives which have been stated as the guides to programs in Canadian National Parks.

Because of the incomplete nature of the system of national parks in our country, much of what I say should, logically, apply to provincial parks as well. Because of the lack of understanding and regard for preservation of natural areas that exists in Canada, unfortunately, it does not. That topic has been discussed in other papers (Bodsworth, 1966, 1967; Cowan, 1965; Edwards, 1963; Pimlott, 1965).

EDUCATIONAL VALUE OF NATIONAL PARKS

Although this heading refers to national parks it would be difficult to claim that the educational values of a national park are different from the values that may exist in a wide variety of other areas
where diverse natural environments are maintained or preserved.

If available for study, the marsh that exists on a private estate may have a greater educational value than a national park that was not selected because of its natural features but became a park as a result of a jurisdictional accident of a by-gone age.

A system of national parks that contained a wide variety of natural features, physiographical, geological and ecological would be of great educational and scientific value to the nation. Unfortunately, for reasons which I will not discuss here, our Canadian system falls far short of an optimum one. This is true in terms of distribution of units, of size and of the types of areas that are included in it.

The term "Living Monument" is being used more and more to describe one of the important functions of natural areas that are preserved from exploitation. It is an apt term because just as historical museums demonstrate aspects of the character of a nation in previous eras, so Living Museums give historical glimpses of the land as it existed when it was first seen by pioneers. They show the character of the country as it was reflected in the flora, fauna and landscapes of an earlier time. In referring to these values, the late Howard Zahniser (1957), then executive director of the Wilderness Society, expressed it this way:

There are monumental or historical values of the wilderness also, values which are closely related both to educational and recreational values. It perpetuates on our continent not only the scene of the pioneering activities of the first white men in this hemisphere but also a still more ancient scene. The areas preserved are monuments to the pioneer's conquests, but they also are samples of the natural world without the influence of modern man. They have deep values in the continuing opportunity they afford to relive the lives of ancestors, and thus, with also the anticipation of posterity's similar interests, to participate in the immortality of the generation.

But as Living Museums, they serve functions other than simply helping us to understand the origin of elements of our society and culture. Of equal or greater importance is that they provide the
opportunity to study the myriad of components which comprise the variety and diversity of natural environments.

The opportunity of studying a number of the original biological communities which existed in Canada one hundred years ago is becoming rare. The impact of our use of land and of the resources produced on it tends to almost entirely eliminate some communities. The agricultural use of land has, for example, eliminated virtually all of the deciduous climax forests of southwestern Ontario. This was the only place in Canada where many units of the Carolinean flora occurred. Unfortunately, the only national park in this area, Point Pelee, is too small and too intensively used for recreational purposes to preserve a worthwhile segment of this important plant association.

Agriculture, grain production and grazing, has had a similar impact on the prairie and relatively few areas can be found where remnants of the various biological communities of the prairie can be studied. The educational and scientific value of a Prairie National Park would be very great.

Although forestry operations do not appear to be as drastic modifiers of the environment as is the use of land for agricultural purposes, they do have a great tendency to reduce the diversity of biological communities. The effect is to remove associations that have persisted for a long time, either as an edaphic or as climatic climaxes. The secondary stages of succession, or the forests that result from planting operations, are usually very different in species composition, and in many other features of the plant and animal communities, than those which they replaced. Because of this, representative areas of undisturbed forests are of importance for education, for science and for posterity. (The need to maintain variety and diversity in natural communities is one that can hardly be overemphasized; it extends far beyond the need to maintain occasional samples in parks. In his book,
It is worthy of emphasis that it is the climax communities that are in most desperate need of preservation in Canada and in the world today. They constitute a scarce but vital resource where they occur in our national parks. They should be thought of in this light—not as decadent, insect-ridden stands (terms often used to describe them) that pose a threat to adjacent areas of commercial forests.

In addition to their value as areas where plants and animal communities can be studied, natural areas, including national parks, can be vital areas where natural functions and processes can be seen almost, as in the case of time-lapse photography, as they are happening.

An example of this from my own experience occurred on a camping trip to two small provincial parks, Outlet and Sand Banks, in Ontario. The two parks, which are only a mile or two apart, are on sand dune formations in Prince Edward County on the shore of Lake Ontario. As an ecologist, I knew of the great contribution to our understanding of succession in biological communities that had been made early in this century by ecologists from the University of Chicago. Thoughts of Clements and his associates were stimulated by their observations (e.g., Clements, 1916) of the plant communities on the sand dunes along the shores of Lake Michigan.

But I never had the opportunity to study sand dune areas before I came to Ontario. The days at Outlet and Sand Banks Parks were a rich, enlightening, educational experience. The clear record of the succession of plants that was evident between the first stems of the pioneering grasses of the beach, the poplars of the foredunes and the climax deciduous forest, only a half-mile away on the afterdune, was a joy to trace. So, too, was the formation and build-up of soil from the sterile,
organic-free sands of the foredune to the well-developed soil horizons of the climax forest; all stages could be seen in the cuts of the roads that traversed the area. In my mind's eye I could envisage the joy of discovery that Frederick Clements knew as he gradually sorted out the vastly more complex series that occurred in the areas he studied. I remembered, too, that by far the greater proportion of sand dunes of the Great Lakes have been levelled and now serve as sites for steel mills, cottages, or parking lots. I reflected then, as I do now, on the value of parks and the need to maintain the integrity of their communities for educational purposes.

Sand Banks Park is not a carbon copy of Outlet Park. There men, through cutting the cedar for fenceposts and telephone poles and by grazing their livestock, had unleashed the forces of the wind, which centuries before had built a ridge of high dunes. Over much of the area the sand is now on the move, forming hills of minute drifting particles. In some parts of the Park the sand was being stabilized, at least for a time, by the plants; elsewhere the sand could be seen as it broke free of the plants and through cooperation with the wind formed the typical "blowout" patterns where once again the face of the land would undergo rapid change. An evening's walk across the spit of land on which Sand Banks Park is located shows in miniature, but in vivid detail, the geological force of the winds that have formed so many of the landscapes of the world.

I have since roamed over sand dune country in areas of Great Britain and in other areas of North America but I still prize the memories of that joy of discovery as some of the processes and ways of nature unfolded for me in Sand Banks Park. I had read about these phenomena a hundred times before, the impressions created were always fleeting and transient until they were fixed for a lifetime in a relatively short visit to two small, but unique, parks.
The most important educational value of national parks is perhaps related to the "joy of discovery" that can occur in so many different ways and at so many different levels of comprehension. The educational value is, I think, that when it occurs it creates an atmosphere of thought that brings the person closer to an awareness of man as part of nature—makes that person more ready to face the problems and perhaps help with the solution of problems associated with our use of the environment.

I refer, in another section, to my fear of superficiality in our approach to education in parks. Superficial experiences can never create the kind of experience to which I refer; although experiences may be simple they must also be profound or they blend into the great gray area of everyday experiences and leave little to inspire or to remember.

There is an important aspect of the educational values of parks and other types of wilderness areas that relates only indirectly to the biological communities or to the other aspects of the environment. Simply stated, I refer to the educational value of wilderness travel and living through which we gain the understanding that we are at least partially capable of existing on our own resources. Zahniser (1957) said it very well:

Paradoxically, the wilderness which thus teaches modern man his dependence on the whole community of life can also teach him a needed personal independence—an ability to care for himself, to carry his own burdens, to provide his own fuel, prepare his own food, furnish his own shelter, make his own bed and—perhaps most remarkable of all—transport himself by walking.

With these lessons come also the understanding that physical, psychic and spiritual human needs are such that wilderness recreation should always be available, and, in fact, should be enjoyed to a much greater extent than at present.

Thus recreational and educational values of the wilderness merge.

In my research for this paper I found that, in describing the values of national parks, not many writers have mentioned educational
aspects such as those that I have discussed. In most cases the reference has been to personal or spiritual values that are strengthened or gained by personal contact with areas of special character. It was to this aspect of contact with natural areas that reference was made in the introductory remarks. Such experiences have great educational value too, though they are difficult to define or categorize.

In referring to this aspect of natural areas, a folder of the Nature Conservancy states:

Natural areas are requisite to our way of life, for it is to nature that man frequently turns for inspiration. . . . They will forever be an inspiration to all who behold them. They will provide opportunity for reflection and spiritual enrichment, for escape from crowds and confusion, and for simple enjoyment of the beauties of the natural world.

Of this Zahniser (1957) said:

We deeply need the humility to know ourselves as the dependent members of a great community of life, and this indeed can be one of the spiritual benefits of a wilderness experience. Without the gadgets, the invention, the contrivances whereby men have seemed to establish among themselves an independence of nature, without these distractions, to know the wilderness is to know a profound humility, to recognize one's littleness, to sense dependence and interdependence, and responsibility.

When all the cost-benefit analyses have been computed, when all the arguments have been argued about the uses of parks, inevitably the real values of parks come back to the simple things--the opportunity to observe, to study and to learn about ourselves and our environment, and to feel the "simple enjoyment of the beauties of the natural world."

This is the essence. Therein lies the real value of national parks.

THE OFFICIAL VIEW OF EDUCATION IN NATIONAL PARKS

That the legislators conceived that the national parks of Canada should have a direct educational function is indicated by Section 4 of the National Parks Act (1930) which states: "The parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment . . ."
and such parks shall be maintained and made use of so as to leave them
unimpaired for the enjoyment of future generations."

The statement describing the general purposes of national parks
is a very general one. Nowhere in the Act or in the Regulations is there
defined in more specific terms the nature of the educational role of
the parks or the way this role is to be achieved. This lack of
direction by the legislators reflected a general feeling of the time
that parks were primarily "pleasuring-grounds" and not places that
contained much of an element of the classroom. At any rate, for almost
thirty years (1930-1960) there was little specific effort to educate the
public who visited national parks in Canada. It is, in fact, only in
this decade that permanent naturalists have been on the staff of even
the larger parks such as Banff and Jasper.

The statement of National Parks Policy (Laing, 1964) was
developed to give a clearer conception of the purposes of parks and to
state specific policies which would be followed to achieve their
purposes. The educational role of national parks is considered in
Section 8 (Education and Interpretation) of the policy statement. Since
the section is germane to this discussion, and relatively brief, it
is reproduced in full in the following sections:

As national parks are 'dedicated to the people of Canada for
their benefit, education and enjoyment' appropriate provision to
carry out their educational function is required. What then is the
intention of the National Parks Act concerning this statutory
responsibility for 'education'? What kind of education is meant and
how should this function be carried out?

Basically national parks are preserved so that the various
natural phenomena may be observed, studied and enjoyed by present
and future generations. It is assumed that such observation, study
and enjoyment is the kind of education and understanding the
legislators had in mind.

Since the Act stipulates that national parks are 'to be
maintained and made use of so as to leave them unimpaired for the
enjoyment of future generations' they must be preserved as far as
possible in their natural state protected from all actions which
might result in permanent impairment. Parks are maintained as
nature sanctuaries so that the flora, the fauna and the geological
features of each area may remain in perpetuity as outdoor museums of living nature for the education of the Canadian people. Thus the 'education' specified in the Act as one of the purposes of parks refers to education in the evolution of nature as exemplified in the national parks.

Interpretative services and qualified naturalists are therefore required to assist the public to know and appreciate the varied aspects of the natural scene. Methods of encouraging and helping park visitors to know and enjoy the natural features should include information on specific locations where various natural phenomena may be seen and studied. Details of the wonders of nature in each park should be made available to visitors through publications for self-guided tours, and directly by trained naturalists. A system of nature trails with various species identified on them is essential, with trail side exhibits where convenient. Graphic displays, illustrated note sheets and pictorial panels in visitors centres as visual aids should augment this material. In campgrounds, museums and other buildings, naturalists should be equipped to give interesting nature talks illustrated by motion picture and coloured slides.

Judicious encouragement and assistance in understanding the cycle of nature will undoubtedly enrich the experience of all park visitors. In addition, methods of mass communication should be used to acquaint Canadians generally with the purposes of national parks, their uses and the benefits which may be derived from appropriate use.

Only when Canadians become fully educated concerning the proper functions of their national parks will they have an adequate understanding of this valuable part of their national heritage. Through such understanding there will be developed a well-informed body of public opinion to give strong support to the long-term objectives of the National Parks Act.

POLICY

1. Educating the public in the purposes of national parks and how to use, know and enjoy them is recognized as one of our basic purposes.

2. Interpretative services and qualified naturalists are essential to encourage and assist the public to understand, appreciate and enjoy all forms of nature which are preserved in these sanctuaries

3. Education and interpretation will involve planned and coordinated use of various aids, such as publications, photographs, special structures, etc., and the assistance of wardens and others.

4. Museums where desirable should exemplify and illustrate natural history and historical values directly related to the park and its purposes. Museums should be provided and administered by the Department."

The policy statement makes it clear that the educational role of national parks is interpreted in a relatively narrow sense by the National and Historic Parks Branch. In Paragraph 2 of the statement, it
is brought out that the educational role is to be achieved through observation, study and enjoyment. This is a broad statement that could cover a wide variety of educational avenues, however, the first item of policy refers to "educating the public in the purposes of national parks and how to use, know and enjoy them . . ." This, and a talk by G. H. Dempster (1963), implies that the educational role of the parks is directed almost entirely toward the visiting public so that the visitors "will be provided a fuller and more enjoyable experience and, as well, will develop a deeper appreciation of the purpose of National Parks."

THE NATURE OF EDUCATIONAL PROGRAMS IN NATIONAL PARKS

The policy objectives on education and interpretation are reasonable and it is difficult to subject them to serious criticism. A more complete understanding of the natural history and ecology of a park can certainly contribute to a more meaningful experience in a park and to "a deeper appreciation of national parks." An important question is, however, should the educational role of parks (provincial, as well as national) not have broader objectives than simply to contribute to the recreational value of the experience? Should their educational role not also be related in simple ways to elucidating fundamental relationships that exist in nature? At a time when the rapid increase of human populations and technological "progress" are pushing thousands of species of plants and hundreds of species of animals to the verge of extinction; at a time when there is a fanatical tendency to simplify the environments of the world from a myriad of species to a few (by planting thousands of acres to a single species, by filling potholes and marshes, by removing fence rows, by stripping roadsides of trees and shrubs, by the over-grazing of vast areas by livestock) should education in parks not relate, at least in simple direct ways, the environment of the park to the
total environment?

Nature Interpretation in Parks

The means that are in use in Canadian National Parks to achieve the educational objectives are the same ones used in the national parks of the United States, in some provincial parks (British Columbia and Ontario) and in some state parks in the United States. The methods of presentation were developed in U.S. National Parks and have gradually been adapted throughout the continent. The first Nature Interpretation Programs, as they are commonly called, in parks in Canada began in provincial parks in Ontario in 1944. Some details of its establishment are given in a recent publication by the Ontario Department of Lands and Forest, *Renewing Nature's Wealth* (Lambert and Pross, 1967).

The interpretation of nature in U.S. National Parks is "planned to concern itself more with the exceptional features" (Wirth, 1962). According to Wirth, the origin of the philosophy goes back almost fifty years to John C. Merriam, who stated:

> At any place of great wonders it is easy to pick out a large number of things any or all of which may be interesting to the public. But the objective of this particular work has been conceived as relating to the exceptional opportunities which the parks present. It is, therefore, important to give assurance that a brief period which may be at the visitor's disposal can be in part devoted to the greatest available features.

> I can understand the logic of the argument but it leaves me with great fears of the danger of superficiality. The philosophy lends itself to the crash-course training of part-time naturalists who memorize a few salient facts, which they relate at campfire talks and then follow with a plethora of "misfacts" during the question period after the talks; it lends itself to the synchronized slide projector-tape recorder shows at visitor centres that start automatically on the hour and half-hour, run for exactly fourteen minutes, and give only superficial impressions of the area. What is available for the person who has more
than an hour or a day to spend? What happens to the boy who has been "turned-on," as Edwards (1965) refers to it, and comes back next year really wanting to learn what makes things tick? What would happen to our museums and art galleries if their programs and their exhibits did not range from the simple to the profound?

R. Y. (York) Edwards, who inaugurated the interpretation program in British Columbia's parks in 1957 perhaps has given more thought than any other Canadian to the question of nature interpretation in parks. In a talk at the Parks Branch (B.C.) Training School, he suggested (Edwards, 1965) that interpretation is a combination of at least six services put together in different amounts. He said the services are information, guiding, educational, entertaining, propaganda and inspirational. Because of the depth of his experience in educating people in parks through interpretation, I will let his words tell what he considers interpretation to be all about:

I have said that interpretation is a guiding service. One of our major jobs is to tell people where to go in the parks to do the things they want to do. Sometimes we actually lead the way to things of interest on conducted walks.

I have said that interpretation is an information service. We answer questions and we give information that we are not asked for.

I have said that interpretation is an educational service. We avoid acting like teachers in classrooms, but one of our most popular tasks is using pleasant methods to improve people's knowledge of the parks. Speaking generally, the more people know about parks, the more they want to know, and many people get their holiday "kicks" from collecting understandings of what makes nature tick. We do not aim at educating deeply. We aim only at opening the doors in people's minds so they will go elsewhere to fill up the space inside. We do this with nature house exhibits, with outdoor signs, with nature trails, with guided walks, and with evening slide shows.

I have said that interpretation is entertaining. It has to be. We want people to come to us, and if what we had to offer was not entertaining, they would not come. Fortunately, most people find that interesting things are entertaining things. For obvious reasons, we avoid many entertaining approaches because they do not help people understand parks. We could pack people in using bubble dancers, or mickey mouse cartoons, or free feature movies; but our job is not to pack people in, it is to help people get more enjoyment out of their parks. The entertainment factor must not run away with the main task to be done.
I have said that interpretation is a propaganda service. We know that by helping people understand nature, and hence understand parks, that these people take better care of nature, and so of parks. We reduce vandalism, and some things that we tell people are purposely aimed at reducing vandalism. We also, quite openly, get people to stop littering parks with garbage, to reduce wear on parks by walking on trails and roads, to reduce dangers in parks as from bears or getting lost; and unavoidably we are telling a conservation story that people take home with them to use everywhere, not just in parks.

I have said that interpretation is an inspirational service. The extent to which we inspire people is the real measure of our success. I would rather inspire one person than bore a thousand, or than merely entertain a hundred. This most important task is the hardest task of all. One doesn't inspire by formula, one does it with infectious enthusiasm, or by firing imaginations with the spectacular, the beautiful, the sheer delight of new understanding. Some people do this better than others. Really, the subject matter has little to do with it; it's more a matter of how it is done. I would expect a really good interpreter to be inspiring if he were talking about a drop of water. This inspirational aspect of interpretation not only changes people's lives in wonderful ways, it has a major influence on the future of parks. People inspired about wild nature, so inspired about wild parks, are the people who want parks badly enough to defend them when they need defending. Interpretation builds up a loyal following of these park users. The most successful park systems in the world have a large body of inspired supporters. Interpretation has done much of the inspiring.

I suppose that park interpretation or nature interpretation explained in its simplest terms, is this: It is opening the eyes of people; it is sharpening the noses of people; it is tuning the ears of people; it is sensitizing the touch of people. We each have a number of antennae out to pick up signals from our surroundings, our eyes to pick up light, our ears to pick up sound, our noses to pick up odours, our skin to pick up touch signals. These wonderful instruments are useless unless their signals are received. Most of us do not receive very much. The job of interpretation is to open the minds of people so that they can receive--on the world's best receiver, the human brain--the interesting signals that parks are constantly sending.

The purpose of interpretation is to help people enjoy their parks. I did not say its purpose is to help people enjoy themselves in parks. This can be quite another matter and may involve all sorts of activities best carried out elsewhere. The difference is very important.

So while entertaining, we give directions, and hand out information, and educate a bit, and even spread a little beneficial propaganda, and if we do it right we will inspire a few people so that the park becomes a special place to them, and their lives will never be quite the same again.

This is the aim of interpretation in the parks of British Columbia. We try our best to achieve this aim. If we never quite make it, we know that we are getting some results, for we can see them every summer as we watch people in our parks.
If all nature interpretation programs in parks were based on such a thoughtful philosophical background and on such a sound approach, that aspect of their contribution to the education of Canadians could not be subjected to criticism.

Broader Aspects of Nature Education

The Metropolitan Toronto and Region Conservation Authority (M.T.R.C.A.) is one of Canada's most dynamic public conservation organizations. It is one of the largest, and undoubtedly the richest of the Conservation Authorities in the network of thirty-eight that has been developed under Ontario's Conservation Authorities Act.

The Conservation Authority system had a very practical beginning. It was to be a system of flood control agencies with the simple purpose of attempting to alleviate property damage and to save human lives. It turned out that it was impossible for the Authorities, and particularly M.T.R.C.A. which now has close to 2,000,000 people within its boundaries, to continue to be solely flood-control agencies. They were acquiring some of the finest valley lands in their areas, lands which, although dangerous places for human dwellings, were ideal for public recreation. Virtually overnight M.T.R.C.A. was catapulted into being the principal provider of recreational land for the mass of humanity in the Toronto area.

The "Authority" could have stopped with the provision of recreational lands (officially called Conservation Areas beyond the boundaries of Toronto and Parks within) as far as the public was concerned, but it did not. It went on to develop a very fine historical monument, Black Creek Pioneer Village, and, most significant of all, the Albion Hills Conservation School on the Albion Hills Conservation Area. The Conservation School has a full-time teaching staff and is operated the year around. Each week during the school year it takes two classes
(mainly Grades 9 and 10) of students from schools within the boundaries of the Authority. The young people and their teachers live at the school for the week and are in the field on their projects every day, rain or shine. The outdoors is the classroom and the students have vital experiences, have important doors opened in the understanding of natural functions and laws.

During the summer vacation period the school continues to operate and its sessions are attended by teachers, by housewives, by leaders of youth groups, and by organized youth groups such as the Resource Rangers, which are sponsored by the Ontario Forestry Association.

The nature education program will be expanded this year to include single days afield for still other classes of public school students. In addition to these activities of the Conservation School, the Authority offers a diverse nature program for people of all ages. These range from general nature tours to soil and forestry study sessions, to bird-watching expeditions and to early-morning hikes to study glacial formations and other geological phenomena.

I have gone into considerable detail on the education programs of the M.T.R.C.A. because I believe that the diversity and depth of its programs raise questions about the adequacy of education programs in national and provincial parks. Should there not be some such total educational relationship between provincial and national parks and citizens of the province and of the country?

In the light of questions that have been raised earlier about the ecological problems that society is facing, is it enough to interpret the statutory responsibility of the National Parks Act simply in terms of nature interpretation programs, that are centred on the interest of casual visitors to parks?
An aspect of the National Parks Policy statement that warrants re-evaluation is the policy on research. The attitude on this subject suggests that there has been inadequate consideration of the relationship between education and research. The statements on research which apply are the first two in Section 7 (Research and National Utility Installations).

1. Scientific research for park purposes, such as management of the flora and fauna of the parks and the provision of data for park interpretation, is considered as integral part of park operations.

2. No research, other than for park purposes, should be carried on in a park if suitable areas for its conduct can be found elsewhere. If a suitable area cannot be found elsewhere and the information or service is of national importance it should be accepted only if its importance outweighs the resulting reduction in park values. In any case the impairment and effect on the park is to be kept to an absolute minimum.

The attitude toward research is negative except when the research has a utilitarian value as far as the park is concerned. The implication in the second point of policy seems to be that research per se will result in the reduction of park values. No distinction is made between research that results in impairment and that which does not. In a statement on national parks prepared by the Canadian Audubon Society (1966), it was suggested that research that does not require "the manipulation of environment or of animal populations should be considered as one of the normal functions of national parks."

The policy in the U.S. National Parks system seems to be much more positive for, according to Eichhorn (1966), "They [The Parks Service] encourage scientists to come to the parks to study. The use of parks by scholars leads to greater enjoyment for all visitors."

It is very difficult to draw sharp lines between research and education--between research that will be of value in managing the flora and fauna and research that will not--between research that will provide
data for nature interpretation and research that will not. In addition, education and research are inextricably interwoven and many scientific values have educational values as well.

Areas that are even relatively undisturbed by human use, particularly by industrial activity, are becoming hard to find in Canada and it is logical that the policy should be as the Canadian Audubon Society suggests, positively, not negatively, stated.

The Policy statement refers to national parks as nature sanctuaries. If reasonable zoning policies are developed, the larger parks, particularly, will have considerable value as ecological standards, or norms, for comparison of conditions between modified and unmodified environments. In an article, *The Importance of Wilderness to Science*, Falls (1967) discusses this subject in considerable detail.

However, the negative attitude toward research evidence by the Policy statement warrants sympathetic understanding. In past years, when a virtual policy vacuum existed in the government with respect to national parks, many conflicts of purpose existed. During this period a number of departments of government established research facilities in national parks because it was the simple way to acquire land without having to negotiate with a provincial government. Examples of unrelated, incongruous research establishments are the National Research Council's Cosmic Ray Station and the Department of Public Work's Soil Laboratory in Banff, the Department of Agriculture's Potato Farm in Fundy and the Department of Forestry's Experimental Station in Riding Mountain. With such anomalies scattered throughout the national parks it is not surprising that the pendulum is swinging so far in the opposite direction.

Therefore, the policy on research should be re-evaluated and re-defined in much greater detail. It is of importance both to science and to education that this is done.
IN SUMMATION

I have raised many more questions than I have answered. The reason is not difficult to state: I do not know the answers.

I know that national parks cannot be all things to all people; I feel, however, that their influence on education—the understanding of the environment and of our place and role in it—should go beyond simply educating for better satisfaction in recreation. That should be part of the role of education; it should not be the only one, nor the dominant one.

REFERENCES


The Outdoor Recreation Resources Review Commission of the United States, during several years of study ending in 1962, took a long, hard look at the question of demand for outdoor recreation among the American people. In forecasting the future they accepted the predictions that the United States population would grow to around 350 million by the year 2000, that three-quarters of these people would live in metropolitan areas, and that the proportion of young, active people would increase. Therefore, they expected an increase in wealth, a great increase in leisure, and a marked increase in individual mobility. Consequently, they expected not only a doubling in demand for outdoor recreation to match the doubling in population from 1960 to 2000 A.D., but a far greater increase in demand. They called for a corresponding increase and improvement of areas suitable for outdoor recreation in order to accommodate this demand. Considering the task that they set out to do, such predictions were entirely necessary. But, such predictions can also be misleading.

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The phrase "if present trends continue" covers a great deal of speculation and usually of hope. Commonly it precedes an analysis of one set of trends, affecting one aspect of man's activities in the biosphere, and assumes that those influences that have not been taken into account including interactions within the biosphere will not upset the workings of those forces that are being analysed. During the few months when I was uncomfortably aware of the need to write this paper a number of things happened. For example, the United States presidential campaign brought so many unpredictable occurrences in its wake, culminating in the assassination of Senator Kennedy, that I do not care to think what may happen before election day arrives. France, presumed to be the most stable of European countries, was thrown into anarchy and then quite miraculously pulled back from the edge of revolution by a man whom almost all of the political forecasters had written off. The United States drifted uncomfortably close to a condition of lawlessness. Wars flared up and died down, but somewhere wars always continued. India and a few other developing nations had a good crop year and raised the hope among some analysts that the population and food crisis could be averted, even though few of the major programs needed to bring this about had been undertaken.

I could make a convincing case, but others have done it for me that "if present trends continue" the world will move steadily toward the condition that the Paddock's describe as Famine--1975. If present trends continue we may see an increasing drift toward anarchy, with breakdowns of growing severity in the world technological network on which we all depend. If present trends continue we will fight many wars in many places for dubious purposes. If our population growth goes on to the 300, 350, or 400 million mark in the United States, and we continue our obvious inability to cope with the problems of massed millions in our metropolitan centres we may well move more and more into
the ways of life that John Calhoun has described as a "behavioural sink" in his studies of rat populations\(^3\)--perhaps even a polluted, poisoned behavioural sink jammed with immovable motor vehicles on half-completed freeways.

I wish that I had the same crystal ball as those who see wealth, leisure, and well-being for ever growing numbers of Americans. My crystal ball is cracked and cloudy, but what I see in it scares me. I do not believe we can accept the prediction of continuing population growth, more leisure, ever-growing demand for outdoor recreation, because I believe that such growth cannot continue to be accommodated within our existing political, economic, and social system. I do believe we must take steps to arrest that growth, and that some of those steps must be taken by those involved in the planning for national parks and outdoor recreation.

Right now in the United States our national parks are proving inadequate to cope with the demand for outdoor recreation. Many parks are crowded. Some areas of some parks have degenerated into conditions approaching those of a rural slum.\(^4\) Pressures exist to yield to mass recreation demands, to develop more and better tourist facilities within the parks. Development is still a magic word in America, and development within national parks seems to hold promise of bringing more money to local communities. To proceed into the future we must answer such key questions as "What are the demands for outdoor recreation?" and "What are national parks for?"

The national parks of the United States started their existence on two feet going in different directions—the recreation foot and the preservation foot. That they have survived this long indicates only that until recently the recreation foot has been dragging. The population the leisure, and the wealth needed to create a major demand for national park recreation was not available. For most of their history
the national parks were for the few who knew and cared. The preservation of those natural qualities that the parks were designed to protect could proceed without real opposition. Canada is still, with some exceptions, in this fortunate state that the United States once occupied. But the border is no barrier. The same people who crowd the United States National Parks are now heading northward in growing numbers. Expo'67 was a good device for accelerating this process. The need to decide what role national parks should play in the outdoor recreation drama is faced by both Canada and the United States.

If we work on the assumption that "parks are for people," and accept that statement in its most obvious meaning, then we must go ahead and provide for the most use by the greatest number. Since the favourite form of "outdoor recreation" was found by the Outdoor Recreation Resources Review Commission to be automobile driving, we would necessarily build roads to move cars rapidly, and as painlessly as possible into all corners of each national park, and build the necessary facilities for the service of cars and motorists throughout the park. Similarly, since mass, water-based recreation was also found to rank high in popularity, the parks should seek to provide swimming, fishing, boating, in all suitable areas where rivers can be dammed and lakes, beaches, and marinas created. Since wilderness hiking, canoeing, nature study, and other more strenuous forms of outdoor activity were found to have but small present appeal, only a small area in each park need be set aside for such uses.

However, if we work on the assumption that parks exist to preserve nature in an undisturbed state then we must proceed quite differently. Only those roads, trails and facilities needed to provide protection for the park-by-park personnel would be permitted inside the park. Tourist motor vehicles would not be allowed inside the park. Use of the park would be restricted to those numbers of people judged to be within
the absorptive capacity of the parks without danger of any disturbance to natural conditions. For some areas this would mean no public use. Elsewhere use would be limited to hiking, restricted primitive camping, nature viewing, limited non-motorized boating, and such relatively non-destructive activities.

Obviously neither extreme is necessary nor practical for a national park system as a whole. However, both extremes should be accommodated within any overall system of park and recreation areas. And any nation, province, or state requires such a system of outdoor areas intended to serve a wide variety of purposes if outdoor recreation demands are to be accommodated. National parks are only a part of such a system. They break down when they try to provide for all of the uses that the system as a whole should provide.

The idea of an outdoor recreational area system was developed in the report of the Outdoor Recreation Resources Review Commission, a system that included at one extreme the development of mass outdoor recreational facilities in areas where the demand was highest, near centres of population, and at the other extreme, the preservation of remote, primitive areas for limited, high quality recreational use. Unfortunately, the national park system in the United States has in some instances attempted to incorporate the entire recreational system within the boundaries of the national parks. Yosemite Valley, for example, competes with Disneyland and Coney Island, whereas Isle Royale meets the most exacting definition of wilderness. Canada's National Parks, notably Banff and Jasper, also attempt to be all things to all people. One cannot argue that there should not be a town of Banff with its associated mass recreation, but one can question whether it appropriately belongs within the boundaries of a national park.

A major difficulty in developing an outdoor recreational system is political. Thus in the United States, federal lands are administered
by a wide variety of agencies in several major departments. Each agency has a tendency to try and be all things to all people in order to impress the Bureau of the Budget and Congress. Other lands, available for outdoor recreation or preservation of nature, are in the jurisdiction of state governments, country governments or city governments. Canada has a similar array of federal, provincial and local governmental concerns. But an outdoor recreational system must cut through all of these political jurisdictions. Obviously a national park service cannot tell a metropolitan government how to organize its park and recreation system. Equally obviously there must be some way to define and co-ordinate the roles each agency and each area must fulfill. Lacking this, each agency will attempt to attract the political support that comes with providing a package of goods and services that will appeal to the greatest number of people. Each agency will attempt to meet the full range of public demand for outdoor recreation.

A step in the right direction was taken in the United States with the creation of the Bureau of Outdoor Recreation which has as a function the broad task of outdoor recreation planning. The states in the United States have also taken a step in the right direction through creating their own outdoor recreation agencies. Yet neither state nor federal agencies exercise much influence in local outdoor recreation planning, and it is in this area that the needs and pressures are greatest. Not enough has been done to co-ordinate city, county, state, and federal roles in the development of a comprehensive outdoor recreational system. But until this is done the economic justification for land acquisition and development will remain difficult to establish, the political support will be hard to obtain, adequate outdoor space will not be provided, and we will continue to see pressures to force national parks to provide those forms of recreation that should be provided elsewhere within the system.

If we accept the statement that national parks are unique and
irreplaceable areas of wild land set aside to preserve for the future those qualities of landscape and biota which cannot be duplicated elsewhere, or those physical evidences of man's past history which cannot be replaced, then all other uses of these national parks must be planned accordingly. The parks can serve their function in outdoor recreation if they make those qualities visible and understandable to a public whose interest lies in the appreciation of such things. Their function is not served if they allow recreational privileges that can best be obtained elsewhere to interfere with the task of maintaining unimpaired those qualities that they were intended to preserve.

The administrators of national parks must therefore join with their counterparts in other federal agencies and with state, provincial, and local recreational and park administrators to develop an overall park and recreational system that will meet the widest variety of outdoor recreational demands, and will remove from the parks the recreational pressure that is best accommodated in other areas. Furthermore, as Bill Eddy has pointed out, the interpretive programs in the national parks can do much toward encouraging the kind of public thinking that will lead to a better understanding of the role of national parks in an overall recreational system. Visitors to national parks could leave with a better understanding, not only of the park but of their own communities, could leave the park with a better grasp of the place in human affairs of both wilderness and metropolis. They could be encouraged while in the parks to look at the outdoor recreational needs of their home areas and to consider how these are to be satisfied.

Thus far I have been referring only to national parks in the United States or Canada. But assuming that we can develop some sort of sane world, I believe it is time that we looked beyond North America and considered the development of an international park system. Some countries have made great strides in identifying and setting aside under
protection as national parks, the unique and irreplaceable wild areas that exist within their boundaries. Other countries, however, lag far behind either in the identification or the protection of such areas. Few countries, if any have gone very far toward developing an adequate system of park and outdoor recreation areas for the use of their own people or of visitors from other lands. I believe that an important task for those who have an interest in national parks lies in working with the International Union for the Conservation of Nature and the United Nations agencies for the establishment of what has been termed a World Heritage system of outstanding natural environments, and in working with the nations involved in integrating national parks into an overall program of rational land use, including an adequate system of park and recreation areas.

To summarize, therefore, I believe that the recreational problems of national parks cannot be solved by the national park agency alone, but only as part of regional, national, and international recreation and park systems. Furthermore, I am convinced that (to return to my earlier phrase) "if present trends continue" these problems may well not be solved, since their solution rests ultimately on a recognition of limits to human population growth. At present we are not facing the need to recognize such limits.

A wilderness area can accommodate only a limited number of wilderness travellers without losing its wilderness qualities. A national park can accommodate only a limited number of cars and campers without impairment of its natural values. A limit to the level of public use which can be tolerated in a park must be recognized and established if the park is to continue to function as a true national park. We cannot go on planning to accommodate ever-increasing numbers of people in either our parks, our cities, or our nations. We must recognize limits within which we can preserve unimpaired those qualities
of human experience that make living worthwhile. Thus, if present
trends continue as our optimists see them, we are heading toward levels
of population, leisure, and mobility under which park and recreational
systems may well crumble because of our continued failure to recognize
the need for limiting use. If present trends, as I have described them,
are to continue, the parks may have some respite, but only because the
chaos of the cities and the turmoil among nations deny to people the
opportunity to visit national parks. Neither alternative is one we can
cheerfully contemplate. But there is no need to let present trends
continue. It is entirely possible to face up to the need for recognizing
the concept of carrying capacity as applied to the human use of
national parks, and to establish those limits on use that will preserve
park values. It is possible to abandon the idea that growth and
development are goals in themselves and to work toward a stabilization
of human numbers at levels that will permit the continued enjoyment of
a richly-diversified human environment. Admittedly the task is too
great for those whose primary concern is with parks and recreation, but
they can help to show the way.

FOOTNOTES

1Outdoor Recreation Resources Review Commission, Outdoor Recre­


5Outdoor Recreation Resources Review Commission, op. cit.

6Darling and Eichhorn, op. cit.
Sir Wilfrid Laurier prophesied that the twentieth century will be Canada's century; only time will tell whether this prognostication was true. However, there is little doubt even today that the twentieth century is the century of the City all over the world, including Canada. For better or worse the City is here to stay and has become the prevailing way of life since it is the prevailing way of making a living. Urbanization as the process of change from a rural society to an urban one is a widely recognized and thoroughly documented phenomenon. It has become a universal one encompassing all societies to a larger or lesser degree; in fact countries are considered developed or underdeveloped to the degree of their urbanization. Just as rural society was based on an agrarian economy, urban society is based on an industrial economy. Industrialization had its random beginnings in the early nineteenth century England. Since then it has engulfed Europe, North America and recently Asia, Africa and Latin America. All statistical indices show

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Canada to be urbanizing rapidly especially during the last decade. A few figures will help to justify this assertion and illustrate that even Canada, farm-produce oriented as she is, lives by the city and thrives because of her expanding cities.

At the turn of the century 60 per cent of Canada's population was classified as rural and 40 per cent as urban by the Canada Census of 1901. Fifty years later these proportions had been reversed. Between 1951 and 1961 population growths in the seventeen metropolitan areas of Canada was almost 45 per cent whereas urban growth in non-metropolitan areas for the same period was less than half and Canada's farm population dropped by 19 per cent during that decade. In other words we not only have had a profound switch from country to town but a congregating of people in ever fewer major metropolitan centres. Canada as a whole is likely to follow the well established pattern of other industrialized nations like the United Kingdom and the United States, where more and more people will live in fewer and fewer and ever bigger cities. The causal relationship between industrialization and urbanization can be seen in the rise of Canada's index of industrial production. Taking 1949 as a base year, this index rose from 116 in 1951, to 173 in 1961.

Canada's Economic Council in its Fourth Annual Review compared Canada's degree of urbanization and rate of urban growth to other countries. To the surprise of many it was discovered that among selected countries, including Britain, Italy, France, Sweden and the United States, Canada experienced the highest rate of increase in urban population in the 1951-61 decade. It was 4.1 per cent as compared to 2.7 per cent for the United States or 0.4 per cent for Britain. In fact there is evidence to suggest that Canada had the fastest rate of urban growth among all industrially advanced countries for the post-war period as a whole.
Another indication of these changes may be the fact that almost half of the Canadian labourforce in 1881 was engaged in agriculture. Eighty years later agriculture's share of employment had fallen to 10 per cent and by 1966, to less than 8 per cent of the total: or in absolute numbers, about the same number of people (some 650,000) were working on the land in 1881, as in 1961; in contrast the number engaged in non-farm pursuits soared from less than three-quarters of a million in 1881 to just below six million in 1961. Between 1966 and 1980 the Economic Council predicts an urban population rise by almost 5.8 million. This will be an increase of 40 per cent over 1966 and contrasts with a rise of 26 per cent expected for the total population.

These figures are even more dramatic if we examine the eastern and western provinces and particularly when one looks at the major metropolitan cities, notably Montreal, Toronto and Vancouver. Vancouver is expected to climb to substantially over a million people and Montreal and Toronto are likely to account for seven million persons by 1980. Clearly these numbers will generate and are generating unprecedented economic and social demands. The largest overall physical impact on the growth of urban centers will be in the field of housing. The Economic Council estimates housing construction of about 1.1 million units during the early 1970s rising to 1.4 million units at the end of that decade. In general terms this means that by the end of the century the major Canadian cities across the country will add to themselves as much housing, community buildings, offices, shops, schools and factories as exist today. This means that we are literally doubling every existing house, factory, school, store and road or sewer and water network. Indeed a formidable task and there is some doubt that our institutional arrangements or indeed our conceptual or ideological framework is ready for this kind of quantitative and profoundly qualitative change.

Industrialization/Urbanization has changed individual and group
life so profoundly that it is difficult to pinpoint its single most radical impact. The clearest transformation of social behaviour and group responsibility under the impact of urbanization can be seen today in the developing countries of Africa, Asia or Latin America.

When India and Pakistan or Ghana or Jamaica proclaim they want to catch up with the west—they are saying we want to urbanize and industrialize; they have recognized the city as the unique instrument for economic advance and social progress and perhaps political stability. Urbanization clearly implies better standards of living and probably is also the only socially valid and politically successful unifying agent in a tribal society with parochial loyalties.

In the western world or in countries of advanced stages of urbanization perhaps the most profound impact upon the individual and the group has been the gradual (or recently more rapid) decline in the hours of the working week for the breadwinner. Most people agree that the organized labour force in Canada today produces more and earns higher real wages for substantially less work hours than their predecessors. An extension of this phenomenon is that a majority of people (or at least a growing proportion) lives better and longer than preceding generations while working shorter and shorter hours in a day, a week or a year. A corollary to the shorter working week is a comparable increase in leisure or at least in "disposable time." The individual today is able to dispose of a significant portion of his time as he pleases while being assured of an adequate and rising income or standard of living. Although the increase in leisure time is now widely discussed and argued in the popular press, we have yet to understand and fully grasp its profound impact on our daily life, on our life style and above all on our value systems. Historically leisure (and recreation as an aspect of leisure) was the privilege of the few, now it is likely to become the obligation of the many.
Leisure defined as "time off from work" emerged about 100 years ago. Leisure in pre-industrial England was a way of life for a certain segment of the population, it was the hallmark of a select class. With industrialization and the rise of cities like London, Birmingham, Manchester, Liverpool and later on New York, Chicago, Philadelphia or Toronto and Montreal, leisure became equated with hours and days away from the job. This was a bitterly fought-over privilege; gradually reducing the working week from 72 hours to 60, to 48 and now to 35 hours. Annual holidays and seasonal vacations became prized prerogatives of seniority and superior job classification. Leisure was a negative accomplishment; time off work or the residue in a time budget after all the more important aspects of life and making a living had been provided for. Indications are that far from remaining a residue, leisure or the amount of freely disposable time during a day, a week or a season or even over one's entire life will become the dominant time component. This clearly will affect our total life style in a quantitative sense, perhaps even more profound will be its qualitative impact; in the context of the prevailing Protestant ethos and western Europe's immensely successful industrialization in the nineteenth century, man became convinced that work was good and idleness or leisure was wicked. A good man was one who was busy all day and all week and still today North America's folk heroes toil long and unremitting hours either at the office or at the golf course. For the first time since man's push out of Eden a growing number of young and active people will not have to work for a living because there is a declining number of productive jobs and public social commitments will ensure an acceptable level of food, shelter, clothing and other life essentials. Work may become a privilege and leisure an obligation.

Our value system will have to be turned upside down, so as to allow us to make creative use of our newly found disposable time. The
current generation gap or the confrontation between achievement-oriented fathers and sons attuned to a hippie culture may well be straws in the new "leisure for work" wind . . .

What are the ramifications of these profound social and economic currents of change in the context of Canada's National Parks and recreation? Leisure provides opportunities and demands for recreation, out of doors in particular, but now in quite new ways and dimensions. Outdoor recreation as an aspect of the current revolution of rising expectations is a product of the new affluence and abundance. The day of the occasional simple hiker willing and able to tent, exist frugally and commune with nature has long been replaced by the fully motorized camper carrying with him all the comforts of home and unwilling to give up even for a moment any aspect of the standard of living to which the gadgets or urban life have accustomed him. His relationship to nature is often transient, superficial and abstract; clicking cameras, recording a sight, are more important than its first-hand direct human experience and impression. Reliable and predictable services to the traveller are more important than the profoundly moving experience of view, sunset or the bird's twitter.

In simple terms the new mass leisure demands mass outdoor recreation space; it also generates explicit and implicit new needs of qualities in nature and its response to human use. The quantitative demands are widely documented and well understood, the qualitative aspects are only vaguely perceived. The quantitative pressures require more land, more water, more air or simply more space for recreation as a result of:

(a) more people with rapidly increasing mobility
(b) more time at their disposal
(c) more demands for varied active and passive leisure activities and a corresponding ability to pay.
As more people use existing or new outdoor space they affect the environment that originally made that space so attractive or desirable for leisure pursuits. It is this quantitative impact upon space that threatens the qualitative character of leisure environment.

Canada's National Parks were set aside originally to attain a twin objective:

1. provide vast outdoor space for the pleasure and enjoyment of the nation. This anticipated clearly the recreational space needs of an active and industrializing society.

2. preserve for ever unique ecological environments together with unique scenery and geographic features.

These objectives reflected the expected dramatic change in the landscape as the western frontier was being pushed back and the original rural landscape transformed by urbanization.

Whereas the first objective relates to quantity of open space, the second one touches upon its quality. With a relatively fixed amount of land for Canada's National Parks, the pressure for leisure activities will affect the quality of the outdoor environment. There are many examples of this process and many indicators of significant deteriorations. Some of these are associated with the major townsites. A few years ago we looked carefully at Banff and Jasper as the two major townsites whose initial purpose was to serve as Service Centres for the public touring the western parks.

Banff as a community was established in 1885 and at last census had a permanent population of 3500. More than 70 per cent of all buildings were built before 1945, consequently it was not surprising to find 44 per cent of all buildings in poor condition. Nearly half of all land of the townsite of 325 acres is devoted to housing, 10 per cent to commercial use and 12 per cent to transportation facilities. There are more than 200 individual businesses in Banff. There are approximately 5,000 overnight accommodations in or near the townsite during the summer
while in the winter it drops to about 1,300.

The unique beauty and setting of the town is well known; but most people agree that little advantage has been taken of these assets in the layout of the town or design of individual buildings. There is little that is unique or characteristic of the heroic setting in the townsite. This is particularly regrettable when we realize that all land is publicly owned and leased to a variety of individuals. The leasehold device has been reviewed and improved since our study but there is still many ways in which it could be used as a creative and strategic device in making Banff truly a Visitor Service Centre and not just another town characterized merely by the railway or Trans-Canada Highway. We found, for example, that the leases were renewed with little regard for, or relation to the condition of buildings; or their ability to serve the central purpose of the visitor's convenience and pleasure.

It seemed important to us to use terminal leasehold policy as an essential device of implementing planning policies and selected construction projects. Indeed our major recommendation was to look at Banff as a Visitor Service Centre and not just as a townsite; this would reflect more closely the original intention of the National Park Act. We recommended compact size and compact population as well as year-round use. It seemed critical to our concept to allow all year residence only for those who were actively engaged in serving the touring public and to force full attention on the higher quality of the man-made environment in and around the townsite. We recommended a full range of public and private services based entirely on the concept of public need and that gradually a good deal of the service population may indeed live outside the Park and commute to Banff, particularly during the peak of the season.

A Visitor Service Centre ought to develop with due regard to vehicular and service traffic as terminals and pay high regard to the
needs of the pedestrian. If ever there was a town where walking ought to be the prevailing way of life it should be Banff and the other national park service centres. Here man has time and leisure and ought to be encouraged to experience the great environment he has come to see on foot and in direct physical contact. Feet rather than wheels ought to dictate the shape and site of the townsite.

The opportunity to walk, shop, look, listen and to see and be seen suggests a mall exclusive for pedestrians along Banff Avenue and not a road. Car parking, necessary as it may be, ought to be distributed in a discreet fashion without challenging the visual impact of trees, flowers, view, vista and the National Park panorama. A major interpretative centre with a natural landscape display area ought to become the focus of all activity in Banff as in other centres. Above all the river which at present is difficult to see or enjoy ought to become far more integrated with the townsite, its walkways and boardwalk ought to form an integral part of the circulation system.

When we looked at Jasper we found many of Banff's problems. Jasper was started in 1907 and now has a permanent population of 2,500 people. The townsite encompasses 275 acres but more than half of it is devoted to transportation services. Here is the big difference. Jasper was started by and for the railway and still plays a role in this function although very much reduced in importance. It has about 120 businesses and provides accommodation for about 1,500 people during the summer. Our major recommendation related to the railway yards and the manner in which they cut off the townsite from the river front. In addition these installations consume an inordinate amount of land which should be available for the true visitor's service function which Jasper ought to perform.

We prepared a comprehensive development plan which was to be implemented in three successive stages so as to allow an optimum
development of the townsite in relation to its service function and strategic location on the Edmonton-Yellowhead route. At this point it may be relevant to quote from the report the principles underlying our original urban development plan since these apply not only to Jasper but to the concept of the Visitor Service Centre in other comparable circumstances.

(1) The development Plan ought to propose an optimum use of all land between the Athabaska River and Pyramid Mountain so as to bring the townsite closer to the river bank and relate intimately the Visitors' Service function with the growing activities through the National Park.

(2) Jasper's function as a service centre ought to be emphasized by expanding and strengthening the existing commercial core and thereby supporting the service activities of the townsite.

(3) Flowing from this concept is the principle of consolidation of related land uses and linking all retail and service functions particularly those likely to benefit from easy pedestrian access. Consolidation of land uses does not imply crowding although considerable advantages may accrue particularly to the commercial retail activities by being within walking distance of other compatible service functions of Jasper.

(4) Since the railway apparently cannot be relocated it will always represent a major barrier between the existing townsite and future development towards the river. Although this division can never be fully overcome it ought to be minimized and a strong attempt ought to be made to link the two halves of the town in relation to the railway station and at a central place.

(5) The general development pattern of Jasper is to be a compact one rather than an elongated or attenuated one alongside the existing railway right-of-way. Optimum use of land also involves an optimum relationship to the present and proposed road system including the new western entrance to the townsite and the Yellowhead route providing a new connection between Alberta, British Columbia and the Pacific coast.¹

Our experience with Banff and Jasper indicate that the pleasure and active enjoyment of the national parks requires a broad range of visitor's services including a variety of accommodation, eating facilities and shops. The big question is how many of these are really necessary and where should they be located. A subsidiary issue relates to the housing needs of the people employed in and owning these service establishments. Apart from accurate forecasts of service needs in terms
of generating employment, building floorspace and land area it will require explicit public policies and their enforcement to keep in balance the unique quality of the national parks environment and their rising use.

Visitor Service Centres ought to be compact, strategically located and built so as to encourage or discourage a specific park use. These centres have been called a necessary evil but they are not an evil necessarily. The service centre in its composition and siting ought to be looked upon as an instrument of public policy in the development of the national park in pursuit of the original objectives. If this sounds like a plea for planning, I plead guilty. The nature, scope and demand of the "new leisure" for outdoor recreational space on a regional and national scale is becoming increasingly clear and measurable; the capacity to sustain the visitor's impact and claim upon the national parks ought to be equally assessable. The Visitor Service Centre could become the effective governor or regulator in this relationship between leisure demand and ecological or environmental supply. We know that services, their detailed provision and access to them or lack of it encourage or discourage the touring public, consequently a carefully programmed and sited network of service centres could effectively direct the use of all areas of a national park to the degree they can sustain it. The type of facilities which will be provided in each of these service centres ought to vary between them and ought to reflect the unique visitor's values or attractions in a given area.

Botanically unique areas ought to command different service possibilities from areas that emphasize horseback riding or observing wildlife at close range. By the same token not all areas ought to be accessible by private car or bus or any vehicle; consequently these areas would encourage service centres differing in size, facilities and seasonality. Once one accepts the notion that these service centres
are an instrument of National Parks Policy capable of implementing a pattern of zoned land use of all parks, a hierarchy of service centres will emerge in terms of their respective function, size, location and access. Since these centres are to serve the visitor in his leisure they ought to be located convenient to park use--this may include sites outside but adjoining national parks. This would have the additional advantage of not pre-empting valuable park space where this is at a premium.

The Visitor Service Centre conceived as an integral of the programmed use of a national park can become a valuable instrument of public policy responding to the rising leisure/recreation demand. The provision of service facilities in or near parks is often considered a detriment to preserving the parks and fulfilling their initial purpose. Planned and programmed Visitor Service Centres, however, can become a creative strategy to both enhance the value of national parks for future generations and to respond positively to the mounting demands of urbanization. Visitor Service Centres are conceived here as strategic instruments of policy, supporting the concept of "use without abuse" of Canada's National Parks. The effectiveness and success of these centres will depend on their organization and administration. They will have to play a positive and developmental role within the context of comprehensive regional plans for each of the national parks, reflecting agreed-upon national policy. Initiative, flexibility and continuing opportunities for experimentation will be part of the success of their concept.

However, these are rarely found inside federal ministries and their administrative civil service. Consequently serious consideration ought to be given to separating the provision of visitors services and their supervision from the routine administrative responsibilities of the federal department concerned with Canada's National parks.

Canada pioneered in creating instruments of public policy that
combine the initiative of private enterprise with public ownership and social responsibility. The many and varied Crown companies have proven their value in transportation, (C.N.R., Air Canada), or in communication, (C.B.C.), or in industrial production (Eldorado Mines and now the Development Corporation). On a smaller scale but for the comparable objective of combining initiative and flexibility with public service, it seems reasonable to propose the setting up of a National Parks Service Corporation and vest in it the executive function of providing the full range of visitor's services on a commercial basis.

Such a corporation would develop a detailed program of service facilities for a variety of centres including type and scope of motels, hotels, campgrounds, retail stores, restaurants, cafeterias, rental services and license these respective operations. The services themselves would be in the hands of qualified commercial operators but the initiative and the conditions of services would remain in public hands.

In dealing through leasehold and licenses certain services can be encouraged and others discouraged and thereby the National Parks Service Corporation would reflect its assessment of the market for visitors services. These would change and the corporate freedom of action would allow a great deal of flexibility in the ways and means of servicing the touring public and thereby guiding the planned use of national parks. Where necessary or desirable the corporation could also acquire land and license selected visitors services outside the national parks; this would encourage a separation between park-use and service activities. This policy option illustrates further the flexibility and choices open to a Crown company anticipating and supplying the visitors services. What are the alternatives to the concept of an independent National Parks Services Corporation? The answer is probably continuing stress and strain between Ottawa and local commercial interests and a growing conflict of purpose between serving the leisure public and
making the last dollar out of every tourist. Worst of all, there is the crisis inherent in the ever-expanding land demands upon the parks for visitors services without an integrated and accepted development plan and its creative administration.

Canada's National Parks are a precious heritage which ought to be used wisely and creatively today so that they can be used with equal pleasure and satisfaction by succeeding generations tomorrow.

FOOTNOTES

Summaries and Discussion

Chairman: H. G. Kariel

Panellists: W. A. Fuller, J. B. Cragg, J. S. Marsh, B. Reeves,

SUMMARIES

The Chairman introduced Dr. Fuller who summarized his paper on National Parks and Nature Preservation and concluded with the following remarks:

FULLER: I would like to depart from the text just for the last minute to elaborate on one point. Although we have exploiters largely under control, a provincial minister made a statement the other day to the Canada Council of Resource Ministers to the effect that all types of parks should be open to all kinds of exploitation. So this question is certainly not dead and we have examples in the neighbouring province of British Columbia and in the eastern part of the country in Gaspé, where exploitation has recently been allowed in provincial parks.

Another role of these people which is the one I wish to emphasize, is that they can prevent the development of a park. Now some ten years ago, I surveyed six areas in the Yukon Territory for a potential park site, and before I left the Yukon Territory in 1959, I understood that the plan for this park had been drawn up and awaited
only the Minister's signature. At the same time, a small company was racing to develop a copper deposit. That deposit was developed before the Minister signed the order in council and the area is still not a park. It has since been resurveyed twice, to my knowledge, there is general agreement that this is the area, but nothing happens because of the presence of one small mine.

Mr. Chretien said that we need some forty or sixty new parks by 1984, but if this is the rate at which we get new parks in the North-west Territories and the Yukon Territory with their very scanty populations, I don't see much hope for accomplishing this objective by 1984.

KARIEL: The second presentation is by Dr. Cragg who will speak on Research in National and Provincial Parks: Possibilities and Limitations.

CRAGG: Yesterday I listened with interest and some surprise, and if I had not spent a large part of my life listening to various people speak at conferences, I might well have felt a certain amount of frustration. Because it seemed to me that we were giving all the emphasis to national parks as recreation areas and we were forgetting so many of the other things that national parks have to do, or at least, conservation areas have to do. I am here in the role of what one might term "a minority user," one of the minorities that needs a certain amount of protection in this day and age.

I had a feeling when we talked about the parks yesterday, particularly when we talked about opening up wilderness areas, that we were rather in the position of Marie Antoinette who, when the public cried out for bread and when she was told that there was no bread said, "Well, why don't they eat cakes?" And I think that we have been providing, in a sense, too much cake in the national parks, too many
car parks, too many camping sites, and we have forgotten that at the present moment this spaceship earth is facing probably one of the greatest crisis in its history. In fact, the very survival of man depends on finding out something more about the natural systems on which the production of the total ecosystem of the earth depends.

I want to turn away from the national parks' image for a few moments and to remind you that there are other things which have got to come from protected areas. In the United Kingdom I was, for the last five years there, a member of the Nature Conservancy, and responsible for two major reserves under that authority. And this, in a sense, highlights some of the remarks which I have passed in my paper. It was abundantly clear in Britain, a highly populated country, that one had to separate the control of the national parks from the scientific services which backed up the national parks and which backed up environmental science in general. We had at the time that the national parks were created in the late 1940s, an organization set up, the Nature Conservancy, which had the task of advising on the conservation and control of natural fauna and flora. To do that, it set up a research organization which would concern itself with the fundamental operations of natural systems and in order to carry out that research, it set up a series of National Nature Reserves.

It does seem to me that, in this country, we have got to think along those lines, although not necessarily having the same administrative pattern. But if we are going to understand how to maintain national parks for posterity, if we are going to understand how to utilize the natural systems to the best advantage for mankind, then we must have research opportunities which are equivalent, at least, to those which we give to the laboratory-based physicist or to the agriculturalist and forester.

If you are going to talk about multi-purpose use in the parks,
I think you have got to have a system of priorities; certain things are going to be placed first, and then you are going to have a whole series of categories after that. This is why I feel that if you are going to try to crowd the natural scientist into the existing parks, then you are going to find that the scientist will not, in fact, be able to carry out the job which he is supposed to carry out.

There are very different kinds of science that can be done in national parks. There are certain studies which have to be done in national parks: studies concerned with management, the control of movements within a park, and so forth. One of the investigations going on in The University of Calgary’s Environmental Sciences Centre for which I am responsible is very closely related to national park management. Dr. Herrero is studying interactions between man and bears. Dr. Herrero is learning a great deal about the behaviour of man and as a net result of these studies, we hope that we shall be able to give advice on how both to conserve bears and man in the national parks.

I would say that the main thing that we have got to decide is first, how we are going to classify natural areas. I am using the term natural area here because we have got a whole host of operations to be carried out. And secondly, what kind of organization will be necessary to look after these other areas which I think, are best described as outside laboratories, and which are very necessary.

My main point is that we have got to have areas which can be used as reference points against which we can measure management problems and within which we can really work out how natural systems operate. This, I think, is being neglected at the present time.

KARIEL: Dr. Gardner is unable to attend the Conference. His presentation which you will find in the background papers is titled Banff National Park—A Museum or a Laboratory? Science in the National Park.
MARSH: (Mr. Marsh summarized his paper on *Maintaining the Wilderness Experience in Canada's National Parks.*)

KARIEL: Mr. Reeves will speak on *Man and His Environment, the Past 10,000 Years: An Approach to Park Interpretation.*

REEVES: As a member of a minority group of scientific users of national parks, archaeologists, I think, are somewhat incompatible with some of the concepts embodied in the National Park Act because we do quite a bit of damage to the landscape which, in many cases, is irreparable.

In my paper dealing with the Rocky Mountain National Parks, I present a brief model of what the prehistoric cultural systems and the prehistoric environmental systems were through time, and how this can be used for park interpretation.

Yesterday in the discussion and again this morning, we have been talking about wilderness, natural areas, but we have forgotten one fact; aboriginal man lived in our national parks and we should also be considering the cultural systems through time as well as the present natural systems in our parks. These should also be preserved and studied, and certain park areas should be set aside specifically for prehistoric significance. In Canada we have a lot of historical sites of significance to the settlement and history of Canada, but we have very few prehistoric sites, and I am glad to see that the Parks Branch is now setting aside, or contemplating setting aside, parks or historic sites which are of prehistoric significance only, and I refer to two major buffalo jumps located south of Calgary.

We think of the national parks as being uninhabited by aboriginal man because we do not find any great signs, we do not find any great buildings in our Rocky Mountain National Parks; that is, there is no great cultural modification of the landscape or environment at present. But in the case of Waterton Lakes where our Department has
been working for two years now, we have over one hundred archaeologi-
cal sites. These cover a complete sequence back to deglaciation in
the mountain valleys ten thousand years ago.

Present population estimates are a minimum population of four
hundred people in the Park during the winter. Projecting this over
ten thousand years you have had at least five hundred thousand
aboriginal inhabitants in that Park. Certainly they have had some
effect on the environment and on the landscape, and I think it is
necessary to consider these people in interpretation of the Rocky
Mountain National Parks.

Archaeology's primary benefit, and I think, only benefit really,
is education. In the national parks, the use of the prehistory and
palaeo-environments in which man lived, add a needed time dimension
to the interpretation of our environments in the parks. It is hard
for me to say how this works because you can only do it in a field
situation. People regardless of their education, can very easily
relate to prehistoric man or his artifacts or his garbage, much
easier than they can relate to a lot of the features in the natural
landscape. You can start to interpret the landscape from an aborigi-
nal man's viewpoint and thereby partially help to serve the purpose
of maintaining our national parks. The success of this can be seen in
Waterton Lakes where, during our last two years of research, the
Interpretive Service has used the sites which we have been excavating
at the time as visitor areas for guided tours by the naturalists.
These have become the most popular and most interesting aspects of
the whole interpretive program in the Park.

PIMLOTT:  (Dr. Pimlott spoke on Education and National Parks.)

KARIEL: Dr. Oberlander whose topic will be Urbanisation and Canada's
National Parks, is our next speaker.
This morning, as I got dressed, I turned on the TV and when I did, I got involved deeply, personally and irrevocably in what was going on on the screen. My paper seemed totally irrelevant and hopelessly out of date, and that is why I decided not to talk about it at all.

What I saw on the screen was the take off of a Greek god called Apollo into the twenty-first century. Now I happen to be a little boy at heart and I cannot tell you what a fantastically moving experience this was to see, a man-made object, the Apollo spacecraft, literally take off in front of my eyes, most unexpectedly I assure you, in a totally successful fashion. And apart from the fantastic technological marvel that this is to me and quite beyond my capacity to understand, I was suddenly struck and I have been haunted ever since by this thought—my God, we have been talking about reaching the moon and now we literally can do it. There is no question about it whatsoever, that in a year from now or maybe eighteen months, we will in fact be able to reach the moon.

Now, what does this mean? It means that yet once again man has a real opportunity of escaping his own mess. I have been struck by this fantastic urge, coupled with man's fantastic ability, having thoroughly befouled his own nest, to be able to get up and go and find another space or place in which to be able to start again—and in fact, say, "Let us start from scratch"; here we will build a new world. We have done this throughout the world in moving from east to west. Certainly, the opening of the frontier of this continent was very much in line with this sort of urge and when we finally reached the Pacific and could not go any farther, we learned to move from what used to be the town into the suburbs. And if the suburbs are no longer liveable we go into the exurbs and beyond that. And to me this was part and parcel of what we were talking about—that the great
opportunity to me—and I admit to being a planner—will be for the first time the world seemed to have realized that we had run out of space and that we had better use what we have well, and perhaps even reuse what we have used badly. For the first time in man's collective experience it seemed that man was going to look inside of himself, inside his own community, inside his own thought, inside his own behaviour and then use space more sensitively, more responsibly and hopefully, just better.

And all of a sudden this morning it seemed to me that once again, an escape hatch had opened up and that we will be able to escape yet again from our responsibility of living with our environment. Whereas we used to be able to leave the Old World for the new, whereas we used to be able to leave the downtown for the suburbs and assume by doing this that the world would in fact be better by ignoring the downtown, by ignoring reality--now that we are confronted with national parks, recreation, lack of space, crowding, once again we will be able to move somewhere else.

Now, the most significant aspect of this world in my humble and somewhat jaundiced point of view, is what I call "urbanization." For many years man tried to be homo sapiens. Whether we have ever reached this or not I leave to others, but we have now become homo urbanico or urbanistico-urbano—we have become "urban man." Even Canada, which is in an international sense is a kind of rural society, a kind of bunch of hayseeds, is really an urban country no matter which way you measure it. If you look at the Economic Council's recent report you will find that Canada experienced the highest rate of urbanization in the 1951-1961 decade and there is little doubt that we are continuing at that rate of urbanization which is—and this is a reasonably acceptable measure—4.1 per cent annually. The comparable figure for the United States is 2.7 and the comparable figure for the
United Kingdom is 0.4. I submit that this is a very significant fact in all our considerations.

Urbanization is not only a question of numbers but a question of a fundamental change in our value system. Homo urbanistico is a very different animal from his predecessors. He has different attitudes towards himself, towards his environment, towards the outdoors, towards the indoors--and now has at his disposal an entirely new scale of opportunities of exercising these options.

Leisure used to be the privilege of the few and work the obligation of the many. It is now very clear that leisure will be the obligation of the many and work will be the privilege of the few. Leisure is not time off from work, leisure will be disposable time. For the first time since man emerged from the cave he is capable of disposing a substantial amount of his time as he sees fit, without the pressure of having to make a living. What does this mean in terms of real value changes? In the nineteenth century, and in the house and home that I grew up in, work was not only necessary but good. Idleness was wicked. When my father caught us not doing something he said, "Get back to work," and we knew that to work was to be good and to be idle was wicked--socially, culturally, religiously. Today, and in the next decade or two we will have to change our minds about this very radically.

In an age of rapid urbanization the consumer of the national parks has changed, and is changing. He deserves some attention, he deserves some services. I think we ought to plan for these, creatively and constructively, because then we can achieve the initial purpose of the national park and above all hand them on in an optimum condition to those who will follow from us. The visitor service centre idea which we elaborate upon in my paper is to my mind, a response to the urban man and his needs. I think the visitor service
centre ought to be compact, strategically located and built so as to encourage or discourage specific park users. These centres have been called "necessary evils." I happen to think they are not necessarily an evil. The service centre in its composition and siting ought to be looked upon as an instrument of public policy in the development of national parks, in pursuit of their original objectives.

The visitor service centre, as we can see within this little study, can become an effective governor or regulator in the relationship between leisure demand and ecological and environmental supply. We know that services and their detailed provision, or absence of it, and their access can either encourage or discourage the touring public. Consequently, a carefully programmed and sited network of service centres could effectively direct the use of all areas of a national park and to the degree that they can sustain it. The type of facilities which will be provided in each of these service centres ought to vary between them and ought to reflect the unique visitors' values or attractions of given areas.

The final point is this. If these visitor service centres have, in fact, a strategic and deterministic purpose, they ought to be handled perhaps outside the present system of government and we make a plea for the establishment of a National Parks Service Corporation modelled after other crown companies who can operate creatively and energetically outside the constraints of the public service--like the C.B.C. in the field of communication, or like Air Canada, in the field of transportation. Why not a public National Parks Service Corporation charged with the specific responsibility of providing the services where and when needed in the interests of the national parks? Then, I think, Canada's National Parks, which are a precious heritage and ought to be used wisely and creatively today, will in fact, be available for the continued and equal
pleasure and satisfaction of succeeding generations.

KARIEL: Dr. Dasmann is unable to be present to give his paper on *Recreation and National Parks*. However, Dr. Milton has consented to discuss some points that are similar to those raised by Dr. Dasmann.

MILTON: I thought I might bring up a few points that have just occurred to me from reading Ray Dasmann's paper and together with a few other thoughts that came to my mind as I have sat here this day and half listening to these discussions.

You probably all know a good deal about the Outdoor Recreation Resources Review Commission reports which are a very significant recreational milestone in the United States. When they came out in 1962 they projected that there would be a U.S. population in the year 2000 of about three hundred and fifty million people and as Dr. Clawson mentioned yesterday, this combined with more time, leisure and money was expected to produce a cumulative effect that would be tremendous on recreation, particularly outdoor recreation. This study is very hard to fault within the parameters it considered, but I would suggest at this point that there are a number of issues which may affect the whole recreational picture in North America which very few of us have looked at.

We are now living in a time when population growth and many problems abroad are affecting the whole picture at home in a very unpredictable fashion. We have the phenomenon of university revolutions all around the world. I picked up this paper this morning and I noticed you even had a short by-line about something of this sort here at Calgary. We are in a situation in the United States where the ghettos and the Black Power movement are rising. We are having active revolutions in the middle of our cities which no one predicted twenty years ago. Many of these outside factors are going to change
the budgetary picture in a pretty unpredictable fashion.

Just a few other changes which I think we are seeing. We have a million psychedelic fires burning the eyes of a generation of the United States. We really do not know what this is going to bring about in the way of a change in values in terms of outdoor recreation. We have the whole question of pollution. We really do not know gain how sizeable this crisis is going to be, how much money we are going to have to spend on water pollution alone. And if we have to spend a hundred billion dollars, as one estimate has said, on water pollution control in the United States, what does this mean in terms of the expenditures we are going to be able to make for outdoor recreation and parks? Is this going to become a luxury?

I have not even discussed a couple of the other factors outside the domestic picture. We have the whole range from the old mushroom cloud that we have all seen for years since 1945--that has been haunting us in our dreams--to the two-thirds of the world where we may see in the next fifteen or twenty years, a hundred Biafrans dying a slow, starving, whimpering sort of death. Can we justify the national parks expenditures and recreational expenditures in light of the tremendous demands that we see appearing because of population growth and the lack of production of food around the world? Now, these are real questions I think.

Perhaps we have been dealing with too closed a system in our talk of recreational demand in the future. Perhaps those who gaze into a clear and untroubled crystal ball can foresee a much different picture. I think you can argue that technology such as the Apollo spaceship will blast off and solve our problems tomorrow, bit by bit, piece by piece. Maybe we will have greater affluence, greater leisure, more money to spend, and perhaps we will be able to solve the developing countries' problem of food production, to bring them
slowly into the picture of the twentieth century we now have in the
developed nations. I think we can make a very good argument along
these lines. We can foresee a rise of the rich, leisured, mobile
culture in the United States and Canada, and much of Europe, parts of
Asia, perhaps Argentina; but we do have this moral choice to consider.

I think that if we do decide to go ahead and spend our resources
on improving the recreational picture in the United States and Canada
we will have to do a great deal of planning now, and this planning
is a very critical sort of issue—it is something which we have to
do no matter how these other factors may intrude themselves on the
domestic scene. In the United States the Outdoor Recreation
Resources Review Commission recommended the establishment of the
Bureau of Outdoor Recreation, primarily to set up a single co­
ordinating agency which could go into the whole problem of how we
should plan for a spectrum of recreational resources in the United
States. We were getting a picture where the United States National
Parks were trying in many cases to fulfill a total spectrum of
recreational demands.

Well, I think this picture has changed and will continue to
change, largely due to the creation of this Bureau of Outdoor
Recreation—perhaps because the Bureau has been asked to plan for the
total recreational needs of the United States, including everything
from wilderness recreation on into the urban scene. I would like to
suggest this kind of institution might be an interesting one for
Canada to consider, particularly in light of many of the arguments
that have been developing here over the past few days about what the
United States and what the Canadian National Parks should do—what
are their functions, what are their roles, what kinds of facilities
do you allow?

In their relation to the whole recreational spectrum, national
parks have two aspects which stand out in my opinion. A national park is a place where we have high and unique ecological diversity and it is a place where we manage to maintain ecological health. Darling and Eichhorn elaborated on this in *Man and Nature in the National Parks*. This is a very difficult kind of concept, however, if you think of just in terms of diversity, we are producing a society which is technologically extremely diverse; we are at the same time wiping out a great deal of cultural diversity—the diversity of the Eskimo, the diversity of many of the tribes that you have in western Canada. These things are being lost but we are having from a technological standpoint, a mushrooming of information which is a new kind of diversity. And in great part the old natural diversity is feeding this new diversity.

Now, to my mind, one of the significances of the national park movement is the fact that we do want to maintain as broad a spectrum of environmental diversity—including the human and the natural—as possible. And the national parks are one of the few types of places left where we really have the most valuable parts of that wild natural diversity to which we all feel linked. And yet, at the same time, we want to keep them in such a fashion that they are large enough to take care of themselves, or at least be managed in a fashion to take care of themselves. By this I mean we may have to use fire to bring them back to a stage of succession that fits in with our picture of primitive America, a primitive grassland, a Sequoia forest. So management is a part of the picture in a paradoxi-cal sense. How do you manage to unmanage?

If we can come to grips with some of the deeper questions that are posed by management, I think one of them is the question of carrying capacity. This is a big one for Canada. It is very closely linked with the question of how you use facilities. Obviously the
facilities that you need for a trail going over a piece of granite are
different and the kind of impact that this is going to have, is much
different than, for example, in the case of a flamingo population
in the Galapagos which stops breathing if you just have one visit
every two years. We need research into these things to find out how
we do manage the human impact, how we do determine carrying capacity
of the national park so it can remain essentially natural.

I will close by suggesting that another area for future
recreational research, strictly in relation to national parks, is the
changes outside the park which are affecting the natural area, the
recreational reserve. I have been involved in one such study in
Rokkery Bay in southern Florida where the whole drainage picture
surrounding this wonderful natural area in the southwest coast is
affecting and changing the whole ecology of the natural area itself.
So we have to start thinking in terms of broader environmental
changes and how they change habitat in terms of our national parks
systems. It is much broader than just recreational impact, it is a
whole ecological matrix.

PANEL DISCUSSION

KARIEL: To start off, Mr. Swem will give some discussion as to the
United States' experience on the topics that we have had. Mr. Swem.

SWEM: Mr. Chairman, there has been much looking at the forest this
morning. I would like to say that I will be looking at a few of the
trees.

In referring to the comments of Dr. Cragg, in conjunction with
the International Biological Programme, we are actively involved today
in the identification of what we call "Research Natural Areas"
within the areas of the national parks System. This is a much broader
program, of course, than that involving the National Park Service—it is an inter-departmental program and involves the efforts of many agencies. The first publication has been released which lists some 350 Research Natural Areas on public lands within the United States. This will be supplemented from time to time as other Research Natural Areas are identified.

I would like to make most of my comments, however, concerning a relatively new program as far as the National Parks Service is concerned, a program that we call our "environmental education program." Today, it has two main thrusts, one that carries the title of the Need Program. This is an environmental education program for elementary and secondary school students and it is being developed with the University of California. A curriculum was prepared about a year ago and during this past year it has been tested out at four different areas in the country, including Yosemite, Between the Lakes, which is T.V.A. area, Fire Island National Seashore at New York, and Prince William Forest Park which is in one of the suburbs of Washington, D.C. We are now in the process of refining this curriculum, based on the experience we had with students at the elementary and secondary school levels, and this curriculum of course will be available to educational institutions and to others who are interested in using it. We will continue with the Need Program, testing and using this curriculum further.

The second program has to do with the identification of what we call "environmental education areas," and these are areas to tie into teaching a better recognition and knowledge of the importance of the total environment. These areas are all found on lands within the National Park System. They will be found on lands in any one of the categories. We have identified some fifteen to twenty to date, and these are located on lands within the "historical" category areas,
and "recreational" category areas. We have identified these areas in close proximity to metropolitan centres since we feel that this is where there is the greatest need for this type of environmental study effort. As the program advances of course, they will be identified throughout the country on areas of the National Park System.

These areas are available to teachers in the school systems nearby, to take their students on them and to work on this program of environmental education. They may conduct the program on their own, but if they want assistance from us, our interpreters work with them on the particular projects. These areas, as is the case with the Research Natural Areas, will all be recognized on our master plans, and represent very definite commitments of land for these particular uses.

We are presently considering the establishment of what would be called an "Educational Landmark Program." We have in our country today, a registry of Natural Landmarks, we have a registry of Historic Landmarks, and this would now be a registry of Educational Landmarks. These particular landmark areas would be recognized for the purpose of environmental education, but in all cases they would be on lands owned or administered by others. We have had great success in the Historic Landmark, Natural Landmark programs, and the recognition of areas of great importance for particular efforts, and there is a long-range benefit of protecting the particular area involved. The Educational Landmark Program is under active consideration now, and probably will be underway within the next few months.

My remarks here have covered programs that are relatively new. From the standpoint of our existing program, we are placing greater emphasis than ever before, on the importance of teaching or talking about the total environment in our interpretive programs. One of the things that has become very important to us in the past few years in
our master planning, is that we want to analyze more and more what
the true park experience should be to the visitor. Too many times
in the past, it has been interpreted as just being a sum total of
visits to separate features. For example, Yellowstone; to see the
lake, the river, the falls, and the wildlife. But we would like to
turn this around and place more emphasis on what a true park experi­
ence should be. Now this is rather difficult to define; it involves
much subjective thinking, I am sure, and it involves consideration of
total environment.

For a considerable time of course, we have been talking about
the importance of individual features within the natural areas, but
to now put these features in the context of the total environment
is going to be a great challenge for us.

KARIEL: Thank you very much. Dr. Cragg?

CRAGG: To begin with Mr. Chairman, I should just like to comment on
this list of Research Natural Areas produced in the U.S.A. I am
highly impressed with this document and I think many members of the
audience might like to hear one paragraph from the Introduction which
bears the signature of that very great conservationist Stewart Udall.

The paragraph reads as follows:

Research natural areas are important as base lines against which
man-caused changes can be measured. They are useful for evaluat­
ing improvement or impairment resulting from the intervention of
man in the otherwise natural environment. The urgency for setting
aside and protecting these areas becomes greater as our expanding
population increases our demands on the land, as our concern for
soil, water and atmospheric pollution grows and as far reaching
environmental controls such as weather modification become a reality.

In that paragraph it has been said, in very much better words
than I used earlier, why, in fact, I attach so much importance to the
setting aside of natural conservation areas. I might make one
further remark about the kind of thing which has been set up here.
One of the great problems is to get the people, the ordinary people of the country, interested as participants in conservation programs. It does seem to me that one of the most useful ways of getting people interested, would be to have local committees of people responsible, in a sense, for the care and for the work which goes on in these natural areas.

Now I would like to comment, quite naturally, on some remarks by Dr. Oberlander. He blasted off about the Apollo rocket. I also heard the Apollo rocket blasting off this morning, but my reaction was somewhat different. I felt, if only we could have the value one-hundredth the price of one Apollo rocket to spend on one natural area, to allow us to put in the same quality of research scientists, then how much different our knowledge would be of the natural systems that we struggle to study with all kinds of inferior apparatus.

I would like to come to Dr. Oberlander's remarks about urbanization. Yes, I am prepared to believe that there is a high rate of urbanization in Canada. I do not think that the problem we are faced with here is so much urban man. I feel it is mobile man. It is homo automobilensis that we should be concerned about and not urban man. Because man is so mobile we are, in fact, having a form of urbanization which obliterates the landscape; that continuous spread of little boxes does not give any sense of community.

We have heard a great deal about wilderness. I should just like to remind people that Thoreau, a name which is always quoted when one talks about wilderness and solitude, went off to his Walden Pond--his pond was two miles away from his homestead--and he used to go back regularly to talk to his friends in the village. I do not think we need to encourage the concept that man must travel large distances and must spread over large areas of country in order to be comfortable and happy. I think there is a myth about wilderness, but, anyway, I
am more concerned at the present moment with impressing upon you all the need for natural areas, if we are going to maintain man on this planet.

Coming back to Dr. Oberlander; he commented that he believed that man is more important than nature. I do not think that any of us today have said that man is not more important than nature. I believe that man is part of the natural world and I believe that unless we understand the natural world, then man will not be able to continue to exist on this planet.

KARIEL: Before giving Dr. Oberlander a chance here, Dr. Fuller has some comments.

FULLER: I hate to engage in polemics with one as facile with words as Dr. Oberlander, but I think there is some danger that we may have been snowed under by his opening remarks. I do not really believe that Apollo opens an escape hatch and there is one analogy which, I think, is a pretty good one. The invention of the steam engine, the use of steamships and the availability of an almost vacant continent in North America and South America, did not solve the space problems of Europe. If the steamship and North America did not solve the space problems of Europe, the Apollo rocket and the empty moon is not going to solve the space problems which we now have.

I would also like to concur with Dr. Cragg's last remark that we have not said that nature is more important than man. It is a question, I think, of the same dicotomy that the philosophers engaged themselves with, the mind-body doctomy. Man and nature is the same thing. Man is a part of nature and as Dr. Cragg has said, we must accommodate ourselves to living in harmony with it, and not set ourselves apart from it.

KARIEL: Dr. Oberlander?
OBERTLANDER: Thank you Mr. Chairman. Let me go back to Dr. Cragg's points.

I too, in looking at the Apollo had the thought, if I could only have--and I not as modest as he is--not one per cent, but all of the cash that is involved in going up into space, I would like it for the kind of problems that the urban ghetto and the urban revolution now is all about. I am all for the nature conservancies and I have enjoyed them as an innocent onlooker, but I am damned scared of what is happening in our cities and by those who feel themselves totally disenfranchised.

I would like to use the Apollo money for more and better housing, for more and better schools, for the kinds of things you and I and our children really need, long before we go to the moon. If we could have convinced the United States as well as Canadian governments, to participate in a true struggle and competition with the Union of Soviet Socialist Republics, in terms of reaching downtown instead of the moon, we would in fact be able to live a more meaningful, a more effective, and I would submit, in terms of the nature-man relationship, a more creative life. So I would like the money that the Apollo has now pushed into the outer space, to use for the kinds of things that, as a very simple, pragmatic fellow, I see we really need.

If we are able to reach the moon, I submit, we are also able to build a better environment. As Mr. Milton very, very clearly explained, it is a matter of allocation of resources. As a society, and I am talking about western society particularly, we are extremely affluent; we have never had as many real resources at our disposal before. The question is no longer a question of affording, it is a question of allocation and distribution.

Now, the second point that Dr. Cragg mentioned is homo automobilensis; I would defend the concept of homo urbano simply on the notion that I am talking about changing values. In the days when man
lived a relatively simple life—and by "simple" I mean he lived by
the skill of his own hands, in a relationship with nature and his
family which was relatively simple and relatively clear to him—he
could see cause and effect very easily. A person living by the land
knows what happens to land if he treats the land badly. Pollution
is a matter of personal experience for someone who disposes effluent
in a way that in fact, destroys the nature of his very livelihood.
We have lost this because we are detached now. Therefore, homo
urbanistico, or some such Latin phrase simply illustrates, as I am
trying to, a change in value. We do not really understand our
relationship to the environment—and I welcome of course, Mr. Swem's
programs of learning the total environmental relationship—and
secondly, since we do not know our relationship to the environment, we
seek various kinds of escape.

Mr. Milton, I think, referred to the twenty-four volumes of the
Outdoor Recreation Resources Review Commission, and if I remember
rightly, correct me if I am wrong, in the survey made about what
people do for recreational purposes, the function which had the high-
est numbers of votes was "driving." Now, given a choice in a free
society, what do people do for the fun of recreation? They drive.
Why? Because they really do not quite know what else they could do.
This automobilensis situation is a function, as I see it, of the change
in values and the lack of clarification of values in which we are
captured.

As to the concept of escape hatch, I regret to say I am not as
sanguine as my colleague. I fear that this Apollo notion is, in fact,
opening up an escape hatch. I do not mean we will all suddenly take
off to the moon, but I think, once again, it will change our collective
value system. We will think we can escape our own misdeeds; we will
think we can escape the pollution problem; we will think we can escape
not tackling the blight on our landscape; we will think we can escape the real issues of Africa or Asia. That is a great danger of the success of reaching the moon. This will allow us once again, not to face the real issue of our environmental relationship in an urban world.

Incidentally, not only do I believe that man is more important than nature, but I also believe, and maybe this is now something to challenge Dr. Cragg with, I happen to think nature is made by man. I don't think there is nature that is not made by man. Is that true or false?

MILTON: False.

PIMLOTT: I think that the gap between our scientific progress and our technology is a very important part of this concept of Dr. Oberlander's that man is completely separate from nature, and unless leaders of our society first of all come around to accepting that we are part of nature, that we are still dependent on natural functions, we could get into very, very severe problems; I think that we are off on a disaster course.

Lamont Cole has raised the question of what would happen if we had one of these super-tankers loaded with herbicide go on the rocks, as the Torrey Canyon did, and sink in an area where the total load of 250,000 tons of herbicide was distributed throughout the marine systems and have a very important force on the destruction of phytoplankton. What would happen in terms of oxygen relationships in the world?

If we go on thinking of man as apart from nature, or man being able to escape, his escape hatch being technology--we do not have to go to the moon--his escape hatch will always be, "Technology will save us." Many of us who are ecologists, feel that this is a very, very
serious defect in our thinking and we must get back to thinking of ourselves not as apart from but as a part of a holistic community.

OBERLANDER: Mr. Chairman, I do not mind being chastised for the right things. I did not say that man is apart from nature at all; in fact, man is an essential partner of nature. But I do say that the relationship between man and nature has changed, and is changing.

I think my simple example is this; that we look at Banff National Park and say, "Isn't this a marvelous example of nature undisturbed?" when we know this is simply not true. Banff National Park, as Dr. Nelson explained yesterday, has been cut over and has been treated as every other piece of this continent has been, and then gradually has become a kind of national park enclave. So the nature in which I would live is, in fact, made by man, for better or for worse, and therefore, I entirely agree with the holistic approach. Man and nature are partners.

PIMLOTT: I am glad that we have at least clarified the semantic problem, because Dr. Oberlander definitely said that man is more important than nature. If man is more important than nature, of which he is a part, he obviously is not part of it. So it is nice that he has at least cleared up a semantic problem. I understand him a little better now.

(Laughter)

OBERLANDER: Excuse me, there are equal partnerships and unequal partnerships.

(Laughter)

KARIEL: Let us give John Milton an opportunity to say a few things here.

MILTON: I am not a semanticist, so I will just make a couple of short comments. I think that we are entering a new era in man's impact.
What struck me from my work in the Tropics is that three things are quite different now in their impact in the developing world; two-thirds of the world, after all. One is the size with which we can mount massive programs for changing areas. You visit southwest Florida and you will find areas where forty, fifty miles of canals have been dug and dredged in a period of six months—just massive huge changes—and we are talking about building dams that would flood an area the size of Italy in the Amazon Basin. We of course, have talked about changes in Alaska; Rampart Dam. All you Canadians are quite aware of the proposals for the Nawapa scheme. This would create quite a considerable change in the whole ecology of Canada and her rivers. But the size of these things is something entirely new to man, it is something that we are now having to come to grips with in a very new sense.

This is compounded by a second factor, which is the speed with which these programs can be put into effect. We can dig a new canal, once we decide to, in the Canal Zone, in a matter of months. It no longer takes years and years; we can get in and through atomic excavation, do it right now—fast.

Third, we are taking a lot of the technology as evolved in the Temperate Zone—at least it is better adapted to the Temperate Zone—and exporting it to the tropical regions in particular, assuming that it is going to create great good there. We really have done no work to find out what kind of sophisticated technology can really work with the tropical environment to improve productivity.

FULLER: I think we have been attacking Dr. Oberlander on one or two peripheral points and I think we should not forget that he has made some very valuable statements about the change to homo urbano or urbanistic, and the changes in human attitudes.

I think the question of managing national parks as examples of
public land for instance, has two dimensions; the scientific one which is primarily a biological one of understanding the natural situation in the region—and the very important sociological or psychological one, or whatever it comes down to, of managing man in this environment. I think it is at least useful that we have this dialogue with Dr. Oberlander, who obviously represents the sociological approach, where some of us have been more concerned with the ecological.

There is one question though, that I would like to ask him. He said a few moments ago, if I understood correctly, that we have more resources now than we have ever had, more real resources; it is not a question of shortage of resources but allocation of resources. If this is true, is it not a valid allocation of some of these resources to say that they shall be unused and preserved in perpetuity, or against some emergency that may arise in the long-term future?

OBERLANDER: This is a very interesting question. I hope you will not say that I am trying to be a semanticist here in what I am going to answer. I happen to think a resource is no resource until it is used—and used for man. So the question of the resources at our disposal are entirely related to purpose and man's capability. I am simply saying that we individually, as a society, have in fact produced more real wealth—and I am subject to correction by economists in the audience—more material wealth than ever before, and that we are in fact, able to allocate our resources in a much wider fashion than we have done.

Let me just be very simple again. I think the United States for the first time in history, is able to afford war and peace at the same time. No other civilization has ever been able to do that. Now, it is true that it is not quite the real kind of peace. Mr. Milton quite correctly says, "Look, we don't have enough money to do the kind of 'Great Society' that Mr. Johnson has proposed, "but it is amazing
what kinds of things are possible despite the fact that the U.S.A. is literally fighting a major war and therefore, its resources, not only have to go to the moon, but have to go to Vietnam as well. So, in fact, the question of resource allocation is really a matter of allocation—and we have a lot more.

The other point is simply this, if I look at myself and my own family; my father has worked longer hours than I do; his father has worked longer hours than he did. My grandfather produced less in actual real terms by working more. My father produced more with less hours, and I, sometimes, produce more with less hours. So, the question of producing wealth, to me, is quite real, and, therefore, the question is one of allocating resources, and only when a resource is in fact allocatable, is it a resource.

DISCUSSION FROM THE FLOOR

HEACOX: Dr. Oberlander needs no defence or support from someone like me. He has ably taken care of himself. However, I would like to come back to his statement, "I think that man is more important than nature." Now I would like to place my interpretation on what he was saying and if he differs with me, this is fine.

I think he had the same attitude that I had, having sat here for a full day and a half. He sees here, and has listened to, a number of very talented scientists in a wide variety of the natural sciences. We have been listening to people who have been talking about the national parks primarily from the standpoint of the scientist and of the naturalist, and we have almost overlooked the fact that national parks are for the people. This is not to say that they do not have a function for the scientist, for research and so forth, but really national parks are owned by the people and they are for the people,
whether they are in the United States or Canada or South Africa, or wherever they may be. So that was what, I think, he was reflecting and at least, whether he was or not, my attitude and my impression of this meeting has been that the group of scientists here have been really talking about the national parks from their own individual standpoint, much more so than from the standpoint of the people of Canada. I see you shaking your heads.

Each of you represents to a degree, a very narrow phase of the natural sciences; you have got wilderness people and recreation people, and so forth. Now I have been in this same position almost all of my life. I have attended many meetings at which practically all of the speakers were professional foresters, either in private or government work; practically all the people in the audience were foresters of one kind or another, who had devoted their lives to managing timber and growing timber; and we have been accused of talking to ourselves. As they say, "You are talking in a rain barrel, you're just echoing back, listening to your own echoes and you are only interested in profits in the first place, and you are not really thinking in terms of the real service that the forest can perform for the people."

We in turn say, "Well, we think that growing timber is a pretty good thing in itself. Twenty-three per cent of the value of all the raw materials that go into industry in the United States come from the forest, so we look upon ourselves as making a contribution to mankind, secondarily, in that way."

I think that each of you, undoubtedly thinks that in making your comments, you are placing the people of Canada foremost in your thinking, with respect to how you are going to develop and manage the national park system. But, nonetheless, the emphasis has been on the scientific and the naturalist side of it. I am not trying to defend
Dr. Oberlander but, to me at least, he really changed the tone and the character of this meeting in a very constructive way.

KARIEL: This reminds me of a question about timber in Mount Olympic National Park, and the response of the individual supervisor was, "We don't have any timber here, we only have trees."

STELFOX: My impression has been that the speakers this morning were making one simple statement; that the national parks are for the people but before we run headlong into multiple use of the national parks, it is imperative that sufficient research be done to understand the workings of the ecosystem, so that we prevent unknowing damage by permitting the multiple use of these lands.

This brings up one point that has been bothering me. We have heard considerable evidence by Doctors Fuller and Cragg that detailed ecological studies are, in fact, required to understand the workings of these ecosystems, and that until such research is complete we must preserve them. Now, considering only those relatively unimpaired portions of the national parks and considering the numbers of agencies and their multitudes of researchers who are eager to conduct research in the national parks, I wonder if the panel would care to make some suggestions on just how should ecosystem research be co-ordinated, directed and isolated in such manner that research in itself does not introduce serious impairment to national parks environments.

KARIEL: Dr. Cragg?

CRAGG: In the written version I point out that it depends a great deal upon the type of research you do. The type of research has got to be planned and the scientists, for the most part, for certain types of research, must have complete control.

There are other types of research which can be fitted into other operations within the park, but my own view is that much of the
fundamental ecological research which must be done today, cannot be done in national parks as long as you have public access to practically any part of the park. Sooner or later apparatus, sophisticated apparatus in particular, is going to be damaged or the animals you are studying are going to be moved, or man is going to interfere with them.

Now, you may say that what I am asking for is a study which is not a natural system. I am prepared to accept that. What we are trying to set up are models against which we can test various ecological or other scientific hypotheses. I think this is important. What I am afraid of is, that if we continue to think "parks are for the people," that we shall end up without sufficient areas on which natural systems can be studied in their own right.

An earlier speaker rather suggested that all the speakers this morning were concerned with one use, namely scientific use. I made it perfectly clear in my opening remarks that I was speaking as a minority user. I mean, the total amount of land necessary for the scientific work that we want to do, and this is coming out very clearly in the International Biological Program, is not very large in terms of the total amount of land in Canada. But what we do want to feel is that when we set up an experiment, it is not going to be destroyed. The work of my own Centre is dependent wholly on the good will of the federal Department of Forestry on whose land we operate. The relations are exceptionally good and friendly, and I am not saying that I would want them any different. But what I would like to do is to be able to control hunters at certain times of the year.

These are small things and I do feel that a scientist working with the most complex systems of all, natural ecosystems, has the right to a certain amount of independence in his activities, just as
a physicist working in his laboratory has. People in this University
would object, I am quite sure, if we took our sandwiches and sat down
in the middle of the physics laboratory, and then left our papers
behind. But this is what happens to experimental areas and that is
why I feel as a minority user, I have got to protest strongly—and
very strongly.

HENDERSON: If we think of man apart from nature we are attacking our-
selves in some way. When we go ahead and build our cities without
thinking of ourselves as a part of nature, we have no chance of
building a city that is, in fact, a natural system. Man is part of
nature. Our cities could be natural systems, they could be beautiful:
they could be habitable, utilizing ecological principles. These would
devolve from the uses which Dr. Cragg would like to make of natural
areas for the scientific investigation of natural systems.

Man has to have a feeling of belonging. I really feel that a
lot of the problems of our cities and in society today originate from
a feeling of alienation, because we have set ourselves apart from
nature.

Just recently, one of the leading science editors in Canada was
writing on the questions which Dr. Milton mentioned about reversing
the flow of rivers flowing into the Arctic, and so on, and he had
one sentence which struck me. He said, "In the battle between man and
nature, can any of us doubt that man will not be the winner?" Now,
I think this attitude is what we are really discussing. It is the
wrong attitude. I think we are heading for disaster, as Dr. Pimlott
said.

KARIEL: Thank you.

DE VOS: With increased use of national parks, more and more damage is
being done by visitors to the natural environment of these parks. We
all know that through the years the environment of Yosemite Valley
has been drastically changed, and in my recent experiences in other
parts of the world where the environment is less viable, I have
noticed how even a few biologists can have a drastic influence on the
environment.

What I would like to know is where agencies such as the
United States National Parks Service—which has been looking at this
impact of man on environment—are increasing their research on what
the impact of man is on the natural environment, and how they go
about this sort of thing. Perhaps Mr. Swem can enlighten us on this.

SWEM: Speaking to your point Mr. De Vos, I would also like to refer
back to the comment of Mr. Stelfox about co-ordination of research,
and make the remark that in so many of our areas there is not enough
going on in the way of research to really have anything to co-ordinate.
I think this is a very basic weakness and later in this meeting when
we hear from Mr. Lucas of the Forest Service, who is one of the very
fine researchers in our country on matters such as you mention, I am
sure we will be getting more into this subject.

We do have some studies going on, a few of them being carried
out by the National Parks Service. There are researchers from several
universities working in some of our parks.

I could mention a few of the studies such as the ones that, I
think, have been pretty well publicized; those of Dr. Betty Willard
in Rocky Mountain National Park, where she has been studying the
impact of visitor use in the Arctic Alpine Zone. As a result of her
work, we have changed some of our approaches in the management of the
high country, particularly how we are opening up certain areas to the
visitor. We have certain studies going on in Sequoia, from the
standpoint of the impact of burning and the lack of burning, and
regeneration of the Sequoia species.
MILTON: Ted Swem did not mention what I consider to be one of the finest studies that has come out of the Department of the Interior. This is a very imaginative study on the series of phosphorescent bays in Puerto Rico. I would recommend it to all of you here to look at as a model of how an environmental system might be managed to preserve the resource.

In this case, they understood that the watersheds feeding into these luminescent bays were very critical; any pollution of these watersheds would wipe out the plankton which phosphoresce. The preservation of this very interesting recreational resource requires looking at a much broader region than just the bay itself.

Another point is that in the United States right now, there is a tremendous growth I think, in attention being given by various universities, particularly on a regional basis, to take a look at national parks problems. I might suggest again that this might be a useful role for Canada. I think you are already underway in this kind of effort as I see by a couple of the monographs at this University. But there is a tremendous wealth of university work which can be done by graduate students led by professors, if a dialogue is opened up between the National Park Branch and your provincial parks people.

Thirdly, I would like to reiterate the point on the possibilities of getting a broader institution in Canada which might assign itself to the whole recreational problem. I remember that yesterday, the Minister was speaking on the need for a diversity of recreational areas within Canada. Well, to get this, you need to have some single agency which is going to take a look at the whole spectrum of national, provincial and local recreational needs, and try to make some sense out of all these varying demands. Only in this way can you get a direction of the intensive uses into these areas and then some relief from the demands on your high quality National Park areas.
SCOTT: Mr. Chairman, I have come to the conclusion from listening to what has been said, that research requirement is not necessarily compatible with either the maintenance of wilderness or with the demands of recreationists. As a result, therefore, I think it is emerging that we require areas that are specifically set forth for research, just in the same manner as Suffield [Alberta] is now used by the Department of National Defence. However, without any malice or anything of this nature, but in an attempt to start defining certain battle lines that I can see are emerging from the papers, I would like to address myself, to some extent to Dr. Oberlander.

Urban development is definitely not compatible with the demands of the wilderness believers. I suggest to you that development is an active thing. The existence of wilderness is a passive state of affairs. Its maintenance may also be passive after its boundaries are defined and established. Thus, development adjacent to wilderness administered by the same body may well put an active force against a passive situation. The passive situation over a period of time I suggest, must suffer. This, I suggest, is what is now happening.

As a Canadian, I am looking forward to the very best use of our existing heritage. With respect, I believe your policies in regards to the Banff National Park are doing the very opposite. Let me illustrate. You have created Banff and Jasper as "visitor services centres." Every other department of government is holding them out as "resorts." Dr. Nelson in his paper, took an example which adequately illustrates the point, that is, the advertising. I suggest the application of these visitor services centres to existing townsites is one that creates complete confusion and frustration. This is the reason why we are here in Calgary having this very important Conference, because we are adjacent to this problem. Development is limited where resort development would otherwise be
encouraged. And let us not be deceived on an analysis of the history of the western national parks; the conservationists, not the visitors and recreationists, are the intruders. I have fifty years of history to back me up, up to 1930.

It is therefore, my suggestion that your conclusion on your terms of reference has been falsely conceived. You have proceeded on the premise that this territory which you were requested to examine was wilderness subject to intrusion of visitors. It is clear in my mind that the basis of your studies ought to have been to create the very best resorts, with as little erosion of remaining wilderness as possible. After all, highways, railroads, towns, etc., cannot be erased at this stage of our development. It is not too late now, however, to reappraise the problem and to make the necessary changes in approach. If these are made, I believe that additional lands will become available for wilderness—which are now wilderness. I am saying, "Make wilderness out of wilderness, please."

Finally, if the delusion continues that Banff and Jasper are purely service centres, as I suggest is brought in your paper, then no province will give one inch of land for national parks in the future. My reasoning is pretty obvious. The stifling of one tourist industry must serve as a warning to all other provinces. Have no doubt, our tourist industry is suffering badly in Alberta and others are hearing about it.

HERRERO: I should like to make an attempt to bridge what seems to me to be a very big gap between Apollo VII and the national parks, and to end up hopefully, relating them with the dimension of man. It seems to me that Apollo VII and space exploration, and wilderness and the outdoor experience, are very closely related. They reveal basic genetically inherited behavioural propensities of man. These behaviours were established by natural selection and resulted in the
dispersal and success of man as a species. Today, cultural revolution makes it difficult to study our biological behavioural heritage. Still, to ignore it in discussing either Apollo VII or wilderness, may be disastrous.

BRANDBORG: I think Mr. Milton's plea for a dialogue between those within academic circles and those within the administrative political circles is a very earnest and a very sound one. I associate myself with Mr. Heacox when he says, "Indeed, parks are for people." Now, at times we regard this as a shibboleth, a hollow expression, a rationalization for over-development and commercialization of the parks. I think we see within this room a consensus that parks for all of their values, should be preserved in generally wild condition, but that their function is that of meeting the needs of people. I think that we must relate in a very realistic way in the course of this Conference to the challenge of bringing what we see here as developing guidelines, into a practical perspective of political action.

Dr. Oberlander in blasting-off this morning, has served a very vital purpose. He has challenged us as people who stay within the confines of our respective disciplines, who bathe ourselves in wonderful esoteric exercise in this kind of a setting, but who fail to talk to the very realistic problem of what is happening in a democratic state.

We see young people taking off, challenging those of us in middle age; we see the very great problems of the ghetto; we see the problems of poverty. We see the real threat of sacrificing wilderness in the face of all kinds of what we might refer to as, "uncontrolled, horrible development." But what, as a group, are we doing to reflect directly to people within democratic countries, where we have certain democratic institutions to pursue?
Now what I am asking is that you as professionally-trained people, with great breadth and great understanding, recognize as someone suggested here today, that we start processes at the community level, at the state and provincial level, to address ourselves to these problems in terms that local people can understand. In the United States, those of us within conservation organizations, are realizing that the people are away ahead of those within the professional circles; both within the agency circles of government, within many of our academic circles and within those groups which are sometimes described as being emotional in our orientation.

The people are ready to preserve wilderness. They do not care whether the wilderness is within our national parks, or whether we find small units of wild country within our municipal settings. They are ready to go. They will address themselves to the very broad, basic problems of society just as quickly as they will concern themselves about wilderness. But we, as people within land management and ecological disciplines, must relate to the training that must be done with these people, to point out how they, through an A,B,C process, can get their feet wet; how they can emerge themselves in the practical problem of saving the little park; in the practical problem of doing something for the people in the ghetto.

We, with our disciplines, can address ourselves to wilderness, to parks, to the resource areas, but we must show people how to get involved, how to assert pressure on politicians, how to make politicians see this great light which has been spread so beautifully before us today. We should not continue in this kind of an exercise for the balance of this Conference without being people-oriented and without being realistic in addressing ourselves to these political realities.
FULLER: I would like to make a few comments about the statement that "parks are for people." I think the people who have raised this question have left out the time dimension. I agree that parks are for people, and they are not only for this generation but for future generations, hopefully many future generations. It seems to me that this generation has only a caretaking mandate; that we use these parks, but in our use of them we must attempt to pass them on to those who come after us.

We have also heard that man, starting in prehistoric days, has been in these areas and has modified them, but we know that natural landscapes have a considerable power of recuperation. Yesterday, Dr. Nelson showed us pictures that prove this; that when the town-sites disappear the healing powers of the natural ecosystem take over and the landscape returns to something different from what it was. In fact, there is a paradox of preservation; strict preservation from fire in the national parks has changed the national parks very much. A professor of plant ecology once told me that the only habitat in the State of Wisconsin that does not change is the sand shore vegetation on Lake Michigan, which is wiped out every year by the ice push in the spring, and then the same pioneering plants come back.

We are dealing with a dynamic situation and some change by man can be tolerated by these systems. The amount of change that an alpine ecosystem can stand is not the same as the amount of change that the spruce forest on the lower slopes can stand. This is one of the places where we need research.

I think if we consider the question of parks for people, and people who are coming a hundred years or five hundred years or a thousand years after us, we will return to the question: "What do we
want to hand down to them?" Then, I think, we come back to Dr. Pimlott's argument for a living museum. We preserve all sorts of artifacts in museums, in archives, in art galleries, and I would simply raise the question: "Should we not somewhere in this country, preserve examples of the landscape more or less as it was at the time of settlement by Europeans?"

I think the question really is: "What do we want to preserve?" Do we want to aim at this period before widespread change of the face of the country by Europeans, or do we want to hand down to our grandchildren beautifully designed service centres in the various valleys of Banff and Jasper National Parks? Do we want to hand them down pulp mills and roads and railways, beautiful examples of which they can see all over the country? Or do we want to hand them down some little bits of native North America?

I have also done some thinking, as Dr. Oberlander recommended we should do, about my own family. I have a seven year old son who probably has had more wilderness experience than perhaps half the people in this room: a real wilderness experience in the Northwest Territories, not in the national parks. I have had wilderness experience, my children have had wilderness experience but the question that arises in my mind is, "Will my grandchildren have a wilderness experience?"

(Applause)

KARIEL: I would like to give Dr. Oberlander one more opportunity before we adjourn.

OBERLANDER: Thank you Mr. Chairman. It is not really a question of fairness so much as that as an old professor, I find it difficult to resist the captive audience.

(Laughter)
Let me make two points. One is a matter of information and the other a kind of act of faith.

I, too, live within an academic universe and I, therefore, sometimes pursue scientific ideas. What we have discussed today is single purpose research. In other words, those in the field of zoology look at wildlife, those in the field of forestry look at trees, those in the field of water look at streams, and so on. This is vital but I have always felt that the cross-relationship, the interdisciplinary relationship between these various fields is of the essence if we are really going to know what ecosystems do, and how we ought to live within nature.

Hence, as a very modest example, at the University of British Columbia we now have an opportunity—and that is all it is. Under a research grant from the Ford Foundation, we have brought together Forestry, Agriculture, Zoology, Ecology, Economics and ourselves—Planning. This is an attempt at bringing together disciplines to attack what is probably one joint problem—namely, the use without abuse of man's environment.

I do not think in all fairness, that there is as much of a conflict as some of either the panelists or the audience have interpreted my remarks to represent. I think there are differences of emphasis; I think there are differences of priority. I am anxious to widen the options available to us and widen the choices. I, too, would like my son and his son to have the wilderness experience. I do not think it is necessary to choose between either service centre or wilderness. I think we ought to have both. I think we can have both. I think it is essential that we ought to have both through good management. Life is highly dynamic. The one thing permanent in life is change. If we accept this, then the notion of use of national parks takes on a different character than if we look
at the world in static terms. I suggest to you it is not a question of choice. I think we can afford both—the kind of notion that some people call wilderness and the kind of notion that other people call areas for active recreation of an urban society.

KARIEL: Thank you. It has been a very good morning.
III MEASURING THE VALUE OF THE NATIONAL PARKS
Friday, October 11th: Afternoon

Providing for National Parks and Related Values
   Jack L. Knetsch 349

The Measurement of the Benefits of Public Investment in National Parks
   Lawrence G. Hines 363

Uses and Abuses of Highway Benefit-Cost Analysis: A Primer on Highway Economics for Park Officials, Conservationists, and Interested Citizens
   Dennis Neuzil 374

Summaries and Discussion 397
The purpose here is to look at some of the value questions related to parks and related amenities and to call attention to some of the ways in which we are meeting changing conditions of natural resource use—especially how these resource values may affect the role and provision of national parks. While a great deal of pride is rightfully taken in such parks I think we now need to be particularly mindful of how we adapt to changing conditions and providing park services and how we provide for the protection and provision of park-related values—and these may be far ranging.

That parks are generally considered to be a good thing, and that national parks are considered to be very good, carries with it the danger that we may be less sensitive to changing conditions and changing requirements of the system than we might otherwise be. The stakes appear to be such that we no longer can afford this. The simple

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magnitudes of the economically significant values associated with not just parks, but with our natural environments appears to dictate that we look beyond what is now being done.

I believe that a challenge of major proportions faces the movement to provide national parks. It is not just to block out some more land and adjust inholdings, it is to provide for parks and related land uses in a wider context to deal more directly and effectively with the wider ranging and vastly more important park and environmental values.

With the emphasis given various forms and purposes of preservation, protection, recreation, open space, and aesthetic enhancement, concern for parks has been greatly stimulated. The demands which are becoming important are not just the demands that we see evidenced by increasing numbers of park visitors. These are important, to be sure, but they are only part of the rapidly changing demand picture for parks and environmental values.

Many of the changes in environmental quality demands have been very rapid, paralleling that of the more evident growth for active outdoor recreation. The supplies of many of the environmental goods have on the other hand not always kept pace with increasing demands and in certain instances have actually decreased. The real challenge, therefore, is not simply to accommodate some of the demands related to recreation, parks, and certain environmental values, but to attempt to meet a wider range of such values and to bring supplies into a better balance with what appear to be rapidly increasing demands.

There has been without much doubt considerable progress made in the field of recreation and environmental enhancement within the past few years. However, I think a case can well be made that the setting aside of isolated areas and passing of the legislative measures we have witnessed, has only begun to bring the supply into some accord with the emerging demands. The means of accommodating to the demands have not
really become firmly embodied in the way in which resources are allocated and managed. There can be a good case made that the gains made in providing better environments, relative to the growth in the demands, have been rather minor.

We need to indeed look at some of our current efforts and past accomplishments in the national park field, and examine what in fact has been accomplished, and whether as much has been gained as may have been possible with some alternative actions. Many aspects of the national park movement are undergoing change and I think in many ways these are very hopeful changes. But there remain some severe problems facing the provision of parks if we are in fact to accomplish a more relevant dealing with a wider range of environmental values. This is not to say that the national parks by themselves are intended to accomplish all of this, but they do play a part, and the motivations for supporting national parks can also go a long way in supporting other more extensive means for dealing with environmental quality problems.

These environmental goods are not marketable and have no retail price but in their value and scarcity they are just as much economic goods and have value as those regularly produced, purchased, and consumed in the economy. The values attached to better environments—undisturbed bogs, mass recreation beaches, open spaces, pleasant agricultural and city landscapes—are related to demand and supply. It is the relative scarcity and demand which establishes values for these environmental products just as they do for other economic goods.

The increased demand for these environmental values, to the extent that they exist in terms of our willingness to sacrifice to obtain them, means an increase in the value of resources that can be used to supply them—open spaces, marshes, lakes, and beaches are worth more. The desired actions are, therefore, to the extent this is the case, to shift resources and commit them to such purposes. The
principles of efficient and economical use of resources, where alternative values are equal at the margin, is equally applicable in cases of environmental values as in other areas of economic activity.

In connection with this notion I would raise a point of some concern in park planning procedures. Certain kinds of recreation opportunities are more valuable than others, and certain types of preservation activities are more valuable than recreational development. We should not, therefore, indulge in the all too common practice in recreation planning of equating number of visitors to value. This can seriously bias outdoor recreation and preservation planning activities and do irreparable harm to some of the most significant values with which we should be concerned; and this often occurs in connection with national park involvements.

Many forms of outdoor recreation are readily available, while others are relatively scarce and have few or no close substitutes. We should not be willing to sacrifice important physical or ecological resources that may be rare and valuable for what is commonplace and of lower value at the margin. While this may make good common sense, it is not an idle worry. A decision to allow flatwater reservoirs to fill areas in the East Kootney or Grand Canyon should not be based only on a simple counting of number of participants. Surely such a procedure will systematically bias the result in the direction of mass recreation when it is altogether likely that these areas like others are far more valuable for recreation purposes left as they are.

This factor is not unrelated to the whole question of the full range of recreation opportunity and park development, including those close to urban centres themselves. Urban recreation and parks cannot continue to be ignored by those interested in more remote, even though more spectacular, areas.
Nature of Environmental Problems

Marked changes in our society have established new values and patterns for use of natural resources. Preservation of scenic amenities, protection of natural biological communities, as well as open space for active outdoor recreation, have taken on new importance. An awareness of environmental problems is reflected in general public support for legislation and programs to dedicate wilderness, attack water pollution, develop recreation areas, and reduce taxes on farm land to relieve urban spread. Some support emanates from a concern for health, but much more can be traced to the desire to live, work and play in pleasant surroundings.

The result of the changes in our society and in our environment, where technological, economic, political, and social changes have all had their accelerating effect, has been a rapidly increasing awareness of environmental amenities, their destruction, lack of availability, and increases in the demand for them. This is especially true and often finds sharp focus in the case of parks. With the emphasis given various forms and purposes of preservation, protection, recreation, open space, and aesthetic enhancement, concern for parks has been greatly stimulated.

While relative values of different uses of important natural resource change, it is not clear that our usual reliance on the market and other institutions, as well as many of our collective efforts in such activities as conservation and parks, are effective in bringing about corresponding changes in resource use. Environmental quality values are very real, but free societies seem very poorly prepared to inject these values into the social and economic calculus in ways which are effective in resolving the conflicts of divergent interests centring on these values. In the case of many environmental quality concerns, the market solutions and our other means of allocating resources
are inadequate in achieving the most desirable—from the standpoint of all of the values and costs involved—allocation of resources to different uses. In a great many of these cases, social values i.e., what these resources are worth to all of society, may diverge greatly from the private values which determine the distribution in the market place.

Rightful pride is taken in the vast production of goods and services from the stock of our resources, and such progress has real value. It may, however, also impose serious offsetting losses in other values. In many cases the improvements have been gained at the expense of disrupting natural surroundings—often a substantial cost, and the social cost of such environmental deterioration is simply no longer zero. For example, coal produced by a strip mine is valued in the market and its production is subject to the incentives and restraints registered by its market price and the market cost of production, whereas the consequent change in the value of the landscape receives no consideration by the resource owner. This is not to condemn the resource owner, but to call attention to the fundamental problem confronting the preservation and improvement of quality environments. Similarly, the marsh filling operations of a land developer selling home and cottage sites imposes a severe cost to sport and commercial fisheries by destroying the area on which fish depend at one stage of their life cycle. Since these costs are not taken into account by the developer, cottage site prices are artificially low in terms of the total cost, some of which are external to the developer's decisions. If firms and individuals are not obliged to take such side effects into account they will, for the most part, treat them as free when in fact they are anything but free.

Related to the problem of external effects and the existence of important non-market demands for park-related values, and similarly causing private allocation decisions to often yield poor results, are our assumptions about the reversibility and accessibility of resource
values. This is likely to be important in instances involving environ-
mental values and park values, especially by those stemming from less
common experiences or resources. Unique areas offer prime instances in
which supply is certainly anything but reversible. Once many ecological
communities are disturbed, for example, they may be effectively destroy-
ed for all times. If the Grand Canyon were materially altered, it is
unlikely that, as a practical matter, it could ever be restored.

Parks and Accommodation to Change.

Increasing population densities and increasingly urban society,
the juxtaposition of large population centres and large blocks of pub-
lic land set aside or acquired during early conservation crusades, grow-
ing and conflicting demands, and demands from all parts of the country
for the right to develop resources according to local economic object-
ives, have resulted in noticeable signs of stress in the present self-
contained rationale underlying park designation and management at all
levels of government. Park acquisition costs have risen, often dramat-
ically near urban areas or areas close to prime recreational resources;
proposed roads and facilities in park units have precipitated bitter
fights—often between groups claiming similar goals; there are disagre-
ements about the management of wildlife within parks; and many of the
important demands of major segments of the population have effectively
been ignored.

There is, I believe, increasing reason to question the ability
of our existing unitary park concept, with its discreet boundaries con-
ceived under past conditions, to deal adequately with the full range of
pressures, values, and purposes which are emerging. This is especially
true in areas of the heaviest competing demands for resources—where the
recreation and park demands are often also the greatest.

Setting aside large areas of public land or the outright acquisi-
tion of park land, is often not possible and may no longer be an
adequate solution, especially in certain portions of the country. Realities of competing purposes and demands may not be handled appropriately, nor can the increased opportunities be exploited to satisfy a broadening range of purposes.

National park management has often been vocally attacked for such things as overdevelopment in the parks or not making them more freely accessible to more people. These are important issues, and are in need of constant appraisal, but I believe that a far more significant problem and opportunity in greater need of attention is how parks relate to the areas surrounding them, and the demands made on our total natural environment and the social, physical and biological systems of which they are a part.

The national park as a form of land use has been a continuing enigma for those interested in natural resources. The difficulty stems from having the objectives—which are often stated in highly moralistic terms--translated into tangible boundaries, roads, buildings, land acquisition contracts, and developments. Much of the attention of park pronouncements has been centred on questions of management of areas within a system. However, there are difficulties having to do with formulating a rationale to guard selection and definition of prospective units, and most importantly, how such units relate to the total environment.

Early park units were justified in word and spirit by a desire to keep some superlative areas safe from exploitation. The arguments for inclusion have hinged on statements of the "significance" of a proposed area. Most of the choices made were clear-cut and beyond question, but inconsistencies have been apparent, for significance, after all, is a sliding scale. In addition, significance could be offset by the works of man even though the modification was slight and easily repairable. A case in point in the U.S., is Lake Tahoe, a superior area by-passed because of logging scars in the eastern portion of the basin.
Park boundaries selected for protecting what was judged to be significant have not always, or even often taken into account the equitable geographic distribution of units, the effects of population shifts, nor the nature of activities alongside and near the parks.

Further, there can be little doubt that in more recent park proposals outdoor recreation as a park purpose is in the ascendency. Elaborate pleas for the protection of natural features have come forward, clinched by statements that within a few years high volumes of campers and motorists can be expected to visit the delicate, irreplaceable features. To cite another example in the United States, Canyonlands, supposedly the quality heart of an extensive country of weird erosion forms to be "saved" by national park management, is characterized as needed to serve the burgeoning recreation "needs" of southern California.

The argument that certain features—a lake or beach—or some acreage must be placed in public ownership to meet the population demands of forty years hence, or any future time, doesn't answer very much. What is to happen where there is little unoccupied land in a region to put into public ownership? Will all problems have to be resolved by designating all or nearly all of the land surface for public ownership, as some have proposed in the case of our Potomac River basin? What happens to the land not in public ownership? These hard questions suggest problems facing unitary parks, as presently conceived, to serve as bulwarks in preserving or enhancing high-quality environments, or even that they may not be really very important for this purpose.

It appears that we cannot continue to rely on public ownership and unitary parks as a major answer in bringing about a better balance between demand and supply of environmental values. And as the demands continue to shift as they apparently have and no doubt will continue, the usually isolated national park may well become more important but yet
Related to this is the notion that this generation cannot and should not provide all of the park and recreation lands and opportunities that will ever be demanded. It is the accommodation to resource demand changes that this generation should most importantly provide. In this sense, there may be little sympathy for the notion of "finishing" a national park, or any other such system. And there is even less for the idea that a few parks covering the most spectacular areas can once and for all take care of the public's demands—and these are real demands—for general quality environments and pleasant landscapes, to be lived in for more than a few days every year or visited every several years.

Unitary land reservations with significant features are distinguishable, attainable symbols which are easier for citizens and legislators to perceive than the complex programs required to deal comprehensively with environmental ills and environmental protection. But while the unit parks have heightened public perception of broader environmental issues, established park units do not necessarily relate to what is happening in the world outside their boundaries.

It may be neither desirable nor possible to shed the missionary fervour surrounding traditional park approaches. But it is clear that other approaches seem to be needed to come to grips with the expanding role of parks, and to provide more effectively and equitably for demands, particularly if resource protection and scenic enhancement are to be a part of the land use patterns which are to emerge.

Some of the weaknesses of many of our traditional approaches are the result of a very narrow perception of parks and their relationship to the biological and social world around them. An approach capable of deliberately recognizing that within regions all park areas no matter
what size or for what purpose they were established, are related to one another, to the landscape which includes them, and the society which uses and supports them, is needed if we are going to find our way out of the thicket of piecemeal parcelling of recreation commitments and endless bickering about the seeming morality and immorality of various private and public actions in this field.

The fundamental distinction of such a systems approach to park planning is that it does not treat tracts of land or a single resource as an isolated parcel or determine its use in isolation. Instead attempts to place each resource and each purpose in a larger context, considering its complementary and competitive aspects. Furthermore, it makes possible a more flexible framework to deal with changing uses and values.

The time horizon relevant to resource decisions is a long one. Resource uses and values change, and planning should allow for and take full advantage of it. For example, the common notion that an area may now have some improvements on it and should, therefore, be excluded from any park consideration because it is already lost, is really short­sighted. A region can include privately owned and developed areas. Indeed, the relationships between these and other areas are of prime concern. To include such areas within the planning purview improves the chances for the values of all of the resources to increase. The result would be greater equity or fairness among resource users and resource owners. Institutions could well be devised, for example, to allow for the short life of buildings, and management decisions can be made which would guide land use toward desired ends through combinations of incentives and restraints.

If we are to deal realistically with the demands and values that will be more important in the future, we must take into account the relative supply and demand for resource products, and the incidence of
gains and losses resulting from how we respond to demands. The translations of park values into politically popular programs turns on this assessment and on the trade-offs which can be made to ameliorate the inequities. If the demand and values in fact exist to the extent we think they do, we surely ought to be able to bring about changes in land use to realize them. This, however, is a continuing challenge for both now and the future. But here too lie significant opportunities.

We must recognize that park costs and benefits are perceived differently by different people. Proponents and opponents of national park units follow a script, with minor variations pitched to the specific vicinity: proponents are nearly always representatives of a wide, often national interest, while the opponents are nearly always those in immediate proximity to the project. Redress methods currently in use are uneven and, as in the case of establishing value in appropriation or eminent domain proceedings, not particularly equitable.

If parks are to be established, a better mechanism to identify the gains and costs and to compensate those suffering losses must be sought. The valid and sincere conflicts between different interests must be more nearly resolved not only to attain more equity among different affected parties, but to get some unanimity among governmental representatives. In Canada, as in the United States, very few proposals seem to get very far without this.

If parks are to contribute to an expanded range of environmental supply other requisites to the provision of park services have likewise become increasingly clear:

1. An exterior boundary should not be a rigid line of demarcation between completely different kinds of land use; and,
2. The plans for development should consist of a series of flexible strategies which reflect the inherent character of the resources and the abilities of both public and private
agencies and organizations to meet constantly shifting public
demands for services from the resources.

Once a general direction of resource development has been out-
lined, based on knowledge of resource and use interrelationships, mon-
itoring systems to record and evaluate programs and policies can and
should be established, and every administrative device available to each
level of government employed as part of an implementing strategy, rang-
ing from tax rate adjustments, installation of water and sewer lines,
subsidies, and partial purchases, to outright acquisition of fee simple
titles. By utilizing such incentives and restraints, land use could be
guided in desired directions. The national government, with or without
local help, might, for example, set out to identify clearly and acquire
fee simple title to extraordinarily fragile resources or those of great
scientific importance and concentrate on providing the expertise to
maintain them.

It may or may not be that a single agency such as a national
parks organization can be capable of carrying out a complete regional
approach. It may be that effective participation of it may only be in
the area of preservation and interpretation of natural phenomena.

Traditional forms of administrative mechanisms, geared to single
or limited programs by either federal or non-federal agencies, seem to
be inadequate to deal with the multiple considerations encompassed in
any approach to the total environment. It may instead necessitate the
re-orientation and co-ordination of the many separate programs present-
ly being conducted by federal, non-federal and local agencies. Such a
policy cannot be developed or effectuated without full support at all
levels. And to be successful, a continuing sympathetic dialogue must
be established between the various interests.

Under current practices, public interest as perceived by each of
the several functional agencies is in terms of its own legislative
mandate and is often expressed as a fragmented scheme of property right acquisition. Surely these can be put together in ways that complement each other in order to provide for, or yield, greater resource values in a region. Furthermore, many of these desired facilities and preservation of area need not be all provided at public expense.

There may clearly be a rationale for provision of services by the general public without necessarily a case for making it a free service. The dictates of economics and of markets are often useful even in public enterprise. For example, income derived from graduated user-charges could be a major source of finance for both park development and for more adequate compensation of public and individual losers.

Landowner and local government objectives are valid. There may be perfectly reasonable ways to achieve them, given more complete knowledge of the resources, total costs, and benefits than they have been able to perceive from their limited vantage point. Similarly the evaluation of the resources by a more remote public has validity and may show that the objectives of the public at large may be realized without sole reliance on total acquisition. The continuing dialogue suggested here cannot take place if the participants are all located in the national capital, provincial capital or local municipal hall.

It would seem that the stakes are sufficiently high to wonder more about how we are to provide park values in the future. This concern is not just one for more new parks; this alone is not enough. Rather, it is for providing for them in, probably less tidy ways; for their efficient and equitable establishment and operation, and for a wider range of increasingly important environmental concerns.
Over twenty years ago, the United States National Park Service undertook a study of the recreational benefits of national parks, which prior to the design of the project solicited the advice of selected economists on how it should be undertaken. The conclusion of the study—that park benefits are generally not susceptible to strict monetary assessment—is less interesting than are the almost uniformly unhelpful responses of the economists queried. Few had seriously considered such problems and most responded in a kind of *ad hoc* expression, sometimes including a personal endorsement of the National Parks System. Since this early study, the literature has burgeoned in the field of resource economics, with public investment in water resource projects providing the basis for the development of benefit-cost analysis and the discussion of such issues as those raised above.

Although the output of articles and studies in this area has been vast since the Park Service's early attempt, progress in the
development of techniques of benefit analysis has fallen considerably short of the remarkable. Indeed, a recent symposium on benefit measurement sponsored by the Brookings Institution \(^4\) reaches a conclusion that differs very little from that of the early National Parks study. Mack and Myers in the Brookings symposium ask "whether recreational benefits can be given a price that seems reasonably comprehensive and reliable." They respond:

> Our conclusion is negative: in the absence of market mechanisms that function with sufficient breadth and depth, market prices do not serve the purpose; nor can other satisfactory dollar measures of merit be contrived.\(^5\)

In the absence of automatic private market measurement of the worth of recreation benefits, a number of indirect and proximate indicators of benefit measure have been employed. Most of these techniques involve greater reliance upon market data of one kind or another than Mack and Myers appear to consider desirable. One of the earliest of the indirect approaches is that of Professor Hotelling, which depends upon establishing the demand for recreational services on the basis of differing "concentric travel cost zones." The most famous application of this technique is to be found in the article of Trice and Wood on recreational benefits.\(^6\) Essentially, the determination of the worth of benefits is derived from the costs of travel to the recreational area, providing an index that can be constructed by sampling travel expenditures from different geographic zones. It is assumed that the recreation users from nearer zones benefit from consumer's surplus.

The advantages of the Trice-Wood index are its simplicity and its ease of derivation by sampling technique. Its disadvantages are that although the index is based on market data—travel costs—it is at best a partial measure of benefit, but at the same time possesses the usual deficiencies of market price as a measure of social value. (The deficiencies of market price as a measure of social value and as a guide
to recreational benefit measurement will be considered below.) Moreover, in attributing consumer's surplus to those whose travel costs are lower—come from nearer zones—Trice and Wood implicitly posit a uniformity of consumer preferences that is quite unlikely. Some who live near the recreational area may be just on the margin of indifference in visiting the recreational area at the low travel rate; others in the near zone may place a higher evaluation on the recreational experience than is involved in the travel cost for a single trip, but adjust to marginal indifference by more visits. As a result, where the first visit may have yielded consumer's surplus, the last does not. Given mobility and ample time, recreational users may be expected to behave in the orthodox consumer manner of adjusting marginal expenditure to marginal benefit.

As a ranking device, the Trice-Wood index has merit, but care must be exercised to determine whether travel costs provide an adequate reflection of the social worth of the recreational installation. In important instances such costs will not yield the desired evaluation. The Trice-Wood index represents a considerable advance over the relatively unsophisticated arraying of all gross expenditures, whether directly or indirectly the result of the recreation visit, as a measure of the worth of recreational benefits. And yet in the face of zero price and generally unrationed access to most public recreational areas, there is a critical need not only for a device to rank the economic worth of existing facilities, but for a means of determining whether more or less resources should be transferred from the private sector of the economy to such installations. The gross expenditure measure, with all its faults, comes somewhat closer to providing information on this latter question than does the Trice-Wood index.

But as Marion Clawson and others have pointed out, no one can be very happy about the estimates of recreational gross expenditures.
Such estimates err on the side of the exclusion of essential expenditures and inclusion of inappropriate items. For example, sample questionnaires and estimates may not pick up expenditures indispensable to the recreational experience that were made outside the region, but may include expenditures, such as for food that would normally be consumed whether in the recreational area or at home, which cannot be attributed to the recreational experience. There is no reason to believe that these over-inclusions and under-inclusions will balance out. Such objections to the gross expenditure approach must be recognized, however, as largely an indication of the crudity of both the data surveyed and the technique of analysis applied rather than a conceptual weakness of the gross expenditures approach.

More than the price or fee may be involved in the pursuit of different recreational activities and some expenditures—such as for equipment—are a clear cost of undertaking the activity and just as legitimate a measure of the consumer demand as are, say, greens fees on a golf course. Expenditures that are not peculiar to the activity, however, such as normal outlays for food, clothing, and shelter, should not be included as part of the gross expenditures associated with the recreational activity. But of course expenditures in these areas that are higher than the normal home outlays, such as the cost of eating on vacation trips, should be attributed to the relevant activity to the extent of the difference.

Three variations in concepts illustrate the different objectives that may lie behind the measurement of the economic value of recreational activity. First, gross expenditures as a measure of economic worth: all outlays for equipment and user fees (or prices) irrespective of where made in order to provide a comprehensive indication of the value of the activity to the individual and the contribution it makes to national income. If the activity is available at zero price, as are many
recreational opportunities, a substitute estimate price should be included in computing gross expenditures. (This substitute price should not be included, of course, when following orthodox national income accounting practices.)

Second, gross expenditures as a regional contribution: all outlays made within the geographic area in question irrespective of whether the expenditures are "transfer" in nature or exclusively because of the recreational activity. The sole criterion is whether the expenditures are made within the region; purchase of equipment outside the region, even though solely for the recreational activity within the region, are of no interest whereas expenditures even for items that are mere duplications of those that would be made at home are included in the regional contribution measure. The issue of double counting is of no relevance in the computation of gross regional expenditures because the purpose of the final figure is not to reveal the economic worth of the recreational activity to the individual, but to measure the magnitude of the economic stimulation to the region of this activity. The issue becomes the difference in regional income with and without the activity, or in benefit-cost terminology, both primary and secondary benefits are counted.

Third, net contribution (value added) as a measure of economic worth: only the expenditures induced in the direct pursuit of the recreational activity are included; excluded are secondary outlays, such as for food and lodging, and other purchases that may stem indirectly from the original action. The value added measure is a somewhat more refined device than the gross expenditures concept and some consider it a superior measure of the worth of recreational activity than the broader approaches. The superiority of this measure is open to serious doubt, however, unless one finds in the elimination of a large portion of recreation-induced expenditures that a more reliable residue
is left. This may be false statistical security, especially in the case of intangible benefits, since a critical consideration in the case of intangibility is a market price substitute, which is only indirectly of concern to the determination of value added. Market price (or its estimated equivalent in the case of intangible benefits) is the necessary starting point in the computation of value added. Expenditures (costs) that are not purely the contribution of the industry in question—such as transportation costs rather than expenditures for the recreation itself—are deducted to eliminate the income or value generated by the cooperating industries. For example, if recreational benefit is very narrowly defined, such as simply the value of fishing on a particular lake, the problem is reduced to that of deriving a user price for the privilege. Travel costs, equipment expenditures, etc., which provide important boundaries of the upper value range of an activity, are automatically excluded. As a result, the narrowly interpreted value added concept may reflect but a part of the total worth of the activity to the individual and, moreover, for intangible benefits the process of computing value added may direct attention away from the important problem of estimating a user fee or monetary equivalent in the absence of a market price.

The main contribution of the value added approach appears to be in pin-pointing the income generating effect of a particular economic activity, thus making it possible easily to compare the economic contribution from different patterns of resource utilization. With knowledge of the value added from different economic activities or from different usages of a particular resource, the optimum allocation of resources is self-evident. The value added approach thus becomes an application of the principle of comparative advantage, but tells nothing in itself about how the value of the resources involved should be determined in the absence of market information.
More than any other recent researcher Marion Clawson has been forthright in insisting that recreational benefits be described in monetary terms. Indeed, he approximates a demand curve for recreation by relating costs of visits to Yosemite National Park on the price axis and to "thousand visits per 100,000 population" on the quantity axis. Two separate curves are plotted for "Groups of California Counties" and "Groups of States, excluding California." The California Counties are classified in five groups and the States in six, which provide five plotting points for the derivation of the Counties "demand" curve and six plotting points for the States "demand" curve. The relationship shown is fewer visits and higher costs for more distant visitor families. It is not this self-evident relationship, however, which is Clawson's contribution but the empirical establishment of the range of visitor costs.

Probably more than anyone else, Clawson is aware of the limitations of his procedure and the inadequacies of his data. It is not appropriate to quibble over whether he has really derived a demand curve. He has not and he makes no pretence of such. The question is to what extent his techniques of estimate represents a superior method of evaluating the worth of recreational benefits. It is not possible to give a categorical answer to this question. Two issues are involved:

1. Conceptually, Clawson appears to take no account of the fact that most national park visits take place at virtually zero price. As a result, Clawson's "demand" curve probably lies further to the left than would be the case if an addition to visitor costs were made for the absence of a market price or user fee.

2. Statistically, the data may be selective in such a manner that the relationship between visitor costs and number of visits is influenced by more than the distance of the
visiting family from the recreational site. Other factors, such as travel time (not to be confused with travel costs) and an atypical income distribution within the group categories may prevent the "demand" curve from depicting the simple relationship indicated by the axes.  

**Market Price as a Benefit Measure**

More than admiration of the pricing system is responsible for the economist's repeated attempts to simulate or approximate the decisions of the market economy in establishing the value of activities that are not generally evaluated in that market. The great appeal of the market measure of value is the precision and impersonality of the decision: the result is stated in convenient monetary terms and no apparent personal value judgment intrudes in the price (benefit) determination. A further advantage in the case of government expenditures is that the assessment of benefits in monetary terms permits a comparison of resource yield in the public sector with that of the private sector, thereby providing a guide to whether the government investment is economically justified. Or so it is thought—

But it is not this simple. Even if it were possible to obtain a totally unfettered private market appraisal of the worth of recreational benefits, it does not follow that this price—or any market price—is necessarily an appropriate indication of the social worth of a given allocation arrangement. The economic efficiency of the marginal-cost-equals-marginal-revenue equilibrium is an efficient adjustment only to the extent that it represents the best utilization of resources under existing conditions. Existing conditions--income inequality, mobility restraints, ignorance--may prevent the market economy from generating a price structure that provides satisfactory guidelines for public policy.

The market may direct resource allocation to the mail order gun
quite as efficiently as to the classical record. It makes no ethical judgment beyond that inherent in the consumer's decision to buy and the producer's willingness to sell. And both have demonstrated that there are important areas where either restraint is necessary or supplementary positive resource direction is desirable. Aside from providing inappropriate guidelines for public resource use, the pricing system's foundation in individual self interest provides no way for the individual to express a public policy view. The resource-pull of purchase, as for redwood patio furniture, makes the non-purchase attempt to influence private corporation policy trivial and inconsequential. Finally, the market mechanism at best has a most limited and variable predictive capacity. In some areas, such as wheat production, it may anticipate well the effect of supply reduction, provide the necessary rationing of the lesser supply and through the higher price direct resources to additional production. (Even here, however, a kind of unhappy oscillation of over- and under-production may sometimes occur.) But in the case of unique resources—a wilderness area, a redwood forest, a Jasper National Park—commercial exploitation provides neither a satisfactory rationing mechanism for the present use of the resource nor a socially acceptable basis for development or replenishment. Quite the opposite occurs. Uncontrolled private exploitation of such areas is almost certain to lead to the irreversible destruction of the character of the region. While the market does provide a basis for comparison of the value of resources in different uses, the standard of comparison may be intrinsically unsatisfactory. To adopt the market standard in determining recreational benefits is also to embrace the inherent (but not apparent) value judgments of the individual where he behaves solely as a self-aggrandizing competitor.

To re-emphasize, the market does not give satisfactory planning data for recreational development for the following reasons:
1. It is an inadequate guide to future need, particularly in the case of certain kinds of natural resource areas such as wilderness regions;

2. It reflects no more ethical justification than can be found in the distribution of money resources that motivate purchases and direct allocation; wants in our society are satisfied in the market in terms of the pocketbook, not need; and,

3. The ability to appraise the worth of some kinds of recreational activity, such as a canoe voyage in the Quetico or a climb of Edith Cavell, may require more experience than most consumers have to make the judgment of their worth. What is needed is not greater fidelity to the market standard, but informed adjustment or replacement of it as a measure in those areas where it is unsatisfactory. A systematic application of merit-weighting to determine recreational benefits of public investment is the obvious alternative to simulation of market data. The process of determining merit-weights for different recreational investments is likely to be vastly more productive of useful knowledge than continued tedious attempts to adapt or simulate market price as a measure of benefit.

FOOTNOTES


2Professor Harold Hotelling's response is an exception. He suggested that the demand for Park services be derived by assuming that the Park visitor from the most distant zone established the level of demand and that visitors from closer zones enjoyed consumer's surplus.

3Most of the stimulus to the discussion and research in these areas came from the writings of Otto Eckstein and Roland McKean, whose works and many others are covered in Bibliography on Socio-Economic Aspects of Water Resources (Washington: Office of Water Resources


8 Ibid., p.9.


10 Clawson, op.cit. See also Marion Clawson and Jack L. Knetsch, "Outdoor Recreation Research: Some Concepts and Suggested Areas of Study," Natural Resources Journal, 3, (2): 262, October, 1963, where it is stated that "...With all the difficulties involved, it seems entirely possible to develop specific, and rather objective, rating scales for different outdoor recreation areas and for major different uses of each. These scales would have great utility in planning, other research and administration. The talents and knowledge of different kinds of specialists might well be used in devising and testing such rating scales."

11 Clawson, op.cit., p.19. Clawson also estimates in this same work costs per visit in relation to 100,000 population for selected national parks as well as estimating the effect of entrance fees upon park visits.

12 Clawson is aware of these deficiencies. Strictly speaking, the relationship shown by the curves is of higher cost per fewer visits per capita.

13 See Mack and Myers, op.cit., p.89 et seq.
Introduction

A casual glance at a map of Canada reveals that well over ninety per cent of the population of Canada lives within a relatively narrow belt extending north about 300 miles from the Canadian–United States border. This belt also contains most of Canada's national and provincial parks, existing and potential. Growth in population, commerce, industry, and tourism will result in increased pressures for improved and expanded highway facilities within this belt, and some of the highway improvement proposals will probably involve routings through national and provincial parks, forest and game preserves, as well as other areas of park or wildlife reserve calibre. These pressures may become very great in park areas near major urban centres.

It is important for the purpose of this article to distinguish between three types of park highways. The first is the "local" park...
highway; that is, a highway having as its sole function the provision of access within the park for visitors to park features and facilities. It is often built to low or medium design standards.

The second type of park highway is the "through" park highway, which is classed as a park highway simply because it passes through the park. It has high-type design features consistent with its function as an important link in the provincial or national highway system and its service of a moderate to large volume of through traffic. It generally provides little or no traffic service for local park circulation, and if such service is provided, it is done only where such service will not hinder the highway's primary function of carrying through traffic safely at high speed. Presently this type of park highway is typified by the expressway which traverses an urban park at-grade, elevated, or via tunnel.

The third type of highway is a hybrid of the first two types in that it serves both as a local facility and also as a through highway. An example of this type is the Trans-Canada Highway through Banff, Yoho, and Glacier National Parks.

Park officials evaluate proposals for any of these types of park highways in terms of their potential impact upon the affected parklands. Their evaluation process gives primary consideration to the likely effects of the highway upon scenic, wildlife, recreational, scientific, and other park values. Alternate route locations will have varying effects upon these park values, as will the same location with alternate design features (alignment, profile, cross-section, control of access, etc.).

In the general case for any proposal of a new highway, whether urban or rural, through developed or natural areas, there are usually several possible alternate routes, as well as various possibilities for design features. Ideally these alternates are evaluated and compared
with respect to: (1) traffic service and safety; (2) design features; (3) financial requirements and capabilities; (4) economic utility; and, (5) environmental impact. Highway officials have traditionally been most concerned with the first four factors, while park officials and conservationists are most concerned with environmental impact.

Economics has little or no place in the development of alternate designs or locations for the local park highway. The very purpose and function of such a highway precludes giving any thought to the reduction of vehicular operating expenses by the provision of a relatively straight-line route with flat grades and little or no curvature if the consequences would be the scarring of terrain and the destruction of much of what park visitors have come to see and experience in the park, regardless of how much these savings more than offset the capital costs of such a highway.  

Where the park highway is intended to be more of a through highway than a local park highway, highway officials will place great emphasis upon traffic service and safety, finance, and economics. Not only do these factors play an important role in the highway agency's evaluation of alternate park routings, but indeed they are often the basis for the decision to consider park routings in the first place, as opposed to those which would by-pass the park.

In the United States, highway officials place great emphasis on the comparative economics of alternate routes because the other route evaluation factors lend themselves less readily to quantitative analysis. Regardless of whether a proposed highway involves a park location, that alternate which shows the highest index of economic utility based upon current highway engineering economy measures is generally the one most likely to be selected for construction, finances permitting.  

This stems not only from the highway agency's desire to economically optimize the investment of highway funds, but also from strong pressures
which arise from various sectors of the "motoring public" in response to a highway location report which indicates a substantial degree of economic superiority for one routing over all others.

However, there have been more than a few cases in the United States where highway officials have neglected or improperly applied the basic principles of modern highway economic analysis, and many highway agencies have been slow to make use of current developments in theory and research in this area. While it is unfortunate that any highway improvement be justified by faulty economics, it is especially unfortunate in the case of highways through parks, where the result is not only the waste of limited public funds, but a portion of irreplaceable natural resources as well.

In order to play a more effective role in the overall route location selection process, park officials, conservation groups, and interested citizens should familiarize themselves with the fundamental principles, concepts, factors, and assumptions of highway route economics as utilized by highway agencies in the highway "benefit-cost" analysis. Although the technical terminology may at first appear foreboding to the lay person, these principles and concepts are quite elementary and simple to comprehend.

The Benefit-Cost Ratio

The criterion most commonly used in economic analyses by highway agencies is the benefit-cost ratio. Each of the several alternate routes under consideration for a particular highway proposal will have its associated user cost and highway cost. User cost is based on the type and the length of the route, traffic estimates, and the unit cost of vehicle operation. The unit cost of vehicle operation varies according to type of vehicle, expected average speed, volume of traffic relative to designed capacity, gradients, curvature, and the frequency
and type of intersections. Average unit operating cost in relation to the above factors is given in *Road User Benefit Analysis for Highway Improvements*, which is used by many highway agencies in the United States.7

In order to emphasize the basic character of the unit operating cost, it shall be referred to as "mechanical" operating cost, i.e., the combined per-mile cost of fuel, oil, tire and brake-wear, vehicle maintenance, etc. This emphasis is important because a somewhat arbitrary "cost" of the motorist's travel time is often added to mechanical operating cost to arrive at a "total user cost."8 The *benefit* part of the benefit-cost ratio is simply the potential savings in user cost which one alternate offers over another alternate.

Highway cost is the sum of the initial cost (right of way plus construction) converted to an annual basis plus the annual cost of maintaining the highway.9 The *cost* part of the benefit-cost ratio is the difference between the highway costs of any two of the alternates under consideration.

The basic highway economy principle which the benefit-cost ratio tests is this: the alternate with the lowest highway cost is assumed to be the most economical unless it can show that a more expensive alternate (one of greater highway cost) would produce offsetting savings in the form of lower user cost. The calculation of the benefit-cost ratio is incremental in nature and proceeds as follows:

1. All alternates under consideration are arrayed by increasing initial cost.10

2. The alternate with the lowest initial cost is taken as the base or starting point, and is compared to the alternate of next higher initial cost. If the user cost savings obtainable from the more expensive alternate more than offsets the difference in highway cost between the two alternates, then
Fig. 9 Alternative Routes for Interstate 70, Colorado Rockies
it is economically desirable to choose the more expensive alternate. If the more expensive alternate fails to meet this test, it is dropped from the benefit-cost ratio analysis as it is economically inferior.

3. This comparison procedure is repeated until all alternates have been examined. The most expensive alternate which offers adequate user savings relative to the additional highway cost it will entail is taken to be the most economically feasible route.

Before proceeding to an actual example for the calculation of the benefit-cost ratio, two important points should be re-emphasized. First, it should be noted that an alternate which does poorly in the benefit-cost ratio calculation may still be the "best" choice for construction if it receives a high rating in the other major components of the total route evaluation procedure: traffic service and safety, design features, finance, and environmental impact.

Second, "intangible" costs and benefits—environmental impact—are seldom treated in engineering economy studies. Such factors as air pollution, community impact, and the impact on scenery and wildlife are difficult to quantify, but are no less important than the tangible costs and benefits; they should be considered as part of the total route evaluation procedure.

A proposed highway routing in the Colorado Rockies will serve as an example. Figure 9 shows two alternate routes for Interstate 70 just west of the Continental Divide, about 75 miles west of Denver. The Vail Pass route would for the most part follow the right of way of existing U.S.6. The Red Buffalo route, farther north, would traverse national forest land of true wilderness character, and is strongly opposed by the Colorado Open Space Co-ordinating Council. C.O.S.C.C. indicates that the Red Buffalo route would consume about 7,000 acres and destroy
the wilderness quality of perhaps 25,000 adjacent acres in the Gore Range-Eagles Nest Primitive Area. Design and cost characteristics of the two alternates are given in Table 5, which includes maintenance and user costs for sections of U.S.6 that will remain in use.

The Red Buffalo route is nearly 11 miles shorter than the Vail Pass route, but has much steeper grades. The effect of steep grades on speeds, particularly truck speeds, reduces the significance of this distance saving. Furthermore, only east-west through traffic would benefit; local traffic, and through traffic to and from State Highways 9 and 91, would be better served by the Vail Pass route. The Red Buffalo route would leave considerable traffic on U.S.6, a two-lane highway. More freeway service to satisfy total traffic demand in the route corridor would be provided by the Vail Pass route. Close examination of the Highway Department's alignment data reveals that unlike the Red Buffalo route, the Vail Pass route could be designed for speeds of 60 to 70 mph at little or no additional construction cost. Since the two alternate routes do not offer equal traffic-service potential, the utility of economic comparison is much reduced.

The Red Buffalo route, costing $40 million more, would be nearly three times as costly to construct as the Vail Pass route. But according to Highway Department estimates, it would justify itself economically because of user savings. The benefit factor of the department's benefit-cost ratio is obtained by deducting the estimated annual user cost of the Red Buffalo route ($8,457,000) from the user cost of the Vail Pass route ($11,750,000), yielding an indicated annual benefit of $3,293,000. The cost factor of the department's benefit-cost ratio is obtained by subtracting the annual highway cost of the Vail Pass route ($1,214,000) from the annual highway cost of the Red Buffalo route ($2,908,000), yielding an indicated annual cost differential of $1,694,000. The benefit-cost ratio of the Red Buffalo alternate is thus
<table>
<thead>
<tr>
<th></th>
<th>Vail Pass Route</th>
<th>Red Buffalo Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Length</td>
<td>27.3 miles</td>
<td>16.5 miles</td>
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<tr>
<td>Average Grade</td>
<td>3.1%</td>
<td>5.1%</td>
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<tr>
<td>Design Speed</td>
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<td>50 mph</td>
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<tr>
<td>Initial Cost:</td>
<td></td>
<td></td>
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<tr>
<td>Roadway</td>
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<tr>
<td>Pavement</td>
<td>2,650,000</td>
<td>1,652,000</td>
</tr>
<tr>
<td>Twin Tunnel</td>
<td>--</td>
<td>41,211,000</td>
</tr>
<tr>
<td>Right of way</td>
<td>2,639,000</td>
<td>1,153,000</td>
</tr>
<tr>
<td>Total</td>
<td>$22,803,000</td>
<td>$63,095,000</td>
</tr>
<tr>
<td>Initial Cost Converted to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Basis, C</td>
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<td>$2,708,000</td>
</tr>
<tr>
<td>Annual Maintenance Cost, M</td>
<td>$102,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Total Annual Highway Cost, C + M</td>
<td>$1,214,000</td>
<td>$2,908,000</td>
</tr>
<tr>
<td>Annual Road User Cost</td>
<td>$11,750,000</td>
<td>$8,457,000</td>
</tr>
</tbody>
</table>
calculated to be:

\[
\frac{\text{Benefit}}{\text{Cost}} = \frac{\$3,293,000}{\$1,694,000} = 1.94
\]

This means that for each additional dollar of annual highway cost (over and above the annual highway cost of the Vail Pass alternate), the Red Buffalo route is expected to save motorists $1.94 in user costs.

The break-even point for benefit-cost ratios is a value of 1.00. A ratio of less than 1.00 indicates that the higher-cost alternate would be economically disadvantageous—that added highway costs would exceed user savings. But note that in actual practice, the minimum acceptable benefit-cost ratio may be higher than 1.00 because most highway agencies have a tremendous backlog of high-economic-yield projects. If other projects with benefit-cost ratios greater than 2.00 would exhaust available funds, for example, a project with a benefit-cost ratio of between 1.00 and 2.00 cannot be justified.

**Interest Rates**

Other things being equal, the lower the interest rate used in economic analyses the higher the resulting benefit-cost ratio—and the greater the likelihood that a higher-cost alternate will seem economically attractive. Because annual capital costs were based on an interest rate of only 3.5 per cent, the Highway Department's benefit-cost ratio of 1.94 significantly overestimates the economic feasibility of the Red Buffalo route. Such a low interest rate is unreasonable today. Since state highway funds are obtained from the highway user, highway improvements should earn a return on the investment of these tax dollars equal to that which the motorist could obtain from private investment of comparable risk were highway taxes not collected. (The interest rate the motorist pays for financing his car, his home, or other purchases also serves as a good guide to the minimum rate of return that should be obtained from highway improvements). Many savings and
loan associations pay five per cent interest, and conservative stocks and bonds may pay six to eight per cent.

The interest rate used in benefit-cost analysis should be comparable to that obtainable from conservative private investments. Authorities on highway economics believe that six per cent is currently an appropriate minimum value. Where investment costs are high and there is a greater than normal possibility that cost and traffic estimates may be unreliable, consideration should be given to interest rates of seven or eight per cent. Line 1 of Table 6 demonstrates the effect of interest rate on the benefit-cost ratio for the case at hand.

TABLE 6

EFFECT OF INTEREST RATE AND STUDY LIFE UPON BENEFIT-COST RATIO, RED BUFFALO VS. VAIL PASS ROUTE

<table>
<thead>
<tr>
<th>Interest Rate</th>
<th>3.5%</th>
<th>6%</th>
<th>8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Highway Department Study Life (Pavement, 20 yrs.; roadway, 40 yrs.; tunnel and right of way, 60 yrs.)</td>
<td>1.94</td>
<td>1.28</td>
<td>0.99</td>
</tr>
<tr>
<td>2. Author's Recommended Study Life (Pavement, 15 yrs.; roadway, tunnel and right of way, 30 yrs.)</td>
<td>1.46</td>
<td>1.10</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Raising the interest rate from 3.5 to six per cent drops the benefit-cost ratio from 1.94 to 1.28, significantly reducing the apparent economic desirability of the Red Buffalo alternate. At eight per cent interest, the Red Buffalo route becomes economically unfeasible. The validity of a benefit-cost ratio may be called into question whenever an interest rate of less than six per cent was used.

Study Life

The anticipated useful life of a proposed public works project is called its study life. Assumptions as to study life are necessary
for the calculation of the annual capital cost of each alternate route. Other things being equal, the longer the study life, the lower the annual capital costs and the higher the benefit-cost ratio.

It is important to distinguish between physically useful life and economically useful life. A proposed highway may have a probable structural life of forty years or more, but if after twenty years we find that a new highway can serve traffic more economically, then from an economic standpoint the new highway should be built. Thus the old highway is not fully amortized; funds invested in it are not fully recovered, and the result is a "sunk cost" that is written off as an economic loss to highway taxpayers. This has been the fate of many rural highways, especially in mountainous areas, and even some of our urban freeways have had to be so substantially reconstructed because of outdated design features that, in effect, they have been replaced at great cost. The highway engineer who assumes that current technology will serve acceptably forty to sixty years from now is simply naive.

For the Red Buffalo route, the Colorado Highway Department assumed useful lives of twenty years for pavement, forty years for roadway, and sixty years for tunnel and right of way. Since the tunnel itself accounts for sixty-five per cent of the project's initial cost, and the tunnel plus roadway account for ninety-five per cent of the initial cost, the use of study lives of forty and sixty years strongly biases the benefit-cost ratio in favour of the Red Buffalo alternate.

Considering the dynamic changes in transportation demand and technology, such lengthy study lives cannot be justified. Sixty years ago, highway travel was virtually non-existent. Within the space of about twenty years, inter-urban electric railways came and went. Traffic forecasts cannot be considered reliable for more than about twenty years ahead. What logic is there in comparing user benefits for twenty years with highway costs that are spread out over up to sixty
A wise approach to study life is the rule that either physical life or economically useful life should be used, whichever is the shorter. A study life of twenty to thirty years is the longest that can be reasonably justified.

It is noteworthy that in 1941 the size of the Gore Range-Eagles Nest Primitive Area was reduced to accommodate the present route of U.S. 6 over Vail Pass, this decision having been made by the United States Department of Agriculture, which administers the lands, on the basis of the Colorado Department of Highways' claim that there were no feasible alternatives for this important transcontinental route. The construction of the Red Buffalo route would in effect bring to an end the economically useful life of U.S.6 as a major highway after about thirty years of service . . . not the forty to sixty years which the Highway Department assumes as a reasonable useful economic lifespan for highways.

Table 6 shows the effect of using realistically shorter study lives in the analysis of the Red Buffalo route. At 3.5 per cent interest, the benefit-cost ratio falls from 1.94 to 1.46. The benefit-cost ratio also declines at higher interest rates, but not so markedly. One important effect of the interest rate is thus apparent: as the interest rate is increased, other assumptions (such as study life) become less critical in their effect on the benefit-cost ratio. The use of higher interest rates in benefit-cost analysis provides a safety factor, decreasing the danger that the alternate route selected will prove to have a much lower benefit-cost ratio than originally estimated.

System Costs

When a new highway is opened, the volume and pattern of traffic on existing roads is usually altered. Sections of these existing roads must often be relocated. This results in changed user costs on the affected roads, and each alternate route for a proposed freeway usually
has a different effect on the user costs of existing roads. The user cost of the new freeway—whether it be the Red Buffalo or the Vail Pass route—must include the user cost for traffic that would remain on U.S. 6. Similarly, the highway cost of the new route should include the cost of reconstruction and maintenance required on U.S. 6.

Average User Cost

Because annual user costs increase over time as traffic increases, it is necessary to calculate an equivalent average annual user cost for proper determination of the benefit-cost ratio. Some agencies use as an average value the user cost associated with the estimated traffic at the half-way point in the study life. This procedure usually results in overestimation of the benefit-cost ratio. Basic compound-interest formulae can easily yield the true average annual user cost. In its analysis of the Red Buffalo route, the Highway Department did not properly estimate the average annual user cost, which resulted in a larger benefit-cost ratio than can be justified on the basis of the forecasted traffic volumes.

Truck User Costs

User costs for truck traffic are usually determined by assuming that the typical truck will travel at the same speed as passenger cars, and that its operating costs will be equal to some specified number of passenger cars. The Colorado Highway Department assumed in its Red Buffalo route analysis that a truck’s operating costs would equal those of eight passenger cars—a figure significantly higher than the maximum value of six suggested by the American Association of State Highway Officials. Trucks account for only about twelve percent of the estimated traffic, but the cost equivalence of one truck to eight cars gives a heavy weighting to truck user costs.

Available data indicate that the ratio of truck operating cost
to passenger car operating cost increases as steepness of grade increases. The Red Buffalo route is much steeper than the Vail Pass route, but the department used the same truck-to-car cost ratio for both freeway routes. The savings in truck user cost afforded by the Red Buffalo route is thereby overestimated, producing a higher benefit-cost ratio than will occur in fact. The value of the truck-to-car cost ratio should be adjusted for each alternate according to its gradient characteristics.

The mechanical portion of truck user costs—fuel, oil, tires, brakes, and so on—can be approximated by a carefully considered truck-to-car cost equivalence. The traveltime component of truck user cost, however, should be evaluated separately by more accurate methods, especially where the alternates differ significantly in gradient. Truck speeds for different lengths and steepness of grade can be estimated, and can be used in estimating traveltime for trucks over a route. The Department did not follow this procedure; it merely assumed that the cost factor of eight cars per truck held good for traveltime costs as well as mechanical operating costs for both routes. This produced an apparent saving in annual traveltime for trucks of $660,000 for the Red Buffalo route over the Vail Pass route. But when the author computed traveltime cost by the method recommended above, he found the savings to be only $40,000 per year. This means that the Highway Department's benefit-cost ratio should be reduced from 1.94 to 1.59. When a six per cent interest rate and thirty year study life are used as the author recommends, the benefit-cost ratio declines from 1.10 to 0.90 (indicating that the Red Buffalo route is not economically feasible).

Traveltime Costs

The assignment of monetary value to traveltime savings is a subject of much debate among students of highway economics. Not all
time savings result in benefit to road users and the economy at large, and the sum total of a few minutes saved by many vehicles over many years is not a completely meaningful figure. Nevertheless, it is generally agreed that dollar values should be assigned to traveltime for trucks. The unit cost of traveltime should vary with the type of truck. Values of $3 per hour or more have been used for heavy trucks, and in some cases, a value of $5 per truck-hour might be reasonable.  

Traveltime cost for passenger cars is another matter. Business trips by auto might be given some time value, but there is less support for assigning value to non-business traveltime. The value an individual places on his traveltime varies from person to person—and for any particular person, varies depending on the purpose of the trip, the weather and traffic conditions, the scenery along the route, and so on. Thirty per cent or more of rural traffic is recreational, with higher percentages in the west and major recreational areas. Much of the traffic on major rural routes moves on weekends, especially near urban centres, and pleasure drivers are a substantial component of this traffic. The easiest way for a "Sunday driver" to maximize time savings, if traveltime were really of value to him, would be to stay home. The author believes that traveltime cost should be assigned to no more than half of the passenger car traffic on rural highways, particularly for highways through scenic and recreation areas.

Mechanical operating costs are often greater on new rural freeways than on the old highways they replace, because operating costs rise sharply as speed increases. Rural freeways have been justified economically, in such cases, solely by arbitrarily assigning $0.75 to $1.50 or more per vehicle-hour to all passenger car traveltime savings.

Table 7 shows the effect of alternate treatments of traveltime cost. The unit cost of traveltime was taken at $4.85 per hour for trucks and $1.55 per hour for passenger cars.
### TABLE 7
ANNUAL ROAD USER SAVINGS AND BENEFIT–COST RATIO FOR RED BUFFALO ALTERNATE FOR VARIOUS TREATMENTS OF TRAVELTIME COST

<table>
<thead>
<tr>
<th>Benefit-Cost</th>
<th>Annual Road User Savings</th>
<th>3.5%</th>
<th>6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>(a)</td>
<td>(b)</td>
<td>(c)</td>
</tr>
</tbody>
</table>

1. Allowing Traveltime Cost for all Vehicles:
   A. Highway Department Estimate $3,293,000 1.94 1.10
   B. Author's Estimate 2,683,400 1.59 9.09
2. Allowing Truck Traveltime Cost + \( \frac{1}{2} \) Passenger Car Traveltime Cost 2,481,900 1.47 0.83
3. Allowing Truck Traveltime Cost Only 2,280,400 1.35 0.76
4. No Allowance for Traveltime Cost 2,241,100 1.32 0.75

(a) Based on author's estimate except for 1.A.
(b) Interest rate with study lives of 20, 40 and 60 years for pavement, roadway, tunnel and right of way respectively.
(c) Interest rate with study life of 15 years for pavement and 30 years for all other elements.

The author's estimate of user savings (line 1.B.) is about $610,000 less than the Highway Department's (line 1.A.). The difference is accounted for primarily by the author's more accurate assessment of truck traveltime cost. With the low interest rate and long study lives used by the department, the effect of alternate treatments of traveltime cost is even more pronounced than it is under the author's assumptions. Again, it is evident that realistic assumptions as to interest rate and study life provide a safety factor, reducing the sensitivity of the benefit–cost ratio to variations in other assumptions such as traveltime cost. If highway agencies would report the results of the type of analysis shown in Table 7, the criticality of arbitrary traveltime assumptions could then be evaluated. Highway commissions and concerned laymen could then weight the traveltime factor as they saw fit,
an opportunity not readily available when only one benefit-cost ratio is reported.

**Sensitivity to Estimation Errors**

The sensitivity of a benefit-cost ratio to estimation errors is not apparent when highway agencies report a single ratio based on a single set of fixed assumptions, as most agencies do. But a benefit-cost ratio can be affected greatly by a single faulty estimate. For example, a tunnel similar to the Red Buffalo tunnel is to be built a few miles to the east on Interstate 70. The Highway Department has just revealed that the lowest bid on this tunnel was $54.1 million—twenty-seven percent higher than the department's own estimate of $42.5 million. The expected construction cost of this tunnel (before bids were revealed) was used as a basis for estimating the construction cost of the Red Buffalo tunnel, which, therefore, is probably underestimated also. If the construction cost of the Red Buffalo tunnel should turn out to be ten percent above estimate—not twenty-seven percent, as in the case of the other tunnel—then this factor alone would cause the Highway Department's benefit-cost ratio to drop from 1.94 to 1.79. If, in addition, average annual traffic was overestimated by twenty-five percent, the department's benefit-cost ratio would decline to 1.43.

Calculations such as these showing the sensitivity of benefit-cost ratios to possible estimation errors can be made easily enough, but rarely are. The cost of sensitivity analyses is trivial; the possible cost of failing to make them is not.

**Conclusion**

While park officials and conservationists are naturally most concerned with the potential environmental impact of proposed major highways through parks, highway economy factors will in many cases also play an important role in the total route evaluation and selection
process, along with traffic service and safety, design features, and financial considerations. Because of the great weight given to comparative route economics by highway officials, it is essential that all parties who have (or should have) a major role in the route evaluation and decision making process be familiar with the basic elements of highway economic analysis.

All this is not to say that park officials and conservationists should become highway engineers as well and base their recommendations upon highway design factors and economic utility. Certainly, these groups must give major emphasis to their own area of concern. Yet it appears to be a "fact of life," insofar as the United States' experience goes, that other things being equal, the greater the economic utility attached to a proposed route, the greater the likelihood that it will be selected for construction.

Benefit-cost ratios are merely estimates of the comparative economic utility of alternate routes, and they are no more reliable than the assumptions on which they are based. For example, the Colorado Department of Highways concluded that the Red Buffalo route has a benefit-cost ratio of 1.94 and is economically justified. It has recommended the construction of this route. On the basis of the same raw data, but using other assumptions and with refinements in analytical procedures consistent with current knowledge and the magnitude of investment involved, the author concludes that the Red Buffalo route has a benefit-cost ratio of 0.90, at best, and is economically unfeasible. This example well demonstrates that even if its reputed benefit-cost ratio is high, a proposed highway's economic utility need not be conceded by park officials and others so long as the assumptions underlying its benefit-cost ratio are obscure or unreasonable.

Note:

In May, 1968, shortly after this paper was submitted for
pre-conference publication, U.S. Department of Agriculture Secretary Orville Freeman denied the Colorado Department of Highways' request to construct Interstate 70 through the Gore Range-Eagles Nest Primitive Area (Red Buffalo route). While Secretary Freeman noted that "the public benefits of preserving this priceless wilderness area far outweigh any other consideration," it was apparent that the decision was also based on economic feasibility factors, since the Department of Agriculture could not accept the Highway Department's position that the Red Buffalo route was the only feasible route. 24

FOOTNOTES

1 Henceforth the term "park" as used in this paper is taken to include not only national and provincial parks, but also forest reserves, game preserves and wildlife refuges, wilderness areas, etc., and includes not only those which have been officially so designated, but also those areas which have potential for such designation.


3 Dennis Neuzil, Interstate 70:Dillon to Dowd, Colorado; A Case Study in Highway Economy, Newark, Delaware, September, 1967.

4 Except in the case of pavement design, culvert design and other roadway elements that are basically neutral insofar as environmental impact and road user costs are concerned. Note that by definition, a wilderness area should remain free of any highway development, other than that intended to provide access to the wilderness area gateway.

5 U.S. federal-aid funds account for fifty per cent of the cost of design, construction, and right of way for federal-aid primary and secondary highways, and ninety per cent for Interstate highways. The percentages are higher for 12 western states having substantial amounts of federal lands. Thus a $10 million Interstate highway project would cost the state about $1 million in state funds, while a $20 million version would require the investment of $2 million in state road funds.

6 The reader should note that much of the following discussion is applicable directly, or with slight modification, to other types of public works projects such as dams, water and power projects, canal and harbour projects, etc., which are commonly justified on the basis of benefit-cost ratio analysis.


8 Other non-mechanical costs sometimes combined with the mechanical user cost to obtain a total user cost are the cost of accidents,
and a "comfort" cost. The use of these cost components has generated much controversy, particularly the value of a life and related "bone-yard economic" issues. Unless the alternate routes are quite dissimilar in length and design features, these "costs" where used, tend to cancel out. On the other hand, typical mechanical unit costs have been quite thoroughly determined, and a difference of only a cent per vehicle-mile can amount to a substantial sum of money when summed over thousands of vehicles travelling daily over a route for a number of years.

9 It is necessary to convert initial cost to an equivalent equal annual cost in order to properly compare the capital investment in the highway with user cost, since the latter is given on an annual basis. This conversion is made by the following formula:

\[
C = C' \left( \frac{i}{(1 + i)^n - 1} \right) + i
\]

where: 
- \( C \) = annual capital cost
- \( C' \) = initial cost
- \( i \) = annual interest rate (decimal form)
- \( n \) = economically useful 
  lifespan of the highway, years

Where the several elements of the highway (right of way, major structures, grading, pavement, etc.) are given different economically useful lifespans, the formula is applied separately to each such element and the results summed to give the annual capital cost.

10 Where a new highway is to be built to supplement or replace an existing highway, the existing highway is often taken as one of the alternates. Thus, one choice available to the highway agency is simply to "do nothing"—i.e., retain the present highway (possibly with some improvements) and not build a new highway.


18 Winfrey, *op. cit.* pp. 22-23.

19 Statement by Secretary of Agriculture Orville L. Freeman: Decision on the Request by the Colorado Department of Highways to Route Interstate Highway 70 through the Gore Range—Eagles Nest Primitive Area, Arapaho and White River National Forests. May 17, 1968, Washington, D.C.

20 *Road User Benefit Analysis*, pp. 144-147.

21 See Neuzil (1967), *op. cit.*, for summary of recent truck operating cost and upgrade-speed characteristics.


23 In a recently issued revised study report, the Colorado Department of Highways revealed increased initial cost estimates for the two alternates: the Red Buffalo route was raised from $63.1 million to $76.3 million, while the Vail Pass route was increased from $22.8 million to $27.6 million. Thus the difference in initial costs was increased from nearly $40 million to about $50 million—a twenty-five per cent increase. Most of the cost increase of the Red Buffalo route was accounted for by a raise in the estimated tunnel cost from $41.2 million to $53.7 million reflecting the underestimation error of the nearby Straight Creek tunnel project, which was used to estimate the tunnel cost for the Red Buffalo route. (It is odd, however, that the Vail Pass route cost was increased by the same percentage as the Red Buffalo route, twenty-one per cent). With a slight increase in the interest rate from 3.5 per cent to 4.5 per cent and other modifications made in response to criticism of the original Highway Department report (3), the State reported a new benefit-cost ratio of 1.65, down from the earlier value of 1.94. A detailed study of the revised report by the writer indicates that realistic values for the benefit-cost ratio are still of the order of 0.9 or less, depending upon specific assumptions for interest rate, study life, travel time costs, etc.

24 See footnote 19.
Summaries and Discussion

Chairman: J. Stahl


SUMMARIES

The Chairman made the following introductory remarks:

STAHL: This whole problem of Measuring the Value of National Parks is one which economists have tried to dodge for years, simply because we are talking about things upon which it is very difficult to place objective values. However, since we all deal in public life with budget directors who are notoriously nasty about things like benefit-cost ratios, we are forced to face the issue of whether we can measure the value of a national park to society in some quantitative terms. And if we cannot measure it, we are bound to specify fully the reasons why this cannot be done.

Hopefully the papers and discussions will provide some insight into this problem of measurement and some of the reasons why economists and engineers and public officials in general, have been in such difficult straits in the past in facing the problem of measurement.

KNETSCH: (Dr. Knetsch summarized his paper on Providing for National Parks and Related Values.)

HINES: (Dr. Hines summarized his paper on The Measurement of the Benefits of Public Investment in National Parks.)
NEUZIL: (Dr. Neuzil summarized his paper on Uses and Abuses of Highway Benefit-Cost Analysis: A Primer on Highway Economics for Park Officials, Conservationists and Interested Citizens.)

PANEL DISCUSSION

STAHL: I would like to call on Professor Kariel first to make some comments.

KARIEL: I am in a somewhat difficult position in that I tend to agree with the three papers. However, I will not let that detract entirely from my comments and I will see what I can do in terms of trying to draw attention to some other aspects which perhaps should be included.

I am starting with Dr. Neuzil's paper. I agree that figures do not lie, but liars can figure. We might, in a much more serious vein say, "Well is there anything in this benefit-cost analysis that is overlooked?" For example, we are only looking here at the user costs and the benefits to the user, and not at some greater benefits which might be achieved. Now, whether or not you consider these things to be benefits or non-benefits is a statement of values. Your individual ones, mine, and so on.

But let us say that full employment is a "value." In that case, we could say, "the construction of a highway certainly would provide employment for many, many people." As well as the individuals employed in the construction of the highway, considering multiplier analysis, we could very quickly get to a large number of individuals who would be employed. So it is not only certain costs and benefits derived from the use of the highway, but it is secondary employment, exogenous factors if you wish. The answer of course to that one is relatively easy: if we need to employ the people, let them build...
piles of bricks and tear them down again or let them fight in some foreign nation, or something of this nature.

But I think that very seriously, there are some benefits and costs which are overlooked. Could we perhaps incorporate social values in terms of a total benefit-cost analysis? Could we perhaps assign arbitrary figures, even at a low amount or a high amount depending on our particular values, to this sort of analysis?

Turning to Professor Hines' paper, the question might arise, "If the market mechanism does not provide a satisfactory allocation of resources, then what alternatives might exist?" In other words, could we perhaps, here educate individuals and change their values in such a way that we can obtain something which is not an economic benefit alone? If there is a greater good, considering the long run point of view, could we perhaps establish something within our government which permits this type of a decision? In other words, a conference table sort of agreement. And of course in many ways, our decisions today are based on a conference table discussion.

In the paper by Professor Knetsch, a similar sort of thing might be mentioned except that, in general, could we perhaps say that social values are reflected in economic values, in land values--and why not have these people then pay for the things that they really want? If the people are not willing to pay for national parks, let us not bother providing them.

Perhaps you could counter this and say that if the individual is not able to pay them through government action, we could establish a public utility, or what have you, and provide these sorts of goods and services. However, it could very well be argued if we have arrived at the place that we have, in working with the present economic system, let us not interfere with it and let the market system or the market mechanism take its course and let the people pay
for what it is that they are after. And if they really want national parks, if they really want a wilderness area through which a highway might go, let them pay for it, so to speak.

STAHL: Thank you very much. Now, Professor Myres from the Department of Biology here at Calgary.

MYRES: I want to comment on the remark which we have heard several times, that "The parks are for people." I am not denying that they are not for people, but I think that we should perhaps rephrase this. I would, in effect, say the parks are not for people; parks are for renewal of the human "spirit." This word is not being used as somebody used the word "soul" earlier on.

Secondly, I am quite certain that parks are not meant to provide "fun." I looked up "fun" in the dictionary and it turns out that "fun" equals "sport" or "amusement." And if I say that parks are not meant for sports or amusements, I think you would agree with me, almost all of you. But if I say that parks are not meant to provide fun, most of you would have a doubt in your mind as to whether the reasons you went to the parks yourselves were "fun" reasons or not. I think most of us would in fact conclude that we did not go to the parks for fun reasons, we went for something beyond that, something which a few of us might call "renewal of the human spirit." But at least, if you interpret "fun" as "sports" or "amusements," I do not think in fact, many people go there for this reason—or if they do, they are the wrong people.

I first introduced this phrase a year or two ago and I thought I would just quote very quickly some of the sentences in it.

"Because of their wilderness nature, an increasing number of Canadians find that the national parks provide the only complete 'outdoors experience,' the only one that brings them into a relationship with the natural environment which approaches that experienced
by man during his evolutionary development." This harks back to what Barney Reeves said earlier. "Those who have been into the wilderness have found in it a form of spiritual experience and renewal that the wilderness alone provides. One is at the same time humbled and exhilarated by it. While an experience of the wilderness is enjoyable [this is the fun element], it is also awesome and educative." So the key things here then, are being humbled by it, exhilarated by it; we find it awesome and we are educated by it. "National parks do not exist to provide 'fun'.'

Since we have got to move towards economics, I thought I would also quote a couple of sentences which I came across last night, because it relates to the same problem which I have already referred to, and which I will be referring to a little later. These are the remarks of a man who was mauled by a grizzly bear this summer.

The one thing that makes me very unhappy about the whole incident is my fear that this will only add fuel to the fire for those who advocate the destruction of the grizzly to make our national parks safe. There is no reason in the name of civilized progress, to kill an animal for doing what is natural. I feel no malice towards the bear. It was my fault for sticking my neck out too far--the bear was only protecting her young and her territory.

I certainly don't recommend my experience to anyone. Yet, I will photograph bears again and I will hike alone again--which is also not recommended. The only thing that would prevent me from hiking in the wilderness again is the eventual destruction of that wilderness itself and when anyone advocates the destruction of grizzlies, they are, in essence, advocating the destruction of true wilderness. Let us pray that this never happens. [Lethbridge Herald, June 3, 1968.]

Now the facts of the matter were that this man was mauled. He presumably suffered expenses in getting himself repaired, and yet, this is his comment. So economically he suffered. Had the bear killed him, his family would have economically suffered, and since he was a school teacher, presumably, a man of this quality clearly would have been a loss to the school. And it seems to me that is a
reflection of my remark about "spirit." I think we are talking about "spirit" and the question is; how can we justify it, how can we evaluate it?

Measuring the worth of wilderness: I would like to quote here from Dr. Hatter of the British Columbia Fish and Wildlife Division who spoke at a recent Federal-Provincial Wildlife Conference as follows:

The esthetic worth of something is what I am prepared to pay for it, what I am prepared to sacrifice to get it, how far I am willing to travel to enjoy it, how much time I am prepared to spend to get it, where I choose to live, the salary I am prepared to work for, rather than go somewhere else and do without it--happiness, good health, and so on."

Now, these are things that are very difficult to measure. They are ones which we have made little attempt to try and measure. I have tried to do it for naturalists and I have come up with some rather startling results which were published in Canadian Audubon earlier this year. I think we have to think in terms of how to measure quality.

STAHL: Thank you very much. Now if we will turn to Professor Knetsch for his comments.

KNETSCH: I suppose getting several economists on the panel is bound to produce at least disagreement. Mine is with respect to the usefulness of benefit-cost. I will take probably an extreme minority view and argue great utility for it.

I think the point that the market does not provide goods in the proper way is legitimate. I tried to say that in my paper. But this does not mean that there are not market values that are useful in allocating resources. What I am saying is that benefits do occur even though they are non-market. The analogies of water development where a lot of this benefit-cost business started, provides I think, some clues: namely, that we have flood control benefits and nobody
sells flood control. So we can have benefits existing even if money does not change hands.

I think that the use of benefit analysis really cuts down a lot of the abuses that you would have without it. In the case of water developments, for example, a friend of mine says that benefit-cost analysis at least slows down the Corps of Engineers from building a canal across the Rocky Mountains. And I think that is useful.

(Laughter)

Economic values are indeed social benefits. As for the great morality associated with certain kinds of benefits as opposed to others, I have engaged in arguments with Corps of Engineer planners who were proposing one sort of dredge project or another and they make the same kind of claims for the goodness of their project as any park planner that I have ever run into. In other words, people can really get very emotional about the goodness of the project. It is not dishonesty at all. But I think some objective measure of the benefits, some sort of criteria, has a useful purpose.

Now, I am not saying that we can measure all the benefits: but I think benefit calculations are important and could be important in allocating resources between different kinds of recreation investment. I think it is possible to show that one might be worth more than an alternative investment. Now, this is not to say that parks do not have other uses than recreation. I am saying it with particular reference to the recreation component.

One other comment is: "Can we sit around the conference table and dream up a value and put it into the benefit calculation?" Well, of course we can; the real question is what does it mean? Does it have any economic meaning and is it at all practical? I just want to show that even when we use benefit-cost analysis, we are not immune
from using bad practice--and certainly we do. This comes into water developments.

I often get involved in questions: for example, "Is it worth more to keep the stream free-flowing in a wild state or put a dam in it for flatwater recreation?" Well, the way we rig out benefit-cost analysis, we say that a recreation day is worth a dollar, a dollar and a half, adjusted for price level changes or not adjusted for price level changes. We use this number and we multiply by the number of days. And then we say well, if we put a dam in there, we are going to get a million visitors but if you left the stream alone, there would only be a hundred thousand. Well, if you multiply both by the same number, the thing is naturally rigged for you--you always come out building the dam--other things being equal, because you are multiplying one case ten times the number by the same value number.

This totally ignores, however, the real benefits that might be attributed to this stream--benefits in the sense of willingness to pay. What really has to be done is to show that, in fact, it may be worth a great deal more to keep the stream in a wild state. In other words, the willingness of a few people to pay, might so far exceed the willingness to pay of the many. So we are not immune to bad practice.

One last point: the comment, "Maybe if people really want these things, let them pay for it and then that is that." Number one: the thing is rigged so that a lot of the values we have are non-market. You cannot really go down to a Safeway store and buy good environment--it is not for sale. This is the problem. Whereas farmers can adjust their production, whether they are going to grow soya beans or corn, by looking at market prices, we cannot plan our environment this way. We have questions of what economists call "market failure." And for these and other reasons, technical reasons, we choose publically to
provide these things. The problem comes through; how to put a value even though it is non-market?

I do not think we can say that if people want it, they will pay for it and that is it. But at the same time, let me hasten to add, there are certain kinds of environmental commodities, particularly associated with recreation, which could be marketed. There is no real reason why all these recreation services have to be provided free, particularly the expensive ones like camping.

Take an area like the Rideau Canal, for example. Here is an area where a mix of private and public provision of services may well be an answer. I do not see any use in even arguing, "Should we make the Rideau Canal a big national park and run it like we run all other national parks?" I think this would be a gross waste. At the same time, there could be a national involvement there, a provincial involvement and a private involvement--involving the sale of certain kinds of recreation benefits.

STAHL: Thank you very much. Professor Hines.

HINES: Well, I think it is going to come as no surprise that there is immediate disagreement as soon as the second economist starts to talk. I would not come to the same appraisal of the worthwhileness of benefit-cost analysis that Professor Knetsch does. I think there are some very serious handicaps to benefit-cost analysis as a guideline to public policy.

I think we ought to recognize that benefit-cost analysis serves two main functions. So far as the federal agency is concerned, it serves primarily as a ranking function to provide distinction of priority for particular projects. So far as economists are concerned, they would like to see it provide an additional function which is that of determining whether or not, the investment in the public
sector of the economy is justified. So we have had all the paraphernalia whereby if it has a ration greater than unity, it is justified equivalent to a return at the marginal level in the private sector.

There are certain things about the mechanical way that benefit-cost operates in analysis which tend to provide a higher benefit-cost ratio for some kinds of projects than for others. Specifically, if it is a project involving flood control where it is easy to quantify the benefits that are involved—that is, where you go around a valley or a flood plain area and assess the property—then you have got a built-in, quantified worth of the project. And moreover, if it is simple for you to assume that a flood of a certain level is required to destroy $x$ amount of property which is necessary to cover the cost, you have got a further method whereby you can almost guarantee a satisfactory benefit-cost ratio. This involves no particular restraint whatsoever upon the Army Corps of Engineers. And if they do restrain themselves by the level of the flood assumed, they can always, of course, try to get the interest rate a little lower, which will reduce the cost side of the equation.

There is a second disadvantage of benefit-cost studies which is that the final appraisal comes out in the form of a ratio. It comes out as 1.5, 1.8, 2.7, or some such figure. This figure, of course, may be qualified by a variety of other observations that are made in the study about the fact that certain intangible benefits will be destroyed: they cannot be measured and quantified; that there are certain other benefits of different projects that cannot be quantified and put in the ratio of those projects. But the congressman is inclined to look at the ratio and this provides him—under a period, of course, of great stress in working through legislation—with a means by which he can judge whether one project is superior to another. And it inevitably follows that the project that is easily
quantifiable is better, so far as this kind of arrangement is concerned.

This happens to be a great advantage to flood control projects, to navigation projects, to those things that have benefits that are churned through the market in some way. Other kinds of projects, let us say a pollution control project where much of the benefit would be of an intangible nature, would be discussed in the project analysis but would not go into the ratio itself, and it would be at a disadvantage in the legislative struggle. And this is quite aside from the possibilities of rigging the project ratio which, of course, conceivably could be done, but which also can be caught if the project is important enough.

I would also like to comment on the highway situation, if you donot mind: and that is with respect to the nature of the public investment that is involved in highway development. Here I think, you have a case where priority of investment is more fully developed in this area than in almost any other public field. And I would suggest to you that again, this is a case of a kind of caprice of the way the decision is made; or the ancillary opportunity to raise taxes tied to transportation that provides us with much greater visible rewards in the form of highway benefits than we get in the form, of say, elementary school education or something of this nature.

Secondly, you have the possibility of imposing standards of quality in the case of construction of a highway that are not possible in the case of other kinds of public services such as education. You can hire anyone who can stagger up to the front of the room and stay there for a full hour as a teacher. You cannot hire anyone who builds bridges and persistently, of course, puts the span in the wrong place so that cars always go in the river.

(Laughter)
This is the kind of selective device that prevents incompetence in some fields; it does not prevent them in others. And so you have tied to the opportunity to raise funds, overdevelopment of some areas of public satisfaction and underdevelopment in others. I think the highway situation is a good illustration of this.

STAHL: Thank you very much. Professor Neuzil, any comments?

NEUZIL: I really wonder why we might want to measure the economic value of national parks anyway. Some have suggested in a private discussion I had this morning, the need for investment criteria, market values and so forth for guiding park acquisition policies and programs; and some this afternoon have pointed out the difficulties encountered here. But I wonder if this is not just an academic, theoretical sort of problem that is of little practical concern.

It seemed to me that only when we would be getting to the point where we were acquiring so much park lands that we ran the danger of running into the situation where we were having marginal costs exceed marginal revenues or marginal benefits, that we would need some criteria. I do not believe that in Canada or in the United States we have come anywhere close to the situation where we have got too much park and where you could have an uneconomic allocation of resources into park use.

STAHL: Thank you very much. I am going to take the Chairman's prerogative here and make a couple of comments.

I am going to, in a sense, be heretical as an economist and plump somewhat for a political solution to some of these problems of defining, if you will, an objective function. In other words; a rank ordering as to the "goodness" or "badness" of projects.

I think that among parks people, economists, conservationists, whatever brand they may be, there is an idea that the political
process fails to reflect some sort of an objective function. I think rather that it does not reflect the highly refined objective function of the park planners, the economists, or the conservationists, or whatever group it may be. I think over time, the political process if it is at all reasonable in its operation, can provide us with a public ranking system in rather large broad categories.

I grant you, it will not be able to make minor distinctions on such property as the Skunk River Scheme in central Iowa which got Neil Smith re-elected two times in a row—or similar minor projects. But it can, for example, reflect the desire of the public to retain Grand Canyon, or at a lesser scale, there are projects that can be reflected in a public objective function.

I am not saying that the economist can divorce himself then from attempting to rank order these projects, many of whose benefits do not fall into the market sector. He can through the use of his rather esoteric techniques, act as a dampening mechanism on the oscillation of public desires. One can slow down the processes as Jack Knetsch has pointed out; slow down the Corps of Engineers from constructing waterways from Omaha to Grand Island, Nebraska—this sort of thing.

Anyone who is familiar with the constant tension running between the Soil Conservation Service, Bureau of Reclamation, Economic Research Service, and other agencies, is aware that there is this constant pressure of the economist through his own agency, on the builder in his own agency. So, by ignoring, I think, in a way, the political process, we might be down-grading one very important way of reflecting public values whether or not they can be in turn, translated into market values in terms of dollars and cents. We can get some sort of a rank ordering through the political process over a reasonable period of time.
HINES: I think I should have said that there is a place for benefit-cost analysis in those cases where you are dealing with essentially the same type of projects: where, say, your flood control projects do not have significant different opportunities for intangible benefits and where you limit it to a ranking; in other words, an ordinal measure as opposed to a cardinal measure of the worth of the project.

DISCUSSION FROM THE FLOOR

STAHL: Professor Hamill.

HAMILL: I would like to add some information about the Canadian situation which I think indicates that there is a very great urgency about this business of benefit-cost calculation as it affects parks.

There is now, in Canada, a very well developed and, I think, quite clear situation where we are about to be sold a bill of goods: namely, a very large development of dams, partly to service supposed Canadian needs for irrigation, flood control, and things like that; partly on the promise that we can peddle the water to the United States-- and there is a pretty well organized group in Manitoba that is talking about the Americans being willing to pay two hundred dollars an acre foot, which I am assured is ridiculous.

In any case, there are plans available in Alberta, by the Department of Agriculture, which identify a whole series of possible reservoir sites: there is a five million dollar project by the Canadian government which is concerned with a couple of major river systems; there is P.R.I.M.E. which involves both the provincial and federal government. We are about to be hit with a very sustained operation involving engineers, economists and politicians, and the benefit-cost ratio is going to be part of the political process in this case--and there is not going to be enough time to develop the
kind of sophistication that is indicated here as being available in
the United States. It is just going to be a railroad job and the
railroad has already started.

So, I think that in view of the fact that there is a real
threat to recreational areas in the national parks in Alberta and
British Columbia, and also to areas outside the national parks--and
I am talking specifically about the forest reserve--we have got to
come to grips with the benefit-cost ratio very quickly, because the
benefit-cost ratio is going to be used dishonestly. It is already
being used that way. It has already been used that way to sell
irrigation projects in Canada. It is almost certain to be used that
way again, and if we do not come to grips with it very quickly, it is
going to affect recreation.

Now, I would suggest that a way to handle this would be to have
an independent non-governmental agency which might be an organization
that could deal on a professional level with benefit-cost analyses as
they are presented to justify dams.

The second point I would like to make is that you do not need to
be that afraid of benefit-cost analysis as it is going to affect
recreation. I feel very certain that in the area south of Nordegg,
in western Alberta, any honest use of benefit-cost analysis will
favour recreation over timber production, water production and
grazing. I think we really have to come to grips with it and we do not
need to be necessarily afraid of it.

STAHL: Thank you.

WARNER: It seems to me that there are abundant data that could be
utilized in making some kind of a quantitative statement of the value
of a national park visit based, for example, on the amount of money
one expends getting to the national park, the length of time one
has available for the total vacation—and this might be analyzed in terms of the total income of that person. This could then be related to the amount of time he feels he can take from his total vacation and commit it to a national park experience.

MYRES: What I want to know is whether any of the economists on the panel know of any attempts to establish rating values for the quality of the experience that one has in the park system. I am not interested in areas outside the parks for the present moment.

We seem to be wandering miles away from how you evaluate the parks experience. And I would like to know, before I try and give what I think might be the answer to the question, whether any of the economists can actually come up with any studies that have been done that include quality ratings applied to number of visitors, how much they spend, and which classification they fall into.

KNETSCH: With respect to the question, "Have people looked at how much money people spend and so forth, and used that as a sort of benefit measure?" yes, this has been done for a long time, particularly in the fish and wildlife field where they spend a lot of money making surveys on how much money fishermen spend going fishing. As a measure of the value of the fishing, however, it is really pretty well accepted now to have no bearing whatsoever. It is totally irrelevant. The five dollars a day they spend is for gas, food, fishing rods and worms. That does not have anything to do with how much they would be willing to spend for the opportunity to go fishing—and that is what you need the value for. However, there have been some other studies which use data like this, that have come up with, in fact, a simulated market price.

What we are really after, in terms of the economic value here, is, "How much would people be willing to spend if, in fact, there was
a gate at the fishing hole or the park?" There have been attempts
to do this. In terms that these kinds of measures have any validity,
and I again feel they do, we should be able to say something about
the willingness to pay for different classes of recreation. To use
the example I used before—flatwater recreation; on the average
probably, the willingness of people to pay for this kind of recreat­
on is far less than some unique kind of experience such as white
water canoeing. So, to the extent that we do have legitimate
indicators of this kind of a value, we should be able to say something
about the value of relative classes of recreation.

An earlier comment was that benefit only comes in when you
reach the margin where you have too much park land and that this
country and the United States do not have too much park land, at least
in the opinion of park people. This really is not the question. The
question is whether we ought to allocate for this parcel or another
parcel; we are all talking about limited incomes or limited budgets.
The real question is, "Should we invest in one area or in another
area?" There are questions of overdevelopment in some kinds of parks
that were oversupplied relative to another kind of park. I think
this is certainly the case with respect to rural and urban parks.

If, in fact, we had benefit-cost analysis, I think that we
perhaps could have made better allocations between getting more
parks that related to urban areas—I am speaking for recreation
particularly—than we do for the present configuration of parks in
either country. I think we have grossly misallocated our park
resources in the rural versus urban.

HINES: May I respond to this very briefly? I think that it should not
go without note that one of the pioneers in the measurement of
benefits, Marion Clawson, has done much work in this area. And also,
as I recall, an article by Professor Knetsch and Marion Clawson
together, is concerned with this issue. So there has been a consider­able amount of work in terms of measurement of benefits.

On the matter of composing the value of an intangible experi­ence, however, which I think is really the nature of the question that was asked, there is somewhat less evidence that there has been very much work done in this area--and certainly this is not an area where economists would have any particular competence to make these kinds of appraisals. However, the survey of recent problems of measurement in outdoor recreation by Ruth Mack and Sumner Myres in *Measuring Benefits of Government Investments*, published by Brookings Institution, does suggest this kind of approach--and where a panel of authorities will make appraisals of the worth of particular experiences and use this as a basis for determining benefits.

**KNETSCH:** Is there not a great danger in having this kind of a panel though? Could you imagine a panel consisting of the president of a barge company and a general of the Corps of Engineers sitting around appraising navigation benefits? I think there is great danger.

**MYRES:** You need somehow, to modify figures for parks attendance. We have, in Canada, something like ten million people visiting the national parks each year. Frankly, I do not know whether this figure means very much. It certainly means almost nothing when the individual goes as far as the town site at the entrance of the park, and goes no further. It means relatively little when they only travel along the road, do not get out of their car, turn round at the end and go back. This is not getting very much of the parks' experience.

It seems to me that it is only becoming valuable when you go through a series of increasing utilizing scales and grades ultimately leading up to hiking into the wilderness for two or three days or nights. It seems to me that you can provide what I would call some
kind of a quality rating. If you read the statistics, the implication is that only a tiny proportion of the visitors ever go into the wilderness or ever get the parks' experience, so the wilderness is completely worthless from the point of view of recreation. The Trail Use Survey for Banff and Yoho Parks [see Nash, footnote 30] tells you how many people, in fact, went into the back-country. It seems to me that what you should do is to provide quality ratings. Now, if you attempt this and then multiply the rating against the number of people who did it, it seems to me you come up with a much more valid figure than the fact that only a few dozens or few hundreds of people went into the backwoods.

My ratings; I will not list them all because we could argue endlessly about whether, in fact, this is a fair rating, but at least I have made an attempt at it. Number one was that you use the road beyond the townsite by car, visited the terminal point and turned back without ever getting out. That is not really getting much in the way of a parks' experience. If you get out and walk, of course, this puts you higher up the scale. My highest scale was seven which was a hiking, mountaineering, riding, skiing or canoeing trip which involved overnight camping in the wilderness or at an alpine hut.

My zero point on this scale was: "Visited the townsite and its facilities only, and went home." Of course, both zero and one eliminate a very large number of the people who go through the Banff Park entrance gate. And it seems to me to say that two million people visited Banff National Park is a mistake. Unfortunately, the Trans-Canada Highway goes through the Park. But if you take Algonquin Park or some other park which is at the end of the road, and eliminate those who have gone through the gate but not gone beyond the townsite, then you get back to a slightly more realistic figure.

Now, it is true that the number of people who go into the
wilderness is still very small but by the time you have multiplied them by seven on the rating scale, you come up with a much greater, clearer indication of resource utilization in a value sense or a quality sense.

I might just add one further point. The question was asked; "How much are people prepared to pay for this kind of thing?" A recent issue of the *Canadian Field-Naturalist* [82:155] reported that the Hamilton Naturalists' Club which is a small group of organized naturalists, had recently purchased one hundred and sixty acres of natural area which "was the only remaining remnant of the climax forest which once covered the Niagara Peninsula." This small group of naturalists raised ten thousand dollars with which to do this. Ten thousand dollars is not very much when you are talking in terms of millions of dollars for a culvert but on the other hand, it is an indication of good will.

If we have to find out how much people are willing to pay, if we are to foresee and plan in advance to control the planners in the sense that Dr. Hamill was talking about just now--he effectively said that all the dams are going up and there is nothing you can do about it--where is the great Canadian or American public? One reason is that they are not terribly aware of what is going on, in this country in particular. Planning is by committee, the committee is usually secret and it is high time that decisions of this sort were perhaps planned by Trustees of the National Parks--I introduce that word deliberately--and brought out into the open for a little bit more discussion. I think we would be surprised how many members of the general public supported the more conservative measures and were against vast developments.

KNETSCH: Just a quick reply to this. I think we have to be very careful with this sort of wilderness snobbery. We really cannotconclude
that just because somebody goes in there and wanders around in a car, that he does not really find some enjoyment.

I visited Banff National Park once and did not get out of the car for that matter. I enjoyed it very much. If I had to get out and wander around the woods, I would not have enjoyed it half as much. This is my personal feeling. In fact, you know, I would not have been willing to pay—they would have had to pay me. But this is just the way I feel about wilderness.

It is legitimate to say, however, that as long as that is all I am interested in and Banff offers something unique and you have got to save it for something else—by all means do that. But then provide some other places for people like me to wander around in and look at some scenery, if that is all we have in mind.

PAISH: Professor Myres got to the point towards the end of his last remark and I think our Chairman hit the nail on the head in his comments a little earlier.

In my experience, we tend to overestimate the sophistication of the research that is done by the people with whom we are in competition. I bumped into a couple of excellent instances of this during the past couple of years. It is just a question of sitting down and doing a bit of doodling as a non-economist on the back of an envelope then going to an economist friend and saying: "Does this make sense?" And he says "yes," because an economist is dedicated to making common sense difficult at times.

For example, one good instance in British Columbia was a flood control plan for the Cowachin River where no attempt was made to quantify fisheries benefits. We were able to do this very, very quickly and effectively stall the project for some time.

I think that most of our discussions here have centred not so much on parks as on the total environment—and that one's response to
one's environment is inevitably an emotional response. Incidentally, most of these other things are emotional responses too: find me a more emotional thing than greed which is a primary motivation for all this benefit-cost stuff most of the time.

But seriously, I think we tend to underestimate the power of people. For example, there are five or six British Columbians in this room; three of us came to British Columbia because we wanted to come to a place where we could enjoy a quality environment. I get offered five grand a year extra to go and live "back East" or to go and work in the United States, and I do not want to go there. It is worth $5,000 to me to work in British Columbia.

Now, there are many, many, many more people at all strata in society who are prepared to accept this surface value judgment. It is an emotional response, true, but to accuse someone of being emotional about parks is like accusing them of being emotional about their kids or their family. And I always suspect that if we start concentrating a little more on motivating and providing leadership--as Doug Pimlott suggested scientists should be doing and as Mr. Brandborg showed the various citizens organizations are doing--to motivate this emotional response to our environment, we will soon realize the alleged degree of sophistication.

There are river basin developers; for example, the Peace Project. There was no benefit-cost done there. They went for one set of benefit-cost figures; they were not what the provincial government wanted so they went and got some more.

(Laughter)

Most of our so-called sophisticated research is a lot of bluff, and we have numbers on our side and I suggest that we start motivating these numbers and using that a little more.
KARIEL: People are important and we often do go by the majority, but in a democracy we also have to remember that the minority needs protection as well.

I am a little bit afraid that if we base all of our criteria on economic benefits only, then we might very well do something with the Guggenheim Museum that we might not like to have done with the Guggenheim Museum. In other words, we might very well turn this into a bowling alley. It will bring in much more money; it will be much more "valuable," "good," "best," or whatever way you want to call this, than if we leave it as a Guggenheim Museum.

Yet, on the other hand, there are people in New York as well as in other places, who are interested in having a Guggenheim Foundation and a Guggenheim Museum. No, they do not go there--they could not care less, so to speak. But it feels good that it exists, that they know they or their children or someone could exhibit pieces of the particular type of art which is exhibited there. Indirectly, they do pay, of course. Perhaps through taxes, perhaps through some other way, but individually, directly, they do not.

The point of political decision making, I think, is somewhat relevant here—as brought out by our Chairman. We might very well rank the kinds of projects upon which we could have our expenditures and so on. But I am afraid here of the problem of the ranking.

The problem of interpersonal comparison of utility would be a difficult one to resolve. On the other hand, I suppose we could get somewhat quite sophisticated in our techniques, to the point where we could apply game theory which has been attempted, perhaps in certain kinds of political decision theory. However, if we do apply game
theory, we might very well find two solutions: one of them, the
"most influential individual would win," whatever this is; or we will
end up with the lowest common denominator winning—which is sometimes
what we end up with anyway.

PIMLOTT: Earlier there was a very succinct comment from the floor about
the things that are brewing as far as water impoundments in Alberta
are concerned. And this is one of the things that I think is of great
concern in Canada—the fact that our jurisdictional system is so
completely different to the United States and that an awful lot happens
in camera. We have all kinds of decisions being made and if we have
a chance at all to comment on them, we comment after we have been
told that this project is about to go or has gone. We just do not
have the system of the president or the governor proposing and the
congress or the state legislature disposing. Professor Nelson
referred to this in his paper on Thursday, not in the economic sense,
but in terms of decisions about whether or not a highway would be
constructed through the upper Red Deer Valley. So much can happen
and we never learn about it.

So, I feel that it would help me as a ecological activist, if
people who are politically and economically oriented, could offer
some suggestions about how we cope with this in Canada. We need, as
it were, an ombudsman for all conservation organizers in Canada who
would help us to understand what are the economic implications of
all the things that are going on: the Peace; the big project that is
proposed for Manitoba; the dozens and dozens of projects that are
proposed in Ontario, in Quebec, in Newfoundland. We just have no way
of coping with these at all.

How can we come to terms with this so that at least we can
understand that we are being stripped? It would be kind of nice to
know that you are being taken even if you cannot do anything about it.
STAHL: Would anyone care to comment on that?

MYRES: First, I hope that Dr. Pimlott and Dr. Fuller will join with me in seeing to it that in future students taking graduate work in ecology take at least, a course in economics so that they can beat these men at their own game. This is something which has been long since overdue. We can extend it further and say that biologists, by and large, are not political animals and this is a great disservice to the conservation movement. What we really require, I think, is a few biologists who will sacrifice themselves in the cause of society and everything else, and enter Parliament.

The second point I want to make is that I think the time is again long since overdue in Canada when the various branches of the government cease to have their monolithic control over the natural resources. We have, for example, the Canadian Wildlife Service and it is a very good service and it does a great variety of things. But there are times when one would like to be able to comment upon its activities before these things happen. It is even worse when you are dealing with engineering departments, departments of agriculture—which are the most monolithic of all—and things of this sort.

I think the time has come when perhaps we should think in terms of having a trusteeship organization that runs the national parks, rather than having them run by people who one would like to know but finds it very difficult to get to know--people who live in Ottawa. Trusteeship is an organized way of balancing the various interests. One assumes that the trustees are perhaps eminent men outside the civil service, who are appointed by the Prime Minister because of their eminence in one or another, indeed, a varied number of fields. You will have some economists there, you will have some private
entrepreneurs, but you will also have some ecologists and they will do their arguing and they will avoid making their mistakes behind closed doors. They will then come out and say, "We have hashed this thing out. We could do this and we could do that but we would be very foolish because in the process, some valuable feature of an environment would be destroyed."

I personally would like to see national parks under trusteeship rather than directly under the control of a federal cabinet minister who is inclined to be overruled by his colleagues in agriculture, forestry, fisheries or whatever it may be.

KNETSCH: I would agree with the first part of the answer to the question --namely, what should we do to beat them at their own game? I agree that perhaps it is useful for a few biologists to, in effect, sacrifice themselves and study economics. This was suggested.

But I think really the point is, "Yes, indeed, do find out what this benefit thing is about." It is, after all, not immoral. And there is nothing as deflating to these kinds of things if, in fact, you can demonstrate that the benefits are negative. This really takes the wind out of any kind of analysis presentation. But you cannot really do this with, if you will pardon me, the Sierra Club approach. That sort of obstinate reaction is not really going to get us very far and I would agree with the statement--which was made very early in the discussion--that if, in fact, we really looked at benefit-cost, we would end up on the side of far more recreation and parks rather than less. I do not think there is any reason to be scared of it.

YEOMANS: Yes, right along with what you are saying Mr. Knetsch; in British Columbia, for example, we have had the problem of no public use plans for reservoirs, no public hearings. I am a landed immigrant of five years status and before I came up here, got involved in a lot
of public hearings in the United States. And I admire this approach to resource management.

I would like to comment on a rather bright light, however—the Canada Land Inventory—in which a number of sectors are involved in assessing land capability. Now, as this study progresses and as the capability factors fall together, government will have no choice but to assess the relative values of the land—forestry, wildlife, recreation, soils and so forth. It is my hope and the hope of others that are involved in this study, that this data will become available and there will be no choice to government but to assess this data. In which event, we hope plans for any source of resource development then would be made known and a public hearing system would evolve. And I think this is our only chance to at least be appraised of the stripping before it takes place.

STAHL: Gordon?

J. G. NELSON: I would just like to point out something that some of you may have noticed in the paper last night which I think, is very heartening and which comes from some thinking which I think the National Parks Branch has been doing for some time about public hearings.

There was an announcement that provisional master plans will be discussed at public hearings in the local area, if I remember the statement correctly. I think this is a very encouraging sign. I have had discussions and I have, in fact, had the opportunity to appear as a private individual to discuss certain proposed projects with the National Parks people—after some urging or requesting on my own behalf. I think that I am probably not the only individual who has done this.

What the exact hearings procedure will be is of considerable
interest to me and I think to others. I suggested in my own paper, for example, that there might be some central discussion perhaps through something like the National and Provincial Parks Association or alternatively through some kind of conference which is structured in such a way as to meet nationally once or twice a year.

K. NELSON: Just one quick response to Professor Myres. I think that in the planning process the key to good planning, regardless, is involvement on the part of responsible people. And we in Saskatchewan certainly give our university staff and the staff of other universities -- the finest brains that we can find in the field -- every opportunity to participate.

Now, I think that in fairness to government and in fairness to the civil service, the university people themselves have been sadly derelict in meeting their responsibilities in terms of this involvement.

STAHL: I will buy that. I have no complaint with that.

REEVE: I would just like to expand slightly on the reference made by Dr. Nelson to public hearings of national park master plans. There was an announcement in the Calgary Herald to the effect that there would be hearings on the master plans for our national parks.

The one point I would like to correct though is that Dr. Nelson said that we would be starting to do this. I would draw to his attention that slightly less than a year ago, we did indeed have our first public hearing of a national park master plan and that was for Point Pelee National Park.

At that time, various organizations were told that their briefs, their oral presentations, would be welcome. And at that presentation, the general public was told--there was some three hundred, four hundred people present--what the plan was for the Park and everyone
had an opportunity not only to submit briefs and make oral presentations, comments, criticism, etc., but they were given the opportunity of sending further comments, reports, etc., in at a later date; and this is the approach that we are planning to take with our other national parks.

STAHL: Professor Oberlander.

OBERLANDER: Since I have already talked too much, I will be very brief. But I would like to respond to two things; one, the public hearing notion and the other is the request for "what can we do?" that Dr. Pimlott raised.

I think when we talk about public hearings for national park purposes, it seems to be essential that these are in fact, national hearings. I think this is of the utmost importance to me. If this becomes a Calgary hearing, no matter how I love Calgarians, I think we are abdicating the national decision making purpose and process for a national issue; so I think this is really very critical. I would like to be part of the public hearing although I happen to live four hundred miles away instead of eighty. All too long, with due respect, has Calgary thought that it had a proprietary interest in the skiing and resort facilities of "Calgary" [Banff] eighty miles away.

(Applause)

Secondly, I suggest that there is a very real vehicle for public excitement, commitment and action available to us. I happened to be raised in the parliamentary tradition and I happen to think that it has some very real value. I do not look towards the American system with very envious eyes because I am not altogether sure that it has done very much better in terms of the environmental situation. We do have a parliamentary system which is based on parties and I submit, Mr. Chairman, that I think it would be extremely exciting if
we could get a party--and I do not mind which one--to be truly committed as a matter of party politics--high priority--to the kind of notions that we have discussed here.

Paranthetically, about a year ago, my students conducted what I thought was an interesting survey. They were saying the same kinds of things we were saying about the city; "Why does not the government do something about it?"

So I said, "All right, why do you not write to the four federal and provincial parties--Conservative, Liberal, Social Credit, N.D.P.--ask them what is your policy about the city and expand what means." And we got some fascinating returns. By and large, it was obvious that the parties themselves had never thought about the city; had, in fact, no public policy and were in no sense able to lead in the political process on what we thought was the most critical issue of the day. I suggest, Mr. Chairman, that one of the great things we could do is to find out what the Liberal Party really thinks about open space, about national parks, about the wilderness. And then we might find out what the Conservative Party thinks about it. Is conservation and conservatism in some way related?

(Laughter)

And then we might go to the N.D.P.

I think this would be a way in which we could really use our existing system of government and our existing social institutions--and also begin perhaps, to plug into the political decision making process which, under the present Prime Minister, I think, will have a new lease of life.

STAHL: I think the problem here is that it is not a question so much of getting the political parties to tell us what they think about them, it is us getting the political parties to think about them in a
constructive manner. And I think there is no reason why the Canadian political system is in any way hampered in performing this function. In fact, when one looks at the pork barrel system for minor projects and even major projects down south, one certainly wonders about the desirability of this procedure as against the parliamentary procedure.

PIMLOTT: I support the plea, "Let us get national." I want to get in on discussions about Banff but I cannot afford to come to Calgary or to Banff. If they are even held in Ottawa, I would have a chance. But there should be a few other locations. We have got to break away from this local approach to what is adequate for park planning.

MILTON: I would like to respond to Mr. Oberlander's comments, which I second very heartily, and comment that we in the United States have tried to undertake a very similar sort of operation in relation to the elections now about to get underway.

We formed a committee of some of the prominent ecologists in the United States which put together a statement requesting specific responses from each of the major party candidates—in this case, Wallace, Humphrey and Nixon—asking for a statement of national policy on the environment and listing a series of items for them to respond.

We then, after getting the response from the three candidates, sent this into the major news media in the United States and got editorials in the New York Times, The Boston Globe, and so on, which have since become quite a major point and issue in the whole national campaign. In fact, the New York Times came out with a comment that the only real reason for electing Humphrey was his stand on national environment policy.

(Laughter)

Mr. Wallace sent us a nice letter back saying, "Thank you very
much, we are interested in your letter and we will certainly take it
into account."

(Laughter)

Mr. Nixon's response was an absolute blank. We made a number
of phone calls to his office and were told, "We do not consider this
an important enough issue to even bring up."

HARDY: I would like to suggest to Mr. Reeve that when the public hearings
on parks are held, the invited delegates be given material beforehand
so that if they represent an organization, they can discuss it—or at
least they should receive detailed information afterwards.

At the Point Pelee demonstration which was quite magnificent,
with multicoloured ten-foot maps and good speeches, we were given a
little kit to take home that summarized very briefly what was talked
about—and they gave us a little mimeographed map. It was certainly
a good start but I think if the public hearings are going to mean
anything, there has to be more preparation and material for people
to take back.

NASH: I want to say a word about hearings. Hearings, we sort of
assumed, are good but they are not good unless one is prepared to
operate effectively in the hearing. One can make a fool of one's
self in a hearing. One can be totally ineffective regardless of how
rightly one is motivated. We have had differences today, but I think
we can all more or less speak together, as people of our frame of
mind have to realize it is necessary for us to talk the language of
the men who are making political decisions.

This means for one thing to avoid hysteria.

It means for another thing to avoid what I call an "overly
sentimental attitude."

It means for a third thing, to present rather than just protest--
to present alternatives. And I think one of the reasons for the great effectiveness of some of the resistance campaigns in the United States, such as the resistance to the Grand Canyon dams, has been the fact that Dave Brower and others have been able to come before the congressional committees not just saying, "Don't do it," but saying, "Do this instead."

I think we have to be ready with alternatives. This takes a lot of footwork, a lot of statistics--fighting fire with fire. We do have to become trained as economists, as you suggested, and we have to be able to go to brass tacks with these men, recognizing that the people who are opposing us are going to be well organized, well financed, determined and dedicated--often represented and financed by the very biggest economic blocs and interests in our respective countries.

It is very difficult as a citizen, to get up and fight teams of lawyers who have been pouring over documents and so forth; but this is, I think, how some of groups like the Sierra Club have been most effective, by operating in hearings in a professional kind of a manner.

So, if you are going to get into the hearing business, get into it effectively.

STAHL: Thank you. Tim?

MYRES: I wanted to just harp back briefly to the notion of trusteeship because I hope somebody will discuss this in more detail. I still think that hearings are grand. I am all for this--and I am all for plans.

But I do think, really, that the National and Historic Parks Branch which makes the plans should, in fact, be submitting them perhaps first, to trustees who would go over them with a tooth comb and decide whether they were in the national interest. Then they could perhaps go to public hearings--as they certainly should on a
national scale--and then, only then, should they go to a minister of the Crown.

I would like to make one slightly side comment on this; it is an economic one which I have come across. In Dr. Hines' presentation, he refers to the Clawson "Demand" Curve and he states, "The relationship shown is fewer visits and higher costs for more distant visitor families" to the parks; that is, the farther away you go from a park, the fewer the number of people who are coming from those regions and it costs them more, of course, to get there.

The suggestion is that most people visit a particular park from the closer regions rather than from great distances. However, I would like to draw his attention to the Banff and Yoho Trail Use Survey, Figure 5, which is, Origin of Backcountry Users, Banff and Yoho. Now where do these backcountry users--the hikers in the wilderness--come from? It is true thirty one percent of them come from Alberta--that is fine--but twenty per cent come from the western United States, 21.8 per cent come from the eastern United States. So, forty per cent of them are coming from the United States, and the thin areas, curiously enough, are Saskatchewan, Manitoba, Quebec and the Maritimes. And more foreigners visit Banff and walk around in the backwoods than do people from Saskatchewan and Manitoba put together. Saskatchewan and Manitoba--it's 3.4; foreigners, 4.7. That is; foreigners outside of the U.S. Now, this suggests, facetiously, that perhaps these hearings should take place in the eastern U.S. and the western U.S., because forty per cent of the visitors come from there.

(Laughter)

HINES: I want to make a comment that was inspired by Rod Nash's observation about the Sierra Club, because, I think, too often, we think
of it as just a kind of organization which has cried "halt" and gone off to sulk if halt was not obeyed. Actually, more than anything else, I believe it succeeds because of the use of professional talent: in the case, for example, of the Grand Canyon Dam issue. Certainly, very important in the successful blocking of the dams in question, was the work of two very young but very able economists from the Rand Corporation who opposed these dams at the level of congressional hearings. So, I think they have used a wide variety of professional resources.

KING: I would just suggest caution in identifying too closely with any one political party. I think you can get yourself into difficult circumstances. I am affiliated with a group that is an obvious lobbying organization and when personnel change or the party changes, they sometimes find themselves in very ridiculous circumstances.

I have found strongly ardent conservationists in both parties in my State and I would expect the same in the Canadian situation.

As for the academic community, when your opinion is asked for or even when it is not asked for, if you can frankly state objective ideas, they will land on more receptive ears if you speak from your position in the academic situation rather than from your political affiliation.

OBERLANDER: I would disagree with the last speaker quite vehemently in the Canadian context. If we have something to say, I think we ought to say it; and the political system is there to exercise our techniques of getting it done. I think that Canada has all sorts of really good examples where ideas became operative because they were put into the political system. Without that, the ideas simply are good ideas and that is all there is to it.

I think the whole history of the social welfare program in this
country is the result of getting involved in this particular case with the Liberal Party in the 1940's. If this had not happened, we would not have had the kind of legislation that we now enjoy. So, I think, the question of political action on behalf of the sorts of things that we believe in is essential, otherwise we really do not have a chance of getting it done.

STAHL: I think the question is how closely one becomes associated with a single political party and the question of retaining your options to transfer your pressure to another party may well be a valid point even in Canada. It is very difficult sometimes if your position is strongly associated with one political party and that political party goes through a metamorphosis over time and your position is out in the cold.

ANDERSON: I have the feeling that a good deal of our concern with landscape resource management, use, conservation and so on, stems in large part from two fairly basic Canadian problems—one being regionalism; the other being the problem of space.

Now, I use regionalism in the sense of our historic and political evolution and the British North America Act, in which the prerogatives for control over land and land resources lie with the provinces. A great number of our active associations and conservation associations have evolved in Canada with a provincial concern and sometimes, with a very successful record of activity at the provincial level.

The other aspect, the spatial one is, where we are talking about the problem of communication, in a sense—and this is a pretty fundamental Canadian problem with our distance, thin population and our great amount of real estate.

Among the things that have been mentioned are concern for awareness—for knowledge of things that are going on or a voice for
the people who are concerned. If we have national concern about resource management, resource use, resource conservation, it seems fairly obvious—and I would agree one hundred per cent with the statement that Professor Pimlott made a little while ago—that we need some sort of vehicle for discovering what is going on across the board, and also for expressing concern and feeling about developments, both on a provincial and a federal scale. Perhaps one thing we need is a material conservation association and journal, with writers who are professional journalists, capable of describing the intricacies of resources problems to the public in a readable understandable way.

SCOTT: Mr. Chairman, I think it is rather important for me not to leave this meeting this afternoon without correcting one thing that is probably going to be a great misconception in a lot of people's minds.

I refer to an earlier remark that Calgarians have regarded Banff Park as being their private preserve. I would suggest to you that Calgarians are just as keenly aware of their national responsibility in regards to national parks as anybody is in Canada. We have the fortune or misfortune, depending upon how you look at it, to be located some 65 road miles from Banff National Park. If I were to turn to the citizens of the City of Toronto and say, "I want to be heard when something comes up with regards to a provincial park in the Muskokas," they would look at me and laugh. If I said to the government of the Province of British Columbia, "I want to be heard before you take 40 square miles out of Garabaldi Provincial Park so you can put your Olympics in, they would laugh."

We are very, very concerned about this national parks problem. We whole-heartedly support the wilderness concept—and let this not be misunderstood. We believe that we have a duty to support wilderness just as much as everyone in this room. We do not, however, like
to be referred to as people who regard as their private reserve or
preserve for their own benefit, a great tract of land to the west of
us. Obviously we are concerned about it because we are adjacent to
it; just as a Torontonian would be to the Muskokas, or a Montrealer
to the Laurentians, or a Vancouverite in relation to Garabaldi
Provincial Park.

STAHL: Thank you very much. I think any comments that were made, were
made in good grace without any serious attempts to downgrade the
attitude of Calgarians.

I think what has happened here this afternoon is that we have
proven that the quantifiers, whether they be economists, geographers
or engineers, have not answered all the questions. And without being
oversimple about this thing, I would suggest that the quantifiers
have never suggested that they could answer all the questions. The
quantifiers have attempted and are attempting, to provide better
information for the public and for the political machinery within
which it makes its decisions. This goes to the point of drawing on
academics for research, for consultation.

I am new enough in Canada so that I am not aware of the reasons
why, in the past, Canadian academics have been somewhat divorced from
the process of decision making. This is not necessarily a long-term
thing. I am familiar with the operation of the land grant institutions
in the United States where, if anything, the academics are too
involved with public affairs and with consultation outside the
university.

But essentially, the problem with regard to this whole question
of value, is to provide better information for the ranking and decision
making process when we face alternatives.

I return to something that seems to have—if I overstate this,
you will pardon me—dominated this afternoon. We are concerned with
ranking national parks, with evaluation of them, with the procedures for making decisions. We are concerned with the making of decisions as to alternative uses within national parks.

Something we seem to have forgotten for a little time is that we are also ranking alternative uses of resources between much broader uses. The demands of water for urban use; the demand of land for agriculture; the timber resources—can they be withheld from active timber production? These are questions that are involved with the total problem of the human use of all resources for all purposes, and to say that we can isolate the national park or the recreation aspect of this from these is really begging the major issue.

I would like to thank our panelists this afternoon and thank the members of the audience for participation.
### IV OTHER ALTERNATIVES: THE ROLE AND PLANNING OF PROVINCIAL, STATE AND LOCAL PARKS

Saturday, October 12th: Morning

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THE PARKS OF ONTARIO
E. G. Pleva*

I. A FRAGMENTED AND MULTI-LAYERED SYSTEM

Ontario's pattern of parks and open spaces is fragmented and multi-layered. Four major levels are easily recognized: (1) Federal; (2) Provincial; (3) Regional (particularly conservation authorities, counties, economic development areas); and, (4) Local (cities, townships, towns and villages).

An individual layer itself may be fragmented. For example, at the provincial level at least fifteen provincial departments, agencies, or commissions are actively engaged in parks and open spaces programs. The following list is not complete but will serve to point out the complexity of Ontario's evolving parks and open spaces system.

1. Lands and Forests: crown lands, game and fish, forests, provincial parks.

2. Agriculture: fairgrounds, A.R.D.A.

3. Highways: highway parks and waysides, picnic tables, scenic

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easements and vistas.


5. Tourism and Information: publicity, rating of facilities, visitor industry promotion, historical sites and markers.


7. Health: sanitation, environmental health, inspection of facilities.

8. Hydro-electric Power Commission: park areas and open spaces at power sites and reservoirs, revenues from water rights for park purposes.

9. Education: school grounds, outdoor schools, recreation programs, vocational courses in community colleges related to parks, outdoor recreation, and the visitor industry.


11. Energy and Resources Management: conservation authorities, parks and water management areas.


Furthermore, a given park or open space may have been provided and may be maintained by several governmental levels. For example, Fanshawe Dam and the Thames Valley Park, near London, were built and are maintained both directly and indirectly by federal, provincial, and local governments under the Upper Thames River Conservation Authority.

To further ramify the system it is obvious that a given park, once established, may be used by many groups and individuals collectively and singly to satisfy a great number of recreational needs. These needs may be satisfied without conflict only through the careful and
skillful allocations of the resource capabilities of the park. Once again, the Fanshawe area may serve as an example. The following list is not complete but indicates clearly a broad array of recreational opportunities: picnicking, hiking, golfing, camping, trailer park, flood control, supplemental reservoir for water supply, fishing, sailing, boating, shell rowing, skating, pioneer village, arboretum, wildlife, nature trails, outdoor school. Each use finds its own level in the recreational opportunities of the park. Not all potential uses may be permitted. For example, the use of powered boats of any description is prohibited. Thus, it is obvious from the beginning that park planning and management becomes the operational part of a system that is as varied as the resource base itself.

A given park or open space, therefore, may be multi-layered (developed and administered at several governmental levels); multi-purpose (many compatible uses simultaneously carried on with little or no conflict); and multi-interpretive (many resultant values derived from the same environmental resource).

There must be a model, however, that may serve as a guide to a systematic thinking of parks and open spaces. This model is being evolved slowly but certainly through the work of professional workers in the field, particularly in the provincial civil service. Much carry-over knowledge from previous experiences is used to produce better plans for today's projects. Successes and mistakes seem to become part of operational knowledge. Unfortunately the mechanics by which this transfer of operational information can be facilitated and speeded are slow to develop. The communication between workers at various parts of the system tends to become complicated by inertia within elements of the system and the actual absence of linkages for the transfer of information and experiences.
II. ONTARIO AS AN URBANIZED PROVINCE

Ontario is a province of city dwellers who live mostly in the south. A relatively few metropolitan areas account for three-fourths of the population. Ontario's magnificent dimensions may be a mere statistical oddity to the urban person who is far removed in miles from the grand open spaces of the north. Thus each person, no matter where he lives, has a hierarchy of recreational opportunities based on geographical location, ability to travel, time to use recreation space or opportunities, and money to pay for the indirect and direct goods and services needed to satisfy his wants.

There is an obvious relation between where a person lives and his primary needs for recreation and open space. Ontario is facing the responsibility of providing that recreational values be maintained or built into the areas where people actually live. This responsibility, now being actively pursued, reinforces a broader responsibility to develop the farther away recreational resources of the province. A zonal pattern seems to surround each individual to include a nearby area of daily involvement, an intermediate zone of day trip and weekend recreational needs, and a more amorphous outer belt of camping and vacation needs. The sorting out of these millions of individual zonal patterns for Ontario people and the added millions of neighbours in nearby states and provinces is the primary obligation of recreation, land use, and resources planners. Much excellent work of a probing nature has been done and every indication points to a successful procedural program of research and analysis in recreational land use planning.

III. REGIONAL GOALS

A recent development in Ontario is worthy of study and support by all who are interested in parks and outdoor recreation. The "Design
for Development" program under the Cabinet through the Treasury Depart­
ment provides a means whereby co-ordination of monolithic departments
may take place at the regional or problem solving level.

Ontario is divided into ten provinces for purposes of regional
economic development. "Economic development" is a broad term that im­
plies a comprehensiveness of planning not permitted in the territorial
confinements of local government nor in the single-purpose functions of
provincial departments. The program is in its early stages and likely
will move slowly at first due to the permissive nature of the legisla­
tion and the necessity of a local or regional response before provin­
cial involvement can be fully effective in an advisory or other ways.

Each region was given a grant in 1968 to develop a regional
goals program by October, 1968. Public meetings, conferences, local
discussions, briefs and local reports, employment of consultants, sur­
veys, questionnaires, and interviews were included in the work done
separately in all ten regions. This is the first time in Ontario that
parks and open spaces have been looked at on a regional scale in a
holistic and synoptic way in connection with all the other elements of
the physical and cultural landscape. Each region carried out its sur­
vеу independently. There may be ten separate approaches. The analysis
of the ten approaches may bring Ontario closer to a workable continuing
survey technique that will have immediate utility to decision makers
at regional and local levels. National and provincial procedures of
measurement and analysis may be completely valid at the scales for
which they were devised but often the products of these procedures were
difficult to apply at the local or regional level. The scales (federal,
provincial, regional, local) may be compatible but all too often there
is a difficulty in translation from one scale to another.

An important element in the "Design for Development" program is
the establishment of regional technical advisory committees whereby the
provincial professional resources workers may work together in advising both the Cabinet and the regional economic Councils of regional needs and problems and of their likely solutions. Thus, representatives from Lands and Forests, Municipal Affairs, Education, Agriculture, Highways, Tourism and Information, Energy and Resources Management may meet regularly at their own call or at the call of the Cabinet Committee through the Departmental Advisory Committee or the Regional Economic Council to deal with regional matters that involve more than one department of government. The fact that this procedure is now an official practice means much to the co-ordination of parks and outdoors recreation at the regional level.

IV. THE GREAT LAKES WATERFRONT

Ontario has a special responsibility in being the custodian of Canada's entire Great Lakes "waterfront." Many investigations and conferences have called attention to the increasing pollution of the Great Lakes with resultant damage to primary water resources and secondary resources such as recreation based on water. The Great Lakes will be restored and maintained to high quality levels if one may assess correctly the programs underway and contemplated in Canada and the United States. There is, however, an additional kind of blight that is taking place around the lakes in the form of unwise land uses and the closing of access to the lakes to the people who live inland.

A special look should be taken immediately to the critical area that lies between the waterfront and the first major road inland. The planning of this critical area should have high priority, not only for the benefit of the local residents, but also for the continued and increasing prosperity of the "visitor industry" which is now recognized as the real "sleeper" in Ontario's economic development.

An informal overview of the Great Lakes-St. Lawrence Scenic
Highways and Parks system shows many promising developments in recent years. The St. Clair Parkway was established by legislative act and brings an important industrial area into a scenic highway and park situation. The St. Clair Parkway is significant in that active cooperation of federal, provincial, and local governments was combined with the interests of important industrial corporations to bring about a realizable plan and program. The main high speed highway and truck artery will be built landward of the industrial belt thereby leaving the river front highway as a scenic road through a variety of parks, some local, some provincial, and some privately maintained by industry.

The Ontario government must be commended for recent projects related to the enhancement of the Great Lakes waterfront and must be encouraged to expand and extend its programs to the full extent of the financial capability of the province for such activities.

In recent years, many projects of historical significance, such as the reconstruction of Ste. Marie near Midland, promise to have justifiable magnetic effects that will require many important additions to the number of parks and camping areas in the Georgian Bay area.

V. OPEN SPACE IN RAPIDLY GROWING URBAN AREAS

A pressing problem is related to the increasing imbalance of open space to built-on areas in rapidly growing urban areas. Many cities developed official plans that were based on the "suburbia" idea of each home providing a major share of the community's open spaces. A later increase in industrial and commercial zoning, ostensibly to create a better assessment balance, often leaves the open space ratio unchanged. At a still later date, a suburban community may find itself in the rapid transit scale of the nearby metropolis and will permit a great increase in apartment construction. The old ratios of quiet suburban communities regarding open space may not have changed
along with other specific land use changes. Somehow, open spaces and parks become forgotten as important parts of the urban landscape when land values increase.

Some cities openly admit they cannot provide parks because of heavy demands for other urban necessities such as pollution control and urban renewal. Windsor is permitting its best natural park area, Peche Island, to be transformed into a commercial recreation development because it claims the city needs the assessment and cannot afford the cost of acquiring the island as a municipal "open space." All municipalities are faced with rising budgets and, unfortunately, the provision of parks and open spaces usually gets pushed down the list along with low priority items. There is much work for us to do to convince others as well as ourselves that parks are important in our living space.

VI. WILDERNESS IN ONTARIO

Now let us leave the cities for a while. Ontario has a great responsibility to furnish the "wilderness" environment to Eastern North America, especially to the millions who live in the nearby Great Lakes megalopolis and the Eastern megalopolis.

A student asked me to give him a really workable definition of "wilderness." This was a difficult assignment but an extremely valuable one. It seems we are using "wilderness" to mean two kinds of things, one of which is valid, and another that is invalid and which weakens our entire position regarding the wilderness.

A wilderness is a designated area where for specified reasons development control permits only those activities that are compatible to the specific reasons for designation. These examples come to mind: "wild river" basins, "natural habitats," "primitive" economies, "unique" characteristics, special "ecological" factors, superlative scenery and natural waters. It seems we are, unfortunately, using (or are forced
to use) another definition of wilderness. Many who use the term wilderness mean a legal holding device for mothballing areas, the ultimate use of which is undetermined but likely will be of an "open space" or low density characteristic. It is this secondary use of the concept "wilderness" that, like flood plain zoning, is causing us the most difficulty in legislatures and in courts.

The machinery of development control as a part of an official plan and for implementing zoning by-laws is well developed in Ontario urban centres and its use should be extended to the areas outside the Great Lakes megalopolis. The term "development control" has legal status and permits us to make necessary detailed studies along with giving us a control over any change from the existing land use at the time "development control" was established.

Development control does not let us maintain a permanent freeze on an existing use but it does enable the municipality power or the provincial sovereignty time to determine a proper use of an area under study. The courts have held that flood plain zoning by a municipality is valid only if the municipality is prepared within a reasonable number of years to acquire the property.

VII. PROFESSIONAL PERSONNEL

There is a shortage of qualified professional personnel to undertake and maintain the complicated programs of resource management related to parks and outdoor recreation.

The universities are moving slowly in the direction of greater activity in this field, especially Toronto, Waterloo, Guelph, Brock, Carleton, and Western Ontario. Basic undergraduate programs at all universities are necessary but co-operation and co-ordination is desirable at the post-graduate level. In line with the developing concept of a University of Ontario for specific scholarly purposes, the
professionally qualified workers at the universities are discussing already how professors and students may move in structured and unstructured ways to get a maximum training and experience from the opportunities of all the universities, agencies, and governmental departments in Ontario. All the Ontario universities, with only one exception, are overwhelmingly supported by the same taxpayer group and it seems that great economies and efficiencies may be possible by a fuller use of Ontario's total resources in the resources management field. It would be futile, actually impossible, for any one university to develop a program of international stature within the present constraints of the educational dollar but through co-operation and co-ordination Ontario already has the resources in qualified personnel and research opportunities to produce the outstanding training program in North America. This does not mean an end to program building in this field at individual universities but it does mean the building of a real program at the provincial level that has great merit.

Many of Ontario's top scholars in this field actually are not in the universities but are in the professional civil service for the province and the federal government. These scholars and professional workers should be invited to participate in the educational programs related to the preparation of competent professional workers in the field of resources analysis and management.

VIII. DECISION MAKING IN PARKS AND OPEN SPACES

Have we reached the point where we can look closely at a model of decision making that may be useful in dealing with the problem of parks and open spaces? The following model is being used experimentally in the "Regional Goals" program. Has it any validity or reliability?
1. The setting of goal-objectives. Legislation, permissive in nature and already in existence, permits governments at all levels to join together in various arrangements to achieve a variety of objectives (ranging from the vague to the definite). The specification of goal-objectives may be in the context of an Official Plan (or similar document).
   (a) Can socially desired goals be defined?
   (b) Who defines the goals?
   (c) On what authority?
   (d) What review mechanism operates at this level?

2. The necessary facts must be assembled and arrayed systematically. Studies will identify relevant conditions and trends. The economist, geographer, sociologist, historian, and political scientist can make significant contributions at this level.
   (a) How can relevant conditions and trends be identified?
   (b) What are the research resources needed at this level?
   (c) How can research resources be organized and exploited to provide necessary solid information?
   (d) In what form is the derived information most useful to those who must use it?

3. Alternative courses of action.
   (a) How can alternative courses of action be designated?
   (b) Is this the step at which a double-blind approach should be started? If so, how is the exercise set up?
   (c) How is compatibility of information systems assured if double-blind procedures are used?
   (d) Who decides the ground rules for separate inquiries on alternatives?

4. The projection of possible outcomes of each valid alternative.
(a) What criteria determines which alternatives shall be projected to possible outcomes? How is the field narrowed?

(b) What are quantitative and qualitative bounds of a projection?

(c) Is this the step at which regional characteristic (such as social capital indices, etc.) should be introduced?

(d) In what ways may these projections be reviewed by those who produced the alternative courses of action?

5. The description of specific consequences of each action.

(a) What are the inputs? What are the costs? What are the benefits? What are the multipliers?

(b) Is this the step at which a direct problem solving technique should be planned through: (1) the design stage; (2) the pilot stage; (3) the total application stage?

(c) How can the project be related back to the social environment in which the action will occur?

(d) Can the outcomes of different alternatives be compared or contrasted directly, or must they be judged only after they have been related back to the original general proposition?

6. The evaluation of the consequences of the outcomes of each alternative in terms of an agreed-upon policy related to a specified value-preference scale.

(a) The debenture limits and the Treasury Board in Ontario seem to come at this stage. Should they not come earlier?

(b) Who converts or translates a governmental policy into terms compatible to/with the evaluations necessary to
justify and support an action program?

(c) What happens to a project proposal when everything checks except the financial support to carry out the operation properly?

(d) What is the critical mass for a given project?

(e) Can a series of small projects add up to a major project? Can a major project be fragmented through phasing stages to add up eventually to a comprehensive development program?

7. The final choice of a course of action to be followed.

(a) How is a policy established?

(b) Who carries out the project?

(c) Who evaluates the results of the project?

(d) In what ways are the steps described in reality a continuous process? Can one cut in on the stream? Can one re-cycle back from any stage?

IX. PROVINCIAL LEADERSHIP

The parks of Ontario are basically a provincial responsibility. All power at the regional and local level is based ultimately at the sovereign power of the province. It is fitting that leadership in dealing with parks should be vested in the provincial departments.

Governments evolve constantly to deal with changing conditions. In Ontario, the monolithic nature of departments is changing rapidly to deal with those functions and elements, such as parks, which involve at least a dozen departments. In Ontario, the ultimate responsibility of co-ordination rests in the Cabinet. However, that department with the greatest involvement in a function that includes several departments must take the greatest responsibility in bringing about correlative understanding between the departments concerned. In the case
of parks and open spaces, the designated department must be the Department of Lands and Forests at this time. It has the experience and the mandate to act, particularly in the north.

The next five years will see many adjustments in the ways through which the provincial level works at the regional and local levels. The ways in which the people of Ontario hold, acquire and maintain their parks and open spaces will be one of the most energetic applications of a rapidly evolving positive attitude toward proper resource use. Much can be expected of a province where the young men and women in the high schools are learning techniques in land use analysis and are developing concepts of resource management that ten years ago were available to only a few students in a few departments of the province's universities.
THE PARKS OF SASKATCHEWAN
W. A. Hartwell*

Introduction

The Province of Saskatchewan; "Centre of Inland Canada" and located midway between the recreation giants of Ontario and British Columbia. It might be asked, "What are the recreation alternatives available to a resident of this province because of these factors?" Unquestionably they exist all around us. Quite often we hear our Saskatchewan farmer remark, "We are going to the Coast for the winter," or a Saskatchewan family comment that they were visiting "down East," or some young couple say that they were going to "live it up in the South." This is supported by the fact that Saskatchewan produces a serious net deficit or loss in vacation dollars. On the other hand, in our provincial parks we are presently hosting in excess of two million visitors. It appears as well that residents of other provinces and particularly from the United States, are taking more and more advantage of Saskatchewan's recreational alternatives. This Conference is recognized as being of real value and should permit us to become

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more knowledgeable in terms of "How to keep them home on the farm." In other words how to develop an improved understanding, within Saskatchewan, of its recreational opportunities.

Alternatives

Recreational opportunities within our own boundaries of necessity relate to one national park--Waskesiu--some 14 provincial parks and 67 regional parks. There is no question that Saskatchewan people lie within the zone of influence of the mountain national parks of Banff and Jasper. This is possibly most significant in terms of our winter sports enthusiasts. It is found as well that certain of our provincial parks, because of their geographic location, close to provincial and state boundaries, do provide some limited alternatives to residents of other provinces.

In spite of what is generally believed, Saskatchewan does contain a variety of landscapes. Planning of our new park locations and recreation sites has taken into consideration an understanding of the broad geographical patterns that hold within this province. We well recognize that in order for a provincial park program in Saskatchewan to provide adequately for public recreation it must endeavour to preserve representative portions of all the province's main regions. A secondary consideration suggests preservation of unique areas which in themselves are distinctly different to the rest of the province and are unique by reason of their geology, such as our Cypress Hills, or because of their biota, and still others because of archaeology and history. It is felt that by preserving these locations, our Saskatchewan resident is afforded many alternatives and has a much greater opportunity to know and better understand Saskatchewan. A special department of youth, our Provincial Youth Agency has endeavoured to provide additional recreational alternatives directed primarily to urban and non-rural areas.
They have, however, devoted their program almost exclusively to youth in terms of physical education, crafts and the arts. We have found as well that the present trend in Saskatchewan to a more diversified economic base has brought about a number of recreation by-products as the result of satisfying water needs for our major potash industry. The coming into being of Lake Diefenbaker in the midst of the southern portion of the province has provided a recreational opportunity of unlimited proportions. The extent to which this can be developed to satisfy our increased recreational demands will be most significant.

The prairie environment has placed certain limitations on our recreational opportunities. There is no question that with eighty percent of the province's population of 945,000 residing within this "plains" area they are too far removed from our forest and Pre-Cambrian belt which does possess unlimited recreation opportunities. However, an expanding "roads-to-resources" program presently underway will without doubt relieve this situation.

Planning Considerations

It has been clearly stated and confirmed by legislation, that our provincial parks and major recreation areas are to be "preserved, developed and maintained for the use and enjoyment of the people of Saskatchewan." We feel that the success of our provincial park and recreation program encompassing our outdoor leisure time activities will be measured by the degree to which our planning authorities can localize their attempts to overcome certain of the geographic diversities which beset the province as a whole. As park administrators, we feel that in Saskatchewan we must adequately correlate management of our recreation resources with the expanding use of our other resources. We, as with every park jurisdiction, are faced with rising numbers of users, accelerating costs of maintenance and in particular what would
appear to be a distinct lack of appreciation of the purpose of our park system. Our Park Planning staff have underlined the need for a clear definition of policy—this will be of real value. They have stated that one of our major goals will be to increase the effectiveness of the provincial park service as a "people serving" organization dedicated to park conservation, historical preservation and outdoor recreation. Action is already underway with a view to defining our park policy and isolating a park classification system. It would be hoped that one of its prime objectives would be to develop a sensitivity and awareness and appreciation towards Saskatchewan and its natural resources.

**Internal Considerations**

Recreation responsibilities within the province at present are shared by various government agencies. This diversification of interest does have a tendency to complicate an orderly approach to satisfy the province's recreation requirements. We find that our Tourist Branch has been concerning itself primarily with the "out-of-province" visitor and providing guidance to the private sector in terms of accommodation and services. It does appear, however, that there will be a change of emphasis by this agency to relate more closely to satisfying the needs of Saskatchewan people. We have recognized that as public use of our recreation resources increases so should our informational programs. It is realized that we must maintain a good degree of harmony between the resource and the public's appreciation of it. Reference has been made to the involvement of our Provincial Youth Agency. This particular department has worked very closely with us in the programming of a recreation experience within our provincial parks. A third agency, the Saskatchewan Water Resources Commission has also become involved in the recreation picture through the development of water areas to meet industrial needs. This diversity of interest is not necessarily bad;
in fact, a high degree of harmony and co-ordinated effort has been evident. However, it would appear that accomplishments are slow to materialize because of the need for a complete familiarization process.

Satisfying local needs is of the highest priority. There is no question that the nature of our plains area—supporting major population densities—suggests that recreational opportunities must be created where in many places they have never existed naturally. Our regional parks program has made significant contributions to satisfying this need. It has enabled us to provide for local responsibility which satisfies regional requirements and as a result, takes pressure off existing provincial parks. Our regional parks program at present does encompass over 300 cities, towns and municipalities. Total capital assets in this program, which includes municipal and provincial contributions, now exceed 1.5 million dollars. There is no question that recreation values must be built into the areas where people actually live.

We have accepted the fact that the park user will be required to bear a direct share of the costs of providing improved and better facilities. The expenditure level in terms of development has averaged close to two million dollars per annum during the past ten years. The bulk of this spending has been devoted to our established parks. We have found that in the core of these multi-use parks we are approaching close to maximum development. This has necessitated some major elaborations which include sewer and water systems, the buying back or acquisition of prime resource lands from the private sector and major redevelopment of existing establishments. The southern two-fifths of the province supports a limited number of recreation resources for the people involved, while in the northern three-fifths the opposite holds true. In one region it is a matter of providing access and fitting artificial recreation aids into a naturally acceptable environment and in the other it is a matter of creating this acceptable environment.
Possibly the most significant internal consideration which will play a major role in satisfying future recreation requirements within Saskatchewan is the 140 mile long man-made lake that has been established on the South Saskatchewan Reservoir--Lake Diefenbaker. This reservoir, by far the largest in western Canada, will store some eight million acre feet of mountain water. This excellent lake is providing tremendous boating and fishing opportunities. The province proposes the development of three major provincial parks on this reservoir supplemented by a series of additional recreation sites and boat launching facilities. We have under consideration the development of approximately 50,000 acres of park and recreation lands adjacent to this reservoir. This asset is established where no large natural water body previously existed. In excess of 1,500 acres of tree plantations have been established in one of the proposed new parks and close to one and one-half million trees are already growing on park lands. The potential for sport fishing is most outstanding with depths up to 180 feet being predicted. The area is situated within one of the major flyways for migratory waterfowl and should provide unlimited hunting opportunities. This excellent water area will provide unlimited recreational opportunity and a major task to our Park Planning people to provide for its proper utilization. During the current year an expenditure of $358,000 has been earmarked for development of recreation facilities on the reservoir. Major construction has centred on the building of large poured-in-place boat launch installations, development of campgrounds, and internal park roads.

There has been of late an encouraging trend in the development of park interpretive programs. During the past year interpretive centres comprising displays of natural history and complimented by nature trails have been installed in a number of the major provincial parks. The fact that the province's Museum of Natural History is a
part of our department has allowed for a very specialized approach.

**Conclusions**

The provision of space and facilities for Saskatchewan people is a necessary requirement, allowing them to enjoy an outdoor recreational experience. Of serious concern to our park administration is the matter of providing first-class accommodation in an outdoor setting. We feel that our present highway site program is geared with this object in mind.

Looking to the needs of the future the provision of adequate provincial land and water for various recreational pursuits is of the highest priority. A serious problem confronting Saskatchewan as is undoubtedly the case in other areas, is the increasing pressures to assist urban centres in the development of outdoor recreation facilities. Saskatchewan boasts some 125 public parks in ten major cities, 64 rural parks and 33 commercial parks.

It appears as well that economic justification for expenditures on outdoor recreation will require some specialized attention. For example, there has been a substantial advance in the average weekly earnings of Saskatchewan residents. Total personal income within the province in 1966 rose by 14.2 per cent to an overall high of $2,145 million dollars. The increased mobility of our resident has been reflected particularly in the recreational use within our provincial park jurisdictions. Provincial travel has increased by an average of 5.1 per cent for the period from 1957 through to 1967. Motor vehicle registration, during this same period has increased by 4.68 per cent. Park visitations during 1967 showed an upward increase of approximately 31 per cent. All of the foregoing does suggest that Saskatchewan residents do have alternatives in recreation and the opportunity to take advantage of the same.
It would appear that one of the main issues confronting our park people is the lack of knowledge about people who seek recreation, their desires, their attitudes and the kind of activities they prefer as well as what segments of the population they represent. The question has also been raised in terms of recreation development, "Are we truly getting a dollar's worth for a dollar spent?" or has our base of development been too closely related to immediate demand rather than future need? Does it provide for maximum user benefit and are new installations sufficiently adequate to take care of future needs without undue reconstruction?
Parks in Alberta had their beginning with the establishment of the Hot Spring Reserve in 1885, an area of ten square miles near the townsite of Banff. However, provincial parks did not come into being until after the Province of Alberta took over the jurisdiction of its natural resources in September, 1930. No clear record appears to be available as to when the first municipal park was conceived and established.

There are five national parks in this province and without the inclusion of Wood Buffalo National Park these account for 4,506,880 acres. The provincial parks in all categories account for an additional 1,718,681 acres. No concise acreage figures are available for municipal parks, but I would estimate that at least an additional 5,157 acres can be included in this category. This acreage plus a smaller amount from private enterprise parks could conceivably account for 9,490 square miles of park area within a province of 255,285 square miles, or roughly 3.71 per cent of the province.

It would be presumptuous of me to attempt to talk or write about any type of a park outside the Alberta Provincial Park System, however,
their role and planning of provincial parks.

Their History

Alberta's Provincial Parks are an entity which date back over thirty-five years. The Provincial Parks System had its inauspicious beginning on May 15, 1932, with the establishment of Aspen Beach Park.

Until the transfer of the jurisdiction of parks within the province to the Department of Lands and Forests on April 1, 1951, the development of parks was guided by the Department of Public Works. Since this Department also was responsible for roads, the parks were the responsibility of each district road engineer with a very meagre supply of funds, as can be shown by the following extracts from departmental files:

In connection with the estimated expenditure of $622.49 less 25% discount for extra loam and to haul water the Board accepts the offer, however this expenditure would of course necessitate the deletion of the other items on the appropriation for this year. (1931)

I am returning under separate cover your book of plans. Such is of little service to us and I would, therefore, ask you to kindly return the sum of fifteen cents which we have had to expend in connection with postage. (1932)

Earlier parks were established on sites which had a close proximity to populated areas, and as modes of travel were not as efficient as those of today, the more populated areas of the province contained the greatest number of parks.

During the 1950's, public interest in parks increased greatly and additional leisure time together with improved transportation required that more attention be given to parks and recreational land requirements. Park development in Alberta has aimed at providing family unit recreational opportunities; namely, bathing beaches, camping and picnic areas, and where possible, boating and fishing. The principle objective of site improvement has been an endeavour to
achieve a comfortable blend of essential development and natural environment.

With the fundamental and important obligation in the administration of parks being to preserve from impairment all significant objects and features of nature in the park, while providing the opportunities for enjoyment of the park and its natural recreational activities and developments in perpetuity, \(^3\) it was found necessary to define a Provincial Parks Policy. This Policy was tabled in the Provincial Legislature in March, 1967.

**The Policy**

The preparation of long-range plans for the development of a sound Provincial Park System and for each of the Parks, Historical Sites, Wilderness Areas, and Natural Areas in the System must take into consideration legislation, present and anticipated visitor use demands, potential additions to the System, character and capacity of individual parks, and most important, the ultimate objectives of each of the provincial park identities and of the System as a whole.

Within the Alberta Park System were areas with definite and distinctive identities: these were all covered under one terminology of "Provincial Parks."

Categories of parks, their definition and purposes defined, were placed within the following categories:

**Park.** A tract of land offering a variety of outdoor recreational opportunities and containing areas of natural scenic beauty or historical significance. To provide recreational facilities in harmony with the preservation of significant geographical, geological, biological or historic features; but always so as to minimize impairment.

**Recreational areas.** A tract of land offering recreation opportunities which do not require the degree of protection sought by park status or having development standards which may be less exacting than
those of a park. To provide for popular outdoor recreation on intensively developed lands.

**Historical sites.** A site which has local or provincial importance for its cultural association such as old fortifications, petroglyphs and pictographs, Indian archaeological sites, etc. The purpose would be to preserve portions of the country's cultural heritage for interpretation and display in an appropriate manner and for scientific research.

**Natural areas.** A tract of land containing an ecological association which is desired to identify and preserve intact for its scientific or interpretive recreational interest or a unique natural area of outstanding scenic quality or a natural feature of special interest such as river canyons, spectacular waterfall, superb forest, unique geological feature, etc. The purpose would be to preserve the area or feature in the natural state for viewing and interpretation in an appropriate manner.

**Wilderness area.** A tract of undeveloped land set aside for the presentation of a natural environment, retaining its primeval character and influence, without permanent improvement or human habitation. The purpose is to provide opportunities to expand outdoor knowledge and recreation experience in natural wild conditions.

**Roadside campsites.** A tract of non-urban land adjacent to travelled routes providing camping and rest stops for the travelling public.

The following are extracts from the policy statement:

**Wildlife and nature.** Objects of nature in parks are important parts of the provincial heritage and should be preserved unimpaired for the benefit, education and enjoyment of future generations. The flora, fauna, soils and waters form the natural ecological communities in parks. The quality of beauty and wildlife in parks must be maintained in as completely a natural situation as possible. For this reason
parks, excluding wilderness areas, must be retained as game preserves. The following activities are detrimental to natural history values in a park:

(i) Grazing of domestic livestock,
(ii) Pollution of air, soil or water,
(iii) The mining or harvesting of the resources of land or water including oil exploration and drilling,
(iv) Granting of easements across park land for commercial purposes such as oil wells, pipelines, power lines, etc.

The construction of highways, fire roads, hiking trails, fences, townsites, artificial recreational developments and the like are detrimental to natural history values in parks, but if essential should be developed so as to have the least possible impact on nature and natural features. Impairment to nature in general, caused by visitor use or developments aimed at improving visitor use of a park, should be kept to an absolute minimum. The character of special features of a park should not be altered. Good quality angling for visitor recreation should be encouraged. Public appreciation of natural history values must be developed through provision of nature trails, nature museums, nature guides, leaflets, lectures and other interpretative activities.

Forestry. The forests of the parks should be protected and maintained to preserve their natural recreational, scenic and other aesthetic values, and any use made of them should leave them unimpaired for the enjoyment of future generations. Only forest operations which are primarily concerned with the management of the forests for the protection and maintenance of park values should be permitted.

Commercial highways. Trunk highways passing through a park and designed for through or commercial traffic represent an intrusion. The only grounds on which a trunk highway for through or commercial traffic can be accepted in a park is if it is of sufficient importance.
that the sacrifice of park values can be justified.

Park roads. A system of roads within a park, although an impairment, is necessary to allow visitors access to the park features so that they can enjoy and benefit from them. Roads must be located so as to reduce general impairment as much as possible. Roads should be designed to a good standard for safe driving, but not a sufficiently high standard to encourage high speed travel. The standard of the road should be in keeping with the character of the park and the purpose of the road.

Airfields. The provision of airfields in parks should be limited to the use for transportation of visitors to or from parks where there is sufficient land available and there is a definite need for this type of transportation.

Waterways and Boating. Since travel by boat is an acceptable means of park use and enjoyment and a means of access to points of interest in the parks, where factors such as the safety of swimmers, the limited size of a water body, or the wilderness character of an area require it, power boating may be limited or non-powered craft only may be permitted. The provision of accommodation for boats such as launching ramps, docking and associated shore facilities such as parking areas and toilet buildings, is an acceptable form of park development where it will facilitate park purposes. Such facilities must be separate from swimming developments since the two uses are quite incompatible. Accommodation for private boaters should be designed primarily for the small boats brought to the park by the touring visitor or vacationer. It should include launching ramps and parking space for cars and boat trailers as well as parking space for the overall boating accommodation.

Trails and footpaths. Travel in parks by foot should be encouraged. While the construction of trails for horses and footpaths does
not appreciably impair the landscape, care should be taken to avoid impairment as much as possible.

Camping. Camping is an activity closely related to the basic purposes of a park. Facilities and regulations for camping must be carefully planned to encourage this form of park use without sacrificing the natural park values that the camper has come to enjoy. Campgrounds with varying degrees of services are required.

Serviced campgrounds—where a formal layout is provided, but retaining tree cover as much as possible. This type of campground would be equipped with such facilities as flush toilets.

Semi-Serviced campgrounds—the objective here would be to provide near natural camping conditions in prepared sites with only basic facilities provided. Facilities provided would be piped water, flush toilets if possible, and kitchen shelters if required.

Primitive campgrounds—would consist of little more than designated camping spots. They would be largely protective in that camping would have to take place in areas brushed out for that purpose.

Group camping developments. The leasing of land, and the construction of permanent buildings by private organizations (youth organizations, churches, clubs, etc.) is not permitted in parks.

Townsites. The leasing of lands for residential purposes whether for permanent residence or summer cottage use is not compatible with other park purposes.

Research. Scientific research for park purposes, such as management of the flora and fauna of the parks and the provision of data for park interpretation is considered an integral part of park operations. No research other than for park purposes, should be carried on in a park if suitable areas for its conduct can be found elsewhere.

Education and Interpretation. Interpretative services and qualified naturalists are required to assist the public to know and appreciate
the varied aspects of the natural scene. Methods of encouraging and helping park visitors to know and enjoy the natural features should include information on specific locations where various natural phenomena may be seen and studied. Details of the wonders of nature and history in each park should be made available to visitors through publications for self-guided tours, and directly by trained naturalists. A system of nature trails with various species identified on them is essential, with trail-side exhibits where convenient. Graphic displays, illustrated note sheets and pictorial panels in visitor centres as visual aids should augment this material. In campgrounds, museums and other buildings, naturalists should be equipped to give interesting nature talks illustrated by motion pictures and coloured slides.

Educating the public in the purposes of parks and how to use, know and enjoy them is recognized as one of our basic purposes. Interpretative services and qualified naturalists are essential to encourage and assist the public to understand, appreciate and enjoy all forms of nature which are preserved in these sanctuaries.

Recreation. Artificial or urban-type recreational developments will not be permitted in parks if their presence is not in harmony with park purposes, or causes impairment of significant natural or scenic values, or lessens the opportunity for others to enjoy the park. Only the wholesome outdoor types of recreation which are compatible with the natural atmosphere will be permitted. Artificial recreations in the individual parks should not be introduced to attract visitors who would otherwise not visit the park, or as a means of increasing visitation.

Classification of Provincial Parks

In planning a park system it is necessary to categorize and classify each identity within the system and in this regard we have used the Federal-Provincial Park Conference Park Classification System. The Park Classification System set up by the Conference classifies
parks according to two principles:

(a) nature and purpose of the area, and
(b) degree of protection given to it.

Under nature and purpose areas are classified as follows:

**Class A**  
Wilderness Areas—40,000 acres and up

**Class B**  
Historical, Ethnological or Archaeological Areas

**Class C**  
Unique Natural Areas or Monuments

**Class D**  
Natural Environment Recreation Areas—500 acres and up

**Class E**  
Specialized Outdoor Recreation Areas—intensively developed—less than 500 acres

**Class F**  
Parkways and Highway Parks

Under degree of protection, areas are classified as:

**Type 1**  
completely protected and dedicated to outdoor recreation and nature study only.

**Type 2**  
primarily for outdoor recreation, lands reserved from sale but some resource exploitation may be allowed.

**Type 3**  
set aside for multiple resource use, with recreation as a co-ordinate land use. Lands reserved from sale.

The parks in the provincial System are classified as:

### Class A1

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<th>Acres</th>
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<tr>
<td>The Willmore Wilderness</td>
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<td>Ghost River Wilderness</td>
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<td>The Siffleur Wilderness</td>
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<td>The White Goat Wilderness</td>
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<td>Bugnet Plantation</td>
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<td>Fort White Earth</td>
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Frog Lake Massacre 3.84
Hay Lakes Telegraph Station 0.89
Indian Stone Pile 3.75
Massacre Butte 1.00
Rev. George McDougall 0.46
Ribstones 2.00
Rocky Mountain House Fort 2.75
Shaw Woollen Mill 0.25
Standoff 0.89
Stephanson 12.00
St. Joseph Industrial School 0.36
Twelve Foot Davis 2.10
Old Women's Buffalo Jump 8.16

Class C2

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Woolford 86.51
Garner Lake 146.55
Gooseberry Lake 128.00
Pigeon Lake 313.00

Class F2  
Tillebrook Campsite 180.96

The Future

While the greater concern of national parks is the preservation aspect, provincial parks are more activity-oriented. Therefore, there is never any thought of competition, but rather one system complementing the other.

The jurisdiction of recreational resources is spread over several agencies within the provincial government and to indicate the recreational alternatives to both the national and provincial parks there are 85 municipal parks, 240 highway campsites and 95 forestry campsites listed within the province.

Alberta's parks have experienced the same increase in patronage use that is being felt nationally, and more consideration must be given to the increase of cost of park development and operation. It is quite conceivable that the park user will be required to bear a greater share of these costs in the near future, through the implementation of increases in the fee structure for park use.

Provincial park research in the past few years has been directed more than ever before towards the requirements of the total recreation picture of the province and the part that the Provincial Parks System plays in this picture. The Federal-Provincial Parks Conference Outdoor
Recreational Demand Study that is underway is one very necessary tool in this regard. More and more consideration is being given to the concept of regional demands for park services, as well as preservation of sites for recreation. For a number of years the province has been reserving lakeshore lands with the realization that summer recreation is so strongly water-oriented.

The Provincial Parks Division is undertaking a complete review and reassessment of the Provincial Parks System within the province and if necessary is prepared to redesign to meet present and projected public need within the scope of the provincial budget.

FOOTNOTES


2 Department of Lands and Forests (Alberta), Provincial Parks General Files.


OUTDOOR RECREATION IN THE CALGARY REGION: PROBLEMS AND POTENTIALS
Louis Hamill*

A. INTRODUCTION

This Conference is concerned with national parks. Banff National Park is being used as a reference point for much of the discussion. Many of you no doubt believe that it would be desirable to reduce the tourist and local recreational pressure on Banff National Park so that it would be possible to preserve some of the qualities which you believe a national park should possess. The following analysis is concerned with the prospects of increasing opportunities for outdoor recreation in a region which contains both a large and rapidly-growing city and a major national park.

In addition to providing specific detail on the local situation, I hope that this paper will also have some more general relevance to the problems that are being faced by national parks and other recreational areas in and near urban regions.

Let me refer briefly to the possibility of reducing the tourist and recreational pressure on Banff National Park. This pressure arises

*Louis Hamill is an Associate Professor of Geography at The University of Calgary.
from three sources: (1) residents of Calgary and its region; (2) residents of other areas within the day-use and weekend-use zones; and (3) tourists, who require more than a weekend for a visit.

The chances of reducing the tourist pressure on Banff National Park are less than nil. Not only is it in the interest of every type of commercial enterprise to increase the tourist trade, it is also in the apparent interest of every tax-collecting level of government. More business means more tax revenue, it is as simple as that. In addition, the federal government has a keen interest in reducing balance-of-payments deficits, and the tourist account is one that can be affected significantly by government programs. Also, economic growth is gospel to civil servants in practically all government agencies, and economic growth requires increased tourism for areas like Banff National Park. Under these circumstances, slow growth is considered to be almost as serious a problem as decline. It seems obvious that there is no realistic possibility of reducing tourist use of Banff National Park as long as all levels of government have continually increasing needs for tax revenues. The only remaining possibility seems to be to increase the recreational opportunities outside of the National Park to such an extent that their demands on the park will be reduced.

Marion Clawson and others have pointed out the logic of meeting urban recreation needs in and near the city in which they originate. There are substantial changes possible in the recreation that can be enjoyed in and near the City of Calgary. Indeed, the possibility exists of creating in every city an environment of beauty and pleasure which could transform life within the city. It is conceivable that city life could be made so pleasurable that there would be little incentive to go outside of the city for recreation, except perhaps to satisfy the demand for long trips. However, in order to realize this
possibility, some fundamental changes would have to be made, most of which appear to be quite unlikely. The first would be a wholehearted acceptance of beauty and pleasure as reasonable objectives of society. A second would be very large investments in both public and private facilities for recreation. Large public investments in recreation facilities are not likely to be made if elected officials do not have the enthusiastic backing of the voters. John K. Galbraith and others have pointed out that Canadians and Americans do not comprehend the excellent environment that can be developed by the use of public means. This decided lack of enthusiasm for public investments probably will be increased in the near future as the demands for highways, education, urban renewal, and other urgent programs are translated into tax levies. Public expenditures for parks and for recreational facilities are likely to be among the first casualties in the struggle for tax revenues. However, in spite of this gloomy prediction, let us consider briefly what could be done to increase the recreational opportunities inside the City of Calgary.

We can dispose rather quickly of the possibility of turning Calgary into a fun city, in which residents will get all the recreation they want within the city limits. The conservative attitude of the Alberta government in relation to alcoholic beverages and entertainment is well known. The Lord's Day Act severely limits Sunday entertainments, and helps account for the notable increase in travel outside the city on Sunday. These attitudes are mirrored at lower levels of government and in the relationship of most government officials to all forms of recreation, with the possible exception of highly organized athletics. One important effect of these attitudes is to limit the effectiveness of commercial recreational services in meeting demands for recreation.

The parks and recreation study which I am now completing for the
City of Calgary indicates the need for substantial investments in land acquisition for parks to meet needs through 1986. Cost estimates for this acquisition program have not been completed, but it is likely that they will be greatly in excess of 6,000,000 dollars. It has also been found that substantial investments need to be made to upgrade school grounds and local recreational parks, to make them more attractive and more useful for recreation. Again, no cost estimates are available as yet, but it is clear that costs will be substantial. Recommendations also are made to invest far more money in upgrading the facilities and programs of community recreation organizations; the cost of this has not been estimated. My study has found that substantial improvement is required in many existing outdoor facilities for athletics, and that additional facilities need to be provided for a number of organized sports. Many other recommendations are made, most of which will require the expenditure of more money. The City of Calgary is already committed to making large investments for ice arenas for hockey and for indoor swimming pools. These large facilities cost close to one-half million dollars apiece, and the total cost will be more than $3,000,000 in the next five years. The City of Calgary is also committed to large expenditures for the expansion of the Calgary Zoo, Heritage Park, and the Calgary Exhibition and Stampede. The latter project will require about $4,000,000 over a ten-year period.

One important reservation should be kept in mind in considering the recommended facilities and programs for Calgary. They do not imply a revolutionary change in recreational patterns and activities. They are designed to encourage and accommodate an increasing participation in conventional recreations, including a wider participation by sex and age groups now largely excluded from recreational programs. If implemented, they would produce a more attractive urban environment and the possibility of greatly increased recreation by all sex and age groups.
Fig. 10 The Calgary Region: Jurisdiction of the Calgary Regional Planning Commission
Their greatest impact would be felt in the summer, since the greatest improvements would occur in facilities for outdoor recreation. Even if implemented fully, they would not produce an intensely urban recreation pattern. It is not likely that they would result in reducing the recreational demands on Banff National Park by the residents of Calgary.

The author believes that existing attitudes toward recreation and toward urban living make it very unlikely that an intensely urban environment will be created in Calgary within the next twenty years. The proximity to the mountains will continue to have a strong effect on the attitudes of Calgarians toward the development of recreation in the city. Elected city officials will no doubt continue to use proximity to the mountains as an argument against investing money in urban amenities. And increasing urban tensions will probably make Banff increasingly attractive as a weekend escape.

Having disposed of two possibilities for taking the pressure off Banff National Park, let us now consider the possibilities for increasing the recreational opportunities in the mountains and foothills west of Calgary. This discussion will include Banff National Park, as well as the area outside of the Park.

In order to have a proper background for a consideration of the recreational potential of the mountains and foothills we should first consider some of the consequences of the increasing population in the Calgary region (see Fig. 10). Equally important as increasing population is the increasing urbanization of that population. We will also consider some of the existing problems of resource management in the mountains and foothills, as they affect opportunities for outdoor recreation.

B. INCREASING POPULATION AND INCREASING URBANIZATION AND THEIR PROBABLE CONSEQUENCES

Before World War II, Alberta had a low population and had mainly
an agricultural and grazing economy. That situation is now only a bucolic memory, resurrected yearly at the Calgary Exhibition and Stampede. The large-scale development of natural gas and oil after World War II set Alberta on the road to becoming an urban society, in which the ways and thinking of the city dweller will be dominant.

It is conservatively estimated that the population of Canada will increase from about 20,000,000 in 1966 to about 25,500,000 in 1981; this is an increase of more than 25 per cent in about fifteen years. The growth in Alberta is expected to be even greater: an increase of between one-third and one-half. One conservative estimate is that the population of Alberta will increase from 1,463,000 in 1966 to 2,200,000 in 1981. The population of Calgary is expected to almost double in that fifteen-year period. The Calgary Department of City Planning expects the population to increase from 330,000 in 1966 to about 590,000 in 1981, and to over 800,000 in 1991.

Rural areas and small towns in the prairie provinces are losing population, with very few exceptions. Everything indicates that this trend will continue, except for increasing suburban development around cities. In 1966, Canada was 74 per cent urbanized, and Alberta was 69 per cent urbanized. It seems reasonable to assume that Alberta and Canada will be more than 80 per cent urbanized in twenty years.

The urban pattern in Alberta is already well developed. With the possible exception of Medicine Hat, most of the increased population in Alberta is going to be concentrated in the urban centres along the highway connecting Lethbridge, Calgary, Red Deer, and Edmonton (see Fig. 11). In other words, most of the increased population will be in locations that will place the foothills and mountains within their day-use recreational zone.

Some Consequences of Increasing Urbanization

I believe that urban influences will have had profound effects on
the organization of land use in the area between Lake Louise and Calgary by 1986. Every major intersection will likely have a cluster of service facilities. There will likely be a string of urban nodes between Banff and Calgary, spaced between ten and twenty miles apart. Some of these urban nodes will consist mainly of weekend and vacation residences. There will, in addition, likely be extensive cottage developments in the Bow Valley itself and in the tributary valleys north and south of the mainstem of the Bow River.

One interesting possibility should be kept in mind. That is the possibility of developing satellite cities near existing major cities. There is now a great deal of interest in this concept in the Canadian government, where it has been urged by Paul Hellyer. Mr. Hellyer seems to be the government minister charged with solving the "urban crisis" in Canada. This concept is receiving considerable attention from planners and architects in Calgary and Edmonton. If implemented, it could result in the development of as many as three substantial communities between Calgary and Banff National Park. This would, of course, increase the recreational pressure on the mountains, and on Banff National Park in particular.

The most important consequences of increasing population and increasing urbanization are that more people, with more time and money to spend, will be visiting the nearby mountains more frequently, and will be carrying on a wider range of activities in and near the mountains. The chances are good that there will be an increasing demand for both the least urban and most urban activities to be carried on in the mountains.

There will probably be a strong demand to extend the day-use recreational zone ever farther to the west. This will mean, basically, higher-speed roads. In order to increase and maintain capacities, there will be a continual demand to add more lanes to the main roads. It is
Fig. 11 Major Urban Centres in Alberta between Edmonton - Edson - Hinton Axis and U.S. Border
likely, for example, that both of the roads between Calgary and Banff will be more than doubled in width by 1986.

In addition to a demand for higher speed of travel, there will probably also be a demand for more interest and variety in the travel environment. This demand can be met by developing more access roads leading into Banff National Park. The road from Red Deer, by way of the Cascade Fire Road, will be followed by many more. In the Calgary region, entry roads by way of the Ghost River and the Spray River could be developed easily. Some of these new entry roads could be developed, eventually, into high-speed roads.

The increasing demand for both least-urban and most-urban activities in the mountains is already evident. The demand for the least-urban activities is detailed in the later discussion of outdoor recreations in the foothills and mountains. One good index of the increasing demand for urban amenities is the style of new hotels and motels. The rustic log cabin motel is definitely a thing of the past, except for occasional prefabricated log buildings. New motels and ski lodges are generally modern in appearance, and must have modern plumbing; motels must have TV. The visitor accommodations at Sunshine Village, which are quite elaborate, are setting the standard for all ski developments in Alberta. The new townsite of Lake Louise, with its large motels and restaurants, will reflect the realities of an increasingly urbanized demand, as well as the desire of the national parks administration to keep the development compact.

The increasing popularity of snow skiing in Banff National Park increases the pressure to develop an urban recreational environment in and near the National Park. Skiers are becoming increasingly insistent on the development of the type of facilities that accompany skiing at major centres in the United States and Europe. The after-ski facilities desired by most skiers are the same kind of facilities desired by most
summer tourists. They consist, basically, of (1) good hotels and motels with moderate rates; (2) a variety of restaurants, with good service, good food, and a variety of prices; (3) a variety of establishments for social drinking; (4) facilities for dancing; and (5) other facilities for recreation, such as bowling alleys, book stores, equipment stores, and so on. When this range of facilities becomes available in a national park, or any other setting, it is possible for recreation to be an essentially urban experience in a non-urban setting.

Urbanized recreation is not a new phenomenon in Banff, Jasper, or Waterton Lakes National Parks. The large hotels in these parks have for many years provided an essentially urban environment in the mountains. But their highly urbanized environment has been a very localized phenomenon, catering to a very limited clientele. The explosion of population and of affluence creates the demand for an urban environment in a much larger area of the mountains. Urbanized environments are becoming much more widespread, especially in Banff National Park. Attempts will probably be made to start new recreation complexes in other parts of the Calgary region, most likely in the Kananaskis and Ghost Valleys.

The Banff School of Fine Arts is a uniquely urban amenity. In conjunction with the commercial recreation facilities described previously, it can provide the opportunity for an essentially urban life in a mountain environment. There is every indication that its role as a centre for education, conferences, and recreation will continue to expand.

Another, and very convincing, indication of the urban orientation of users of the national parks may be found in the changing demands of campers in the national parks. Gordon D. Taylor has reported that survey questionnaires of users of national park campgrounds display an increasing preference for artificial environments,
less wild and more urban. The eventual aim of many campers is to achieve a style of living with the comfort of a motel and the cost and space advantages of a campground.

The demand for urban amenities in the recreational environment is as strong outside of Banff National Park as it is within the Park. It is evidenced in the continual high level of demand for weekend cottages and for country homes in the Calgary region. As a result of this demand, recreation residence developments may be very extensive in the Bow Valley by 1986.

There is no doubt that a very large potential market exists already in Calgary and that it will probably continue to expand. There is, for example, a substantial demand for the few areas that have been opened to cottage leasing on the Bow River Forest in the Calgary region. Cottage developments are likely to be recommended by the consultants now doing an economic potential study of the Stony Indian Reserve. The Calgary Regional Planning Commission is under constant pressure to allow cottage developments on private land west of Calgary. It is now in the process of revising its policies regarding country residential developments.

Up to now, proposed cottage developments near Calgary have been limited to the conventional detached cottage in widespread developments. No serious consideration has yet been given to high-density recreation townsites. In a later section of this paper I will refer to some of the probable consequences of large-scale developments of conventional cottage settlements in the Calgary region.

Much of the current demand for cottages in the Calgary region seems to be for sites as close to Banff National Park as possible. The Canmore Corridor--between the National Park and the Stoney Indian Reserve--probably is the favoured area. Its appeal will be strengthened by increasing recreational development in the Kananaskis Valley.
It seems likely that if many sites were made available for cottage developments in the Calgary region, there would be an explosion of cottage building, especially near major roads and strategic recreation areas. However, there are limited areas suitable for cottage development and there are very grave doubts about allowing them to be fully occupied by cottages. The following discussion is mainly concerned with problems of cottage developments on public land.

If the forest reserve was opened to cottage development, it is likely that every possible cottage site in the area would contain a cottage within ten years. This would mean that all areas of gentle to moderate slope, and having water available, would be occupied with cottages. Much of the area that is now open to the public, for walking, hunting, nature study, and similar activities, would be denied to public use. The flats, gentle slopes, and moderate slopes would present a landscape of dispersed, but numerous, houses. The developed areas would have a dense network of service roads, and there would probably be many points of entry and exit to nearby highways.

Experience has demonstrated clearly that occupants of cottage sites effectively deny use of their leasehold to the public. If cottage sites are located on a lakeshore or river bank or along a road, they effectively block public movement through the leased area.

Leaseholders make strong efforts to obtain fee ownership of their lots. The precedent has been established already in Harvie Heights that those who obtain leases will later be able to own their lots. Thus, public use of the area will be restricted by outright ownership of the land, and by the creation of barriers between roads and the public land in the area.

Experience in the Calgary area has demonstrated the virtual impossibility of obtaining and maintaining a satisfactory standard of design and construction in the buildings that are erected on cottage
leases. Similar problems in the United States have led the United States Forest Service to restrict severely the leasing of land for cottages in the national forests.

Harvie Heights, which was originally a cottage development on public land, has now become indistinguishable from the nearby town of Canmore. More than one-quarter of the houses are permanent residences, and the percentage is increasing steadily. Many of these residents work in Banff or in the Canmore Corridor. It is quite evident that there will be a substantial resident population in the Canmore Corridor in the future, and this will produce pressure for residential use of any cottage developments in the area.

Visitors from the United States will no doubt be struck by the absence of commercial ribbon developments along the highways between Calgary and Banff National Park. This happy situation reflects partly the policies of the Calgary Regional Planning Commission and partly the policies of several provincial agencies. There are, however, persistent pressures to permit commercial and industrial uses along the highways. This pressure has succeeded most notably inside Calgary, and on the immediate outskirts, and may be seen along the Trans-Canada Highway on the east and west exits from the city.

Pressure for commercial developments along the highways can be expected to continue. As of now, much of this pressure is focussed on the Canmore Corridor, where there is great interest on the part of commercial interests in the stream of tourists and local recreationists going through the entrance to Banff National Park.

It is impossible to predict whether or not commercial ribbons can be controlled along the highways west of Calgary. Effective control of commercial service centres probably is linked to future policies on rural residential and cottage developments.

The Stoney Indian Reserve occupies a large area of valley, foot-
hills, and mountains about half way between Calgary and Banff. Up to now, this Reserve has been almost undeveloped from an economic and recreational point of view. The small population of about 225 families has been living in general poverty, speaking their own language, and out of the mainstream of Canadian economic and political life. This is changing. The Stoney Indians are using their own funds, partly obtained from oil and gas leases, to build roads and to improve living conditions. More important, they have obtained A.R.D.A. funds for studies of the economic potential of the reserve. One of these studies is concerned especially with the economic potential of tourism and recreation.

The economic potential of the Stoney Indian Reserve for tourism and recreation obviously is very high. Both Calgary and the Rocky Mountain National Parks attract large numbers of tourists, and many of them drive through the Stoney Indian Reserve. Equally important, Calgary is a large, potential market for the cottage sites and recreational activities which are possible on the Reserve. The recommendations which the consultant will make can be predicted. They will include leasing of cottage sites, and sites for hotels, motels, restaurants, gift shops, and other tourist services, as well as renting of horses, guide services, and similar activities. If these recommendations are followed, the land use pattern and the facilities on the Stoney Indian Reserve could be changed very materially. I believe that the greatest recreational impact would be of two kinds: (1) a great increase in the number of recreational residences available to Calgarians, and (2) an increase in the amount of roadside facilities serving tourists.

Whether more intensive recreational development of the Stoney Indian Reserve would reduce pressure on Banff National Park is problematic. To the extent that cottage developments are developed close
to the mountains, it may reduce overnight use but increase day use. It is very hard to believe that the Stoney Indian Reserve can be made attractive enough to support the amount of recreational activity that would be needed to reduce the pressure on Banff National Park significantly.

C. SOME EXISTING AND DEVELOPING PROBLEMS OF RESOURCE MANAGEMENT AFFECTING RECREATION IN THE FOOTHILLS AND MOUNTAINS WEST OF CALGARY

To the casual observer, the Calgary region seems to be unusually well endowed with opportunities and facilities for scenic enjoyment and for outdoor recreation. It is difficult for many people to accept the assertion that problems actually exist. And there are many people who simply do not believe that Calgary will ever become a large city or that the region will be oriented mainly to the city. But the problems of the future already exist, and it is necessary only to use a little imagination to see how they will become serious in the future.

There is, for example, the matter of water pollution, which extends from Lake Louise to Calgary, and gets much worse as the Bow River passes through Calgary. The other problems I will discuss are confined to the foothills and mountains.

1. Low Level of Facilities Design

Paul C. Rump, in an M.A. thesis completed in 1967, reported on a survey of the design and layout of most of the campgrounds in the upper Bow, Spray, and Kananaskis Valleys. He found that most of the campgrounds and picnic sites did not meet established standards of design, construction, and maintenance, including those published by the Alberta Forest Service. The offending facilities were built, and are administered by three Alberta government agencies: Highway Department, Provincial Parks, and Forest Service.
The low state of facilities for picnicking and camping reflects the non-service orientation of the various provincial agencies which are involved in the construction and operation of these facilities. It also reflects the lack of sophistication and technical competence that has characterized recreational developments in this area up to the present. It is clear that a much higher level of design and construction practice is needed in order to realize the recreational potential of this area for urban residents.

A low standard of facility design is found on all parts of the Rocky Mountain Forest Reserve. The facilities seem to have changed little from those built in the 'thirties and 'forties. Even the signs and fire prevention posters indicate a lack of sophistication by administrators.

The low standard of facilities design and maintenance is part of a larger problem, that of inappropriate policies and programs of land management.

2. Inappropriate Policies of Land Management

The Rocky Mountain Forest Reserve has been, and continues to be, managed under policies which are no longer appropriate to the existing economic and social situation in the Calgary region. The practices which result from these policies have results which do not meet the needs of urban dwellers.

In addition, it is doubtful if existing policies and programs in the Rocky Mountain Forest Reserve, south of Nordegg, are in tune with the physical realities of forest productivity and technical alternatives in watershed management. It is likely, also, that they would not be justified by the honest application of recognized economic tests.

The Rocky Mountain Forest Reserve has been managed, and continues to be managed, under objectives that stress physical production, with water, wood, and forage being favoured in that order.
Recreation has been tolerated, but not encouraged. The following statement by the Eastern Rockies Forest Conservation Board (E.R.F.C.B.) states the policy: "It will not be the policy of the Board to encourage or promote recreational use of the area and indeed such use will be restricted in large sections of the Reserve." With such a policy orientation, it is easy to understand the very low level of recreational development in the foothills and mountains of the Rocky Mountain Forest Reserve.

There are, also, technical arguments against policies of the E.R.F.C.B., based on the very low physical productivity of the forests in the Rocky Mountain Forest Reserve. The impoverished environment grows trees at such a low rate that no reasonable level of forest management, beyond protection, can be justified economically on the basis of the value of the wood produced. A study of the economic potential of the forests of the Stoney Indian Reserve by Raymond E. England indicated that this is the case even in the more favoured parts of the Calgary region. I believe that a simple benefit-cost analysis would show that grazing and wood production are being subsidized by existing practices and fee structures.

There is also the paradox that policies designed to protect the watershed from erosion produce conditions that reduce water yield. The major objective of forest management until recently has been to protect the watershed. In practice this has meant a high level of fire protection. There have been no really widespread forest fires since the big fires of the late 'thirties.

The result of this high level of fire protection has been to increase the area of lodgepole pine and spruce at the expense of grassland, grassland-aspen, and aspen. There has also been continual increase in the density of the forest, as conifers have come in in the understory. This has had the unexpected effect of probably reducing
water yields. But the greatest damage has been done to recreation.

The heavier coniferous forest seems to decrease effective precipitation, by holding snow which is then lost through evaporation. It may also increase evapo-transpiration, by increasing the leaf area and the length of time over which transpiration occurs. It has been suggested that heavy cutting of the forests in the Elbow Valley would increase water yield by the equivalent of three inches of precipitation.

The expansion of the area in conifers has reduced the carrying capacity of the forest areas for big game of all kinds. The variety in the landscape has been reduced considerably. And the ease of movement for hikers is being restricted continually, as open stands are replaced by stands of greater density. It is probably timely to consider the use of fire, as well as logging, to produce a more attractive landscape, as well as a more productive area for wildlife. This treatment would also increase water yield.

The Eastern Rockies Forest Conservation Board seems to ignore the damage to water quality that accompanies grazing in the Forest Reserve. Grazing cattle break down stream banks and trample stream beds. Their trails produce erosion, and often channel silt and manure into streams. It would take a veritable army of recreationists to produce the damage that is done to streams every year by cattle.

3. Existing and Potential Effects of Mineral Exploitation

There is now no mineral exploitation within Banff National Park except for gravel, and it seems very unlikely that new mineral developments will be allowed. But mineral exploitation has had a substantial impact on the landscape of the adjacent Rocky Mountain Forest Reserve. Exploration for oil and gas, coal mining and exploration for coal, and quarrying of rock are the activities which have had the greatest impact.

Exploration for oil and gas is done largely by seismic exploration, in which explosives and other sound sources are used to map the
rock strata. In the Rocky Mountain Forest Reserve, seismic exploration seems to be done without effective control. Roads and trails are bulldozed where the convenience of the petroleum explorers dictates. Usually they run in straight lines, up-and-down hills of all grades, and right across streams. In many cases there is no effective control of erosion, and substantial gullyng and silt production occurs. It is only in recent years that serious attempts have been made to get the exploring companies to control erosion and to replant the stripped areas.

There has been an incredibly large amount of oil and gas exploration activity in the Rocky Mountain Forest Reserve, and a much smaller but still significant, amount of logging. All of these activities, and especially seismic exploration, have required road building. Looking back at the length and scale of these activities, and examining the hundreds of miles of useless roads and trails that remain, it seems fairly obvious that good planning could have permitted adequate exploration and also produced a usable permanent system of roads and trails. It has been demonstrated in other areas that petroleum exploration can be done without the kind of destructive road and trail building that is done in Alberta. A proper permanent road system would have contributed to more effective administration of the reserves, as well as aiding recreation.

George W. Tough, in a recent M.A. thesis, has examined the coal mining activity in the Calgary region from its beginning to the present time. His analysis of recent developments indicates that a very substantial increase in coal mining is imminent in the mountains east of Banff National Park. Much of the increased production is likely to come from strip mines. Experience in the Crow's Nest Pass area indicates that the expected scale of strip mining for coal will produce air pollution by coal dust, and grimy settlements. If appropriate steps
are not taken, the unsightly environment of the Crow's Nest Pass area may be duplicated at the eastern entrance to Banff National Park, in other parts of the Canmore Corridor, and in the Kananaskis Valley.

4. Loss of Recreational Land

The Stoney Indian Reserve lies between Calgary and Banff National Park. Both the old Banff Coach Road and the Trans-Canada Highway pass through it. Before the building of the Trans-Canada Highway, this Reserve contained about 92,000 acres. By the time the present widening of this highway is started, in 1968 or 1969, this Reserve will have been expanded to at least 126,000 acres. The difference of 32,000 acres will consist of land given to the Stoney Indian Reserve in exchange for two rights-of-way for the Trans-Canada Highway.

This arrangement, negotiated by the Alberta Department of Highways, will have transferred 34,000 acres of high-value recreational land from the Rocky Mountain Forest Reserve to the Stoney Indian Reserve. This land was formerly open to use by both Indians and non-Indians. Henceforth it will be available only to Indians.

There are many interesting aspects to the existence of two major Indian reservations within the recreational hinterland of Calgary. Up to the present, Indian reserves have been almost exclusively for the use of Indians. Except for a small amount of fishing and through travel, non-Indians have been excluded. Therefore, Indian reserves have been recreational deserts, as far as non-Indians are concerned. There has been only a limited amount of leasing, mostly for organization camps. In addition, Indians have been able to hunt almost without restriction both on and off the reserves. This has had the effect of increasing substantially the hunting pressure on big game in the Rocky Mountain Forest Reserve.

The Stoney Indian Reserve has recently been able to obtain A.R.D.A. money to have a study done that would identify the employment
and income possibilities available to them through recreation and
tourism. The consultants now studying the Stoney Indian Reserve are
sure to find that the greatest economic assets of the Reserve are the
major highways passing through it. Little of the great recreational
potential of the Stoney Indian Reserve would exist without the roads
which the Indians have been paid to allow on their reserve. Thus, the
Stoney Indians have been conferred several great gifts. They have been
given a steady stream of affluent tourists through their lands, with
all that means in the way of commercial opportunities. They have had
the recreational sites on their land, including cottage sites,
connected by excellent highways with a large and eager market, namely
Calgary. And, finally, they have been given large areas of additional
recreational land, much of it served by existing roads.

In view of the great potential economic benefits conferred on
the Stoney Indian Reserve by the building of the Trans-Canada Highway,
additional compensation on the scale given reveals an extremely unsophis-
ticated level of economic understanding on the part of the agencies
involved.

5. Large-Scale Building of Dams and Reservoirs

The irrigation and power potential of the Bow River has
attracted attention from the time of settlement. Most of the existing
dams were built primarily for power supply purposes. Most of the dams
also provide some flood control and water storage capability.

Certain government programs are now underway which seem to be
designed to justify the construction of many new dams, flood control
structures, and irrigation structures. The federal Department of
Energy, Mines, and Resources has started a $5,000,000 study of the
Nelson and Saskatchewan Rivers. The Prairie Rivers Improvement and
Management Evaluation is an interprovincial study with the same
objectives. The dams and reservoirs implied by these programs could
have an important effect on recreation in the foothills and mountains. The roles of high-altitude and main-stem reservoirs on recreation will become an important issue.

Existing reservoirs, except those in and near Calgary, make little contribution to recreation. In several cases, notably Kananaskis and Spray Lakes, reservoirs have destroyed more recreation than they have produced. It seems to be well demonstrated that reservoirs in the mountains of western Alberta, if operated to meet flood control, irrigation, and electric generation objectives, make little contribution to recreation. They occupy large areas of the best valley land, and often destroy important scenic and recreational resources.

The high mountain reservoirs are not popular for boating because of very cold water, chilly winds, and the frequent occurrence of very high local winds. Sailing on these reservoirs is often not only very uncomfortable, but dangerous. These conditions also make for uncomfortable motorboating. In addition to these hazards, there is also a problem in some cases of large areas of shallow water with many underwater stumps and snags. Seasonal and other fluctuations in water level produce unsightly mudflats and bare and eroded banks.

In general, the high mountain reservoirs are suitable mainly for fishing, and they seem to be attractive mainly to hardy and dedicated outdoor types: they are used by only a small part of the population.

There is some controversy as to whether the building of reservoirs has increased or decreased fishing. Although the reservoirs may contain as much or more fish as the same area without reservoirs, there is little doubt that the building of reservoirs has greatly reduced the quality of the fishing experience, at least on the Spray, Kananaskis, Barrier, and Ghost reservoirs.

There is considerable conflict between the operation of
reservoirs for flood control, water storage, power production, domestic water supply, and the like, and their use for recreation. It is almost inevitable that recreational use of either the reservoir area itself or the stream below the dam will suffer.

Recreational use of reservoir areas is maximized when the water level is kept at or near the optimal level to meet recreational needs, at least during the season of active recreation. Recreational use of streams and rivers is maximized when the level of the stream is kept within narrow limits; floods and very low water are usually bad for fishing. (An exception is canoeing, which is best on some rivers during high water, when rocks and other obstructions are covered.)

It is seldom possible to maintain acceptable levels both in a reservoir and in the river below it, without sacrificing a large part of the economic utility of the water storage facility.

Effective flood control usually requires a substantial drawdown of the reservoir level in advance of expected flood flows. This results, in the study area, in increased silt production from erosion of exposed banks and mud flats. Water storage for irrigation requires drawdown during the irrigation season, as required to provide water for irrigation. This produces progressive lowering of the water level during the summer. As with all drawdowns, access to the water becomes difficult except in areas equipped with ramps or floating docks, or both. When reservoirs are used for domestic water supply, recreational use usually is severely limited to reduce the possibility of pollution: in the Glenmore Reservoir, the main source of Calgary's water, no swimming or powerboating is allowed.

Electric power generation involves two basically different patterns of operation. When base power is produced by a reservoir, the flow through the generators is fairly constant. Thus, there is a fairly constant drawdown, and the discharge below the dam can be
continuous, varying within narrow limits. There may be no conflict with downstream recreational use in this case, but there may be conflict with recreational use of the reservoir. However, when a reservoir is used to produce peaking power, the pattern is to release large amounts of water during the short periods of time when peaking power is required. There may be sharp variations in water level in the reservoir, and sharp variations in the depth of the stream below the dam. This pattern of operation characterizes the reservoirs and dams in the Kananaskis Valley, and has had a most undesirable effect on the recreational use of the Kananaskis River. A large part of the river becomes dangerously high when generation occurs. Since there are few bridges, the effect is to cut off a large part of the area west of the river from day-trip use by hikers and hunters.

Another effect of reservoirs is to occupy large areas of valley land. This is very critical in the Rocky Mountains because areas of valley land are very limited, and they are often critical for the support of large wildlife. The scale of reservoir construction that is being contemplated in Alberta could have a profound effect on the wildlife and recreation in the area. These effects should be considered in making decisions about the construction of elaborate water management projects.

D. SOME POSSIBILITIES FOR INCREASING OPPORTUNITIES FOR OUTDOOR RECREATION IN MOUNTAINS AND FOOTHILLS WEST OF CALGARY

The non-urban part of the Calgary region will be able to supply mainly non-urban recreations. There will, of course, be an increase in hotels, motels, restaurants, cocktail lounges, dance halls, and the like, especially in the Canmore Corridor. These facilities would mainly supplement facilities in Banff National Park, and serve traffic to and from the Park. The major recreational impact of the non-urban
part of the Calgary region will be in the supply of opportunities for outdoor recreation. Let us consider the kinds of recreations that will be demanded, and the facilities that exist to permit them.

Estimates of Canadian patterns of outdoor recreation are not yet available. It is necessary, therefore, to use American studies for guidance. The table below shows the outdoor recreation activities which are expected to be most popular in the United States in 1980.

1. Walking for pleasure
2. Swimming
3. Driving for pleasure
4. Playing outdoor games or sports
5. Bicycling
6. Sightseeing
7. Picnicking
8. Fishing
9. Attending outdoor sports events
10. Boating (other than canoeing or sailing)
11. Nature walks
12. Camping
13. Horseback riding
14. Water skiing
15. Hiking

The preceding list probably can be used for Canada as a whole. Locally, as for the Calgary region, there will be differences. For example, I believe that Calgary has, and will continue to have, an unusually high participation in snow skiing. It will probably also have unusually high rates of participation in hunting, fishing, hiking, mountain climbing, and the like. It will probably have low rates of participation in motorboating and water skiing. It will probably equal or exceed Canadian rates of participation in pleasure driving and in
operation of motorized sleds.

These are the outdoor activities in which most people will probably engage. Also important are certain artificial aspects of the environment, some of which do no more than make the chosen activity possible. Reference has been made already to the increasing demand for an urbanized environment. In the following discussion, roads, driving for pleasure, trails, picnic and campgrounds, and cottage and trailer developments are included, in addition to discussions of specific activities.

Roads, Picnic, and Camping Facilities

From the days when travel was by horse and wagon, the area west of Calgary has been used for pleasure travel, picnicking, camping and day excursions. Since the 1920's, these activities have become increasingly motor- and road-oriented. They have also represented the most important recreational developments on public land. Most of the existing facilities, especially the improved roads, date from 1947.

Roads

Although not designed primarily for recreation, the road network west of Calgary has had a profound effect on recreation. In general, it has increased the capacity of the area to provide recreation. In some cases it has damaged the quality of the recreation that is available in the area.

The Forestry Trunk Road, built between 1947 and 1954, has had the greatest effect on the area, opening up a large area of mountain country between Coleman and Nordegg. There has been a continual upgrading of many of the roads and bridges in the forested areas, and it probably will not be long before the more heavily travelled roads are blacktopped. They are now gravel and dirt roads which are dusty and well supplied with pot holes.
At present, many of the roads in the foothills and mountains west of Calgary do not permit easy one-day pleasure drives. There has been an increasing interest in creating loop roads, including some new entrances to Banff National Park. Some of the possible road extensions are shown in Figure 12, and are listed below:

- Road from Canmore to Kananaskis Lakes
- Road from Banff to Kananaskis Lakes
- Continuation of road from Kananaskis Valley over Continental Divide into Elk River
- Road from Lake Minnewanka into Ghost Valley
- Road from Elbow Valley to Kananaskis Valley, via Elbow Lake, etc.

There are also many opportunities to increase pleasure driving by upgrading dirt and gravel roads, including the following:

- Spray Lakes road
- Kananaskis Valley road
- Elbow River road
- Sheep River road
- Priddis-Turner Valley road
- Cochrane-Bottrell road
- Ghost River road (to Nordegg)
- Jumpingpound and Bragg Creek roads
- Harold's Creek Forestry road

**Picnic Grounds**

The low standard of design of most of the picnic grounds in the mountains was discussed briefly in an earlier section. Outside of Banff National Park, picnic facilities are few in number and quite primitive. Many more picnic areas should be developed. They should be designed to be both attractive and convenient. Picnic tables should be attractive and sturdy. Privies should be attractive in design and construction: they should be cleaned regularly. Trash should be
Fig. 12  Existing and Possible Recreation Roads in Foothills and Mountains of Calgary Region
removed regularly. Picnic areas should be fenced so as to exclude cattle and horses. Where possible, short-loop trails for pleasure walking should be nearby. Playing outdoor games and sports is one of the most popular outdoor recreations. This indicates that playing fields and other athletic facilities should be provided for picnic grounds that get heavy use.

_Campgrounds_

The generally poor design of campgrounds has been referred to previously. The improvement of design, construction, and maintenance standards for campgrounds is essential to increase recreational use of the mountains and foothills. Poor design and maintenance of facilities seem to discourage intensive use by city people, and seems to encourage vandalism and outlaw behaviour by some campers. Good design seems to increase the use of campgrounds by urban dwellers, and should be provided as a matter of course.

As urbanism increases, city people will become more refined in their mode of living. They will find it increasingly difficult to accept primitive facilities and poorly designed structures.

Probably the most unattractive structures in Alberta forest areas are the outhouses. When you consider the amount of attention and money that is spent on bathrooms in today's houses, you can see that city people might be quite put out by having to use the primitive outhouses that are found in most forest areas.

All aspects of design are important. Good signs, for example, can make a very good impression on the user. In addition to providing information, they can also convey the impression that the forest managers care about appearance, care about the users of the forest, and have good taste.

In the layout of picnic grounds and campgrounds, spacing and location of individual units are very important. Paul Rump, in the
thesis mentioned above, found that the great majority of campgrounds in the Bow, Kananaskis, and Spray Valleys violated accepted standards of spacing between units. Control of vehicular traffic is another important requirement in picnic grounds and campgrounds. I know of few campgrounds in the Calgary region in which this is done properly.

There is plenty of good information available about the design and construction of picnic grounds and campgrounds. A truly professional operation should use this available information, and refine it to meet local requirements.

*Trails and Other Facilities for Hiking and Mountain Climbing*

Walking for pleasure is now believed to be the most popular outdoor recreation in the United States, and this may also be the case in Canada. At the present time, there is a small boom in the sale of lightweight hiking and mountain climbing equipment in Calgary. These and other outdoor recreations require trails, and separate trails for horses are desirable. In order to meet the expected future demand for these recreations, the Calgary region should be served by a dense network of trails in the mountains and foothills.

There are probably fewer miles of foot trails in the Calgary region now than there have been in the past one hundred years. I cannot substantiate this, because I have not seen a detailed map of old trails, but there are many evidences of old trails which are no longer usable.

The area seems to have had a dense network of trails when it was hunted over by the Stoney and other Indians. Also, during the pre-road days, forest rangers, ranchers, and hunters traversed the area regularly by horse and foot. It seems likely that the trail network declined after the start of World War II, due to reduced staff and money for operation. After the war, the main emphasis was on road building. In recent years, telephone lines have been replaced by
radios, and many miles of telephone-line trails were abandoned. The use of horses in the course of administration seems to have declined continually. The use of the helicopter in recent years has eliminated the need for an extensive road and trail system for fire fighting and administration.

It may be that the increased use of trail scooters and motorized sleds will reverse this trend, and again extend the trail system. However, if this occurs, it probably will be done by the trail users. The important point is that the lack of trail building and maintenance by the Alberta Forest Service has been the main factor accounting for the decline of the trail system.

Hikers usually are well satisfied with trails that meet the needs of hunters, ranchers, and forest rangers, but this is not always the case with mountain climbers. There does not seem to be a single trail outside of the national parks that was built to encourage or assist mountain climbing. This is strange in view of the fact that the Rocky Mountain Forest Reserve contains outstanding climbing country.

I know of only two recent instances of trail building or improvement in the Calgary region. One was to provide a loop trail for a horse rental concession near Kananaskis Lakes. Another consisted of allowing the Rocky Mountain Ramblers to construct a trail from Pigeon Mountain to Ribbon Creek. However, there is evidence that organizations of outdoor recreationists are becoming more vocal and are learning how to make effective proposals to government agencies. Their efforts will help to force land management officials to accept the fact of increased demand for outdoor recreation.

Outdoor organizations and individuals have shown an interest in volunteering money and labour to construct facilities, clear trails, improve streams, and otherwise improve the opportunities for outdoor recreation. If it is properly organized, much could be done through
volunteer effort to improve opportunities for recreation.

Trail shelters are a common facility along hiking trails in some other parts of North America, but they are almost totally lacking in the Calgary region. There is little doubt that they increase use of the area by hikers. Mountain climbing and ski-touring groups have been working to develop a chain of permanent shelters in the back-country of the national parks. A similar interest may also develop on the part of hikers, hunters, and fishermen. Shelters for hikers have been popular in many other areas. Therefore, it is entirely possible that systems of huts and shelters may be added to the trail systems in the mountains, especially in Banff National Park.

Increased use of the back-country inevitably produces the problem of dealing with increasing amounts of garbage and trash. Experience in other areas indicates that the control of trash and garbage in the back-country will require regular patrols by work crews. The removal of garbage and trash may require the use of pack trains, motorized vehicles, or helicopters.

Trail building should be given a high priority in the management of public land in the mountains and foothills west of Calgary. The following list will indicate the potential of trail building for increasing outdoor recreation opportunities.

Walking Trails. Short trails, usually starting from a parking lot, picnic ground, or campground. Preferably a loop, but not always possible. In the Calgary region, there are many fine scenic overlooks and viewpoints to which such trails can lead. Signposted circle trails centring on picnic and camping areas probably would be the most popular types of trails. Trails along the major rivers and creeks also would be popular.

Nature Trails. Like walking trails, but equipped with explanatory signs and exhibits to describe interesting natural features. The
technique of self-guiding nature trails is well developed.

_Climbing Trails._ Leading from a road to the start of a popular climb. Needed at places like Mount Yamnuska to prevent "human erosion." Signposted trails will increase mountain climbing use.

_Long Distance Hiking Trails._ There are opportunities to develop long distance hiking trails between Waterton Lakes National Park and Jasper National Park. A system of overnight shelters would increase the use of such a trail system.

_Short Distance Hiking Trails._ Trails for overnight and longer hikes could be developed in the major valleys and ranges, including the Highwood, Kananaskis, Spray, Elbow, Sheep and the Ghost, including the Ghost River wilderness area.

_Horse Trails._ In areas of intensive use, separate trails for horses and pedestrians should be developed.

_Bicycle Trails._ The popularity of bicycling as an outdoor recreation indicates that bicycle trails in selected areas of the mountains and foothills might be popular, especially around lakes and reservoirs. Bicycle rental facilities may be even more feasible than horse rental facilities in some heavily-used areas.

One of the most important needs for a recreational trail system is for attractive and informative signs at starts of trails and at major junctions. Maps of the trail system are also desirable, and guidebooks for a regional system help to encourage use.

When trails are developed to encourage walking, there is liable to be a conflict with trail scooters and other motorized vehicles. As recreational demand increases, this problem will become more acute and appropriate measures will need to be taken to control motorized vehicles.

In addition to the foregoing, measures to increase the recreational use of public land, consideration should also be given to
securing easements to permit walking on open rangeland by the public.

**Hunting**

In the past, the Calgary region has had a very variable reputation for hunting. Townsend Whelen reported, about 1920, that it was badly overhunted. Writing about the 1930's, Paterson reported that the hunting in the mountains was very good, although he seemed to be preoccupied with finding old Indian trails leading to relatively unspoiled areas. I have been told that after World War II there was excellent hunting in the mountains. I have met a number of disgruntled hunters who have remarked on the notable deterioration in hunting in the past ten to fifteen years.

There is little doubt that there is now very heavy hunting pressure on the big game and on coyotes. All areas within walking distance of a road are heavily hunted, and most of the foothills and mountains are within walking distance of a road. The range of easy hunting has been extended greatly with the increasing use of four-wheel drive trucks, trail scooters, and motorized sleds.

The increased hunting pressure has not been accompanied by an improvement in the capacity of the area to produce game. Indeed, the expansion of conifers at the expense of grassland, aspen, and brush probably has reduced the carrying capacity for large game.

The mountains and foothills west of Calgary seem to be very impoverished areas, in terms of producing game. The number of large game animals is not known, an indication of the very low level of game management that has characterized the area. But studies in the Sheep River area indicate that there are very low populations of all game animals.

Grazing of cattle is found in all the foothills and mountain areas, except in the Kananaskis and Spray Valleys. There is no doubt that cattle compete directly with elk, and elk are the most important game species. Cattle and horses also compete directly with mountain
sheep, as has been demonstrated so tragically in British Columbia in the last two years. Whether they also compete significantly with deer in this area has not been determined.

There are a number of wild horses in the mountains and foothills. They are a far cry from the beautiful animals found in romantic stories and moving pictures about wild horses. Their effect on the productive capacity of the area for game has not been studied, but the effect most likely is to reduce the carrying capacity for game.

Game management in the Calgary region has consisted largely of the enforcement of bag limits and other game laws. There has so far been no important management of vegetation to increase the carrying capacity of the area for wildlife.

The very heavy hunting pressure in the Calgary region is sufficient to justify a high level of game management. License fees collected in the area could support an intensive program of research and management.

Skiing

Calgary and Edmonton provide most of the skiing population using the ski areas west of Calgary. Until now, almost all of the skiing has been concentrated inside of Banff National Park.

There are two ski facilities very close to Calgary: Happy Valley and Paskapoo. Neither take any significant pressure off the National Park. There is another operating facility at Pigeon Mountain in the Canmore Corridor. It is used mostly by learners and by people who do not want to travel far for their skiing, and has marginal snow conditions: it could not function profitably without artificial ice. A facility operated for a short time near Turner Valley but had problems of lack of snow and few users. Another unsuccessful development was started near Bragg Creek.

Two facilities are being prepared which may take some of the
pressure off Banff National Park; both are in the Rocky Mountain Forest Reserve. One is just above Canmore. The other is in the Galatea drainage, tributary to the Kananaskis. The latter, called Snow Ridge, probably will be in operation in the 1968-1969 season.

The Galatea Creek development is reached by the Kananaskis Road, which is kept open in winter to service power dams at Kananaskis Lakes. It required the construction of about four miles of road over very difficult terrain, which will be expensive to maintain and to plow. It seems to have the potential of becoming a major skiing area.

There are a number of other potential skiing areas in the Calgary region, but all will be more difficult to reach and service than existing areas. No systematic study has been made by a public agency to identify the available sites. Until such a survey is made available, it will not be possible to reach useful conclusions about the future development of skiing areas in the Calgary region.

Recreational Use of Water

Very few rivers and lakes in the Calgary region become warm enough for pleasant swimming. Hardy children can swim in Glenmore Reservoir, in the Elbow River, and even in the Bow River. Chiniki Lake, on the Stoney Indian Reserve, is one of the few bodies of water west of Calgary that is pleasant for swimming and water skiing.

The Bow River is a big, fast, rough, cold river. Aside from a moderate amount of fishing, it gets very little recreational use. It is suitable for canoeing and kayaking, but these sports have not yet become popular in the area. The tributaries of the Bow are not suitable for boating, for one reason or another, except locally during moderately high water. The Kananaskis River is dangerous to use, because of unpredictable fluctuations of water level due to the operation of power dams.

The excellent potential of the Bow River for canoeing and
Kayaking is just beginning to be appreciated. But it is only a matter of time until the Bow River will receive heavy use for all suitable types of boating. Increased boating use will result from, and create a demand for, better facilities for launching boats and for taking them from the water. It will be necessary to reduce the level of pollution in the Bow River substantially. This is especially important in the stretch downstream from Calgary.

The Ghost Reservoir, Bearspaw Reservoir, and Glenmore Reservoir get heavy recreational use for boating and/or fishing. Some hardy water skiers use Bearspaw and Ghost Reservoirs. Motorboats are not allowed on Glenmore Reservoir, but it is getting large and increasing use for sailing, rowing, canoes, and kayaks.

Calgary has an unusually small population of motorboats and an unusually large population of sailboats. Cold water and chilly winds seem to have discouraged power boating. Sailboating has been encouraged by the plentiful supply of wind, and the existence here of an unusually large number of professional people with an interest in sailing.

Sailing has been fostered on Lake Chestermere and Glenmore Reservoir. It has been done on a small scale at Ghost Reservoir and Bearspaw Reservoir, and will probably increase greatly on all of these. But it is not likely to become important on any of the other reservoirs, with the possible exception of Barrier Reservoir. The high mountain reservoirs are not popular for sailing, for reasons given above.

More dams are likely to be built in the Calgary region, partly for flood control and partly for water storage. In general, those west of Calgary are likely to add little to the recreational potential of the area. Prairie reservoirs are more desirable for recreation than are mountain reservoirs. Recreational reservoirs east of Calgary might be developed; this possibility has not been explored. Failing this
possibility, the main opportunities for increasing water-oriented recreation is to make more intensive use of the Bow River and its tributaries, and of the existing lakes and reservoirs.

Fishing

The Calgary region is reported to have had excellent fishing as recently as ten to fifteen years ago. There is no doubt that it has deteriorated badly, especially on the tributaries of the Bow. Downstream from Calgary, pollution from oil refineries is so bad that the trout usually are inedible: they are called "oilers." In most cases, the deteriorated fishing is simply a result of low productivity and increased fishing pressure, in the absence of intensive fisheries management.

The low productivity of the foothills and mountain streams is compounded in many cases by the trampling of cattle along the banks. This breaks down the banks, destroying necessary habitat. Trampling also produces silt, which is harmful to the trout in several ways. The Calgary Hook and Hackle Club and the Fish and Game Association seem to be the only strong voices against the continuation of this practice.

Another problem is that of getting access to streams for fishing. Part of the problem is to get access across private land which intervenes between public roads and public fishing waters. Another part of the problem is in getting public access to public land that is leased to private persons. Many ranchers and farmers treat leased land as private land, and will not allow fishermen across it to reach public streams. There are a number of interesting legal points involved in getting access to "public water." The burden of this effort is being carried by the fish and game clubs mentioned above. It should, of course, be a matter of interest to public agencies.

Experience in other areas seems to indicate that improvement in fishing will require four sets of action: (1) eliminating all kinds of
water pollution; (2) stream improvements to increase productivity; (3) more effective stocking programs; (4) improved access to "public waters."

The first start towards a scientific basis for management of the fisheries of the Calgary region will be taken under the Canada Land Inventory in the survey of "Capability for Sport Fishing." This is expected to get under way in Alberta in 1968. This will produce a classification of the characteristics of each stream and lake in the province. This survey will, at least, identify those streams which are suitable for intensive management. It is believed that intensive management of the most suitable streams will yield the greatest returns.

The sport fishing capability survey will involve classification of the "physical and chemical features of lakes and streams, depth and area of lakes, the amount of dissolved nutrients . . ., temperature and oxygen content of the water, and sampling of fish species present." 7

Intensive fisheries management is required in the Calgary region. Recent improvements in the staff of the Alberta Fish and Game Division, as well as increased budgets, offer some hope that it may be getting under way.

Recreational Residence Sites

As the number and wealth of Alberta residents increase, the demand for recreational residences (cottages or small homes) increases even faster. The problems associated with cottage developments are most serious in publicly-owned areas. They were described in a previous section, and are summarized below.

(a) Cottages along a road, stream, or lakeshore restrict public access to the area beyond. This is more serious as the number of cottages increases.

(b) Many cottages are poorly designed, built with poor materials, and poorly maintained. They tend to deteriorate
rather badly, and become quite unattractive. Cottage areas may look like slums.

(c) Many cottages become permanent, or semi-permanent, residences. The effect of this, especially near main roads and near settlements, is to create demands for better road maintenance, snowplowing, mail delivery, police protection, and school-bus services. In some cases, a demand may even develop for street lights, sewers, and community centres.

(d) Vandalism is often a problem in cottage areas. It may increase during the hunting season or during other peak-use periods. Also, there may simply be camping by non-owners on cottage sites, often with minor vandalism. Vandalism may require increased staff time and money for policing.

(e) Cottage developments may create nuisance problems through the disposal of sewage and garbage.

(f) Leasing requirements and rules are often difficult to enforce.

Although it would not be impossible to create laws and an administrative machinery to prevent cottage developments from becoming sub-standard permanent residences, or unplanned townsites, it would be very difficult.

I suggest that the demand for weekend and seasonal recreation accommodation should be met by some device other than traditional cottage developments in the Calgary region. Recreation residences should be concentrated into fully-serviced communities, including town-houses, apartment buildings, hotels, and motels. Such townsites would have complete sewage, water, light, and other services. Buildings would have to meet reasonable standards of design and maintenance. And the users would have to pay the full cost. This approach would restrict
development to limited areas near main roads, would meet existing objections to cottages, and would prevent pollution and cottage sprawl.

Townsites have many advantages over dispersed cottage developments, in terms of area occupied, the provision of social services, and administration. For example, by concentrating all the accommodation in a small area, it may be feasible to provide an adequate level of sewage treatment. This might not be possible in an area of dispersed cottages built on shallow soil.

Concentrated townsites also have the advantage of facilitating arrangements other than outright ownership for obtaining the use of cottages or recreation residences. Renting and leasing permit an increase in the capacity of individual units. Condominium and co-operative ownership require connected units, apartment buildings, and the like. These types of ownership have many advantages for recreation residences.

Admittedly, the type of townsites I describe is quite different from the cottage in the woods or on the lakeshore that most Canadians have in mind. But it is the wave of the future, largely because of its many advantages and because of the shortage of recreational land.

E. POLICY RECOMMENDATIONS

The preceding section gave some recommendations for specific programs to increase opportunities for outdoor recreation in the mountains and foothills in the Calgary region. Some very important policy changes probably would be required to provide an environment within which these specific recommendations could be carried out. But these policy changes probably would require some very important changes in attitude and orientation on the part of governments. They would also require some important changes in the methods of operation of government agencies.
1. Acceptance of Pleasure and Recreation as Legitimate Aims of Public Policy

I have found a widespread attitude among elected officials in Alberta that public expenditures for outdoor recreation can be justified only if they increase economic activity. In particular, outdoor recreation expenditures are justified most easily if they seem likely to increase tourist trade. This attitude makes it difficult to gain acceptance for investments which only increase the pleasure of residents.

Government officials must accept pleasurable living and recreation as legitimate objectives of people and, therefore, as legitimate objectives of public policy. More especially, they must drop the apparent belief that only children should play and enjoy life. Adequate provision of opportunities for recreation are not likely to be made unless this change of orientation occurs.

2. Acceptance of Urban Living as the Most Important Way of Life, Now and in the Future

The majority of Canadians now live in urban centres, and the percentage of urban residents is increasing steadily. However, the orientation of the Alberta government, and of most resource management agencies, is either rural or non-urban. Most resource management decisions in Canada seem to ignore the needs of urban dwellers, even when they are nearby. For example, management policies for the Rocky Mountain Forest Reserve are designed to serve local and non-urban interests. The existing situation in western Alberta indicates clearly that the interests of Edmonton, Calgary, and other urban centres should be the primary consideration in the management of land resources.

Procedurally, several steps can be taken. One is to strengthen the power of the central cities in the operation of the regional planning commissions. The regional planning commissions now seem to be
largely controlled by the rural municipalities, even though the central cities provide a large part of their financial support. In addition, provincial and federal resource management agencies should consult city governments regularly about the management of public lands within their recreational hinterland. This consultation should include public lands used for grazing, as well as forest reserve lands.

3. Accepting Concept of "Public Resources"

Canada is a constitutional monarchy. Land not in private or municipal ownership is referred to legally as "Crown Land." Canada is also a democracy. There is a tendency to refer to "Crown Land" as "public land." But government agencies concerned with the administration of land tend to emphasize the concept of "Crown Land," and accept the concept of "public land" with reluctance.

In the social and political context of this period of time in North America, the concept of "Crown Land" is clearly an anachronism. The experience of forest management in the United States has demonstrated that agencies which do not wholeheartedly accept the concept of public ownership of resources will generate mistrust and opposition.

Canada is, I believe, now at the stage where the concept of crown ownership of resources must either be dropped entirely or made fully synonymous with the concept of public ownership of resources.

Operationally, this means that resource management agencies must act as servants of the public, rather than as custodians of crown property. This change is, of course, being forced on all levels of government in Canada by the changing social and political environment.

4. Increased Use of Public Hearings

One of the most effective methods of insuring public participation in decision making is the device of the public hearing.

Although public hearings are used by resource managing agencies at the
federal and provincial levels, they are used only occasionally and under limited circumstances.

It is recommended that public hearings be held in connection with all existing policies affecting the management of recreational land, including those of the national parks, the Alberta Forest Service, and the Eastern Rockies Forest Conservation Board. In addition, public hearings should be held on existing management plans, and on revisions of management plans. For example, public hearings should be held on the management plans of the Bow River Forest; at intervals of not more than ten years. Also, public hearings should be held on the policies and programs of the Eastern Rockies Forest Conservation Board. Most important, all proposals to build dams and reservoirs should be aired in public.

Public hearings should be held at convenient locations, to permit the fullest possible public participation. Hearings affecting the Calgary region should be held in both Calgary and Edmonton, for example. Any person or group should have the right to make verbal or written presentation, and the public hearings should be published in a useful and available form.

5. Making Use of Available Information and Experience as a Basis for Developing Policies and Programs

Land management practice on the public lands west of Calgary is not up to date. It reflects a failure to make effective use of available information and experience, including that which is available from similar areas in the United States. In particular, it reflects an inability, or unwillingness, by responsible provincial and federal officials to make use of experts from outside of their own agencies.

This failure is most notable in the case of recreational developments, but is also evident in relation to all other resource uses. Part of the problem is due to the real shortage in Canada of trained
and experienced researchers, which is likely to persist for a long time. Under these circumstances, it is advisable to make full use of universities, and especially to encourage studies by graduate students. There is really no other feasible alternative except the use of consulting firms. However, very little use is now being made of the universities in Alberta by either federal or provincial land-management agencies. Yet these universities contain a substantial number of professors and students who could provide valuable research assistance at reasonable cost.

Part of the problem can be handled by upgrading the professional competence of agency personnel. Indeed, this is at the root of all the policy and program problems we are concerned with. But a basic policy reorientation is required to place proper emphasis on the role of study and research in evaluating existing policies and programs and in developing new ones. In view of the increasing competition for a limited number of suitable staff, land-management agencies will have to learn to use outside assistance, including the universities. But they will have to learn to respect the conditions of free inquiry, honesty, and accuracy under which university research must be conducted.

6. Increasing the Sophistication of Analytic Techniques

Agencies responsible for resource management should be required to use modern techniques of analysis, and to use relevant and accurate information in making analyses. Methods of analysis should be standardized and published.

I have earlier referred to the very low level of analytic technique exemplified by the trade of recreational land to the Stoney Indian Reserve in payment for widening of the Trans-Canada Highway. There are many similar cases.

At the present time, resource management agencies in the United States are trying to incorporate the Planning-Programming-Budgeting-
System into their policy and program development procedures. It will be a long time before this can be attempted in the area west of Calgary. The best that can be hoped for is an honest use of standardized cost-benefit analysis techniques. It was mentioned earlier in this paper that an honest use of cost-benefit techniques probably would indicate the need for substantial changes in the priorities that have been used for management of the Rocky Mountain Forest Reserve. The priorities for the use and management of all public lands should be re-examined. Priorities should be based on operational criteria, which are fully and clearly stated. All information used in the analysis should be current and based on scientific evidence.

The technique of dishonest cost-benefit analysis has been developed to a fine point to justify irrigation and power developments. The only defence against the misuse of this technique is the development of procedures to insure accountability and facilitate legislative review including the use of public hearings. In view of the great temptations to government agencies to use misleading cost-benefit ratios, it is essential to develop effective safeguards against their misuse.

It is recommended that standardized techniques be developed for the use of cost-benefit analysis, and that the use of this technique be mandatory in setting priorities of land management. In order to provide safeguards to the public against misuse of this technique, it is recommended that a board of review be established, consisting of competent professionals having no pecuniary interest in the results of the analysis.

In addition, it is recommended that each land-managing agency be given the responsibility to use the latest techniques of analysis appropriate to its responsibilities.

7. Protecting the Rocky Mountain Forest Reserve

In view of the probable need to widen both of the roads west of Calgary, the Alberta government will be tempted again to trade off part
of the Rocky Mountain Forest Reserve to pay for the road widening. It is important to prevent any more of this valuable recreational area from being taken out of public use. Therefore, the regulations under which public land is held and managed should be changed to prevent any more trades of forest reserve lands, except for purposes of consolidating existing holdings.

8. Giving Recreation the High Priority it Deserves in the Management of the Rocky Mountain Forest Reserve

It was stated earlier that an honest use of available techniques of analysis probably would show that recreation should be given highest priority in the management of the Rocky Mountain Forest Reserve. If this is the case, budgets for recreational management of this area should be increased greatly. Where fees are charged for recreation, such as hunting and fishing licenses, the proceeds should be used as a measure of the value of recreation, and should be used for recreation management. Consideration should be given to instituting an annual fee for recreational use of the Forest Reserve.

The amount, method of collection, and use of fees for recreational use of lands needs to be re-examined completely. Fees should not be thought of solely as a source of revenue to the general treasury. They should be used as a management tool and as a method for helping to assign priorities. In order to be most useful for these purposes, they should be usable to identify both areas and activities for which users are willing to pay. Thus, fishing and hunting licenses could be issued for specific areas, or at least identified by the place of issue. The practice of charging a separate fee for each type of animal is already well established with hunting licenses, and could be extended to fishing licenses. Consideration should be given to instituting an annual fee for recreational use of the forest reserve. Special fees for horse parties, hikers, and other users of the back-country could be
used to pay for the cost of trash and garbage control in remote areas. Motorized vehicles of all kinds should probably be licensed for the same reason.

One important change is needed: where fees are charged for recreation, a substantial part of the proceeds should be used for recreation management. Thus, hunting license fees should support game management activities, and fishing license fees should support fish management.


At present, the programs and policies of government agencies seldom are subjected to critical analysis by independent research agencies. I suggest that the only suitable and available vehicle for this review on a continuing basis is the universities. But this function is not likely to be carried out successfully if the universities are dependent, directly or indirectly, on operating agencies for their research funds. Therefore, it would be necessary for the universities to obtain their own funds for research, to permit them to be independent of operating agencies.

In the Calgary region, an independent study should be made to examine the basis for priorities in the management of all non-urban lands. In particular, a study should be made of the feasibility of changing the amount and quality of water yield from the eastern slopes of the Rocky Mountains. Such a study should use available information to provide estimates of the ranges of costs and benefits that could be expected under reasonable assumptions. This should be followed by an intensive study of the probable costs and benefits that could be expected from wood production, grazing, recreation, and other uses in the Rocky Mountain Forest Reserve. Many other related studies need to be made, as well.
CONCLUSION

Many other recommendations can be made to increase the recreational potential of the area west of Calgary. However, they will be implemented only if land-management professionals and government officials learn to accept the facts of life, as they now exist and as they are developing. In particular, they must recognize that the population of all of North America, even Alberta, is largely urban, and that urban ways of living are dominant. The importance of recreation must be accepted. These injunctions apply as much to national parks as to other non-agricultural lands.

Under the best of circumstances, the tourist and recreational pressure on Banff National Park will not be reduced. Quite the contrary; it will increase continually, and the supporters and administrators of national parks must take this into account.

FOOTNOTES

1 A summary of the recommendations of the Calgary Parks and Recreation Study will appear in the 1968 General Plan.


7 Within Our Borders, April, 1968, p. 6.
The Nature Conservancy of Canada grew out of a long period of discussion and preparatory work among the directors of the Federation of Ontario Naturalists who had believed for some time that the establishment of a central national body to carry out acquisition of natural land areas throughout Canada was necessary. In 1963 the F.O.N. had undertaken to purchase the Dorcas Bay reserve on the Bruce Peninsula and it was apparent that another organization should be in existence to carry on this type of work in Ontario as well as in other parts of the country. In due course this interest culminated in the appointment by the board of the F.O.N. of a committee which in turn supervised the incorporation of the Nature Conservancy of Canada as a federal no share capital corporation; that is, a corporation having no shareholders as such but having all the other attributes of a company. The Conservancy applied for and received registration as a charitable corporation under the Income Tax Act which means that it can give receipts for donations received which are valid for income tax purposes.

*F. Aird Lewis is Chairman of the Nature Conservancy of Canada.
The Conservancy is governed by a board of twelve trustees who operate according to the general by-law of the Conservancy. Because the trustees live throughout Canada and regular meetings are difficult, they have appointed an executive committee to make day-to-day decisions. The Conservancy recently appointed Mr. Charles Sauriol as its administrative director, on the basis of a modest honorarium for his services. The trustees of the Conservancy serve gratuitously.

The objects of the Conservancy are set out in its charter and read as follows:

A. To promote the conservation of the landscape in Canada and to co-operate with other Canadian and international organizations having similar aims and to encourage such organizations in their activities.

B. To establish, maintain, develop and manage Nature Reserves in Canada, including the maintenance of physical features of scientific interest; and to encourage scientific research and educational services related thereto: for the due carrying out of the foregoing objects:

(i) to acquire by purchase, lease, exchange, concession or otherwise any description of real estate and real property, or any interest and rights therein, legal or equitable or otherwise howsoever;

(ii) to solicit, acquire, accept or receive donations, bequests, or subscriptions of money or other real or personal property, whether they be unconditional or subject to special conditions, provided any special conditions are not inconsistent with the objects of the Corporation;

(iii) to hold, manage, improve, develop, exchange, lease, sell, turn to account or otherwise deal with the real or
personal property from time to time held by the Corporation and to retain any real or personal property in the form in which it may be received by the Corporation for such length of time as the Corporation may determine;

(iv) to enter into any arrangements with any authorities, public or academic or otherwise, that may seem conducive to the Corporation's objects or any of them and to obtain from any such authority any rights, privileges and concessions which the Corporation may think it desirable to obtain and to carry out, exercise and comply with any such arrangements, rights, privileges and concessions;

(v) to invest moneys not immediately needed for the carrying out of the Corporation's objects in such manner as the Corporation may determine, provided that such moneys may only be invested in such investments as are from time to time legally eligible for investment by Canadian Life Insurance Companies;

(vi) to make such representations as the Corporation deems necessary for the furtherance of its objects;

(vii) to do all such other things as are incidental or conducive to the attainment of the above objects.

The Conservancy was incorporated in November of 1962, and early in 1963 the first problem was presented to it. This was the Rattray Estate campaign, and I am going to describe it in a little detail because it illustrates the type of operation that the Conservancy will undoubtedly become involved in again and shows the problems which arise in any land acquisition. The Rattray Estate was a 150 acre parcel of land consisting of about fifty acres of marsh and 100 acres of table
land sparsely covered by second growth trees. It was situated in Clarkson, Ontario, about twenty miles from the centre of Toronto, and supported a variety of small wild animals and birds and contained some interesting wild flowers and shrubs. Migrating wildfowl frequently stopped over the the marsh. It was the only area of its kind between Toronto and Hamilton and as such represented the last substantial example in this area of the original Lake Ontario shoreline. These factors made it essential in the Conservancy's view to make every effort to secure it in its natural state. The title to this property was in the hands of a builder who was petitioning the local council to allow a marina and residential development to take place.

A local committee comprised mainly of Clarkson residents had been formed under the leadership of Dr. William Gunn, a trustee of the Conservancy, and this committee acted as the Conservancy's representative in starting an active campaign for funds. The campaign raised $80,000.00, which was the largest sum raised in the Toronto area up to that time by a private group for a land preservation project. This sum alone was insufficient to secure the estate as the owner was at this stage talking about a sale price of $350,000.00 for the property. The Conservancy had to interest other groups or bodies, private and/or governmental, to take part in the project. The Department of Education of the Province of Ontario was approached on the basis that this area could serve as an outdoor biology lab and would be very useful either for a nature school or as a part of the University of Toronto. This idea was explored in depth with the Minister over a period of two years and the University of Toronto carefully looked into the situation. The Royal Ontario Museum was approached on the same basis with the idea that a combination of entities could use this property as an outdoor nature centre. The local Conservation Authority (a government body having control over watershed lands for conservation purposes) and the local
municipal government were also approached and were involved in these discussions.

Unfortunately, even after strenuous representations along the lines just mentioned, there was no agreement reached as to the funding of the project. The University of Toronto felt that its capital budget had to be expended on the basis of getting the most land for the least money and it felt it could still acquire similar land at a cheaper price. This land of course would be considerably farther away from Toronto.

This property is now being developed as a high priced residential neighbourhood. Because of the representations of the Conservancy, however, particularly with regard to the problems involved in creating a marina in the marsh area of the property, the marsh has not so far been touched. It is difficult to be optimistic about its future however, because of the building going on around it. Nevertheless, the representations and expert evidence submitted by the Conservancy were responsible for a less intense use of the property than would otherwise have taken place.

The Conservancy believes that the decision of the various bodies not to acquire this land was mistaken because this area was one of the last marsh areas near Toronto and as such was accessible to many thousands of people. If this land had been purchased through the Conservancy's efforts it would probably have been used by interested persons for study and scientific purposes. The general public would also have been permitted to enjoy it, the only restriction being that their use would not deteriorate to a substantial degree the natural features of the area.

This campaign showed the Conservancy how important it is to acquire unique natural land areas before significant development takes place. This obviously is not always possible but it is the most
satisfactory and financially sound way to proceed.

The next stage in the Conservancy's operations has been the building up of its financial reserves. Because the Conservancy has no membership it depends upon individual, corporate and foundation financial support. The majority of donors to the Rattray campaign released their funds to the Conservancy for its general purposes and we have been successful in raising additional funds for our projects. In order to properly carry out our program across Canada the Conservancy requires a great deal of money, which will require a tremendous effort in fund raising.

Up to the present time the Conservancy has made encouraging progress in the carrying out of its program across Canada. A brochure outlining the aims and objectives of the Conservancy was prepared and printed in March of 1967. The Conservancy completed the purchase of the Marshall Woods, an area of pre-Columbian forest near Meaford, Ontario, which has never been disturbed by logging or cutting of any kind. Negotiations are proceeding to acquire a second property in this area fulfilling the Conservancy's requirements. The Conservancy has entered into discussion concerning among other areas, a range property in British Columbia, a coastal stretch on Cape Breton Island, and a large bogland area in eastern Ontario. These properties are unique in many respects and deserve to be retained in their natural state. The Conservancy is very interested in seeing the completion of a master list of natural areas throughout Canada rated according to their priority for purchase. Several organizations have commenced such lists and the Conservancy hopes to contribute by bringing this work together in one document.

I have briefly outlined the Conservancy's history to date and I would now like to give you the Conservancy's idea of where it fits into the broad conservation and recreational picture of Canada. This picture
includes in my view all the conservation and natural history groups throughout Canada, together with all the governmental bodies concerned with parks, lands and forests, and recreational land.

When you look at Canada's situation compared to any other country in the world, you realize that we are very fortunate in that it is still possible for most Canadians to enjoy the natural beauty of their country whether from a natural history or recreational point of view. However, in some parts of the country this picture is changing rapidly largely because of increased urbanization. I think it is fair to say that many city dwellers have never had the opportunity to see an area of their native country in its original state, which for a variety of reasons is an unfortunate situation.

The Conservancy believes that it is of the utmost importance that representative natural land areas of Canada be preserved. The Conservancy believes this because of the change taking place in the quality of our life and landscape. No one can know what the long-term effect of massive doses of fertilizers and pesticides will be with respect to the landscape, although we have been given a fairly dismal guess of what to expect by some commentators. If we continue to treat sections of our landscape in this manner without controls of some kind we may very well be destroying the raw material of many important discoveries which perhaps would have been made by studying for example the organisms living in the soil. The Conservancy also believes that it is important historically and aesthetically to preserve natural land areas. It has been true throughout history that man has a deeply rooted connection with the natural land. The Conservancy believes there must be an effort made to preserve this link and permit natural areas to exist where it may be maintained and strengthened. It is very important that many of these areas be within easy reach of large population centres.

The question which seems to arise a good deal is, "Well, we have
all the space we need, and anyway, don't we have national parks and wilderness areas." We do have these but in almost every case they are at least 100 miles or more from the centres of population in Canada. There are in Ontario, for example, recreational areas within reasonably easy reach of the city of Toronto (within thirty miles), but to a large degree these have been groomed within an inch of their lives and offer no real example of the original landscape.

In the best of all possible worlds (Conservancy style that is), there would be large national parks including natural land areas and suitable recreational areas immediately abutting every large population centre in the country so that people would be able to form an easy relationship with their natural landscape. It is unlikely that this will ever occur. Therefore, the Conservancy must try and acquire these natural areas where it can find them and its most strenuous efforts in this regard must be in the heavily populated areas. This is a matter of priority and does not mean that the Conservancy is not also interested in furthering the preservation of more remote areas.

The Government of Ontario through its Department of Lands and Forests has prepared a list of approximately 600 natural land areas in the province which they believe are of significant interest from a scientific, aesthetic or general interest point of view. Yet no department or government agency at the present time has the authority or funds to purchase more than a few of these areas. Most are in private hands and depending upon the circumstances of the individual owner will be retained or disappear in the years to come. There is no national private organization other than the Nature Conservancy of Canada interested in acquiring these areas as part of a planned program. However, I should point out that many local conservation groups and natural history clubs are making heroic efforts to acquire certain areas for the use of the club or group. The situation is similar in other provinces.
The next question which arises is, "What is the Conservancy's relationship now and in the future with the various government bodies and private organizations concerned with conservation and natural history matters?" The Conservancy of course realizes that there are many people making great contributions in the private conservation field throughout Canada. In many cases, however, they have not had access to any source of funds or advice other than local in the carrying out of their objectives. The Conservancy's idea is to attempt to be a central organization which would be in a position to give advice and make funds available on a direct grant or loan basis to local groups for use in a natural land acquisition program. In looking at any requests for funds the Conservancy would have to satisfy itself that the area in question was suitable for preservation. In each situation presented to it there would be different factors which the Conservancy would have to consider such as the threat of development to the area, the natural significance of the area in terms of its representative or unique value, and other factors relevant to the situation at that time. It is necessary for the Conservancy to examine areas carefully prior to committing funds to their purchase as the Conservancy will have only limited resources compared to the opportunities that exist for the expenditure of its funds.

Because the Conservancy intends to exhibit careful scrutiny with respect to areas brought to its attention does not mean that it is not interested in all the problems associated with this question. In fact the Conservancy intends to give help and advice to the limit of its physical and financial capacity.

In the private sector, then, the Conservancy's policy is to cooperate with all local conservation groups and, where necessary, take direct action itself.

The Conservancy's policy with respect to government entities is
also one of co-operation. There are many government agencies, both provincial and federal, involved one way or another in land acquisition for various conservation purposes. One of these known to you all is the Wildlife Service of the federal government. In the event that a property was brought to our attention which was of interest to a government agency, the Conservancy (assuming the consent of the owner), would try and work out an arrangement with the agency as to the title and use of the property. In some cases it might not work out because the government policy in this area might not be continued and a private land owner might want his land to be owned by the Conservancy directly. The basic point is that there should be discussion between the Conservancy and the various government bodies to avoid any duplication of effort where possible. In some cases the Conservancy might take options on desirable property to later pass title on to a government department. Because it is a private organization the Conservancy can probably move faster in an emergency situation and I think it is fair to say that, where key areas were threatened, the Conservancy would make every effort to step in and take options or other steps until another organization, governmental or private, had time to consider the situation.

It is clear that our priority task is to develop a long-term program which will include the preparation of an inventory of areas which may require protection. Such a scheme assumes that criteria have been developed for the identification of the types of areas in which the Conservancy should take an interest. We are working at the basic principles of such criteria but a refined policy statement in this connection will only be possible when we have had more experience with the diversified Canadian landscape. In general, we feel now that our primary concern should be with two types of areas. First, a series of areas representative of the characteristic natural landscapes of Canada. Such a collection would constitute a reference series or museum
of ecological conditions across the country. Secondly, we will probably concern ourselves with the preservation of unique areas of special scenic, scientific or educational significance, with areas supporting rare and endangered plants and animals, and with those remnant representative areas in danger of destruction.

We will not be especially concerned with the purchase and preservation of areas which are of primarily local interest or with areas which are not of value as part of the representative collection mentioned previously. We will, however, be glad to co-operate with local groups interested in preservation by giving advice, and perhaps, administrative and financial support by loan or in some other way.

We recognize, of course, that we are not the first organization to recognize this need or to take action. We are but one of several private and governmental agencies concerned with the conservation of samples of the landscape. For example, the various Canadian committees working in the International Biological Programme are active in carrying out an inventory of possible areas for research purposes and as permanent ecological references. We will have to develop liaison with these organizations and others sharing our interest to determine where best we can use our experience and resources. We are anxious to discuss joint participation with anyone who wishes to protect areas of the kind that interest us.

The activities of the Conservancy so far have been limited because of limited funds and the time necessary to recruit a board and develop a coherent national program. While we are not yet the owners of a far-flung national collection of interesting natural areas, we do own some property, we have established a national board, raised some funds, and are actively seeking more and, probably, most important, we have gained experience and are developing contacts which will make the Conservancy an increasingly effective agency year by year.
THE NATURE CONSERVANCY IN VARIOUS PARTS OF THE WORLD: ACCOMPLISHMENTS AND DIFFICULTIES
Maria Buchinger*

INTRODUCTION

The private conservation organization is emerging all over the world as an essential factor in national and international policy making and programming decisions. Recently, in March, 1968, the I.U.C.N. (International Union for Conservation of Nature and Natural Resources) held in Argentina a Latin American Regional Conference on Conservation of Renewable Natural Resources. Among the four topics on the program was "The role of private organizations in the development of conservation programs." One of the delegates stated that he would like to establish a conservation organization in his country but could not make up his mind which would be more useful and urgent: a society embracing the entire field of conservation to promote a better general understanding, or an organization dedicated exclusively to the acquisition and protection of natural areas—modelled after The Nature Conservancy in the United States of America. A discussion of the issue determined that the two types do not exclude, or substitute for, but

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rather complement each other, as both of them are needed in all countries where sound conservation principles are to be implemented.

EXPRESSED CONCERN FOR NATURE PRESERVATION

As early as 1964 the special committee for the *International Biological Programme* (I.B.P.) of the International Council of Scientific Unions discussed the working plan of Section A-III (Productivity of Terrestrial Communities, Conservation) and stated that:

*I.B.P. presents an opportunity for a much broader, world-wide program of nature preservation for biological research. It is understood that I.B.P. is not to undertake a preservation action program, but to inventory and give scientific appraisal of the natural areas of the world.*

In *I.B.P. News* No. 2 the Selection of Sites and Communities is discussed:

*The sites little modified by man, which owe their productivity to natural selection, provide a valuable base against which to evaluate the effects of human activities on natural resources. These sites are being so rapidly destroyed, modified or polluted that it is a matter of urgency that some be preserved and studied as soon as possible.*

*The Sixth World Forestry Congress* in Spain in 1966 combined proposals made by the delegations of Uruguay, Chile and Argentina in the following resolution:

*The study of the natural ecosystems is the solution to many of the biological problems of pure and applied science. Great scientific wealth would be represented by maintaining a cross-section of natural areas in the different ecosystems of the world. The Congress, accordingly, recommends to governments to establish or develop national parks or equivalent areas and to help private organizations in their efforts to conserve important natural areas.*

*Geneticists promote the conservation of genetic stock and "type areas" as they are scientifically desirable and economically significant. These areas are set aside for the specific purpose of future collecting, always respecting the principles of sustained yield management.*

Darnell and Darnell\(^3\) maintain that:
if we preserve remnants of each type of natural community our children will find many new uses for the species we save and some of the uses may be critical to their survival. . . . The plants and animals of each region constitute a major natural resource, a national and regional treasure which must be guarded. Natural area protection is a matter of national concern. It can not be left to chance.

Regional planners are becoming aware and alarmed by the disappearance of natural areas and stress that:

further refinement is needed in aspects of open space other than outdoor recreation, such as the conservation of unique natural and historic areas, wetlands etc. . . . and the function of open space in structuring communities within the metropolitan area.  

"Natural Areas in Regional Planning" was one of the topics of I.U.C.N.'s 1968 conference in Bariloche. It is well known that the general purpose of I.U.C.N. is to:

promote or support action that will ensure the perpetuation of wild nature and natural resources in as many parts of the world as possible, not only for their intrinsic cultural or scientific values but also for the long-term economic and social welfare of mankind.

The Interamerican Travel Congresses and the Pan American Highway Congresses constantly include among their recommendations those which relate to the preservation and maintenance of samples of the original landscape and renewable natural resources.

On a smaller scale many specialized societies (botanical, biological etc.) and a variety of conservation organizations are concerned about the disappearance of natural areas.

Where a large area of unique beauty or special biological interest is endangered, it might be called to the attention of the country's National Park Service. However, individuals as well as national and international societies mainly limit themselves to pointing out the way for possible action, as they are usually not organized for a practical follow-up of their recommendations where those involve land-saving. For example an ornithological society might call attention to the fact that the drainage of a swamp endangers the nesting and resting
ground of certain species. But the species are not saved until a land acquisition and preservation agency, such as The Nature Conservancy in the United States of America takes the necessary steps and acquires the area and also provides for its perpetual safeguarding.

HISTORY OF THE NATURE CONSERVANCY IN THE UNITED STATES OF AMERICA

The Nature Conservancy had its origin in a committee of scientists within the Ecological Society of America in 1917. This "Committee for the Preservation of Natural Conditions" undertook a comprehensive inventory of the natural environments of the North American continent, together with a survey of all natural areas then known to be safely preserved. This resulted in the publication in 1926 of the monumental *Naturalists' Guide to the Americas*. This was the first large-scale attempt to compile information on existing natural habitats of scientific value. The Committee also took action to have set aside many areas from other uses. Among the successful efforts it led, were the establishment of the Glacier Bay National Monument in Alaska and of Porcupine Mountain State Park in Michigan. Through the persuasive efforts of biologists in government services or universities and colleges, it had widespread influence on governmental policies and research programs.

In 1946, members of the Committee formed an independent organization, the Ecologists' Union. In 1950 it adopted the name "The Nature Conservancy." This name was inspired by the establishment of a Nature Conservancy in Great Britain. There, however, it is not a private organization as is The Nature Conservancy of the United States, but an agency of the government.

In October 1951, The Nature Conservancy officially became a member-governed, non-profit corporation, incorporated under the laws
of the District of Columbia, and began to seek private donations for its support. It launched projects to save natural areas. It raised funds for their purchase, accepted gifts of land to establish biological sanctuaries. It entered the field of owning and maintaining nature preserves.

Until 1968 The Nature Conservancy had been instrumental in having 85,000 acres set aside as sanctuaries and preserves in the United States of America. Representatives, chapters, and local committees help carry on Nature Conservancy activities. Projects to preserve specific areas are normally financed by local efforts through gifts and donations, with technical advice and loans from the national organization.

The Nature Conservancy works closely with other conservation and scientific groups both in the private and governmental sector. On a co-operative basis it has acquired some 10,500 acres for the United States Forest Service and has assisted many state park systems in acquiring natural areas.  

The excellent results accomplished by this organization prompted interest in other countries where societies inspired by The Nature Conservancy were set up.

PROJECTS AND ACCOMPLISHMENTS IN OTHER COUNTRIES

According to the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere:

The expression "National Parks" shall denote: Areas established for the protection and preservation of superlative scenery, flora and fauna of national significance which the general public may enjoy and from which it may benefit when placed under public control.

The United Nations World List of National Parks was prepared by Professor Harroy who in this monumental work sets the standards according to which areas can qualify for national parks. Following
these criteria obviously there can only be a limited number of national parks in each country and alternatives have to be found to safeguard other interesting samples of open space.

Where possible, The Nature Conservancy and similar organizations encourage the preservation of samples of the following:

1. All stable natural vegetation types, such as forest types;
2. Aquatic habitats, including ponds, lakes and streams, seashores and coral reefs;
3. Areas for species which are in danger of becoming extinct;
4. Vegetation maintained by biotic activity, such as grazing by ungulates;
5. Familiar vegetation types that require management for their maintenance, such as certain types of burned savanna which are maintained only by fire;
6. Physiographically active situations, such as beaches, dunes, marshes and cliffs;
7. Areas distinguished by natural beauty and open space.

The size of the area has no limit; a unique stand of mosses in a cave less than six feet wide is worth preserving as well as 12,000 acres of wetland. Sample natural areas, however, should be of such size and extent that an adequate degree of protection and preservation can be provided for the type of feature being safeguarded.

Thus, for example, the Colombian Orchid Society is selecting and establishing sanctuaries for all native orchids, and their example has inspired Resolution No. 10 of the Bariloche Conference:

CONSIDERING the serious decline in the distribution of orchid species, of cactaceae, bromeliadaceae and succulent plants in general in many parts of Latin America, AWARE also that the main reasons for this decline are modification of the habitat and the uncontrolled collection of these species, the I.U.C.N. Latin-American Regional Conference on Conservation of Renewable Natural Resources, meeting at San Carlos de Bariloche, Argentina, on 2 April 1968 RECOMMENDS Governments to select and establish sanctuaries for their native species and to enact any required legislation. Based on this recommendation non-profit private
organizations of other Latin American countries are already surveying their flora to establish small nature preserves. Some of these are so unique and remarkable that they will be distinguished by the governments and listed in the "Natural Landmark Register."

In Chile S.P.A.Ch. (Sociedad Protectora de Areas Chilenas) is making arrangements for the perpetual safeguarding of the "Palmas de Ocoa" at the foot of Cerro La Campana, which famous palm grove was described by Darwin in 1825. Incidentally the name of the group "Society for protecting Chilean Areas" was selected because the members felt their projects should not be restricted to undisturbed wilderness areas but also include agricultural relics, gardens and orchards from the times of the conquerors.

As a general rule, primitive areas which have not been affected by man are very rare, but any piece of open space which is allowed to remain undisturbed by human activities becomes, after a few years, a good representative of natural processes. Only part of the El Cabo nature preserve in Costa Rica is covered by virgin forests, but the large tracts of second growth vegetation are also valuable as they provide refuge for many forms of wildlife, in particular birds.

Near Cosmapolis in the State of Sao Paolo, Brazil, the original vegetation has recuperated along the river in the last fifteen years partly because of the efforts of a zoologist who reintroduced trees and shrubs and partly through the natural reinvasion of plants and animals. It is evident that open space is especially valuable in and around cities and therefore efforts are made by far-sighted conservationists to preserve it regardless of its present degree of naturalness.

University professors in Argentina are worried about the disappearance of the natural landscape as it hinders the ecological research and diminishes the teaching resources of natural sciences. They encourage the creation of land acquisition and preservation groups
who help to set up networks of ecological sample areas in the various provinces. These efforts could be compared with those leading to the establishment of California's Natural Land and Water Reserve System.  

Usually governmental-land-holding-agencies are appreciative when they are approached by private non-profit organizations who request with well documented petitions the perpetual preservation of certain areas. Such motions have the political appeal of public support. When the land destined to become a park or reserve under public administration is not owned by the government, the private group's assistance in the natural area acquisition program is also well taken, as non-profit organizations can act swiftly and with great flexibility. Here we should recall the efforts of The Nature Conservancy in Japan, which stimulates land preservation in densely populated areas.

DIFFICULTIES TO OVERCOME

De facto land-saving is a most difficult task as it involves a multitude of biotic, legal, social and economic factors spread out in space and time. As we have expressed previously:

Legal provisions for the perpetual protection and management of an area must be established in the most clear-cut terms. All attempts to interfere with, or change the status of the area must be forestalled. The reverter clause is a valuable tool to keep lands from being used for purposes other than those intended. This clause, which is written into most agreements of The Nature Conservancy in the United States when land is turned over to governmental agencies or cooperating local groups for maintenance, provides, that unless the present conditions continue to be fulfilled, ownership of the land reverts to The Nature Conservancy. Thus, no wild rivers can be dammed, no meadows turned into playgrounds, no forests used for experimental burning.

To cope with the task of perpetual protection and management of natural areas, the land-saving organization has to be able to acquire lands and also to have the means to effect its "watchdog" mission.

An individual interested in the preservation of a certain natural area—or in preserving areas in general—has a difficult task pursuing his goals. Even if he owns the land and makes provisions in
his will for its perpetual preservation, there has to be a "watchdog" trust or agency to assure that future generations are aware of, and will respect the donor's wishes.

To influence other people and especially legislative and administrative decisions relevant to land preservation, individual voices are not enough; they are heard only when they join together. Where no such organizations exist, a person concerned with land preservation can use his energy and enthusiasm most efficiently by becoming an entrepreneur and starting a land acquisition and preservation organization. The first step is to look out for potential members and leaders. It is essential to have among its founding members men and women representing a vast range of talents, scientists, lawyers, business men, writers and so on. Such a variety is needed as long as the organization is new, small, and without funds and the free assistance of prestigious members of the community is indispensable.

Obviously not all who are concerned with conservation problems possess the qualities of leadership to organize for a fully-balanced effort, and often they set up organizations whose membership is concerned about only one aspect of land-saving (usually the scientific one).

In many countries the legal formalities of incorporating a new society form a cumbersome process. To avoid this, conservationists consider it simpler not to set up a new organization, but to approach an existing group; in other cases established conservation organizations spontaneously offer their help for the purpose of land saving. This however, should be avoided because if the existing group has been active it has probably acquired the reputation of being a pressure group. Obviously in countries where the conservation consciousness is in the developing stage, conservation groups have to be militant to be effective. Then, if they become interested in land-saving, it is not easy for them to overcome their public image and create the
harmonious atmosphere which is needed for a fruitful co-operation with governmental agencies. On the other hand, if the incorporated agency which is asked to take over land acquisition projects has a background of hardly noteworthy activities, it will be in a difficult position to inspire confidence and attract supporters.

The establishment of an independent organization with the single purpose of preserving or aiding in the preservation of different kinds of open space is fundamental. We have to stress over and over the single purposeness of the organization because it is quite frequent that though a society is established specifically for land acquisition, afterwards its members, chapters or leadership become involved in other conservation campaigns and thus impair the effectiveness of the group.

The importance of being relevant has always to be kept in mind. This attitude does not harm the conservation movement as there are other groups which are set up especially to pressure public agencies, influence legislation and criticize bad practices.

Another obstacle to the successful perpetuation of wilderness areas is the confidence of many conservationists that momentarily favourable conditions might become prevalent in the future. "Do-it-yourself" land-savings by universities, museums and others without intermediations, reverter clauses, or landholdings of a watchdog organization are often faced with problems, when, later on, a new administration is presented with urgent alternative land use requests such as for roads, sport fields, building space, etc. The same problems might arise when a conservation group receives the permission to use an area which is set aside for military or other purposes. Whenever an area is considered worth saving, all necessary steps for its perpetual protection should be taken at the beginning to preclude
such dilemmas.

The cliché that every organization is as effective as its members make it, could well be modified to "every group is as effective as 'the delayers' among its membership let it become." Volunteers who accept responsible missions or positions and then do not find time to write and answer letters, fulfill their commitments, or who by their absence prevent board meetings from having a quorum, are well known in all kinds of organizations, but become especially dangerous in land acquisition programs where timing and congenial co-operation are essential. In several countries groups similar to The Nature Conservancy, after a promising beginning, could not continue full fledged activities as too many prominent "delayers" were in their midst.

Exaggerated local patriotism might also create problems. A local group may be very effective in acquiring and protecting a specific tract of land. When, however, such a project committee is the first in its country and considers itself a national organization without taking on the responsibilities of heading a nationwide land-saving movement, the entire country is damaged, as it is legally impossible in most countries to set up a second organization with the same goals.

The preservation of areas has to be a national concern.

International agencies might be helpful in pointing out the value of certain areas which should be preserved. They can give encouragement and guidance to national groups and also provide the necessary means to finance certain projects. It should be kept in mind, however, that the lands which are being saved belong to the people of a country whose sovereignty should be respected and whose laws abided by. Leading a successful land-saving campaign has to be done by a national organization.

CONCLUSIONS

When discussing and comparing the accomplishments and difficulties of land-saving organizations all over the world, it should be recognized that most of this pioneer work is done under extremely
diversified and critical conditions.

In highly sophisticated countries and around metropolitan areas the value of each acre of open space as well as the pressure for alternate uses is tremendous. Nevertheless it is exactly under such circumstances that concerned citizens are most willing to form action groups to save the last remnant of a forest along a highway, or a few acres of land along the city creek.

Not only the urban areas, but the sparsely populated regions of planet earth are undergoing rapid changes. Watersheds are altered, deserts irrigated, marshes drained, forests burned, bulldozed or otherwise "developed," sand dunes and prairies are afforested. Some changes might be beneficial, other of doubtful value, but all of them are irrevocably altering the ecosystems which originally characterized the area. The plea to save, wherever still possible, samples of the unmodified landscape is coming from many and for a variety of reasons. To transform the plea, or demand, into viable documents and action programs, is the arduous task of those who live or work in and for the wilderness, together with far-sighted, patriotic citizens all over the country who cherish their natural heritage for the sake of its esoteric and materialistic values.

The achievements and difficulties of national groups should be well known to all who work in similar fields in other countries, or for international conservation agencies. Success stories might provide inspiring examples, and new approaches could easily be copied or adapted elsewhere. Publicizing failures is one of the most selfless and courageous forms of international co-operation because it helps to avoid the recurrence of costly mistakes. And in the field of conservation all mistakes are costly. To help other countries to preserve and protect samples of their original ecosystems might be basically even less selfless than it seems at first sight. The
meaningful motto of the First World Conference on National Parks

"National Parks are of international significance" could be broadened to include all permanently protected areas. They are irreplaceable, unique manifestations of the complex biosphere we should enjoy and learn to understand.

FOOTNOTES


11Ibid.
INTRODUCTION

The primary purpose of this paper is to provide conference delegates with information on the contribution to planning and implementation of programs in outdoor recreation resource development available to the provinces under federal rural development legislation. Both the strengths and weaknesses of present programming will receive attention, and the author will query the type of federal-provincial programming which in future could better serve both the economic needs of rural areas and the outdoor recreation needs of Canadians and their visitors, while complementing the programs of national parks.

To put the rural development program into perspective, it may be useful to summarize here some of the services related to outdoor recreation offered in the provinces by other federal agencies. Several provide direct services. The Department of Transport manages waterways for boating; the Department of Public Works builds marinas
and public wharves; the Department of Fisheries develops and manages fishery resources; the Canadian Wildlife Service is responsible for migratory waterfowl; the Indian Affairs Branch assists Indians in developing recreation resources; the Fitness and Amateur Sport Directorate supports a variety of recreation programs; and the federal Tourist Branch promotes tourism and undertakes travel research.

Other agencies with research and/or national policy obligations related to outdoor recreation include the water division of Energy, Mines and Resources, the Atlantic Development Board, who have just concluded a major tourist industry analysis of the Atlantic region, and the Dominion Bureau of Statistics, who are now examining the need for domestic travel and recreation data.

Each of these agencies is making a useful contribution to the understanding, development or use of Canada's recreation resource base, and is increasing its scale of operation to keep pace with the growing demand. However, the scope of each is necessarily narrow. Prior to 1965 no single federal agency other than National Parks was involved in a broad way in outdoor recreation programming. Since then, the programs of the Rural Development Branch have also assumed major significance.

The federal-provincial A.R.D.A. agreement allows federal cost-sharing in a variety of rural development projects related to outdoor recreation. New legislation in 1966 established a fund for rural economic development, now commonly referred to as F.R.E.D., which provides for a more comprehensive approach to the development of large areas. Inventories of land capability for recreation and wildlife are underway across southern Canada to provide data basic for planning in both of these programs.
Background

The failure of rural areas in many parts of Canada to provide their residents with family incomes that were reasonably in line with those of urban dwellers became increasingly evident as Canada entered the 1960's, after a decade of unprecedented national economic growth. This evidence prompted the senior governments in 1961 to pass broad rural development legislation and to enter federal-provincial agreements for its application in a program commonly called A.R.D.A. Designed primarily at its inception for agricultural communities, it was soon broadened to apply to any rural area defined as disadvantaged according to such criteria as average annual family income and level of education.

The A.R.D.A. agreement now in effect was signed in 1965 to cover a five-year term; it provides for federal assistance with provincial programs directed towards rural social and economic development and conservation of natural resources. Each province has established a provincial A.R.D.A. office and all projects are either initiated by that office or are submitted to it by other departments for provincial approval and submission to federal A.R.D.A.

Outdoor Recreation

Sections of the agreement providing for research and "Rural Development Areas" are most pertinent to provincial recreation resource development. The commitment of federal A.R.D.A. funds under the agreement from April 1, 1965, to July 1, 1968, totals roughly $6,200,000 and is distributed among the provinces as indicated in Table 8. Perhaps ten per cent of these funds have been used for various types of studies and surveys under the general heading of research.
The remainder have been used for the development of recreation facilities, primarily in provincial parks. It should be noted that A.R.D.A. funds under the present agreement are available for recreation development primarily in designated Rural Development Areas. Most of British Columbia, southern Alberta and southwestern Saskatchewan are excluded. Research assistance is not normally subject to this restriction, nor is assistance under other sections of the agreement with some, but limited, relevance to outdoor recreation.

### TABLE 8

FEDERAL FUNDS COMMITTED TO RESEARCH AND DEVELOPMENT OF RECREATION AND WILDLIFE RESOURCES UNDER A.R.D.A. AND F.R.E.D. FROM APRIL 1, 1965, TO JULY 1, 1968

<table>
<thead>
<tr>
<th>Prov.</th>
<th>A.R.D.A. Agreement</th>
<th>F.R.E.D. (b) Agreement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nfld.</td>
<td>258,000</td>
<td></td>
<td>258,000</td>
</tr>
<tr>
<td>PEI</td>
<td>315,000</td>
<td></td>
<td>315,000</td>
</tr>
<tr>
<td>NS</td>
<td>226,000</td>
<td></td>
<td>226,000</td>
</tr>
<tr>
<td>NB</td>
<td>233,000</td>
<td>6,300,000 (c)</td>
<td>6,533,000</td>
</tr>
<tr>
<td>Que.</td>
<td>742,000</td>
<td>9,225,000</td>
<td>9,967,000</td>
</tr>
<tr>
<td>Ont.</td>
<td>1,838,000</td>
<td>1,770,000</td>
<td>2,608,000</td>
</tr>
<tr>
<td>Man.</td>
<td>1,067,000</td>
<td>1,008,000</td>
<td>2,075,000</td>
</tr>
<tr>
<td>Sask.</td>
<td>1,008,000</td>
<td></td>
<td>1,008,000</td>
</tr>
<tr>
<td>Alta.</td>
<td>293,000</td>
<td></td>
<td>293,000</td>
</tr>
<tr>
<td>BC</td>
<td>190,000</td>
<td></td>
<td>190,000</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>6,170,000</strong></td>
<td><strong>17,295,000</strong></td>
<td><strong>23,465,000</strong></td>
</tr>
</tbody>
</table>

(a) Does not include Canada Land Inventory costs.

(b) F.R.E.D. agreements normally specify the maximum federal contribution available to the province over the 10 year term for each program sector.

(c) Does not include National and Historic Parks Branch funds in Quebec.
The present A.R.D.A. agreement provides for 100 per cent federal input to developmental programs proposed by the provinces to aid registered Indians. A number of Indian bands hold valuable recreation land, and several development projects are now taking shape, designed to provide jobs, training and revenue for Indians. The program requires provincial initiative, and therefore gives the province the opportunity to fit each project into the provincial plan. Such a project may relieve the province from providing similar facilities for the same public, assuming the standards of development and maintenance by the Indians are adequate. Increasing investments in this area can be expected.

Problems

A program such as A.R.D.A. may interfere with the realization of the objectives of the outdoor recreation planner or the park systems planner. It may influence a province to direct its efforts and development to those parts of the province eligible for grants, rather than those parts best serving provincial recreational needs, or it may influence a province to undertake development without adequate research and planning. Because grants are available for development, but not for routine planning, administration and future operating costs, a province may be influenced to expand its plant without the capacity or the willingness to increase technical staff operating budgets accordingly, thus weakening the entire system.

It is perhaps partly because of these problems that some provinces are inclined to use A.R.D.A. assistance in outdoor recreation development only for the eligible part of their routine annual capital program. In such instances, are rural development objectives being achieved? The most used part of the A.R.D.A. agreement requires that projects "increase substantially income and employment opportunities"
locally. It can be argued that this requirement is not being met if no additional development takes place as a result of federal A.R.D.A. inputs. Furthermore, once a project proposal is approved in Ottawa, the responsible provincial agency may treat it as any other part of its program, and make few if any special provisions in implementation or in future operation because of local economic needs. The same arguments apply to development work in other sectors, and a major criticism of A.R.D.A. has been that all too often it has merely accelerated spending in ongoing provincial programs.

Some provinces have been encouraged by the Rural Development Branch to commence preparation of master plans for recreation resource development on a province-wide basis with A.R.D.A. financial help. Effective programming has been hindered pending availability of C.L.I. data and demand data. Prospects for the future in these respects should be much brighter. Some provinces, of course, either already have satisfactory master plans or have their preparation underway.

THE FUND FOR RURAL ECONOMIC DEVELOPMENT

Legislation to complement the A.R.D.A. program with the establishment of a fund for comprehensive rural development was enacted early in 1966 and the F.R.E.D. program came into existence. Planning for comprehensive development had been underway under the A.R.D.A. program, and application of the new legislation was possible immediately. A separate agreement is needed for each area, which defines the area, outlines the strategy, indicates the objectives and levels of development expenditure in each sector of the plan and defines the cost-sharing arrangement.

F.R.E.D. agreements provide for much more comprehensive development of recreation resources than does the A.R.D.A. agreement. Program allocations must, however, conform to a comprehensive plan based on
adequate research, and recreation resource development must be inte-
grated with other program sectors of the total plan. Again, the pri-
mary objective is to attract new revenue and to create new jobs, but
the provision of amenities for local use may be eligible as well. The
sharing basis is subject to negotiation for each element of the pro-
gram, but the federal share is normally well above the fifty per cent
which obtains in most cases under the A.R.D.A. agreement.

Four F.R.E.D. agreements have now been signed since the fund was
established in 1966. The first, with New Brunswick for the Mactaquac
development on the St. John River, provides for total development of
a major provincial park recreation facility, plus historic restorations
and other lesser projects. A second New Brunswick agreement in the
Bathurst area places little emphasis on recreation resources. The
third agreement, with Manitoba, covering the Interlake area, provides
for substantial development on the west shore of Lake Winnipeg.

The Gaspé Plan, signed with Quebec this spring, provides for
the development of visitor centres at three key locations around the
coast, several resort areas, provincial parks, and land acquisition
for a national park, plus improvement to numerous salmon streams.
Development by the National and Historic Parks Branch of Quebec's first
national park is also written into the agreement. Fairly heavy high-
way construction inputs are separate from the recreation and tourism
sector.

Funds committed by federal A.R.D.A. directly to recreation de-
velopment in these four plans total roughly $17,000,000, distributed
as indicated in Table 8.

F.R.E.D. programs are intended for the comprehensive development
of large areas which can be considered by some criteria to be economic
regions or sub-regions, and which are primarily rural in nature. From
the recreation planners' point of view, the area may be sufficiently
large to permit a systems approach to park planning, or the planning may be sufficiently well funded in future to permit a systems approach to be adopted in planning for the larger unit—the province or region—which includes them. Thus some of the dangers of programming under the A.R.D.A. agreement can be avoided. On the other hand, programming tends to be much bolder, and the desirability of fitting F.R.E.D. plans to province-wide plans, or better still, nation-wide plans for outdoor recreation, is very clear.

CANADA LAND INVENTORY

Objectives, Scope and Progress

The resource specialists and planners who gathered in Montreal early in 1961 for Canada's Resources for Tomorrow Conference stressed the need for systematic inventories of resource capabilities. Thereafter, early in the application of the rural development legislation, the dearth of reliable information about the nation's land resource base constituted a major obstacle to planning for development programs. The Canada Land Inventory was conceived in response to these demands and was approved late in 1963 as a national A.R.D.A. research program to map "the agricultural settled parts of Canada and adjoining areas which affect the economic and employment opportunities of rural residents," and classify them "according to their physical capability for use in agriculture, forestry, recreation and wildlife and their present use." By 1965, when the program was in full operation, a total cost estimate of $18,000,000 had been reached, classification techniques in each sector had been tentatively developed jointly with the provinces, boundaries had been tentatively set to incorporate an area of roughly 1,000,000 square miles, or forty-five per cent of the total
land mass of the ten provinces, the end of 1970 had been agreed upon for completion, and arrangements had been worked out to enable the provinces to conduct the mapping program at federal expense, with federal A.R.D.A. obligated to develop a national geo-information system to handle the data.

At this point, programming is generally on schedule, the geo-information system is only weeks away from being fully operative in terms of retrieval, land capability data are being fed in, and small-scale capability maps are being printed in colour and distributed (in the agriculture sector only to date).

Wildlife Capability

The natural capabilities of land and water to produce waterfowl and ungulates are being classified separately. Each classification system comprises seven classes and is based primarily on the productivity of soil and on climatic factors, with the spatial distribution of landscape elements such as surface water, cover types and protective features figuring prominently.

Sport fishing is recognized to have economic significance for rural development in some areas, and an approach has been developed, and is in use in some provinces, to classify inland water for natural capability to produce sport fish. This is a reconnaissance type of survey designed only for planning purposes and its results will not normally be published.

Recreation Capability

An approach was developed for the classification of land according to its natural capability for outdoor recreation without benefit of precedent or pertinent research for guidance. Influenced by A.R.D.A. objectives for rural economic development, the C.L.I. chose to use as a basic criterion in rating land the intensity of use, or the amount of
use per unit area per year which a recreation land unit is judged to be capable of generating and sustaining. The technique ignores existing access and other market factors peculiar to any location. It rates land units capable of intensive use, such as bathing beaches and good ski hills, much higher than those suited to dispersed activities such as alpine meadows or good hunting grounds. Seven classes or levels of capability are recognized.

In addition to level of capability or class, each unit is classified according to the types of activity to which it is suited or to the recreation features it contains. Popular activities or features which are most dependent on inherent characteristics of the land or water are given prominence. Thus cottaging, skiing, family boating and bathing, fishing, etc., are recognized, while picnicking, riding, ski-dooing, walking and driving for pleasure have relatively little influence. Water is not classified as such, but its capability for recreation is reflected in the classification of the land adjoining it.

Applications

Although the entire Canada Land Inventory program was conceived and designed to serve the needs of the planner, it must be acknowledged that the recreation land capability classification system is designed primarily to meet rural development rather than park system planning needs. It places less emphasis than the park planner would prefer on physical description, the aesthetic quality of physical environment, and the overall evaluation of groupings of related land units. However, when the recreation and wildlife capability mapping is completed, planners will know with considerable accuracy the number, extent and distribution of many critical types of land unit. The geo-information system will allow rapid measurement of area, length of line or corridor and number of points of any designated type within whatever boundaries
the planner wishes to use.

The natural capability data will remain a relatively stable base against which less stable demand and market data can be viewed from time to time for use in the planning process. It will form a key component of the supply data necessary to the nation-wide study of the demand for outdoor recreation being reported separately to this Conference. The other component of supply data, an inventory of recreation facilities and present recreational land use, is also being undertaken in most provinces with C.L.I. or A.R.D.A. assistance. It is designed for use in the C.L.I. geo-information system.

Recreation capability data will indicate fairly clearly, in provinces such as Alberta and British Columbia, the location, quality, nature and extent of key recreation resource lands which could be brought into use to provide opportunities for recreation to complement present national parks. The data should be useful as well to private investors interested in finding high-quality natural attractions for commercial development. Those conducting the inventory in British Columbia, where mapping has reached national park boundaries in places, are greatly impressed with the quality of the attractions they have encountered outside the parks.

IMPLICATIONS FOR THE FUTURE

The present federal-provincial agreement under which A.R.D.A. operates terminates March 31, 1970. Between now and then another agreement will probably be negotiated under the present or a modified agricultural and rural development act. The impact of new policies of new federal government leaders is very likely to influence the new agreements considerably, and at the time of writing, the nature of these influences is unknown. In spite of this uncertainty, serious thinking
about the future relationships between rural development and outdoor recreation is clearly warranted. Current growth of outdoor recreation and of its economic implications ensures that it will increase in significance in rural development. There is every possibility it could play a much more prominent role in a future A.R.D.A. agreement with some provinces than it plays at present.

It has been suggested that some of the problems faced by both provincial parks agencies and federal A.R.D.A. might have been avoided had grants for outdoor recreation resource development been made conditional upon the preparation of provincial master plans. This requirement was used to good advantage by the U.S. Bureau of Outdoor Recreation in the administration of its land and water conservation fund program. It would hardly have been practical in Canada in 1965, considering the lack of necessary data on both supply and demand related to outdoor recreation, even had the rural development agreement signed that year appeared to warrant such a stringent and time-consuming stipulation. However, the picture for 1970 will be quite changed and province-wide plans would no longer be an impractical objective.

Much recreation supply data and data to indicate in a general way future demands for recreation opportunities will be available by 1970. Complementary research into more local demand trends is already underway. One of the major interests of planners and perhaps of A.R.D.A. in the results of demand studies will be the future needs for rural land resources for outdoor recreation and wildlife management. In what parts of rural Canada is a recreation land bank necessary and feasible? Are the unit costs of land already beyond the point where expenditure of rural development funds could be justified in the interests of sound land management, and of economic benefits to be realized perhaps a decade to a generation later?
Plans being prepared or discussions now initiated suggest the possibility of a further five F.R.E.D. agreements within the next year or two. Still others are being mooted. The prominence of recreation resource developments will vary widely, but no comprehensive rural development plan in Canada is likely to omit the sector entirely. Data on which to base planning are rapidly becoming more adequate, but more attention may be needed to the measurement of economic benefits from inputs to the sector if government is to justify continued heavy investment of rural development funds.

Other benefits which cannot be measured in immediate dollar returns are known to accrue to well-planned recreation development. These vary from one situation to another, and may include the attraction of industry, or of private investment, as well as the provision of amenities for the enjoyment of residents, all of which are within the legitimate objectives of F.R.E.D. planning. However, better economic indicators of the tangible benefits are badly needed.

CONCLUSIONS

This paper has outlined in a general way the contribution of federal rural development programs to outdoor recreation in Canada, and has mentioned a few of the problems and possible implications for the future. In conclusion, three points might be stressed.

1. The Rural Development Branch is perhaps the federal agency with the greatest present need to be concerned about regional or national plans and policies respecting outdoor recreation resources and their development. It is in the strongest position to encourage and influence provincial park systems planning, and indeed, is obliged to do so to ensure that rural development funds are spent wisely.
cial plans must be in harmony with regional and national plans and policies. For a paper last fall to a joint Canadian and American conference of foresters, the writer had been asked to examine the machinery for intergovernmental and federal interdepartmental co-ordination in outdoor recreation programming in Canada, and was obliged to admit "... there is no one (federal) agency with a mandate to provide national leadership. The recognition given to other renewable resources at the federal level, such as agriculture, forestry, fisheries, wildlife and water is slow in coming to outdoor recreation." The editors of Park News recently deplored the lack of a national policy and of national leadership in outdoor recreation in Canada, and provided evidence of the costly sacrifices being made. Basic data necessary to regional and national planning and policy formulation are rapidly becoming available. The need for federal organization to use them effectively is critical.

2. There is a natural tendency among parks and wildlife people and conservationists to assume that economics has little practical application to their type of publicly financed programming—that expenditure decisions must be based on judgments unrelated to economic criteria. Efforts to replace judgment with monetary measurements have generally led to discouraging results. And now, badly needed funds are becoming available in Canada provided that economic benefits can be assured; and the decisions respecting the allocation of these funds are likely to be influenced more and more by economists.

Techniques for measuring economic benefits from development
of outdoor recreation are urgently in need of greater attention.

3. The availability of reliable and comprehensive data on land resource capability for outdoor recreation and well-founded indications of demands, the preparation of provincial park systems plans and the development and articulation of national plans and policies, both undertaken with full knowledge of present national parks policies, could unquestionably do much to solve the problems which national parks now present to various public and private interests. Recreation capability data alone will do much to indicate to thinking people the reasonable alternative divisions of responsibility for outdoor recreation between federal, provincial, municipal and private agencies.

FOOTNOTES


INTRODUCTION

We are planning for leisure when much of the world is still looking for food; we are planning for leisure when much of Canada is still groping with the probing problem of regional disparities. Hardly out of the settlement stage and its inheritance of over-exploitation and colonization, we are confronted by the "super-problem" of leisure which until recently had but a strangely distant, abstract and somewhat guilty connotation. Have we really reconciled our Judeo-Christian ethics with the social and economic pressures of this last third of the twentieth century?

These are questions which affect all of us as individuals, independently of the role we play in our society. From the viewpoint of intergovernmental public service, the problem becomes too real and complex to permit easy identification, and its boundaries seem infinite. Yet we are in a position to observe and assist in the gradual efforts

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made by governments to find viable solutions.

I shall therefore confine my remarks to an overview of what governments in Canada are doing in planning for leisure, focussing on outdoor recreation as it relates to other uses of the environment. But perhaps I will be allowed to introduce briefly the organization which I represent.

THE CANADIAN COUNCIL OF RESOURCE MINISTERS

In 1961 the Resources for Tomorrow Conference was held in Montreal to establish a means for assessing our knowledge in the conservation and the development of our natural resources. This conference, sponsored by the federal government but involving the ten provincial governments as well recommended that some provision be made for a continuing review of resource problems and policies to assist in liaison and consultation.

As a result of this recommendation, the National Steering Committee for the Conference was reconstituted as a permanent council. This was the origin of the Canadian Council of Resource Ministers.

Since it was a unique innovation in public administration in Canada, the Council had few precedents to indicate how it should operate and what functions it should assume. Its terms of reference are both general and open-ended: in short, to act as a catalytic force to identify common questions and issues as a first step toward the development of a comprehensive resource policy structure.

The Secretariat, as the administrative agent of Council, deals in resource problem definition and tries to evolve a comprehensive information system to maintain an overview of Canadian resource projects, policies and administration. It is therefore necessary to create a set of methodologies as tools for analysis, planning, implementation, and management to serve the needs of the eleven senior governments of
Canada. However, I must stress that we are not a research agency. We do not become involved in detailed scientific and technological investigation. Our primary concern is with the framework of the problem-solving rather than with the specific occurrence of the problem.

The Secretariat in its work has found that there are three key-words that sum up its operations: communication, co-operation and co-ordination. Communications is obviously the most important of these functions. Consequently, we strive to improve communications in the areas of resource management in Canada: among governments, between governments and the private sector, between governments and the public, and also within the private sector itself. We feel that it is only by assuring consistent information on a national basis that we can set the stage for the co-ordination of policy and resource management programs. Each member government retains full responsibility for formulating its own policy but it will have had the benefit of the views of the other ten governments as it drafts future programs.

At this point, I would like to mention a few specific examples of our work program. We have made an inventory and analysis of inter-governmental resource agreements and recently re-edited a report on The Administration of Water Resources in Canada. However, the most important specific task that was assigned to the Secretariat by the Council was the planning and organization of the national conference on "Pollution and Our Environment" which took place in 1966. We are staging in December 1968 an intergovernmental seminar on water problems and we have also under consideration problems such as forestry, human resources, regional development, land tenure, and many others.

At Council's Ninth Plenary Meeting which closed its sessions October 10, 1968 in Halifax, it was decided to hold in 1972 a major conference on the multiple use of our natural resources with special emphasis on outdoor recreation. Council also decided to hold a limited
objective forestry conference in 1970.

THE PROBLEM

First a few thoughts on the fundamental and extremely complex question with which we are concerned: the management of Canada's basic resources air, water and soil. Such factors as conflicting demands on multi-use resources, increasing industrialization and urbanization, disparate regional endowments and needs, joint and sometimes overlapping jurisdictions, all contribute to making this problem not only quantitatively different from the average administration problem in the public service, but qualitatively different as well. By this I mean that the problem of resource managements is so vast and intricate as to defy being broken down into manageable operational elements which can be handled by traditional administrative structures and techniques. The complexity of modern civilization with its rapid exploitation of resources has forced us to take into account the interrelationships among resource concepts and to consider the tremendous social and economic problems caused by this exploitation.

But while our abilities to perceive problems have sharpened, our utilization of the existing social and administrative structures which must deal with them has lagged somewhat. The responsibilities we place upon our governments have grown, but they must still function through a complicated system of overlapping jurisdictions within which it becomes more and more difficult to assign a specific problem area to an exclusive control.

The federal government maintains a large sphere of influence through shared-cost programs, grants and loans. The provinces, however, control much of the allocation of resources to specific projects while the ultimate implementation and administration is often at the level of local government. This may seem an elusive and irrational system, but
in fact it closely parallels the major problem situations we face. Al­
though challenges such as leisure, pollution, conservation, and poverty
require strategic policy, the actual implementation must take place in
the detailed environment of regions, counties and municipalities. It
is possible that society is beginning to believe that such problems,
only referred to as super-problems, do not require a greater utiliza­
tion of administrative structures but demand the creation of radically
new structures for their solution.

However, super-problems, because of their vastness, tend to be
ignored. It is a truism of managerial science that, faced with a high­
ly structured task and a highly unstructured task, the average adminis­
trator will tackle the structured task first, because it is more easily
comprehensible and simpler to deal with.

It would be useful to describe specifically what is meant by a
super-problem:

1. Super-problems are not amenable to "ideal" solutions and no
one solution can ever be claimed a complete success.
2. Goals of particular aspects of the broader problem are often
contradictory.
3. The definition of the component factors and their values re­
main arbitrary in terms of use, user, location and time.
4. Multi-use conflicts are the rule rather than the exception.
5. The controlling conditions of the problem are dynamic.
6. The study of the problem usually affects the interactions of
its components.
7. At least indirectly, cause and effect are inextricably
linked, effects feeding back on causes.
8. All such problems include social values involving images and
attitudes that are largely unexplored particularly within
the decision making process.
9. Super-problems also involve the necessity of making policy decisions that are technically valid, politically desirable and operationally feasible.

These are the elements which the contemporary public administrator should be prepared to deal with when he turns to the super-problem of recreation.

RECREATION

The irony of the Canadian situation is that despite our unlimited spaces and seemingly inexhaustible resources, these have been utilized along a narrow corridor of human settlement. The result of this development has been conflict in resource uses. Since the traditional resources have created large profits, it is not surprising that outdoor recreation has often been considered a residual resource and this has affected the manner in which it has been administered. To some extent, our increased mobility has permitted us to reach out to recreation areas where no conflicts in use are likely to occur. But, in most instances, these have not been sufficient to cover the daily needs of an urbanizing population.

This population must also depend on the urban fringe for its recreational needs. To the extent that recreation is land-based however, such dependence is made difficult by the fact that urban land is seldom a public good. It is the object of the deep human desire to possess.

Privately owned land is of course often available for recreation purposes. But it only places added demands on the existing public recreation lands.
Before the turn of the century, unprincipled overexploitation of our resources was leading us to ruin. Since then, we have introduced the concept of conservation. Was such action inspired by a moral somersault, an economic concern for long-term development or an anticipation of the leisure problem yet to come? What is important is that this uncertain outlook became reflected in our administrative framework. "Parks" became the catch-all word for whatever we thought we might or should do in that elusive business of outdoor recreation. Parks service, parks branch, department of parks or of recreation, at whatever level of the government hierarchy, it served an indistinct but certainly moral purpose in providing some public goods and services vaguely consonant with the interests of the nation. It is the relentless, untiring work of these parks agencies which gives us today the base from which we can build for tomorrow.

The awareness of this situation at the Resources for Tomorrow Conference in 1961 triggered the formation of the Federal-Provincial Parks Conference, an annual intergovernmental meeting of experts which has been responsible for much of the free flow and exchange of technical experience between parks agencies of our eleven senior governments. This group almost single-handedly insured that some of tomorrow's key problems were kept in the forefront. The Federal-Provincial Tourism Conference is another federally-sponsored forum with a more specific concern for the trading aspect of recreation. The Federal-Provincial Wildlife Conference is yet another annual event of long and respected standing, sponsored by the Canadian Wildlife Service, one of the too few defenders of an otherwise dying-out science, ecology.

Two years ago, the C.C.R.M. appointed an Intergovernmental Advisory Committee on Outdoor Recreation whose mandate was to carry out a
reasoned survey of governmental administration, to identify significant problems in outdoor recreation and to recommend what further action could be taken to assist public administration in carrying out its functions knowledgeably and efficiently.

By reasons of the division of powers in our federal state, it seems that a single national outdoor recreation policy could at best attempt to define the national interest and provide a climate for intergovernmental co-operation, since most aspects of outdoor recreation in some way relate to traditional activities that are often the object of concurrent, overlapping or joint jurisdiction. In itself, outdoor recreation may be considered a matter of resource management, i.e. of essentially provincial jurisdiction. The Honourable Jean-Luc Pepin, Canada's former Minister of Energy, Mines and Resources, and immediate past Chairman of Council, rallies the views of many when he suggests that no resource matter can be deemed to be absolutely a federal or a provincial concern but at best essentially so, thereby emphasizing the need for consultation and co-ordination between the two senior levels of government.

We set great hopes in such efforts as the national outdoor recreation demand studies presently being carried out and in a changing outlook towards the problems of regional development. There is still a lot to do but, as I hope to indicate, changing trends are pointing towards an optimistic future.

CHANGING TRENDS IN OUTDOOR RECREATION

Governments in Canada are responding with a number of constructive suggestions providing an insight into their perception of the super-problem of outdoor recreation. While such views and comments as I give here do not necessarily have formal currency, they are indicative of the changes afoot. I should like at this point to give you a few examples
which are discussed in our recent publication on *The Administration of Outdoor Recreation in Canada*.

A close liaison is maintained with the natural resources agencies in Manitoba through a formal Deputy Minister's Committee which co-ordinates recreational use of Crown land and ensures uniformity in management between the agencies involved.

A possible administrative arrangement is a formal regional parks program, offering planning and financial assistance to local governments and municipalities, a major requirement. Where such a program does not exist, there is a tendency to force provincial recreation developments into a regional and local role. A financial assistance program that would share in both capital and some maintenance costs would go a long way in fulfilling this void.

The Province of Newfoundland has emphasized the fact that a basic administrative prerequisite is the compiling of information on all development plans of every governmental department, in this manner, consideration can be given to the probable effect of the projected works on the outdoor recreation potentials involved. There currently exists in Newfoundland a Provincial Advisory Board primarily concerned with urban zoning problems, although it also exercises building and zoning controls on designated highways. It is likely that the representation on the Provincial Advisory Board will be expanded to include additional involved departments.

A further suggestion is a council or committee representing the lands, forests, wildlife and parks agencies, established in order to create a more integrated approach. In addition, this committee could have representation on a wider and more influential board comprised of senior civil servants drawn from the departments associated with resources and recreation.

British Columbia has indicated, as another problem, that public
recreational activity in extra-urban areas lies outside park agency 
jurisdiction, although the situation regarding park administration is 
relatively clear-cut. For example, in general, provincial park agen­
cies administer a system of parks classified by type, purpose, permis­
sible activity, and degree of protection.

The complex administrative problems arise in providing recrea­
tional opportunities in areas outside the existing park systems. As a 
consequence, it is suggested that the administration, for recrea­
tional purposes, of multiple-use land be under the authority of separate di­
visions of parks branches. This added division would be responsible for 
non-park public recreational activity. Any such arrangement would in 
most cases still have the deficiency that the administrative authority 
over the lands concerned would remain elsewhere.

Using the Government of British Columbia as an illustration, the 
best arrangement might be the establishment of a Division of Recreation 
in the Forest Service or a Public Recreation Service in the Department 
of Lands, Forests and Water Resources. This division, or service, would 
administer the extensive recreational activities occurring on Crown and 
other land. The agency could develop and maintain facilities to issue 
and supervise Special Use Permits for the Land Service, it could act in 
this capacity with respect to lands leased for the above purposes. A 
Division of Recreation or a Public Recreation Service could also offer 
advice to resort developers and assist and encourage entrepreneurs with 
an analysis of business opportunities, development standards and opera­
tional techniques. The agency would be in on the "ground floor" of re­
source allocation decisions and management plan formulation.

Should a second agency actively enter the field of providing rec­
reational facilities, it is suggested that an integration Board or Com­
mittee would be required, along the lines of the Ontario example. Cab­
inet Ministers in every government have very heavy workloads. In order
to remove some of this work, a broadly informed Board is proposed. The responsibility of this Board would be to screen proposals and requested actions of government departments, and to study any objection pertaining to these matters. Having the benefit of more detailed study and investigation on the subject than the members of the Cabinet, the Board passes unbiased adjudication reports along to the Executive Council. The Board could include, or be free to call on Deputy Ministers but would include as well representation from university, industry and privately employed professionals. In addition, the laity could be involved where people with a strong interest in natural resources administration occasionally exhibit a valuable breadth of view and understanding of what constitutes the "best public interest." The Board would not have administrative authority but could call meetings, public hearings, and have access to available information.

These examples and problems apply to most of the eleven governments with individual adaptation. Other governments have expressed similar concerns and ideas. Reports identify the establishment of certain new agencies and the reorganization and extension of various existing ones within the present administrative framework.

SOME PRESENT AND EMERGING PROBLEMS

With the increasing demand on our resources to provide recreational opportunities, governments have reassessed the values of their Crown lands, forests and waters. Crown resources are public resources; they are perceived as being a commodity belonging to all, but are often misused. To remedy the situation, it has become increasingly necessary to impose certain restrictions on such areas. For example, the sale and leasing of Crown property for cottage sites are carefully regulated in many areas. In some instances, forestry roads are partially controlled to allow public access, and may eventually be purchased by the
government involved. Protected beaches are increasing in number, and
developments restricted on forest and park margins.

There has been a recognized need to protect certain rivers from
industrial use and development. These "wild rivers," as they are termed
in certain areas, are preserved in order to maintain a high quality of
water for swimming and boating. In addition, to protect the immediate
surroundings, the government acquires considerable shore frontage.

Canadian cities and municipalities are faced with the growing
problem of providing recreation space to meet an expanding urban popula-
tion. In some areas, local resistance to pressures of industrial and
residential encroachments has almost completely collapsed, and resource
potential for recreation has vanished. In other regions, cities are
actively engaged in the expensive acquisition of land for park and rec-
reation purposes, often involving the repurchasing of Crown lands. Where
only this limited supply of public land is available, communities re-
spond by intensifying recreational opportunities. In order to provide
recreational opportunities for a large population, extremely diverse
environments and facilities must be developed and maintained. This sit-
uation is further complicated for the administrators and entrepreneurs
by the extreme "peaking" characteristics of recreational demand. Con-
siderable research is being devoted to off-peak or off-seasonal develop-
ments. Summer-oriented resorts are developing comprehensive winter pro-
grams in order to attract the recreator during that season as well.

Governments have recognized the importance of strengthening the
co-operative relationships between themselves and private enterprise
in the field of outdoor recreation. Co-ordination appears essential if
Canada is going to meet effectively the growing demand for accessible
and reasonably priced outdoor recreational facilities. Where limited
public land is available for recreation, private development should be
encouraged. This has been the case in urban fringe areas, or in
provinces with limited Crown lands, such as Prince Edward Island.

Increased participation in outdoor activities has initiated a renewed interest in the quality of our environment. No longer is a highway regarded only as a means of getting from one point to another. Being recognized as an important aspect of the total recreational experience, the planning process includes programs for enhancement of the highway environment: roadside margins are being seeded and trees planted; underground installation of transmission lines is increasing; legislation is enforcing the removal or screening of automobile graveyards; unsightly premises are being removed or screened from both public and private lands to improve the total rural landscape; roadside advertising is being controlled; fines have been imposed to discourage highway littering; and winding parkways are replacing straight highways in scenic areas. Also in response to the demand created by increased mobility, governments are developing additional roadside rest areas with picnicking and occasionally, camping facilities.

Another instance of protection and reclamation of our natural environment includes the establishment of a refuge system for migratory waterfowl. The Canadian Wildlife Service of the Canada Department of Indian Affairs and Northern Development has initiated a program to preserve Canada's most important waterfowl production areas and enable wetlands owners to share in the revenue produced by the resource. Game sanctuaries and reserves have also been established by both governments and the private sector to assist in preserving the Wildlife resources.

Canada's historical resources are receiving increasing attention. The senior governments have initiated numerous programs to emphasize various aspects of early Canadian life. Each province maintains historical parks or sites, in addition to other park development, and most governments have introduced protective legislation for areas and objects of historical importance.
One emerging problem which could have disastrous results if it is not controlled, is pollution. Increased urbanization and industrialization have contributed to this problem that is presently damaging and jeopardizing both existing and future recreational development. Recent legislation and development of programs for pollution abatement illustrate the concern of governments across the country.

Another trend in recreation thinking is to consider it as part of the larger problem of leisure in a technological era.

CONCLUSION

In conclusion, it is hopefully clear that super-problems such as recreation and leisure are not insurmountable. We have mentioned some of the difficulties which inhibited action but we have had a look at what governments are doing and more particularly at the increasing evidence of co-ordination and co-operation. The public and private sectors must continue to work jointly and the public at large should be more involved in the planning process. There is much more yet that we can do.

We certainly should know more about our environment, particularly now when most of us live in urban centres; we should restore to full stature the sciency of ecology; we should ensure a conservation education and not simply mouth a few pious verbalizations to that effect. We should put much greater emphasis on the social sciences, on geography, sociology, economics. We must also make attractive any profession that is related to the interaction of man and his environment whether in government or out of it. All government departments that have anything to do with the leisure syndrome must be made conscious of the critical, even if marginal, contribution they can make to a viable solution.

We certainly have not reached the point where there is a necessity for cliff-handing crisis responses to the problem but that is not
to say that the problem is remote. The problem is very real and demands action.

An appropriate ending to these notes might be to recall the words of Niccolo Machiavelli in *The Prince*, chapter III:

Thus it happens in matters of state; for knowing afar off (which it is only given to a prudent man to do) the evils that are brewing, they are easily cured. But when, for want of such knowledge, they are allowed to grow so that every one can recognize them, there is no longer any remedy to be found.
Summaries and Discussion

Chairman: G. Henderson

Panellists: W.A. Hartwell, C. H. Harvie, L. Hamill, F. A. Lewis, 
M. Buchinger, C. S. Brown, C. de Laet, C. Sauriol, 
D. Anderson, C. R. Tilt

SUMMARIES

HARTWELL: (Mr. Hartwell summarized his paper on The Parks of 
Saskatchewan.)

HENDERSON: Our next paper will be from Mr. Harvie who will speak on 
The Provincial Parks of Alberta.

HARVIE: (Mr. Harvie concluded with the following remarks.)

We have taken a good look at ourselves and we realize that we do 
not basically have a parks program in the province which could be 
said to really lead to a parks system. So, we have turned around 
and are now evaluating the situation. We hope that we can integrate 
our program into the total picture of outdoor recreation in the 
province. Our organization has been relatively small but we are 
acquiring some very young, very interesting and some very dedicated 
individuals who, I think, are going to do a great deal in the area 
of providing this parks system. 

Although we represent probably the lesser government in the 
administration of parks in Alberta, we do not necessarily have the
lesser role because in meeting the needs of the populace the national parks may even depend upon us to take the pressure off them. Their existence might be a success depending on our ability to assist them in this need.

HENDERSON: Thank you very much Mr. Harvie. I was very interested in your comments on the need for getting a total plan for outdoor recreation in the Province of Alberta, presumably including the impact of the national parks and the need for ongoing co-operation between the federal administration and the provincial administration. As was pointed out, what happens to the national parks, in this province particularly, depends very much on the programs and policies and degree of co-operation between the province and Ottawa.

HAMILL: (Dr. Hamill summarized his paper on Outdoor Recreation in the Calgary Region: Problems and Potentials.)

HENDERSON: Our next speaker is Mr. Tilt who will speak on behalf of the Ontario submission. Dr. Pleva who has contributed a paper on The Parks of Ontario is not able to attend the Conference.

TILT: My position as Secretary of the Parks Integration Board puts me in a situation where I can view both sides of the story, so to speak. I can see the technical end of it, but I also see the political and decision end of it. And one thing which is extremely evident when you are able to see from this viewpoint, is the emotional nature of park matters. Parks are, I think, one of the more highly emotional factors that we have to deal with. This shows up quite strongly in presentations to our Parks Integration Board by outside organizations and by technical people from within the park field. For example, when Ontario Hydro makes a presentation, one spokesman comes to the meeting. The one spokesman carries everything. If there are other comments by other people
accompanying him to a presentation, they speak through that one person. On the other hand, when we have people coming in from the parks—perhaps there are four people who come in to make a presentation—they make it a point to see that all four people have a chance to say something. You can see the emotional feeling amongst this group.

I think we should start to have some thoughts in our presentations regarding park matters about speaking through one spokesman. We all have something to say, but in getting across our presentation, we often contradict the person who spoke before us. From the political standpoint, if you can get people to contradict themselves at a meeting, well, that is all you need. If they cannot agree among themselves, certainly there is not much point in taking action on it because you are going to create more problems. This never happens in an organization where timber is involved, where hydro is involved, where water impoundments are involved, where drainage projects are involved. They speak through one spokesman as one voice.

In Ontario we are carrying out studies of new recreation areas. We hope to go into this in more detail so that we can point out, from both a use and a natural resource standpoint, the locations of new parks—whether they are needed, where they are needed and when they will be needed.

C.S. BROWN: (Mr. Brown summarized his paper on Federal Rural Development Programs and Recreation Resources.)

HENDERSON: I will now call upon Mr. de Laet to speak on The Canadian Council of Resource Ministers.
The Canadian Council of Resource Ministers has many features by which it is unique and some of them are deplored by the ministers who sit on it. With respect to what Mr. Tilt has just said about his position as secretary of a ministerial council, I can only think that he has a very easy job because at least, all his ministers belong to the same political party. Working for eleven governments that belong to eleven different political parties complicates the problem.

The Council was born out of the Resources for Tomorrow Conference and has spent a fair amount of time in trying to find out what is vocation should be. That vocation undoubtedly is in the areas of communication and co-ordination between the eleven governments. The governments made quite sure that there was no empire in the process of being built by establishing right from the start an absolute maximum of eleven people to the permanent Secretariat of the Council. And the fact that it has a permanent Secretariat is a unique feature in such an intergovernmental body.

Now, the fact that we have such a small staff immediately precludes that we should take a specific interest in the occurrence of any one problem in the resource development field, or that we should accidentally move into a field which has already proved that it needs another organization. The early Canadian Commission of Conservation by accidentally absorbing or taking over some of the prerogatives of the individual government that it was meant to serve—mainly the federal government—led to its own irreversible path to suicide. The Council is a purely consultative body and what we are supposed to do is try to bring out some philosophical precepts for the better use of our environment and to try to achieve a certain amount of co-ordination. I say "achieve co-ordination" because it is really obvious that co-ordination is not an activity
by itself. You must realize the futility of declaring that, "I am going to co-ordinate you, sir." I think rather that the name of the exercise is "communication."

Now, what I have noticed in outdoor recreation is that very often—and it does not matter how many governments, or what kind or level of governments we are looking at, or other agencies—when we are dealing with such an elusive yet pervasive concept as leisure and outdoor recreation, we are immediately confronted with a suspicion that a lot of groups—using "group" in the sociological sense—are adopting postures which tend to preserve their own institutionalized and very often, colonial patterns and traditions. These postures completely preclude the possibility of these groups making more than a verbal attempt at solving problems. These pious verbalizations often confuse the issue and very often the people in Canada who, for the last sixty or seventy years, have worked selflessly and relentlessly at keeping this notion of outdoor recreation in a world which was going right against them.

We have just finished the Ninth Meeting of Council in Halifax and Council has declared for 1972, or shortly thereafter, a large national conference on the multiple use of our natural resources with special emphasis on outdoor recreation.

(Applause)

Thank you. We also have a limited objective forestry conference for next year or the beginning of the year after, which would also touch on some of the subjects that might interest this assembly. Also, I have been instructed to carry out a survey of the practices which guide land administration in Canada.

LEWIS: (Mr. Lewis summarized his paper on The Nature Conservancy of Canada.)
BUCHINGER: (Dr. Buchinger summarized her paper on *The Nature Conservancy in Various Parts of the World: Accomplishments and Difficulties.*)

PANEL DISCUSSION

HENDERSON: I will ask Professor Duncan Anderson to make his remarks and right after that, I will throw the discussion open to the panel.

ANDERSON: Firstly, I think, if we are to be effective planners in our various responsibilities, there is a great need for us to see parks and recreational facilities from the user's point of view rather than solely from our own organizational framework. In this context, it might be helpful if we sometimes thought of the term "open space" or "open space for recreational use," rather than solely using the term "parks." If we thought again, from the user's point of view, of the idea of open space for recreation experience, then this includes the many categories of parks and semi-parks and somehow avoids some of the difficulty of terminology that we get into.

In his paper Dr. Pleva made a basic point about the characteristics of parks and open spaces in that they are, as he described, "fragmented and multi-layered." In other words, there is a diversity of recreational functions and facilities which exist in most of North America, ranging all the way from private enterprise—the Coney Island type of thing—to the other extreme—a wilderness area, perhaps in a national park. In these are a variety of overlapping responsibilities, overlapping jurisdictions, and a variety of types of recreational needs. I think we need to see this as an interdependent system of recreational spaces, perhaps a hierarchy in some cases. What is done in one park whether it is a local, regional, provincial or national park, may have a very profound effect on the use patterns in other park areas.
Recreationists are faced with a variety of alternative opportunities; and just to echo Dr. Knetsch, what people do in the way of recreational activity is influenced very strongly by the alternative opportunities that are available to them.

In relation to national parks, the intervening opportunity of provincial, regional or local parks can have a very definite influence on the use and demand for the national park areas. If we manage in our cities to improve our elbow room and living space, this too, may have an effect on the demand and pressure on national parks.

Interrelationship of recreational spaces puts a tremendous onus on the various agencies which are in the business of furnishing recreational space. You cannot achieve optimum planning to meet this leisure-time phenomenon if it is done in a vacuum. As a geographer, I think the greatest crime any one of us who are in a planning function can do, is to think of his particular system in isolation. One such example is the Rideau Waterway, which Dr. Knetsch mentioned yesterday.

The Rideau is a historic, very attractive, scenic waterway which is becoming increasingly used for recreational boating; linking Kingston, an old capital, with the present national capital. Considerable attention is being paid now to the development potentialities for recreational use of the Rideau, but there is a tremendous overlapping of provincial and federal agencies and departments that have some interest or responsibility with the Rideau.

A couple of years ago, Roy Wolfe drew up a list of sixteen or seventeen agencies or branches of government departments in Ontario—and this included some federal departments—that were involved in outdoor recreation. When we took a look at the Rideau, I counted twenty-seven different branches, departments or govern-
ment agencies which had direct or indirect interest or concern with this Waterway.

All this points up the tremendous need for--I was going to use the word "co-ordination" until Mr. de Laet put it in better perspective--so I use the word "communication"; communication between the various groups and agencies who are involved in recreational space planning; communication on an interdisciplinary basis within the universities, between universities and government departments. We need better communication interdepartmentally, interregionally, interprovincially, and last but not least, we even need communication between the planners and the public.

HENDERSON: We need more than communication. We need some new institutional arrangements both at the federal level and in the provincial governments. The point was brought out by Dr. Milton yesterday, and I made some reference to it in my paper, that it is very vital that as soon as possible some kind of agency be developed in Canada which is similar to the Bureau of Outdoor Recreation in the United States. It is not just a matter of communication between existing organizations, it is looking at new institutions to deal with new situations.

ANDERSON: I would like to ask Professor Hamill if he thinks there are any limitations, difficulties or hazards with the public hearing as a means of conveying planning information to the public.

HAMILL: In Canada the whole job of running the country cannot just be left to the civil servants. There has to be some participation by people; there has to be an increasing sophistication by the people of Canada about the problems that they face. I think that there is a rather arrogant attitude by civil servants in Canada about their use of resources. They feel that they are their resources and that
they are not the people's resources; they do not believe in the
concept of public resources. It certainly has been very obvious, from
my experiences anyway, that there has to be some feeling of responsibility
on the part of civil servants that it is not their property that they
are handling—that it is our property.

HENDERSON: I am going to pass to Mr. de Laet now.

DE LAET: We owe the government institutions a debt but we should assist
them in discharging their further obligations by giving them a wider
umbrella within which to work. The very constructive work that is
being done should be done. Certainly, the remark concerning the
territorial imperative which is being exercised by some civil servants,
is completely correct. You would think sometimes when you walk through
a park or a recreation area that this is the private property of the
administrator, who cuddles to this domain with great care and rejects
any attempt by the public to use it as an expression of the social
advocation of leisure.

It is also evident in the competition between the various levels
of government in how they manage territory: "I will show you that my
park is a bigger and nicer park than yours"—whereas some municipalities
who have urban pressures to provide spaces are stymied by lack of
finances and the difficulties of getting a co-operative system in order
to purchase land ahead of needs. There should not be such a cleavage
between the municipal government and the government of the province
or the federal government, as if they were three different hostile
entities watching each other like china dogs on each side of a
mantlepiece, and espousing with great delight diametrically opposite
policies just to annoy each other. This is not how we are going to
run this country.

Now, perhaps I am a bit out of line by putting too much
emotion into this but I live through this thing on a day-to-day basis—and not just between federal and provincial governments, I assure you. There at least, you have some sort of maturity which proceeds from having the same type of noble traditions in public service. But when you get down to the local areas, where politics are a greater way of life with everybody—the detailed environment of municipalities, counties, and regions—you have problems.

We really must cross bridges. We must throw open a network of communication between these people and as Gavin Henderson suggested, if we need to distract attention from internecine feuds by setting up a new administrative or institutional arrangement, that may be its largest single benefit.

There are still people who think that in order to fight for forty-pound trout one hundred feet downstream from a paper mill, they have a lobby in Ottawa. That is not where the problem is going to be solved; it is a problem of having a local forum for the expression of local preferences and reconciling competing needs to the best interest of all. In many instances, these problems can be solved with a bit of good will.

HENDERSON: Thank you, Chris. Now, I am now going to ask Mr. Hartwell, who is a civil servant, how he reacts to these accusations.

HARTWELL: As I indicated to you before, as far as Saskatchewan is concerned, we do feel that there is a distinct lack of understanding of the federal role in terms of recreation within our province. We have one national park, Prince Albert National Park. There is no really serious overlap as far as that Park is concerned—it really does not concern us. In fact, we have been forced into the position in Saskatchewan of providing all of the alternatives and we feel very, very, pleased that the federal authorities will be developing
additional national parks—and we expect they will not overlook Sas-
katchewan.

But it seems that in terms of Saskatchewan people particularly, the need for satisfying their recreation needs does centre on the province. We have tried to dissipate this to a certain extent with our Regional Program. It is helping. We are getting some local responsibility and some understanding—and we have not, as yet, attempted any form of public hearings. We have not come across any major problems that have forced us into this particular position.

HENDERSON: Thank you, Art. Mr. Harvie, do you have any thoughts on the subject of co-operation on an ongoing basis between the federal parks administration in Alberta and the province—which seems to be particularly needed, more so perhaps than in other provinces. I think the audience would be very glad to get your views on this.

HARVIE: When I read Dr. Hamill's paper first, the hair went up on the back of my neck.

(Laughter)

But everybody is entitled to their own opinion and he has got some very good ones, although I disagree with some of his thoughts on rural recreational developments.

We get into some very, very interesting discussions in the Federal-Provincial Parks Conferences. The federal group really brings to the provinces a lot of sage advice, a lot of areas in which we can really work. However, we go back to our offices and the humdrum of everyday existence, of trying to keep up to the paper work, and the majority of us in provincial parks—if I am judging by our own provincial perspective—do not have the staff arrangements to follow these things through too far.

I do feel, though, that the Federal-Provincial Parks Conference
has been one of the greatest benefits to the provincial parks organizations in getting their thinking on to the overall recreation needs of the country.

TILT: The main function of the civil servant is to carry out the function of government business but so often, we are asked to act as referees. We get suggestions from many quarters—often conflicting suggestions—and it falls to the civil servant to make the decision on these things or to recommend a decision to his superiors. Over a period of years, a civil servant who is called on to act as a referee is going to develop the feeling that this is his own field; this is his own place. He makes the decisions and for this reason, some of us sometimes may appear that we have considered the field our own.

Many times also, we have so few facts to base decisions on that we have to find the facts as well as make the decisions. It would certainly help us and help their cause a great deal if facts were well sorted out before we get them.

HENDERSON: Ches Brown?

C. S. BROWN: I would just like to add a little bit further to the response that has already been made by the provincial people to the inevitable accusation, and I certainly have heard it many times, that civil servants do tend to have a very covetous attitude toward whatever it is that they manage.

I am a civil servant. I am not a resource manager in any sense because there are not many resources managed by the federal government, certainly not outside of a few agencies like national parks. But I say, "Thank God," for the dedicated park manager, the dedicated resource manager, who is usually a civil servant. I feel that you cannot be dedicated to a physical thing like a park without taking a very personal pride in it and viewing it with a good deal of
selfishness.

HENDERSON: Dr. Buchinger?

BUCHINGER: Mr. Tilt was pointing out the need of having a common front.

I would like to add that it is not only important that at any hearing or anywhere, that the conservationists should have a common front, but that this front should be worked out very professionally. Unfortunately, the conservationists who do speak often lack many fundamental bases and this weakens their point.

Last year, at a national parks conference in Venezuela, which turned out to be a sort of hearing, people who own some land near one of the big national parks had their own group with excellent lawyers, and they had read far more about national parks—what they stand for; they knew about the World List and so on—than those quite emotional people who were defending the park. Now, this was a very embarrassing situation as Professor Harroy smilingly agrees. Therefore, I feel that while amateurs are very helpful in certain aspects of the conservation campaign, when it comes to serious business, we should get together and have professionals.

I have another comment and I am afraid that I do not agree with Mr. de Laet on several points. First of all, I feel he does not have the right perspective for his own organization when he belittles it. I think it is one of the best organizations ever formed here because, as you know, I am a sort of professional gossip and when I hear that something good is done in one country, I immediately send papers about it to other countries. Two other countries have already imitated it quite successfully and it works. So you see, you do not have the right to speak lightly about what you are doing.

DE LAET: A book called *The Administration of Outdoor Recreation in Canada* has been put together by the Council of Resource Ministers and
you have no idea how incredibly complex the administration of outdoor recreation is. This survey was put together by an agency which has no vested interest and caused a lot of departments and branches within departments of governments to make a fairly critical self-analysis as to whether they had really explored all the terms of the acts which enabled them to operate.

In many instances, they suddenly discovered themselves responsible for some aspect of outdoor recreation which they had comfortably neglected for the last \( x \) number of decades because there had not been any money in it or political profit for their minister, or a wide variety of reasons. We found that many people who were formally supposed to be doing something about outdoor recreation were doing very little; and we discovered many down-trodden fellows who had been working for years, honestly trying to cover the waterfront but with the flimsiest terms of reference and only with great dedication. So, we must not neglect those people. Thanks to them we still have a few conservation and recreation areas here and there.

The fact that these people, in the course of a survey brought these things together and started talking to each other, is already a large measure of the benefit of doing this co-ordination from without. This is the distinction I would like to emphasize: when you say that this is a consultative body, a super body, you must make very sure that you completely emasculate the body from any possibility of power, authority, or empire-building. You must give it absolutely no operational function, no administrative responsibilities, not even a shade of an executive function at all. Why? Because then it can only exercise its mandate by consulting among people who will have to work together. That is, you do the consultation but outside the system. Where you run a terrible risk is when the co-ordination is done from among people who have normally
a vested interest in protecting their own view.

HENDERSON: Very interesting distinction to make and I think it might clear some misunderstandings.

DISCUSSION FROM THE FLOOR

MADSEN: On the matter of civil servants, I happen to be from California and have been living in the Okanagan Valley for four years. I discovered that there was a band of California bighorn sheep there but that none of these sheep had any area set aside for them at all in British Columbia. There were not any parks in the area, which is a unique one.

We started an Okanagon Similkamean Parks Society and we have purchased eight hundred acres of land now for the bighorn sheep. Happily, the civil servants that I have worked with there are all behind us.

HENDERSON: Dr. Fuller.

FULLER: If Professor Hamill had not used the word "arrogant," I would not here. I am now an academic who has spent about half his professional career in the civil service and half as an academic. I would address this question to Professor Hamill. I happen to think we have a good professional civil service. I think it could be better, but I would ask him whether we will make it better by directing these sorts of snide remarks at it, or by directing our best graduate students into the civil service. I would like to ask Professor Hamill whether he is in fact directing any students into the civil service.

(Applause)

HAMILL: Yes, I am, and I am very much interested in doing this and so is our department. I would like to add that the reason that I made that remark is as a result of a great deal of frustration over
a period of five years. In that time we have attempted to work closely with various government agencies and have been continually rebuffed in a most irritating and, in my mind, short-sighted and stupid way, because there is a fact of life in Canada that is very obvious to an academic who is handling a reasonable number of students.

The fact is that there is a very great shortage of trained people and every university has a lot of people on staff who are capable of assisting. We have offered our services as professors and also, we have tried to structure graduate students' studies which would be related to the great many problems that exist in the country. The impression of arrogance that I get is a reflection of this experience. I am sorry but that is the way life is.

CLAWSON: I have had some experience in the American scene on the federal level and I should tell you that I am now an elected city official, so I see it at the other end of the scale.

Now, this whole problem of the relationship of the citizen, the civil servant, and the elected political leader is certainly one that pervades every society and every government. Many of the things that have been said here have been said and can be said, in every other country at every time. It is a long, pervasive problem and there is no simple, single solution.

Dedication on the part of the civil servant is certainly an admirable trait. God help us from the man who carries on a job in which he does not believe. But I would certainly go further and say that dedication alone is not enough and can have, as has been pointed out, I think, this morning, sometimes adverse consequences. A man can see his own job as being extraordinarily important and because he knows his own motives are pure, he thinks others who question it may not be quite so pure. I think we can find instances
where dedication has actually been counter-productive to the broad, social ends, at every level of government in every country.

A lot of reference has been made to public hearings and believe me, there are public hearings and public hearings. A lot depends on whether the agency involved seeks the advice and reaction of a group, or whether it is forced into it. And we certainly have had our share of both.

Some references were made yesterday to our Corps of Engineers. It is certainly one of the more impervious federal organizations but it is by no means unique. If you are trying to use the public hearing as a device for forcing a public agency into revealing its plans and giving some chance for reaction—this becomes a political event. It has its very real purposes and may have its very real productivity. There are other kinds of public hearings in which the agency genuinely seeks to get reactions and ideas and suggestions and sentiments in various ways.

Also, as was said yesterday, it is extraordinarily important if you are going to have public hearings, that the whole public be involved. Time and again, hearings which involve natural resources in a local area tend to have one division of opinion locally and quite another division of opinion if you take a broader geographic area. Therefore, if your public hearing really deals with a national program, it ought to have some sort of national coverage.

Now, what I have not heard mentioned here is the administrative device—the advisory board. We use advisory boards widely in the United States and I would again say they run the gamut from being nothing but rubber stamps—quite innocuous and quite useless and not very powerful politically—to the other end of the scale where they are extraordinarily useful and valuable.

Certainly, I know as a one-time public administrator that it
is extraordinarily difficult to communicate with the public. If you genuinely seek this, if your park service people or provincial park people really want to get public participation and public reaction, this is difficult to do. A great majority of the public is uninformed and uninterested and unwilling to put any effort to it, but it is frequently possible to get advisory boards that can be genuinely helpful to you.

They present their problems; you have got to be frank and honest with them; you have got to spend some time with them; you have got to listen to them; you have got to require that they not use their position on the advisory board as a political jumping-off point and so on. But they can be, and I speak now with some experience in this, a really useful device.

HENDERSON: Thank you very much. That is very pertinent.

GOLDSWORTHY: As a United States citizen, I am very well aware of the congressional hearings, Forest Service hearings, Park Service hearings, and I have attended some state hearings.

Many of these hearings were called by the agencies; they wanted to get the view of the public. And I will say in my experience, they got some very adequate views and the views were not always presented by the professional lawyer or professional man. They were views presented by housewives who had done a very careful job of homework and had looked up their facts. So the facts can come from individuals—citizens.

Sometimes we have told an agency when we were aware of a certain plan, that we did not agree with it and have asked for a public hearing. Such is the case in a proposed mining road in the State of Washington. A hearing is going to be called in October, so that the public will have an opportunity to hear the agency's views but the agency will have an opportunity to hear the public's
views.

I would certainly say that in Canada, if such a technique can be instituted—I understand that it does not function as readily as it does in the United States—I am sure it would increase communication and result in a better answer. The agencies would realize that people were looking more closely; they would have to defend their arguments more carefully; the people would get more involved.

HENDERSON: Thank you, Dr. Goldsworthy. Dr. Pimlott.

PIMLOTT: With reference to alternative areas, I feel that our discussion is still being hampered by the fact that we do not accept the realities of the Canadian situation. There is great evidence that the realities of this situation are not faced even by the federal government itself.

The National Parks Policy which I have just consulted, suggests that we should get into a system of National Recreation Areas. The reality of the situation is that, even if we can complete a decent system of national parks, we certainly cannot possibly get into the area of National Recreation Areas without working with the British North America Act.

Mr. Henderson has referred to this in some of his writings in the National and Provincial Parks Association's Park News. We must come back to this all the time. There seems to be such an obvious device but somehow it does not seem to get considered.

No one, I do not believe, thought of the federal government taking over the land when we developed the Trans-Canada Highway system. Yet this is a co-ordinated system which was developed with good standards. It went from coast to coast. There was federal initiative. There is just as much complexity in the development of a road system as there is in development of recreation, but we still had a Trans-Canada Highway system developed under national initiative.
and under national standards.

I think we should have something comparable in a Trans-Canada outdoor recreational system, and there should be great federal initiative in developing this—in establishing standards and in offering funds.

So, I would like to ask Mr. de Laet and Mr. Brown if they see any evidence of a trend at the national-provincial level, of the federal government recognizing the realities of the British North America Act and doing something comparable to the framework established by the Trans-Canada Highway system.

HAMILL: I would like to make a brief remark on that. I would like to give an example of the kind of peculiar situation that has developed out of the current emphasis—which I think is just a purely accidental emphasis—on rural poverty in the A.R.D.A. and F.R.E.D. programs. There is far more money being invested in Alberta in recreational development, far north of the Edmonton highway, than there is along the eastern front of the Rocky Mountains. This is simply absurd.

If you look at the needs of Canadians—the needs of Albertans particularly—the place to put the money, the investment, is along the Rocky Mountain front—not north of the Edmonton highway. And I suggest that if we made a real examination of this, we would find that we were opening up a whole new series of possibilities which would affect all aspects of Canadian life and would certainly have a very beneficial effect on recreation.

J. G. NELSON: The question I would like to direct to the panel grows, in a way, out of the thinking that we had in structuring the Conference—and some of the fundamental problems that face us in land management as a whole. Some people have asked me why is the focus on the national parks? Why not, "The National Parks and the Quality of the Environment?" Why not, "The National Parks and Public Land?"
Why not, "The National Parks and Recreation?"

There are various components involved here. There are people. There is government. There is also the element of land. Yesterday afternoon, there was a session on land use types—types of land use in national parks. And it was quite apparent—although the discussion got deflected to ecological approaches to land management in general—that there were several kinds of land use that had developed in one kind of public land and which were now increasingly incompatible.

Now, how do we set up a structure that will result in a relationship between functions like recreation and other possibly conflicting uses of a given type of public land—and how do we go about relating the recreational or other uses to other types of public land extant or needed?

Now, in thinking about this with graduate students, we have talked about a Bureau of Public Land as a possible way of beginning to structure a National Parks Branch, Historic Parks Branch, and an Archaeological Unit and so forth. But we come then, to the question of a use such as transport—we have previously heard several references to the Trans-Canada Highway passing through Banff National Park. How do you build transport into a Bureau of Public Land?

This then caused us to begin discussing the possibility of a Board for Environmental Quality. Then the question arises as to where this should be—at the federal level, at the provincial level, in the Canadian Council of Resource Ministers? Would the panel care to direct discussion to this rather series of questions? I would like to hear some discussion of how you build a land component and a function component into one system.

HENDERSON: I am going to ask Mr. de Laet to comment on Dr. Nelson's question.
DE LAET: If you look at how land is administered in Canada, you find that it is just an awful circus. We have types of land tenure that would even put feudal landlords to shame. We have problems of "passing the buck" in the urban fringe where fast-moving speculators are just sitting there plucking federal, provincial, and municipal governments of every single feather they can find. Why? Because the governments are just offering themselves for that type of thing.

Since we are living in a country which exhibits great regional disparity, there is hope that the Council of Resource Ministers may bring some understanding of land in Canada and the landholding patterns by carrying out the survey I mentioned a bit earlier. Why? Because, in the survey on the administration of water resources and in the survey of the administration of outdoor recreation, we can prove that nobody in Canada really knew how land and water was administered; and for that matter, how outdoor recreation was administered.

I know that nobody has done any real work on land just because it was not the prerogative of any one level of government or any one discipline. We do not have a Department of Land, as such; we do not have a Department of Ecology; we do not have a lot of departments which now represent the contemporary way of looking at resources. Most of our academic disciplines and our government departments still reflect their preoccupations of fifty years ago. And it is not good career planning or a person who wants to go into resource management, to study outside a recognized department or academic discipline. It just does not make sense. So, we are merely perpetuating ancient postures which are going to lead us to ruin.

HENDERSON: Thank you. Mr. Boggs.

BOGGS: I have two brief comments and one question.

First comment is that I am involved with an organization in
Ontario [Ontario Conservation Authority] which has attempted to institute ideas, several of which have been mentioned here this morning. The local involvement in the Ontario conservation movement is a touchstone of the system and the advisory board concept which Dr. Clawson mentioned, has been utilized within this organization since its inception. Thirdly, the recreational basis of these watershed units are focused particularly to the needs of the urban resident, in terms of day-use recreational activities.

Secondly, the matter of communications; somewhat, perhaps, in defence of civil servants. The Ontario government at the present time has two interdepartmental committees, one which is involved with the provincial obligation to the Federal-Provincial Outdoor Recreation Demand Study. We recognized that this was an absolute necessity in order to co-ordinate the various departments and branches and agencies which had some interest, either direct or peripheral in this ongoing study.

There is a second committee known as the Recreation Liaison Committee, the chairman of which is Mr. Tilt. This is an informal body of recreation researchers and administrators at the middle level, as it were, who recognize the need for communications—constant and continuing communications—back and forth among a multitude of government agencies, in order to ensure that efficiency, communication and lack of overlap, or the overlap, do not get out of control.

Now, I have one question which I would direct particularly to Mr. Hartwell on an idea which has not been mentioned yet here in this Conference—the idea of land banking. We are all faced in government with limited budgets and the budget allowance we have for recreation must be devoted either to land acquisition or to the development of lands which have already been acquired. Because land is a stock resource and because this is something which is
decreasing very rapidly, I would like to inquire whether or not any other provinces have given any attention or thought to the possibilities of devoting the bulk of their funds of a number of years to the acquisition of land which is, after all, a critical issue—and postponing the development of these lands until such time as the system on the ground has reached a point that it may be somewhere near an adequate state.

HARTWELL: In terms of the Province of Saskatchewan, land banking is very essential. We recognize the real values in it, but we do find there is a real reluctance to hold land without using it. It seems to be a real concern in government circles. If we can develop ideas or other agencies can assist us, we have no real difficulties in banking land. But the use factor is a really serious one.

One sector that has been having real difficulties is our wildlife sector. Only recently have we changed the emphasis and we are starting to make some ground in setting lands aside, in terms of wildlife needs. We are making some really good inroads, but we have to develop some criteria, some arguments in terms of use.

HENDERSON: Thank you Art. Now we will have to adjourn but I would first of all like to thank the members of the panel for their presentations. Thank you very much.
THE CANADIAN NATIONAL PARKS:
today and tomorrow

Edited by
J. G. Nelson and R. C. Scace

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Volume II
V RECENT DEVELOPMENTS IN THE UNITED STATES AND OTHER PARTS OF THE WORLD

Saturday, October 12th: Afternoon

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Summaries and Discussion

FIELD TRIP TO BANFF NATIONAL PARK
A short time ago I was in one of those moods and sought escape by reading a book entitled Adventures in the Wilderness, written in 1869 by a Boston Minister nicknamed Adirondack Murray. The good dominie loved wild country and in recollecting a trip on the Raquette—one of the great rivers of the Adirondacks—from life in Boston, said, "as we pause a moment from work, above the harsh rumble of car and cart, the sound of file and hammer, rises the roar of the rapids. And often, through the hot, smoky air of town and city, to cool and refresh us, will drift, . . . the breeze that blows forever on the Raquette, rich with the odors of balsam and of pine."

That was almost a hundred years ago and three years before Yellowstone. But today, as always, things are relative. The Adirondacks aren't really the same as those that Adirondack Murray visited. I imagine what we normally consider wild country today would have sent the Reverend to the depths of his favourite mountains for solitude. And wouldn't you gladly substitute the automobile horn, the jack hammer

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and the sonic boom for "the harsh rumble of car and cart" and "the sound of file and hammer" of that day; and the odour of the diesel truck and jet engine for even his hot and smoky Boston air. But we do have more people, money, mobility, and leisure, and probably, we should console ourselves with these because future generations will have even more and, of course, the problems attendant with them.

I won't even try to predict what things will be like in the United States one hundred years from now. But I do know that much of what we do in the next few years will influence how much of our natural and historic heritage is passed along to the generations of that time and what its condition will be.

Probably at no time in the history of our country have so many factors adversely affecting our natural and historic heritage been at play. But on the other hand, we have a public interest in and a public sympathy for this heritage that is unprecedented, and a leadership wanting to solve the important problems of our times so that future generations can concentrate on their own and not have to worry about those we ignored. As Franklin D. Roosevelt said in 1936, "This generation of Americans has a rendezvous with destiny"; and so do we. As far as parks are concerned, it is time for the best in positive thinking and for sensitivity, innovation, and imagination, and a climate exists today to nurture them all.

Perhaps it was intended that I address myself only to the subject of specific area planning, but I would rather first discuss what might be termed "broad planning," because this is positive thinking at its best. Before doing either, however, just a few words of background on the National Park System of the United States.

**CATEGORIZATION OF NATIONAL PARK SYSTEM**

Our National Park System is categorized into natural, historical and recreational areas, there being 69 natural category areas, 167 areas
in the historical category, and 31 areas in the recreational category. This categorization of our System is basic, yet quite recent. It comes from a policy directive of Secretary of the Interior Stewart L. Udall of July 10, 1964, which recognized for the first time these basic types of areas within the System and that each of these categories required a separate management concept and a separate set of management principles.

The natural area category includes the national parks and monuments whose basic values are scenic and scientific. The historical category includes areas whose historical or archaeological values are of sole or greatest importance. The recreational category includes a variety of units varying from parkways and reservoir areas to seashores, lakeshores and scenic riverways, where primary emphasis is placed on active participation in outdoor recreation in a pleasing environment. Recreational areas are more population oriented than the natural and historical areas which have been set aside because of what they are, not where they are.

We have policy compilations for the natural and recreational category areas; a similar compilation is being printed for the historical category areas.

BROAD PARK PLANNING

Now back to broad planning. If we are to save important natural, historical and recreational areas whose protection is not now assured, we must move ahead aggressively to identify those areas that warrant attention.

In this context, we have conducted broad planning or screening studies to identify possible new areas and assess their relative importance in the context of specific historic and natural themes. The studies of the seashores and the Great Lakes carried out by the
National Park Service during the 1950's, although limited to specific physical features, such as seashores and lakeshores, were similar in concept.

The Service has also co-operated closely with the Bureaus of Outdoor Recreation, Sport Fisheries and Wildlife, and Land Management—other Department of the Interior agencies—and with the United States Forest Service, in somewhat similar nationwide efforts to identify important river, island and trail possibilities which warrant attention at the national level. President Lyndon B. Johnson signed into law on October 2, 1968, bills establishing a Nationwide System of Trails and a National Scenic Rivers System. In a large sense, these laws were products of these broad river and trail planning efforts. On August 3, 1968, the President signed into law a bill to authorize a somewhat similar study of the country's estuaries to consider the desirability of establishing a Nationwide System of Estuarine Areas.

The national import of a natural or historical site is basic to its further consideration as a possible addition to the National Park System. History lends itself readily to a systematic evaluation of the importance of sites that tell its story. The National Park Service divided the field of American history into twenty-two themes covering all major periods of human history from the earliest known Indians to the development of America as a world power. Most of these themes have already been analyzed and the importance and integrity of the related sites have been assessed.

Although we have studied much of the remaining Prairie Biome on a systematic basis, we are just getting started on a thematic approach to the identification and assessment of natural areas. Three such studies are underway—caves; bogs, marshes, and swamps; and the third, a study of sites related to the Age of Reptiles. Others are to
be initiated this fiscal year.

Broad nationwide or theme studies like these are valuable park planning tools because they identify potential and assess relative importance of sites considered, thereby providing basic information needed for a positive program of natural and historic site protection and land acquisition as needed.

Taking the results of broad screening studies, also suggestions from many individuals and organizations, 260 areas have been studied in detail during the past five years to assess the suitability and feasibility of each one for possible addition to the National Park System. During this period, many of these areas have been recommended to the Congress of the United States for addition to the System; and of these, 6 natural, 22 historical, and 13 recreational areas have been authorized.

Recreational category areas, unless they belong to the National Scenic Rivers or Trails Systems or have special legislative recognition, are expected to satisfy certain mandatory criteria--mainly involving population orientation--as established by the President's Recreation Advisory Council on March 26, 1963.

SPECIFIC AREA PARK PLANNING

In contrast to broad planning, specific area planning involves detailed consideration of a particular area, including master planning.

We have all heard much about problems caused by the increasing number of visitors and automobiles to our national parks. What to do about these problems as well as countless others that face park administrators today are often the responsibility of management but, too often, management has no choice but to concentrate on the effect, whereas the real solution depends upon getting at the cause. Sound planning can help identify and do something about the cause.
To better cope with the increasing number of proposed and existing area studies and the requests of the Bureau of the Budget and the Congress for more and better data, the Service's planning organization was changed in 1966. Today, Service planning teams operate from two locations in the United States and draw upon several disciplines as needed, including the park manager, the resource specialist, the interpreter, the historian, the archaeologist, the naturalist, the architect, the engineer, the landscape architect, the ecologist, the park planner, and the lands and concession specialists. The products of these efforts reflect the perspective and input of many different backgrounds and they are much better because of it. Without bias to any one profession, I would like to emphasize the growing importance of the ecologist in park planning as we think, talk and do more in the context of total environment.

Today, we are placing more emphasis on master planning than at any time in the past. The master plan establishes the concepts and guidelines for the preservation, development, and use of a particular park, existing or proposed. Its function is to provide the philosophical basis whereby park use, management, and development are reconciled with the perpetuation of the physical resources of the park. It analyzes the park's resources and their potential for use, it commits management to a broad purpose and specific objectives, and it formulates the concepts and guidelines for the park's preservation, development, and use.

Master plan reports generally comprise four main sections: the regional profile, resource description and analysis, area purpose and management objectives, and plans for preservation, use and development. The plans include drawings covering land classification, general development proposals and land acquisition zoning.

The master plan is the control document that guides and directs
the preparation of more detailed action plans for the various facets of park management and development. It is vital that throughout the study the planners continuously reflect upon this role of the master plan to assure that it will in fact provide the necessary information and guidance for other planners who later will prepare action plans. For a proposed park, the master plan also provides a basis for estimating the costs of land, developments, and operations for presentation to Congress.

Action plans normally consist of the interpretive prospectus, land and water rights acquisition program, resource management plan, history and natural science research plans, developed area plans, and the design theme.

On certain major master plan studies, such as those now underway to update the thinking for Yellowstone, Grand Teton, Sequoia, Kings Canyon, Yosemite, and Mammoth Cave National Parks in a regional context, outsiders are participating as actual members of the team. Here, we have the help of experienced scientists, conservationists, and others, which allows us to take full advantage of their knowledge, while giving them the opportunity to become better acquainted with park problems and to suggest solutions for them.

In studying possible new additions to the National Park System, emphasis is placed on developing and assessing alternatives to help determine the best way to achieve the basic objective for the area. This approach allows the weighing of various possibilities for accomplishing the same objective while also allowing comparisons with competitive uses for the same resource base. Alternative proposals usually vary by size of the area, degree of resource protection and development needed and kind of management, for example, the federal or state level. Some of the alternative analyses may be used only within the Service as they enable a decision to be reached upon a particular
alternative to be pursued in greater detail and presented publicly. In other cases, alternative analyses may be presented publicly to obtain sufficient direction to allow a more detailed study to be made of a particular possibility.

NEW APPROACHES

In a new area, the way is usually clear to propose land use and development in accordance with the best planning concepts that may be developed. New approaches to moving people, for example, may be worked into a plan for a new area much more simply than for an existing area where access and use patterns have been in existence for years. The newly authorized North Cascades National Park in Washington, is based on a plan which provides for the use of tramways to take the visitor into the Park, rather than the development of roads which in this case we believe would be more destructive.

Other changes in approach have taken place. In recreation area proposals, for instance, it has now been recognized that there are well established "other uses" that should be permitted for some time or perhaps in perpetuity. Many of the recent authorizations--Cape Cod National Seashore being the first--recognize that owners of improved residential property within the boundary should be allowed to continue to live there as long as the owner adheres to certain locally established zoning principles which meet the approval of the Secretary of the Interior. The recently revised Land and Water Conservation Fund Act goes even further by allowing lease-back and sell-back arrangements for certain lands in the historical and recreational area categories.

Another new approach involved pulling together a complex of widely separated small units to tell a broad story of national import. The Ice Age National Scientific Reserve proposal in Wisconsin was a
"first" in this direction. A newer version of this approach is found in the legislation for the Nez Perce National Historical Park in Idaho. This project involves a complex of many small separated sites, related mainly to the history of the Nez Perce Indians and the Lewis and Clark explorations but it is not limited to these stories. The law recognizes that administrative responsibility for the lands may be divided between the National Park Service, other federal land agencies involved, the state, and the Indians, in accordance with an overall project plan.

It is usually more difficult to solve problems in existing areas unless the solutions are relatively simple or may be phased over a considerable period of time. The United States highways that criss-cross Yellowstone National Park contribute greatly to the Park's traffic problem. Although it is the Service's hope that such highways eventually will be eliminated for the Park, our plans must recognize that undoubtedly many years will pass before this is accomplished.

Road standards in the national parks have been a subject of considerable controversy during recent years, particularly in these times of great emphasis on the development of roads to get the user from one location to another as rapidly as possible. Park roads are not intended for the same purpose and the Service's road standards publication makes this clear.

Existing area problems may be solved, at least in part, where the decision is solely that of the administering agency. The heavy visitor use in Yosemite Valley is a case in point. To eliminate what was really a sideshow attraction and the resulting visitor concentrations, the firefall was stopped in Yosemite this year. Use of the Valley campgrounds has been limited to actual capacity rather than allow anyone to camp there who could find room—a situation that undoubtedly developed because of the Service's concern over inconveniencing
visitors. We are also experimenting with a one-way road system in
the Valley.

Mr. Robert Cahn, a feature writer for the *Christian Science
Monitor*, recently studied the National Park System of the United
States. In his articles reporting on this study, Mr. Cahn took an
objective look at the National Park System. I recommend that you read
his series because I have seen no better analysis of the park prob­
lems of the United States and their possible solutions.

THE VISITOR

It is becoming increasingly evident that just as we need ade­
quate knowledge on the resources and their relationships, we need to
know more about the visitor and what he is doing in the park. For
example, the lack of this information was glaring when the master plan
team for Yellowstone started to study the traffic problem in detail.

We know that some parks, probably because of the nature of ac­
cess to them or because of their location in respect to population
centres—the transcontinental roads through Yellowstone and the heavy
use of Yosemite Valley by visitors from nearby metropolitan areas—
receive heavy use from a certain type of visitor. The park values
along the road or in the Valley are probably incidental to his desire
to get to his destination as soon as possible or to stay two weeks in
a campground in the Valley because it happens to be close to the urban
area in which he lives.

On the other hand, there are many visitors who use a park to
commune closely with nature as well as to make extensive use of the
back-country. A third category might be the normally large group of
visitors that come to a park, often as a once in a lifetime experi­
ence, with perhaps the park serving as the only one or one of two or
three major destinations of the particular vacation travel. This
visitor wants to see the park but because of his background might not be too interested in back-country travel although he does want to learn more about the park and its natural values.

Although all of these visitors have equal right to use the park, the latter two groups are probably more closely associated with the basic purpose for which these areas have been set aside. It is obvious, I am sure, that each area varies as to its visitor use pattern and this in turn will influence the planner as to what should be done for the visitor.

I sometimes think it would helpful—if somewhat overdramatic—to place one vacant chair at the table whenever park planners sit down to their task. It would serve to remind us that the person to whom our entire effort is directed, is not present to speak for himself. We sometimes fail to see the park visitor for the big trees, somehow overlook the evidence that humans are much more complicated and unpredictable than other organisms of nature.

The programs and activities designed for parklands are meaningless if they do not relate to the urgent social needs of people. Too many parks are being planned by persons one full generation removed from those who will use them, for the majority of our population is under thirty. If we consider parks to be sanctuaries in which people gain momentary serenity, we will lose an incomparable opportunity. For park resources can help shape a consciousness—an environmental awareness—which our visitors can take with them, a perhaps more valuable momento than the ability to identify a spruce from fir.

CARRYING CAPACITY

We talk more and more about the possible need to control the number of visitors to the parks. Our Park System areas vary greatly in size, relationship to population centres, climate and visitation
so the need for visitor controls must be assessed carefully on an individual case basis. There is no sound basis for controlling the number of visitors to a particular park at any particular level unless a carrying capacity based on some logic has been established. This won't be easy as any such determination should assure protection of the resource as well as a quality experience for the visitor. We have recently initiated through the Center for Research and Education at Estes Park, Colorado, a study to identify techniques for determining carrying capacities of National Park System areas. I am sure this study will probably only lead to more definitive study efforts but it is a start.

A few months ago, we prepared a master plan for the proposed Carl Sandburg Farm National Historic Site in North Carolina. The Carl Sandburg Home is the main historic feature, but it is located on 240 acres of farm and forest. The planning analysis concluded that no more than fifty people a half-hour, nor 900 persons a day should go through the house if the visitor was to get a true impression of Carl Sandburg, the man, in this simple setting. The area as a whole and the outbuildings can absorb more visitor use but it is intended to limit the visitors to the home to the stipulated numbers.

Undoubtedly, it is much simpler to establish a carrying capacity for the Sandburg home than it is for a sizeable natural area. It is important to emphasize that the limitation was based mainly on the quality of visitor experience and not on the physical impact on the house.

There is much to be said about Dr. Raymond F. Dasmann's thought as expressed in the February 12, 1968, issue of The Nation, that "Perhaps . . . the answer lies in a different kind of planning; one that takes growth as a variable that can be controlled," but more research and knowledge are needed before we move positively in this direction.
for units of the National Park System, except where management methods such as those applied last summer in Yosemite are possible as interim measures.

LAND CLASSIFICATION AND WILDERNESS

The Outdoor Recreation Resources Review Commission in January of 1962 recommended a land classification system for all federal recreation lands in the United States. The National Park Service is in the process of applying this classification to all lands in the National Park System. The policy publications discuss this classification in detail but I would like to explain it briefly.

Classes I and II identify the lands reserved for visitor accommodations, administrative facilities, formal campgrounds, two-way roads, and other major developments of varying intensities. Class III identifies the natural environment areas; Class IV—outstanding natural areas; Class V—primitive areas, including, but not limited to, those recommended for designation under the Wilderness Act; and Class VI—historical and cultural areas.

The truly irreplaceable resources are identified in Classes IV, V, VI. It is the existence of outstanding natural areas (Class IV), or primitive areas, including wilderness (Class V), or historical or cultural lands (Class VI), in combination with a suitable environment (Class III) and with sufficient lands for the accommodation of visitors (Classes I and II) that distinguish natural and historical areas of the National Park System from other public lands providing outdoor recreation.

Land classification is a positive tool for identifying, recognizing, protecting, developing, and using the various resources within any Park System area. It fully supports implementation of the Wilderness Act since it establishes the basis for identification of lands for
wilderness use as well as for other purposes.

In accordance with the provisions of the Wilderness Act of September 3, 1964, the Service must within a ten-year period recommend classification of possible wilderness areas within the National Park System. This has posed a great challenge because it necessitates updating the master plans, including the classification of all parklands for all areas containing possible wilderness. For the first time, we are considering wilderness as a very precise thing and recommending it on that basis. It is necessary that by the time lands are proposed for wilderness classification, planning thinking be so refined that parklands may be committed to basic kinds of use for that must be assumed for all practical purposes to be perpetuity.

Although wilderness proposals for five National Park System areas have been sent to the Congress by the President, no action has been taken on any of them yet. A question has been raised on some of the National Park Service proposals concerning the amount of Class III land (natural environment zone) bordering proposed wilderness. I am confident that this question will be resolved to the satisfaction of all interests, recognizing that the natural environment zone is a logical dedication of lands whether wilderness is involved or not.

REGIONAL PLANNING

We have heard much about regional planning in the United States as it involves areas of the National Park System. It is obvious that parks cannot exist in a vacuum. Although regional planning has definite value and application to the national park unit, it has too often been advocated solely to reduce visitor use concentrations in parks through encouraging the location of overnight visitor accommodations outside the park. If we are to really gain the full advantages of regional planning, we must consider it in its broadest context, including all aspects
of the total environment.

Regional planning must consider road systems and other means of access, water and sewerage, visitor facilities and services of many different kinds, utility systems, building standards, and esthetics to name but a few. Nor can park wildlife populations be considered alone because many species cross back and forth on to other land and the protection or control of their numbers may often be fully dependent upon what takes place on these other lands. For example, the Yellowstone elk population moves into Montana and Wyoming from the Park, and the caribou and wolves that inhabit Mount McKinley National Park seasonally move out of the Park to lands where they may be shot. Nor can implications beyond the boundary be ignored as far as forest fire and insect and disease infestations are concerned.

The National Park Service, of course, has no authority to plan lands owned or administered by others within the region. Therefore, it must rely on co-operative and co-ordinated planning to influence others to follow land uses which will be compatible with the parks. This can be done only where the local people have recognized the value of planning and have provided a vehicle for accomplishing it.

The Department of Housing and Urban Development, an agency of the Executive Branch on the same level as the Department of the Interior, administers a planning assistance program for state and local agencies. The National Park Service and H.U.D. now are co-operating to encourage communities in regions where parks are located to organize planning bodies and to apply for federal assistance in planning. With funds for planning in hand, communities may engage in joint planning with others. This is a big step forward and we hope to have some of these joint planning efforts underway soon. It is a real start towards an approach which will go far in bringing the many related aspects into the "total picture."
New as well as existing parks create continuing opportunities for development of facilities and services outside of the park to accommodate the visitor. Sound regional planning should recognize and influence this so that it is carried forward in a way that it complements the park and the total environment while taking advantage of their presence.

On June 28, 1958, Congress authorized establishment of the Outdoor Recreation Resources Review Commission. The Commission’s study had great influence on park and outdoor recreation policy in our country since most of their recommendations have been enacted into law. The Commission report of 1962, besides advocating establishment of the Bureau of Outdoor Recreation, now an actuality, recommended a grant-in-aid program to the states for planning, land acquisition, and development. Congress authorized this program on September 3, 1964, through the Land and Water Conservation Fund Act, recently amended on July 15, 1968. Certain federal agencies, including the National Park Service, receive their land acquisition monies from this Fund also. $438,000,000 have already been appropriated by the Congress to carry out this activity. Each state must have an overall State Recreation Plan approved by the Secretary of the Interior before grants from the Fund may be made to it.

Relative to regional planning, it is easy to see how the use of fund monies by the state or federal agencies within a region containing a National Park System unit could benefit that unit by reducing or dispersing visitor uses that might normally have been directed to the park.

INTERNATIONAL ASPECTS OF PARK PLANNING

Park planning has an international flavour also. The Waterton-Glacier International Peace Park requires co-ordinated thinking as does the International Peace Garden, actually more of a joint endeavour between Manitoba and North Dakota than a federal project. We have taken the first steps through co-operation with the Canadian National and
Historic Parks Branch towards preparation of a master plan for the recently established St. Croix Island National Monument, an area in Maine along the border next to New Brunswick—one that has much to do with Canadian history because of its involvement with Champlain.

Possibilities for the future come to mind. Parkway potentials that go from one country into the other or hiking trails that do the same, for example, an extension into Canada of the Pacific Crest or Appalachian Trails, the subject of recent legislation by our Congress.

Certain recreation resources in Canada are not found in the United States in the same kind or amount and the reverse is true also. The seashore areas of Canada, for example, are more like those in the northern part of the United States, whereas seashores in the southern United States, the Caribbean and Hawaii, have recreational values of a type not available in Canada. Our marine parks which are in the warmer seas lend themselves to uses not normally found in Canada. On the other hand, the lake and canoe country of Canada has no equal in the United States and the nature and vastness of your wilderness can only be found in our country in Alaska and to a population some 50 or 100 years hence, you may well have most of the largest remaining true wilderness left in North America.

The great increase in travel between our countries reflects this relationship. Our United States Travel Service estimates that in 1967, 7,600,000 Canadians visited our country for more than twenty-four hours. Undoubtedly, many of these visitors visited national and state parks while they were in the United States.

A visitor use study conducted by the Canadian National and Historic Parks Branch of Fort Wellington National Historic Park in Ontario showed that some 28,800 visitors or 39.7 per cent of a total of 72,500 to the area during 1966 came from the United States. Sixty-nine per cent of all visitors to Fundy National Park in 1964 were from the
United States. In 1962, fifty-one per cent of all visitors to Waterton Lakes National Park came from the United States.

We have taken the first steps to initiate a broad planning effort between our two countries to consider various related interests and what might be done about them. Mr. Joseph L. Fisher, President, Resources for the Future, has gone even further recently in advocating a hemispheric plan for parks and natural areas to cover both North and South America.

CONCLUSION

I have tried to look at what we are doing and intend to do as far as planning of National Parks in the United States is concerned. A park friend from another country told me recently that he was so surprised that we were still planning even though we had already set aside so much park land in our country. We have been most fortunate in this respect because our people have encouraged this program. I advocate it to you because whether we are planning for more or better parks, or for other public facilities and services, we should only be criticized because we have planned too big and not because we have planned too little.
THE WILDERNESS LAW AND THE NATIONAL PARK SYSTEM OF THE UNITED STATES
Stewart M. Brandborg*

It is with great interest and from a background of considerable personal involvement with the subject that I speak to you about the 1964 Wilderness Law and its usefulness in providing statutory protection for the wilderness of the National Park System of the United States. Not only the Wilderness Society, but also many other national citizen organizations and the conservation leaders of our government, regard this measure as a conservation landmark. Since its enactment, the Society has devoted a great part of its efforts to wilderness boundary studies and to co-ordination with local and state citizen conservation groups—the "grass roots" leadership which has taken primary initiative in advancing federal agency wilderness designation proposals through hearings in the field and in the Congress. Because much of the moving force behind passage of the Wilderness Bill came from the citizen conservationists, and because my own direct involvement has been within this sector, I can best describe the effects of the Wilderness Law upon the private individuals and organizations making up the conservation

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movement in the United States.

Changes Brought By The Wilderness Law

The changes brought about by the Wilderness Law in four years can be measured in terms of increased protection of the wilderness resource of the nation, changed attitudes within the National Park Service and other public agencies which administer most of our remaining wilderness lands, and the enthusiastic involvement of conservation-minded citizens in public land management decisions to preserve these wild lands.

The experience of conservationists in the 1950's, when they battled well-financed and politically powerful sponsors of proposals to give away public land and invade and exploit our National Forests, National Parks, and other public ownerships, set the stage for the "push" for the Wilderness Law. This long series of struggles and effective citizen campaigns prevented the construction of dams in the National Park System and the transfer out of public ownership of most of the grazing lands and key tracts of high value forest lands from the National Forests. While some of the conservation battles of this period were lost, each contributed to a growing public awareness of the damage that was being inflicted on irreplaceable areas which had been designated for protection for various public uses.

Just as we heard then, we continue to hear throughout today's controversies, the admonition that citizen conservationists should take a positive tack, should strive to assume the initiative in being for something. They are portrayed as being on the defensive too frequently, fighting "holding actions" to protect irreplaceable natural areas against the invasions of those who seek to use them for some other purpose. Perceptive observers realize that any group which seeks to serve the public interest in the natural resource field will be so criticized.
Many times, and often unavoidably, our lot is cast with those who strive to keep something harmful from happening—to stop something. Thus we give our opponents the opportunity they so deftly exploit to label us as "agin'ers" who oppose progress by "locking up" resources and preventing their use and exploitation for what they allege is the public good. Such defensive battles must be waged continually by conservationists—both within our public land agencies and in citizen organizations—as an essential investment in the protection of those lands which are designated for preservation. The patterns for these "defensive actions" were pretty well perfected during the conservation battles of the 1950's, when conservationists frequently fought in the absence of any statutory or high-level policy of support. But these actions, by themselves, are no longer adequate to meet the growing pressures. There must be new laws, as accents on the positive, and firm administrative policies must be written by the responsible agencies to assure adequate protective implementation of these new laws. Statutory protection—protection by specific acts of Congress—provides the best defense we have against the growing pressures to exploit these dedicated wild lands.

The Wilderness Law, with its strong preservation policy and the clear procedures it spells out for the preservation of—ultimately—some fifty million acres of wilderness in the National Park, Wildlife Refuge, and National Forest Systems, is the best tool we have to win permanent protection of these lands.

The Law's definition of wilderness states, in an idealized concept, the qualities of wilderness areas, using these terms: "where the natural community of life is untrammeled by man, where man is a visitor who does not remain." The Law described wilderness "as undeveloped Federal land retaining its primeval character and not presently
occupied by roads or other developments." It requires that wilderness "generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable . . ." and be "of sufficient size to make practicable its preservation and use in an unimpaired condition . . ." This provides sufficient latitude to allow protective designation of both large and small land units, including those that have suffered disturbance which has not significantly altered their natural character.

New Procedures for Designating Wilderness

The review procedures of the Wilderness Law require that all roadless areas of 5,000 contiguous acres or more in the National Park System be reviewed to determine their suitability for inclusion in the National Wilderness Preservation System within a ten-year period that will end on September 3, 1974. Following development by the Park Service of preliminary recommendations for wilderness boundaries within the National Park System units and the holding of local public hearings at which testimony is gathered from individuals, private citizen organizations, and all interested government agencies, the National Park Service may revise its original wilderness-boundary proposals. The revised proposals are then submitted to the Secretary of the Interior for review at the departmental level before presentation to the President. After final review at the White House level, the President submits to Congress draft legislation to authorize the designation of the wilderness areas. Congress, during its consideration of the proposals, may require hearings by the Interior and Insular Affairs Committees of the House and Senate. These must report and clear bills for favourable action by both bodies to gain establishment of Wilderness Areas and their placement in the Wilderness System.

No lands of the National Park System were placed in the
Wilderness System initially. Only the 54 National Forest areas already administratively classified by September 1964 as Wild or Wilderness Areas, and the Boundary Waters Canoe Area, were made part of the original system. These units, representing approximately nine million acres, are only about twenty per cent of the federal wilderness land that is scheduled ultimately for protection in the Wilderness System. The Act provides that inclusion of any unit of National Park wilderness in the System can be done only by Congress, after all of the Law's review procedures are followed. Importantly, the Law requires that these same procedures—including the passage of authorizing legislation—be followed before a designated Wilderness Area can be removed from the National Wilderness Preservation System.

The Wilderness Act clearly prohibits within Wilderness Areas road construction, use of motorized equipment or any kind of mechanical means of transport, and the conduct of commercial and other activities that would destroy their wilderness character. By providing that nothing in the Wilderness Act can be construed to modify the statutory authority under which Park System areas are created or to lower standards for their preservation under the basic National Park Act of 1916, the Wilderness Law assures the applicability of all protective provisions of statutes establishing any Park System unit and for its preservation as part of the National Park System. The National Park Service is further required to preserve any designated wilderness area and to "administer such area for such other purposes for which it may have been established as also to preserve its wilderness character." Through its clear prohibitions against roads, commercial development, and other human intrusions, the Act provides a firm legal basis for the preservation and administration of Park System Wilderness Areas for use "in such manner as will leave them unimpaired . . . as wilderness." Thus, those National Park System wild lands placed in the Wilderness System have
greatly strengthened protection from the continuing threats of commercialization and development. Another important aspect of the protection provided in the Wilderness Act is the encouragement of non-destructive public use of designated wilderness for "scenic, scientific, educational, conservation, and historical" purposes, as well as recreation.

In an April 1964 memorandum to the Secretary of the Interior, National Park Service Director George Hartzog, Jr. declared that "it is vital that the Wilderness Bill make it mandatory for the National Park Service to designate areas which it believes should be given wilderness status." In speaking of adverse uses within the National Park System—uses of park land not in harmony with wilderness preservation—he stated that this problem "should not be considered as down-grading the wilderness program should it encompass these areas, but rather will further the Park Services' ideal objectives so that in time it can achieve compliance with wilderness principles."\(^1\) In another memorandum to the Secretary dated one day later, he described benefits of the proposed legislation in protecting wilderness in National Monuments and National Recreation Areas in these terms:

Areas established by executive action, such as National Monuments . . . and National Recreation Areas, depend upon administrative application of the 1916 Park Act for their protection. They lack the express statutory protection that is enjoyed by National Parks. The Wilderness Bill would give to those areas of this type which are classified as wilderness the additional protection contained in that bill."

The Wilderness Law, in addition to providing lines of defence and clearly established procedures for designating and administering National Park System Wilderness, will give statutory protection to many components of the System which are not now protected.

*Wilderness Reviews Advance Park Planning*

The review requirements of the Wilderness Law for the National Parks, Forests, and Refuges have set in motion a series of far-reaching,
if not fully refined, planning activities within the wilderness agencies. The planning process has involved both citizen leaders and agency staffs in a critical study of what has been happening to our wilderness resource over the years. Some of these studies have revealed major breakdowns in long-range plans through their failure to protect wild land areas. Examples of these include the National Park Service's ill-advised advocacy of a new transmountain road across the Great Smoky Mountains National Park which would have degraded some of the most scenic and ecologically significant forested wilderness in the eastern United States.

In the National Parks there have been some alarming discoveries of thoughtless planning under the local management, and under the master planning aegis, where existing fire or administrative-use "pioneer" roads have been allowed to become established public access routes, invading essentially roadless areas which could have become part of the Wilderness System. This has occurred in the spur roads of the Smokies, in Colorado National Monument, in Rocky Mountain National Park, and in Grand Canyon National Park. Trail construction in Isle Royale has been carried out to unnecessarily high standards with impact upon natural areas. There are serious questions being raised about proposed highway locations in units such as Cumberland Gap National Historical Park where construction would destroy scenic and wild land values. Some of these apparent abuses of administrative discretion have occurred since passage of the Wilderness Act in the period in which roadless areas in the Park System have been placed in "review" status. They are very much like the Forest Service's wilderness-control technique in which the administrators prevent the enlargement of existing wilderness units by authorizing construction of roads up to the present wilderness boundaries, or by encouraging timber cutting and other incompatible practices on wild lands immediately adjacent to existing Primitive Areas which are scheduled for review.
Involvement of citizens in wilderness planning and designation procedures has brought into sharp focus the need for comprehensive regional plans for entire areas in the vicinity of those Park Systems and their units to be reviewed for wilderness status. Perhaps the greatest by-product of the Law's procedures has been the uncovering of the need for in-depth reviews of the agencies' planning and management practices as they have affected wilderness lands. Through participation in the review process, citizen groups have come to appreciate the good work the agencies have done, while at the same time they have gained insight into the problems the agencies face in developing long-range land management and protection programs for wilderness, and so gain valid criteria for constructive criticism. The mistakes made in wild land management usually are a result of insufficient basic ecological knowledge and the failure to plan with long-range objectives clearly in mind.

The deadline of September 3, 1974, for development and review of National Park proposals for Wilderness Areas has given a solid impetus for orderly planning and boundary work by the National Park Service and citizen conservationists. Without the deadline, wilderness lands probably would have received little attention for protection in the face of pressures to build roads, commercial developments, and mass recreation facilities. In providing clear-cut basic policies for the preservation of wilderness "in perpetuity for the American people" and in defining for the administrator what wilderness is, the Wilderness Law has furnished guidelines and tools which now are being put to work.

Because it demands so much of local conservation leaders in on-the-ground field studies and master plan reviews, the Law is bringing people closer to these problems and to those problems and to those individuals in the agencies who administer the public lands and who welcome assistance from citizen groups in resisting threats to wilderness
lands.

**Slow Progress with National Park Wilderness Reviews**

Unfortunately, the National Park Service has lagged behind the Bureau of Sport Fisheries and Wildlife and the Forest Service in completing its wilderness reviews under the time schedule of the Wilderness Law. For the first review period, ending September 3, 1967, the schedule called for completion of reviews and submission to Congress of eighteen National Park System unit wilderness proposals. One year after this deadline, on September 4 of this year, the President had placed only five proposals for Park System wilderness units before the Congress; eleven of its proposals are still undergoing agency restudy following local field hearings, and hearings are yet to be held on three of the original eighteen units on which submissions to Congress were to have been completed a year ago. In terms of compliance with the Law's schedules, the National Park Service showing has been unimpressive, and it has not made any significant progress in catching up to the schedule set by Congress thus far in the second review period, the four-year span from September 3, 1967, through September 3, 1971. Only four public field hearings for the first review period were held during the fourth year (September 3, 1967 - September 3, 1968). Two more have been scheduled for later this fall.

The National Park Service, at the top level, has sought to encourage responsible public involvement in park and wilderness planning. In the widely circulated statement of *National Park Wilderness Planning Procedures* of August 8, 1966, Director Hartzog announced that master plan documents for each unit undergoing wilderness review would be made available to the public sixty days prior to the hearing.

This has helped greatly to clear the way for effective communication between agency planners and the citizen conservationists who
are most interested in the study of wilderness designation proposals. In most cases, however, this "first step" has failed to provide full exchanges of information during the review of wilderness proposals after the field hearings, and has not resulted in the development of continuing working relationships between local citizen leaders and park planners and administrators.

A communication gap between the agency and the interested public appears to stem from the traditional reluctance of agency administrators and professional planners to invite interested private citizen groups to become responsibly involved in the critical review of master plans and wilderness designation proposals. This problem is often intensified by a lack of experience on the part of volunteer citizen conservationists, who at first may not always be skillful in approaching agency people in a spirit of helpful co-operation as they seek to play a constructive role in the planning process. Both parties may suffer initially from a lack of confidence in how to proceed. Sharp conflicts between agency representatives and citizen conservationists, with resulting deleterious effects upon long-range planning and management programs, can be avoided through careful development of patterns of co-operation that can close the gap between the National Park Service and citizen groups interested in the protection of the National Park System.

Growing Public Involvement in Wilderness Issues

Opponents of the Wilderness Bill, who blocked Congressional approval of the Bill until it was amended to require specific Congressional authorization for each addition to the National Wilderness Preservation System, are discovering to their surprise that they made a great contribution to the wilderness-preservation cause. The widespread involvement of public-spirited private citizens across the country in
the work of completing the Wilderness System under the Law's field and Congressional review procedures is winning a broader and more directly concerned and involved clientele for wilderness than ever before.

The first wilderness reviews and public hearings have met with a most encouraging response from interested citizens. Few conservation laws invite and require the degree of citizen initiative and involvement to make them work that the Wilderness Law does. The reviews are playing a major role in acquainting individual citizens with their stake in the country's natural resources conservation programs, and with their responsibility in seeing these conservation programs continued.

The importance of private citizen participation in the wilderness review process has been demonstrated repeatedly, as the first agency proposals for adding units to the Wilderness System have been brought to Congress. Much responsibility for seeing that each proposal measures up to the intent of the Wilderness Act has fallen on the local citizen conservationists, who find that they must demonstrate at every political level their sustained interest in preserving these remnants of wild land. The long-term public interest is benefited as individuals and citizen organizations work to gain the necessary public understanding of and support for Wilderness Area proposals and wilderness preservation programs. Local groups have been remarkably responsive and willing to proceed with the job at hand—the boundary studies and related work that must be done—and they have been able to grasp the relationship of this work to other basic resource conservation issues.

This involvement of citizens in hearing and review procedures has brought many leaders at the top levels of government and, in the National Park Service especially, to the point of recognizing clearly today the vital importance of having public understanding of and support for their wilderness and related master-planning programs.

The alternative is to have those conflicts which are not resolved
during the early stages of review brought by citizen conservation spokesmen to the committees of Congress for their consideration. The Wilderness Law guarantees to the citizen conservationist clear recourse on any administrative wilderness recommendation which he feels is not in the public interest; it provides him the opportunity to take the question to Congress and its committees for review, with the use of as much information and active support from the citizen sector as he can muster. His position usually will prevail if his case is sound and well-documented to show its benefit in the public interest, and if there is strong support from conservationists at both local and national levels.

While many administrators within the National Park Service have recognized a responsibility for the protection of wilderness lands before the Wilderness Law was enacted, there has been a serious lack of direction and policy to guide effective, continuing wilderness preservation programs. Much has depended on the interest, good will, and personal inclination of local administrators, who were rotated often, to the detriment of the longevity of any wilderness-protective attitude that might have been initiated in a given park.

Internal Resistance to Wilderness Designations

Resistance from within the National Park Service to designation of National Park System wilderness appears to stem largely from a relatively small group of its personnel who challenge the removal by the Wilderness Law of certain prerogatives which, until its passage, were left to the Park Service administrators. No longer are unilateral decisions of a park superintendent or regional office allowed, without public notice, to determine the fate of a wilderness area. Since an area that is designated by Congress for preservation as part of the National Wilderness Preservation System cannot be removed from protection without Congressional authorization, the public is assured a voice
in any decisions to remove it from this protection.

Some of the basic differences in the application of the Wilderness Law criteria between Park Service planners and citizen-conservation organizations are reflected in the tabulation of acreages recommended for each as shown in Table 9.

It is notable that the National Park Service has indicated its intent to modify some of its preliminary wilderness proposals in response to citizen testimony at local hearings. In several cases, such as Shenandoah National Park, Virginia, it has shown its intention to substantially increase the acreage of wild lands to be protected within wilderness units and has indicated its intention to reduce peripheral "threshold" zones lying between roads or other areas of development and the boundaries of designated Wilderness. These favourable signs reflect significant changes in the conceptual approaches of the agency planners and a highly encouraging response to constructive criticism from individual citizens and conservation organizations.

New Direction in Wilderness Planning

One response of the leadership of the National Park Service has been to suggest that planners at federal, state and local levels view wilderness and other outdoor recreation needs in a regional perspective. This awareness of the need for comprehensive regional planning, to provide for protection of the wilderness of the National Parks and National Monuments by diversion of non-wilderness uses to non-wilderness lands outside the parks and monuments, is overdue. Active involvement of private citizens, through their participation in master plan teams for several of the large western parks, has greatly broadened the base of this effort and has contributed in a significant way to the growing appreciation within the private conservation sector of the vital importance of careful regional planning.
## TABLE 9
ACREAGES PROPOSED FOR INCLUSION IN NATIONAL WILDERNESS SYSTEM (U.S.)

<table>
<thead>
<tr>
<th>Before Congress:</th>
<th>Park or Monument Total Acreage</th>
<th>Preliminary Agency Proposal</th>
<th>Citizen Proposal at Local Hearing</th>
<th>Revised Agency Proposed Following Review of the Public Hearing Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craters of the Moon National Monument (Id.)</td>
<td>53,545</td>
<td>40,800</td>
<td>40,800</td>
<td>40,785</td>
</tr>
<tr>
<td>Lassen Volcanic National Park (Calif.)</td>
<td>106,933</td>
<td>48,587</td>
<td>101,000</td>
<td>73,333</td>
</tr>
<tr>
<td>Pinnacles National Monument (Calif.)</td>
<td>14,497</td>
<td>3,720</td>
<td>13,000</td>
<td>5,330</td>
</tr>
<tr>
<td>Lava Beds National Monument (Calif.)</td>
<td>46,238</td>
<td>8,792</td>
<td>37,000</td>
<td>9,197</td>
</tr>
<tr>
<td>Petrified Forest National Park (Ariz.)</td>
<td>94,189</td>
<td>43,020</td>
<td>60,400</td>
<td>50,260</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Still Under Review:</th>
<th>Park or Monument Total Acreage</th>
<th>Preliminary Agency Proposal</th>
<th>Citizen Proposal at Local Hearing</th>
<th>Revised Agency Proposed Following Review of the Public Hearing Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Smoky Mountains National Park (N.C. and Tenn.)</td>
<td>512,700</td>
<td>247,000</td>
<td>350,000</td>
<td>------</td>
</tr>
<tr>
<td>Sequoia and Kings Canyon National Park (Calif.)</td>
<td>841,200</td>
<td>740,165</td>
<td>826,000</td>
<td>------</td>
</tr>
<tr>
<td>Isle Royale National Park (Mich.)</td>
<td>539,347*</td>
<td>119,618</td>
<td>130,000</td>
<td>------</td>
</tr>
<tr>
<td>Cumberland Gap National Historical Park (Ky., Tenn., and Va.)</td>
<td>20,170</td>
<td>8,980</td>
<td>15,250</td>
<td>------</td>
</tr>
<tr>
<td>Shenandoah National Park (Va.)</td>
<td>193,531</td>
<td>61,940</td>
<td>91,000</td>
<td>70,000 (Tentative)</td>
</tr>
<tr>
<td>Bryce Canyon National Park (Utah)</td>
<td>36,010</td>
<td>17,900</td>
<td>23,800</td>
<td>------</td>
</tr>
<tr>
<td>Cedar Breaks National Monument (Utah)</td>
<td>6,154</td>
<td>4,600</td>
<td>5,300</td>
<td>------</td>
</tr>
<tr>
<td>Capitol Reef National Monument (Utah)</td>
<td>39,173</td>
<td>23,074</td>
<td>30,150</td>
<td>------</td>
</tr>
<tr>
<td>Arches National Monument (Utah)</td>
<td>34,010</td>
<td>12,742</td>
<td>28,417</td>
<td>------</td>
</tr>
</tbody>
</table>

*405,500 acres are under water in Lake Superior.
The National Park Service, in some of its early wilderness proposals such as that for Lassen Volcanic National Park, recommended exclusion of large acreages within the Park from Wilderness Area designations for "threshold" or buffer purposes. Citizen conservation groups have rejected these large exclusions because, in most cases, they embrace wild lands which, although peripheral to larger tracts of wilderness or in closer proximity to roads or other developments, are essentially wild in character and qualify as wilderness under the Wilderness Act's definition. They question the agency's insistence on such exclusions from the proposed Wilderness Areas, since the agency declares that there are no plans to convert such "threshold zones" to other designations for development of intensive use facilities that will be destructive of wild land qualities. There continues to be an underlying basic question as to whether any lands in the National Parks should be designated for high density, mass recreation uses.

In its August 8 planning statement, the Park Service attempted to allay these fears. It has gone so far as to invite public expression—and this should involve public hearings where justified—before such "threshold" lands could be reclassified for high density and general outdoor recreation uses.

This step is a highly significant and encouraging departure from earlier procedures of the National Park Service which have discouraged the public's participation in basic decision making and planning procedures. It will be conducive to increased responsible public involvement which will not impede careful master planning, but assist it.

This does not mean that citizen conservationists can be unmindful of needs for the provision of basic interpretive and access facilities—in keeping with natural settings—when these cannot be provided outside the parks or in already-established development areas. They can be expected to continue to resist large exclusions of "threshold" areas
around each Wilderness Area of the National Park System. There is encouraging evidence that this question may be resolved by reducing the threshold zones to appropriately small transition areas of no more than a few hundred feet separating roads and areas of development from core Wilderness Areas.

The mistakes of the past, which have brought about the loss of significant areas of the wilderness of the National Park System, should be weighed against the present goals of the National Park Service in carrying out its charge under the Act of 1916:

> to conserve the scenery and the natural and historical objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

This clearly establishes preservation as a primary goal of the National Park Service.

As F. Fraser Darling and Noel D. Eichhorn recently pointed out:

> Implementation of the Wilderness Act by the Service should strengthen the ecological resistance of the parks to the pressures which beset them, but a misguided leaning towards dichotomy of values in assessments of national park terrain could well hasten decline of habitat rather than prevent it. Such a trend would be an ironical negation of what the Wilderness Act is designed to achieve.

Darling and Eichhorn nicely countered one argument used by a few individuals in the Service in resisting wilderness designations when they observed that "Nearly all the parks were wilderness in reality or intention at their inception and should be so considered, without drawing imaginary lines of purity within the parks, caused by our intellectual differentiations of wilderness qualities." They spoke, as other conservationists repeatedly have spoken at local wilderness hearings, of the need for a concerted effort to move outside the parks those so-called visitor service facilities which at present encumber many of them. The too-often quoted phrase, "Parks are for people," raises misleading questions in the minds of the public. These are answered by the observation of one conservationist, who commented that if the
national parks are among the first public amenities to feel the full force of the population crisis, we must stand with new resolve against expedient but degrading solutions and continue in our efforts to protect rare natural quality.

New Trends in Park Management

There has lately been a series of significant and encouraging responses from our National Park Service to the growing interest of people in the public lands. One example was the August 1966 statement on National Park Wilderness Planning Procedures by Director George B. Hartzog, Jr. Welcoming the added protection which the Wilderness Act will provide the National Park System, he defined the National Park Service wilderness policy as emphasizing the need for zoning the parks to identify and protect their wilderness areas and for channeling intensive public use to avoid indiscriminate overuse of the parks' back-country.

More recently, the National Park Service has taken several new steps to prevent potentially destructive road, mass recreation, and commercial developments within the National Parks. The Service's new and highly commendable statement on road policy, published this year, spells out this new direction:

The single abiding purpose of National Parks is to bring man and his environment into closer harmony. It is thus the quality of the park experience—and not the statistics of travel—which must be the primary concern.5

This statement interprets the preservation purpose of the 1916 park establishment act as the governing motive of the National Park System. It does not deny the use of parks for "enjoyment of people," but it places the emphasis on the compatibility of people with parks, rather than dwelling on the old dichotomy, "parks versus people."

The appointment within the last two years of joint private citizen-National Park Service staff study teams to review the Service's
road policy and master plans for six National Parks—Yellowstone, Grand Teton, Yosemite, Mammoth Cave, and Sequoia-Kings Canyon—is indicative of the Service's commendable efforts to improve its planning procedures through the responsible involvement of private conservationists.

In Yosemite, this action was followed by Mr. Hartzog's announcement that the agency will phase out the existing golf course, control and materially reduce the volume of automobile camping on the floor of Yosemite Valley, and eliminate the controversial firefall. The Service had made it clear that those activities which detract from or do not contribute to the appreciation of the scenic and natural values of the Park will not be permitted to continue merely because they attract more people. These positions were taken in the face of strong opposition from commercial interests operating in or near the Park, and they represent a forceful move on the part of the National Park Service to stand up to those groups who would have private commercial advantages determine park policy and practice.

Early this year, Director Hartzog said that the Service will not build two proposed new lanes that would parallel U.S. Highway 441—the existing two-lane Newfound Gap highway across the Great Smoky Mountains National Park—because of the damage that would be inflicted by this road upon the virgin forest of this section. The Service has announced plans to levy a daily fee for automobile camping within the Smokies Park as an essential first step to limit automobile camping to reasonable levels. He has also suggested the operation of a scenic bus system on the present Newfound Gap highway as a means of contributing to the full enjoyment of the park by visitors. These actions—plus a frontal attack on the serious threat of private inholdings within National Parks through requests to Congress for adequate funds to accomplish the needed acquisitions—are significant indications of the desire of the National Park Service to protect natural values of the parks by
directly meeting some of the basic problems which result primarily from the constantly increasing number of visitors.

The Struggle With the Developers

There has emerged in the course of the wilderness reviews strong public support for the full protection and dedication of wilderness lands of the National Park System. The proposals of those who speak for construction of extensive highway networks and commercially operated resort-type facilities within the central core of the Park System's wild lands, are strongly opposed by the growing number of people who are concerned about the future of their parks and are making themselves heard and felt in the halls of Congress. The results of the recent questionnaire of the Christian Science Monitor, which concluded its excellent series of articles on the National Parks by Robert Cahn, demonstrated this public concern. At least half of some 2,000 readers who responded indicated that "all of the present wilderness-type area in a park should be preserved . . . [with] no development at all in these [wilderness] lands." A similarly large number objected to the suggestion that roads and other development facilities be built within wild land areas of the parks.6

These reactions to the questionnaire reflect the growing public awareness of the need to conserve our environment—to protect and preserve its beauty, particularly in areas within the publicly owned National Park System. The impressive accomplishments of Congress in recent weeks in moving to authorize new Wilderness Areas, large and very significant additions to the National Park System, and totally new programs for establishment of a National System of Trails and a Wild and Scenic Rivers System, furnish some measure of the current support for preservation programs.

Some commercial operators of private business concessions within
the parks, whose enterprises represent millions of dollars of trade in items ranging in importance from imported souvenirs to essential public services, may oppose moves to limit or control further expansion of their highly profitable operations. In many cases, where these operations have seriously conflicted with protection of natural environments, they must be removed entirely from Park System areas. The highway builders, who currently are riding "high, wide, and handsome" and are stubbornly resisting all efforts to bring their current road-building binge under some kind of reasonable control, also will fight efforts to keep their new superhighways from infringing upon natural values of park areas. Those who have backed proposals for dams and other water projects within units of the National Park System are beginning to see that strong political force can be generated by the millions of people who do not want to see dams constructed in the Grand Canyon of the Colorado River, in Dinosaur National Monument, or in any other of the lands that have been designated for protection within the National Park and Wilderness Systems. But we should not expect the developers and exploiters to give up.

There can be no question, however, that the rules of the game have undergone drastic change. Citizen conservationists have grown in effectiveness within this decade to the degree that, when vital conservation issues are taken to the people, the political processes of our system can be made to function to protect the public interest in our National Parks and other resources. Conservationists have, within a few years, developed tremendous skill in the use of the publicity and educational media. In a conscious effort to realign and update their programs for reaching people, some of the larger conservation organizations are now involved in leadership development and training efforts for those citizen groups with whom they enjoy strong ties of co-operation at state and local levels.
The Response of Government

Congress, if not the public land agencies, is receiving the message. The recent successes of citizen conservationists in gaining favourable Congressional action on major conservation bills speak convincingly in support of this fact. The citizen conservation movement has shown a new dimension as concerned citizens, who are shocked by the growing evidence of our abuse of the environment, give new, constructive direction to our conservation programs through the influence they bring on those in politically sensitive, elective offices. The member of Congress, the delegate to the state legislature, the local representative to the city council can measure—in terms they understand—both the sentiment and political pressure generated by local people if these citizen-constituents become aroused on behalf of a conservation goal. It is these elected representatives to whom an increasingly large number of basic resource policy questions are being directed in the many cases where sound programs and proposals meet with continuing resistance at the agency level of government.

The Wilderness Law and the New Conservation

The Wilderness Act is a viable instrument for fulfillment of an ecologically oriented policy which requires the preservation of the remaining National Park System wilderness. But at this moment, this policy has neither been clearly defined nor fully and satisfactorily implemented through the application of the Wilderness Law to any Park System unit despite the work of many within the National Park Service who believe in the Law's important role. The Wilderness Act provides opportunity for wilderness designation of most of the remaining wild lands in the National Park System. This will come through the involvement of concerned and informed people, who under the requirements of the Law can take their case for wilderness directly to the Congress. It
remains to be seen how fully the National Park Service can follow the lead of some of its own people in implementing the Act in a manner that will best serve its preservation purposes and those of the 1916 National Park System Act. It is clear that the public is ready to support the Service fully in meeting these purposes and in resisting the demands of those who would sacrifice the natural values of the National Park System in response to special interest and mass-use pressures.

It is also clear that citizen conservationists are well launched into a new era of the conservation movement in which they will fully utilize their democratic prerogatives to provide constructive guidance and strong political pressure toward objectives which they believe best serve the public interest. It would be much better for all concerned, and for the irreplaceable public resource which is involved, if citizen groups and agency planners and administrators could work closely together in implementing the Law to full advantage of its preservation objectives.

FOOTNOTES


ADDITIONAL READING


Publications listed are available from; The Wilderness Society, 729 15th Street, N.W., Washington, D.C. 20005.
THE PLANNING OF NATIONAL PARKS IN EUROPE
Kai Curry-Lindahl*

INTRODUCTION

What is a national park in Europe? Many countries on this tiny and densely populated continent have quite different concepts of a national park. In some countries national parks are well-protected areas, where any form of human exploitation is banned except for modest recreational facilities. In other countries far-reaching developments and various forms of exploitation have modified the "protected" area to such an extent it is very different indeed from most people's interpretation of the term "national park." Therefore, the planning of national parks in various countries of Europe does not follow the same pattern.

Diverse opinions as to what is a national park prove to be not only a semantic barrier but also a direct obstacle to international actions and activities, because national parks and equivalent reserves should not be delimitated by national boundaries. With the establishment of the national parks of tomorrow more attention will certainly be

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paid to covering ecological units, even if they are crossed by national borders. Hence, it is highly desirable that the term "national park" should correspond to criteria recognized by all countries throughout the world. The International Commission on National Parks of the International Union for Conservation of Nature and Natural Resources (IUCN) has for long worked towards such a goal. This year, Africa has shown the way by its acceptance of the African Convention for Conservation of Nature and Natural Resources, in which there are clear definitions of what is meant by the term "national park."

However, even if every country in Europe should in the future, give the same definition and interpretation of what a national park is, approaches to the planning of these reserves would inevitably differ from one country to another, because the ecological and sociological background is so different in the various countries. Topography, availability of acreage for reserves and the population density of a country, as well as historic and pure economic factors, must obviously be taken into consideration when planning national parks in Europe—both existing ones and those which have yet to be established.

The planning of existing national parks should include management policy (if this is desirable), plans for basic and applied research, and so forth. This is perhaps not the sort of thing that most people have in mind when speaking of "planning national parks." However, scientific management planning of a national park is one of the most important things to be done. Such planning must necessarily always go on, for within a national park, many external factors which have been introduced by man influence the natural dynamics of the ecosystem. Therefore, while habitat management planning must be flexible, there should always be a determined goal in mind.

The mosaic of qualifications for national parks in Europe's thirty countries makes it impossible to review and discuss the planning
of European national parks in a general way. Each country has its own specific problems and is, therefore, obliged to follow different paths in its national park policies.

Many national parks in Europe were established in areas which were for a long time left intact by the course of human activities, either because they were remote or because they were considered as marginal or non-productive. Other areas were set aside as national parks too late, that is after their habitats, vegetation and fauna had been greatly changed or even exterminated by human action. In fact, the present network of national parks in Europe represents only a fraction of the continent's ecosystems and habitats, which would have been of great value had they been preserved for scientific, educational, recreational and also purely economic reasons. Therefore, it is important and most desirable that the European countries co-operate so as to ensure that the selection of areas to be set aside for national parks will include as complete a spectrum as possible of all ecosystems and habitats that are typical and unique for Europe. It is also necessary that rare or threatened plant and animal species be included in these national parks.

Development planning in those national parks which are of European significance, should be made extremely carefully and under the supervision of ecologists. Every country should clearly recognize that facilities (if these are necessary) and activities inside national parks must be undertaken in such a way so as to cause the least possible disturbance to the living landscape, its soil, water, vegetation and animals.

Unfortunately, there has been as yet, no co-ordination in national park selection in Europe. In fact, it has not even been discussed, but I hope the time will come when such a policy seems both necessary and natural to all European countries. A fairly good
representation of ecosystems, habitats and species is already protected by existing national parks, so the work to be accomplished is the completion of the series through the establishment of additional national parks. Thus, in Europe (at least), the future planning of national parks should be on a continental level. It is necessary for effective conservation work to look beyond political boundaries and to consider the demands and problems of Europe as a whole. Continent-wide planning for national parks and recreation systems necessitates inter-European programs of co-operation and technical exchanges. Perhaps I.U.C.N.'s International Commission on National Parks can take the initiative and serve as a co-ordinating body.

Europe also has its Council of Europe, which during the last few years has opened its eyes to the values of conservation and national parks. But this organization covers only a part of Europe and its concept of national parks is not satisfactory. For some years the Council of Europe has given a diploma for what are considered to be outstanding European national parks, those which are of European importance. This is a good idea, which, if wisely utilized, might encourage and promote national parks of European significance. But unfortunately, the Council of Europe has undermined not only the value of its diploma but also the sound criteria for national parks by giving awards to categories of national parks which in no way correspond to this term. When "national parks" that are inhabited and permanently exploited or have been partly destroyed by hydro-electric exploitation and other disturbances, receive the Council of Europe's diploma, this signifies in reality that governmental or private destruction inside national parks is internationally encouraged. The Council of Europe's national park diploma in such cases slashes a knife in the back of national conservation organizations which have fought vigorously but in vain, to save the same national parks from exploitation. Moreover, when the next national
park is threatened by destruction, governments can excuse themselves by referring to the Council of Europe's diploma.

The Council of Europe's attitude to the national park concept may also have negative repercussions outside Europe because underdeveloped countries may be influenced to think that national parks rewarded by the Council of Europe must be models for national parks and the way is open to alter them drastically by exploitation. Fortunately, Africa (at least) has escaped from being influenced by the Council of Europe's lack of conservation responsibility concerning the integrity of national parks. The brand new African Convention for Conservation of Nature and Natural Resources stipulates that "a national park means an area exclusively set aside for the propagation, protection, conservation as well as for the protection of sites, landscapes or geological formations of particular scientific or aesthetic value, for the benefit and enjoyment of the general public." This Convention after having been requested by the Organization of African Unity (OAU), was set up by I.U.C.N. in close co-operation with the African countries, F.A.O. and U.N.E.S.C.O. This means that the O.A.U., which, like the Council of Europe, is a political organization, has realized and respected the integrity concept of national parks, while the Council of Europe has failed to do so. For a European this is nothing to be proud of.

International organizations dealing with conservation matters must show leadership and foresight. They must also be loyal to national conservation efforts. I am sorry to say that in the field of national parks the Council of Europe has done more harm than good. Its policy is not an example to be followed and the impact its activities may have on the planning of national parks in Europe is dangerous from conservation points of view.
PROJECT MAR

Alarmed by the progressive loss of marshes, bogs and other wetlands in Europe through drainage and so-called "improvement" schemes, I.U.C.N. took initiative in 1961, in close co-operation with the International Council for Bird Preservation (ICBP) and the International Wildfowl Research Bureau (IWRB) to develop a program on conservation and management of temperate marshes, bogs and other wetlands; to be called Project MAR.

This project's program has been divided into four stages (listed below), and its ultimate goal is a European Convention for the Conservation of Wetlands. Several preserved areas, covered by the Convention, may eventually become national parks.

The five stages of Project MAR are as follows:

1. To prepare a broad statement on the importance of marshes and wetlands to modern mankind and to give the broadest publicity to this statement.

2. To assemble all important data on the means of conserving wetlands, to keep or improve them for wildlife through proper management, to restore them when debilitated and to make man made aquatic habitats useful for wildlife: to make this information known and available to all those in a position to take action to advance the conservation of wetlands.

3. To make an inventory and classification of all European and north-west African marshes, bogs and other wetlands of international importance.

4. To offer technical assistance for the establishment of reserves in marshes, bogs and other wetlands classified as of international importance.

5. To preserve the most important wetlands by a European Convention.
Points 1 and 3 are accomplished, points 2 and 4 are partly covered but the work continues and could go on forever. Point 5 is making rapid progress. One symposium (1962), three international conferences (thanks to the governments of Great Britain, 1963, the Netherlands, 1966, and the U.S.S.R., 1968), and the effective work of mainly the I.W.R.B., have prepared the ground for a mutual European understanding of the importance of saving wetlands inside or outside the national parks. I.U.C.N., I.C.B.P. and I.W.R.B. have been very successful in establishing close contacts with the East European countries, which have taken part in this work.

Stage 3 of Project MAR has yielded a list, published by I.U.C.N., of European and North African wetlands of international importance (Fig. 13). All of these areas are, in fact, potential national parks. They are of extreme importance and significance for Europe where they represent rapidly disappearing habitats, and in many cases entire ecosystems.

The proceedings of the symposium as well as other publications connected with Project MAR are listed in the References.

Although Project MAR is not directly linked to the planning of national parks, I have dealt with it at length in this report, because it shows a method of continent-wide approach to preserving habitats in great need of protection. Whether they will be protected in the future by national parks or other measures is secondary; the essential thing is that they are protected.

MEDITERRANEAN EUROPE

The Mediterranean region is Europe's jewel, but also the most destroyed area of the continent. It has an atmosphere of sun, life, and richness, which is genuine, yet death and destruction rule there. Every year people from all over the world flock to the Mediterranean beaches to enjoy their warmth and beauty. The countries of this region
Fig. 13  The Most Important Wetland Areas of Europe and Adjacent Regions Planned to be Set Aside as Reserves
have been, so to speak, a trysting place of Europe for at least three thousand years.

It is somewhat amazing that the countries around the Mediterranean still have vital energy, are still highly productive, and still support large populations. These facts bear witness to how great the natural wealth of the region once was, based upon favourable climate and fertile soils. During the past three thousand years the soils have been dissipated, and although the climate has hardly changed, its effects are no longer what they were when the land was rich in forests. Today, the Mediterranean countries are living on a rapidly diminishing capital, with fertile soil being washed into the sea or blown away. Unless a radical change occurs soon, all the land is doomed to exhaustion.

The average tourist in the Mediterranean certainly does not realize the extent of the destruction. And even very few of its inhabitants seem to understand that they live literally on the verge of disaster. They still continue to abuse the soil, to let their goats graze on the poor foliage, and to cut down the last remaining forests. The inevitable consequence will be starvation, not only of cattle and goats, but also of human beings. The aridity of the area is increasing at an accelerated rate. What was previously a paradise may become a desert.

Despite the toll of continuous destruction during the last three thousand years, the Mediterranean countries still possess much charm and many natural values. Almost every part of the Mediterranean area—Spain, southern France, Italy, and the Balkan Peninsula—has been reshaped by man. Only small segments, such as delta regions, strips of coast, and the highest mountains, may be characterized as untouched. Luckily, a few patches of virgin forest also remain. Perhaps they are not purely virgin, but they surely approximate the type of deciduous
forests of ancient times.

It has often been debated whether it was a change in climate or the action of man that caused the impoverishment of the Mediterranean region. Most of the evidence supports the view that the desolation is man's work. For six or seven thousand years, the climate of the Mediterranean area has been largely constant, and although there was a somewhat higher precipitation in the century before Christ, such fluctuations do not deserve the name of climatic changes. The conclusion we can justifiably draw is a very important one: if no clear, long-term climatic change has taken place in the thousands of years during which the natural wealth of the Mediterranean countries has been squandered by man, the present development toward a sterile, desert-like condition can be halted. We may even dare to hope that this dead landscape can be revived, the dying soils saved and the vanished forests restored. The climate clearly would not prevent a return to the former natural conditions.

Such a development would, however, certainly seem to require several thousand years. Possibly, technological aids could shorten the time needed to restore the landscape to its former glory, but at best a thousand-year reconstruction program would be necessary. The trees planted on the mountain slopes must produce a carpet of debris as thick as that on which the forests once grew. Until that has been done erosion of low-lying land cannot be effectively prevented.

It is not so difficult to imagine what the Mediterranean landscape was like when it had the most luxuriant forests in Europe and a rich animal life. Its vegetation was always unlike that of the rest of Europe. Generally, the land was covered with light open-canopy woods of deciduous trees with a dense undergrowth as a response to the rich light. On sandy soils there grew a variety of conifers—umbrella pines, stone pines, cypresses, cedars, and so on. Undoubtedly there already
existed in ancient times coastal strips with the macchia or maquis (chaparral) vegetation (shrubs and low evergreen trees) that is so characteristic of the Mediterranean region today. Now the macchia has spread to areas where deciduous forests have been cut down. In the past, the woods and forests climbed high up the mountain slopes along the coasts as well as in the interior, reaching an altitude of about four thousand feet. Another type of dense mountain wood extended even higher. At that level, pines and other montane conifers took over, forming a zone up to the timberline. Today it seems almost impossible to believe that the whole Mediterranean basin was once covered with such full-grown, climax forests.

As the vegetation was being destroyed, so was the animal life being decimated and changed. Not only did the changed environment make life more difficult for the animals, but man also deliberately hunted them down and thus gradually eliminated them. Very few species of large mammals remain of the once great variety of Mediterranean fauna which existed in ancient times.

Landscape restorations in appropriate areas of the Mediterranean countries should have top priority in the planning of national parks in Europe. It is primarily up to each nation to plan such a scheme, but international efforts can be of much help, both financially and by example. There is such an example in Spain, which might lead to a national park of enormous importance to Europe and the world. It is the Coto Doñana and Las Marismas in the southwestern part of the Iberian Peninsula. This area was saved by the joint efforts of I.U.C.N., the World Wildlife Fund and the Spanish government.

Of the many types of European landscapes none has been so altered by man during the past 150 years as have marshes and bogs. So many of them have been drained that the total area of permanent marshland and of land that is flooded annually has now shrunk to only a fraction
of its former size. This drainage has not always been economically sound. Instead, there has sometimes been a loss. Besides this, drainage has destroyed valuable natural assets.

Southern Europe is not so rich in marshes as the northern, previously glaciated parts of the continent. The icecap and the prolonged period of melting left thousands of marshes and shallow lakes in northern Europe. Thus, southern Europe has suffered proportionately more from this obsession with drainage than the northern countries. The marshes of southern Europe are usually rich in organic life. The biological productivity of such areas is great, not only during summer growth but also in winter, when they act as nutritional reservoirs for the flocks of migratory geese and ducks of northern Eurasia. In addition, the few marshes in these southern European latitudes are often the only remaining wild areas—except for the highest peaks and submarine environments. So there are not only economic but also social and scientific reasons why these marshes should be preserved.

There are only seven large marshlands left in southern Europe, all of them in river deltas: those of the Guadalquivir River in Spain, of the Rhone in France, of three regions along the Adriatic coast of Italy, of the Danube in Rumania, and of the Volga in Russia. Rich inland swamps are also found in Hungary and Austria, and in a few places in the Balkans, but they are less important than the coastal regions mentioned above, and none of them exceeds in beauty or wealth of species Spain’s Coto Doñana and Las Marismas near the Atlantic coast, not far from the Gulf of Cadiz.

The location of the Coto Doñana below the mountains of Andalusia, with the Atlantic to the west, the great delta of the Guadalquivir to the east, and Africa to the south, has, as a consequence of the varying terrain, given rise to a fauna quite unique in Europe. Most of the Coto Doñana consists of vast fields of sand drift and marshland (marismas)
Despite the fact that the score or so of biologists and naturalists who have studied Las Marismas are agreed that it is one of the richest natural areas in Europe, it is not well known. Since the late 1950's the threat of exploitation has hung over it, and several international conservation organizations have been struggling to preserve the region. Their efforts have met with a measure of success: the Spanish government has dedicated Las Nuevas, a large area in the centre of Las Marismas, as a reserve, and a scientific research station is to be established there. A part of the Coto Doñana, an ecological complement to Las Nuevas, has been bought in order to extend the reserve westward. It is hoped that still more land and marshes—particularly Los Hinojos—can be acquired so that the greater part of Las Marismas west of the lower reaches of the Guadalquivir will be protected.

The Coto Doñana and Las Marismas Nature Reserve has the potential to evolve into Europe's most famous national park but its planning must be to preserve rather than to develop, so that the natural attractions for which the area has been protected will not disappear because of disturbances by too many visitors. On the other hand it is necessary for the future of this protected area that it be open to the public and partly utilized for recreation and education.

Spain has two national parks, both situated in the northernmost, mountainous part of the country. Hence, there are several other regions and habitats which are in need of protection in this large portion of Europe.

The same is true for Italy. This country has four national parks of European concern. Unfortunately, there are serious problems of various sorts in all four national parks. Their protection should be strengthened and management planning modified.

The Parco Nazionale del Gran Paradiso in the Alps of the
northwestern corner of Italy and close to its boundaries with France and Switzerland, is the home of the ibex (*Capra ibex*). Once saved from extinction in this national park, it now occurs there in satisfactory numbers, but illegal hunting pressure increases because of insufficient staff of rangers. Also, the lumbering activities there should be stopped.

The Parco Nazionale dello Stelvio in the eastern part of the Italian Alps is situated not far from the Swiss National Park on the other side of the Italian-Swiss border. It is desirable to co-ordinate these two national parks so as to form one unit, but it is even more urgent to extend the Stelvio National Park to include the nearby bear country in the Italian Dolomites between Adamello and Brenta where the last surviving brown bears of the Alps struggle for their existence against the advance of man's power saws, bulldozer, hydro-electric dams, tourist installations, and all that follows in their wake.

The Parco Nationale d'Abruzzo in the Apennines of central Italy, 165 km. east of Rome, includes splendid forests and serves as a refuge for many mammals and birds. Unfortunately, this national park is tragically deteriorating through habitat destruction caused by lumbering. Italian conservation organizations have asked the I.U.C.N. to intervene. The latter has urged the Italian government to realize its responsibility to its country and to Europe by giving this national park adequate and effective protection.

Finally, the Parco Nazionale del Circeo on the Mediterranean Coast south of Rome is at present the most problematic of all the Italian national parks. Ever since the draining of the Pontine Marshes, the Circeo National Park has gradually changed from a swamp wood, its most interesting aspect, to something more conventional. But it still has features typical of a coastal Mediterranean deciduous forest. The national park regulations are, unfortunately, neither comprehensive nor
strictly enforced. Hunting licenses have been quite generously granted for years and hunters have been permitted to shoot quail and turtle-doves, for example, in the spring. And now buildings are invading Circeo on all sides, and it is rapidly losing its character as a national park. Instead of tightening control, there is talk of abolishing the national park restrictions completely. This is a regrettable development, because in the network of Europe's national parks both the Circeo and Abruzzo National Parks are important in preserving vanishing habitats.

The Adriatic coastland of Italy has several regions of great biological interest, which are worthy of establishment as reserves or national parks. It is highly desirable from a European point of view that the following areas be adequately protected and perhaps partly developed into national parks.

1. Lagoons, salines, marshes and temporarily flooded lowlands and salt steppes around the lower part of the Candelaro River and its delta in the Gulf of Manfredonia in Apulia.

2. A large lagoon surrounded by small satellite marshes, swamps and large areas of water-logged ground, called the Valli di Comacchio in Emilia.

3. The Venetian lagoons, an outstanding example of rapid delta growth.

All these three regions apart from their topographical attractions are extremely important as breeding and resting areas for large numbers of water birds.

Greece has not been exempted from the destruction of the Mediterranean landscape through millenia. In fact, it has suffered even more than Spain and Italy. Unfortunately pre-World War II attempts to end this negative development through the establishment of national parks has failed. Two of Greece's three national parks, Olympus and
Parnassius, have been heavily exploited and deforested since the war.

Several actions taken by Greek conservation organizations with international support from I.U.C.N. and the Council of Europe, have hitherto not shown any positive results.

No recent developments in Yugoslavia and Bulgaria are of sufficient significance to be reported here. Turkey, (a fraction of which lies in Europe), has shown an increasing understanding of the importance of setting aside and developing national parks, particularly in forest areas.

France is partly a Mediterranean country and has recently established a national park in this area, but we deal with this country in the next section.

CENTRAL EUROPE

Though advanced in conservation, many of the heavily populated countries of Central Europe have, except for some mountainous areas, simply no primeval regions to protect. However, cultivated landscapes with their vegetation and fauna are also significant and deserve to be set aside as natural monuments of the past or the present. Therefore, the planning of national parks in Central Europe must, in large measure, mean dealings with man-made habitats.

France established two national parks in 1963, and more seem to be on their way. These are, in fact, the first real national parks of this country. Although the Parc National du Pelvoux in the French Alps had already been set aside in 1914, this reserve was not a true national park in spite of its name. The new French national parks are Port-Cros, an island in the Mediterranean, and Vanoise in the Alps. Of all the French Mediterranean islands the Isle de Port-Cros has retained to a remarkable degree its typical flora and fauna. Forests and macchia vegetation (maquis or chaparral) prevail. The Parc National de la Vanoise represents one of the highest and wildest parts of the Alps. The
Gran Paradiso National Park is its neighbour to the east.

An interesting Spanish-French project is located in the Pyrenees. A national park, Parque Nacional del Valle de Ordesa, has existed on the Spanish side of the border since 1918. This Park is, in turn, surrounded by a large hunting reserve. On the French side there are three nature reserves and there has also existed since 1967, a national park, the Parc National des Pyrenees Occidentales. All these protected zones are relatively small when compared with a project to include the two national parks and all the reserves, as well as a large additional area in France, within an international, Spanish-French national park which should give adequate protection to one of Europe's most spectacular regions containing brown bears, wolves, wild cats, lynxes, genets, chamois, ibex, lammergeyer, several other vultures, golden eagles and many other rare animal species. The new French national park also includes a protective zone, on the French side, which is larger than the national park itself. This international national park project is crossing political borders in a way that one hopes may become more common in the future all over Europe.

However, of all the French national parks and reserves the most important one is still the Camargue Reserve in the delta of the Rhone on the shore of the Mediterranean. It is a fascinating synthesis of natural and man-made lands and wetlands. The most valuable parts of the Camargue are now protected by the Société Nationale de Protection de la Nature et d'Accrimation de France, an organization that has done much to increase our knowledge of the area. During the past decade, the Station Biologique de la Tour du Valat, with its enthusiastic team of workers directed by Dr. Luc Hoffmann, has been conducting valuable research work in and outside its own protected area, and in 1962 it became the headquarters of the International Wildfowl Research Bureau. A more strategic position for such a research station could
hardly be found.

*Switzerland* has one national park, situated of course, in the Alps. Established as early as 1914, its prime purpose is to protect the ibex which was reintroduced (from Italy) in 1920. In 1966 the population totalled 206 animals. For long the policy in this national park has been to refrain from introducing management measures, despite the fact that the present fauna has been deprived of all its larger predators such as bear, lynx, and wolf. Because there were no controls, the population of red deer increased rapidly to numbers much beyond those which the environment was really able to support. Despite seasonal migration to the surrounding country, where the red deer were hunted, their unrestricted increase within the national park has caused overgrazing and overbrowsing at the expense of other herbivores, as well as preventing the regrowth of woods. The only factor that has caused a reduction of their numbers inside the national park has been a series of severe winters with much snow and a shortage of food.

In order to prevent a population crisis through starvation, and to end extensive forest damage, the National Park's Board decided some years ago to reduce the red deer by hunting them in winter, when most of them are outside the reserve. Hence, the story of the red deer in the Swiss National Park where natural predators are lacking, confirms the classic North American examples of what happens with deer and their environment when carnivores or man do not control the ungulate populations.

In *Austria* great efforts have been made during the past few years by both national and international organizations to strengthen protection in the Neusiedler See and Seewinkel conservation areas by creating a national park out of the whole complex. Within the present reserve there are several strictly protected ponds. Lake Neusiedl, one of the ornithologically most important wetlands of Europe, is the westernmost
steppe lake in Eurasia. It has an average depth of about five feet and merges to the east into characteristic puszta-like country, the Seewinkel, with about eighty alkaline ponds. The lake is located on the Austrian-Hungarian border, which crosses its southern part. Most of Lake Neusiedl and the Seewinkel, or about 800 square km., is within Austrian territory. The area is only about thirty miles from Vienna as the crow flies.

Another Austrian area predestined to become a national park is Hohe Tauern Conservation Area, located in the Alps close to the Italian border.

Germany has no national parks but a great number of nature reserves, both in the western and eastern parts. Recently the West German conservation organizations, Deutscher Naturschutzring, took the initiative in creating a national park in Bavaria. Included in the planning of the park is the reintroduction of mammals which are thought to have once occurred in the area, for example the moose. The latter species will be translocated from Sweden.

There is virtually no genuine nature left in densely populated, highly industrialized and often war-smashed Belgium. But this country has many natural oases, surprisingly abundant in wildlife. Several private conservation organizations have worked hard and with a degree of success towards saving for the future, areas that are representative of various habitats.

Being the most densely populated country in the world, it is obvious that the Netherlands has specific and difficult problems in setting aside and maintaining nature reserves. Nevertheless, Holland has several national parks and a great number of reserves. It is, for instance, one of the few countries that has reserves for amphibians. Small sanctuaries have been created to protect species of frogs, toads and newts threatened with extinction by water pollution and draining.
Reclamation in Holland is still going on as it has done for centuries. Many of the man-made wetlands have become favourable for wildfowl and have been established as reserves. This shows that the planning of reserves is just as important and is of value in those countries which consist of land that is 100 percent man-made.

Poland has been advanced in conservation for a long time and has a fine network of eleven national parks and a number of reserves. The most valuable of Poland's national parks is the Białowieża National Park, which protects a unique, virgin forest, the largest of its kind in Central Europe. The most interesting news from this national park is that its free-living herd of European bison (exterminated in the wild after World War I), now numbers about seventy, of which at least thirty-six were born free.

The Pieniny National Park in the Carpathians is located close to Czechoslovakia, from which it is separated by the River Dunajec. From 1932 to the end of World War II the Pieniny was a national park on both Polish and Czechoslovakian territory. In fact, the national park was the first international nature reserve, an admirable example of how valuable natural areas should be preserved. Unfortunately, the war put an end to this co-operation. Now the Polish part of Pieniny is a national park, while the Czechoslovakian side is a nature reserve. Efforts are being made to re-establish the international park.

The Tatra National Park in the Carpathians is an example of an international national park, because both Poland and Czechoslovakia have protected their respective parts of the Tatra Mountains with national parks. As long ago as 1888, it was proposed in Poland that these mountains be made a national park, but it was not until 1924 that Poland and Czechoslovakia decided to unite in establishing such a park. This pioneering plan was not, however, realized until 1954—although a national park had been created on the Czechoslovakian side in 1948.
Another national park in Czechoslovakia that has a counterpart in Poland is the recently established Krkonose National Park, set aside in Czechoslovakia in 1963, and in Poland in 1959. On the Czech side this national park comprises 38,000 ha, and on the Polish side 5,600 ha. It lies in the western Sudet Mountains and protects geologically interesting features as well as glacial relicts of plants and animals which formerly had a wide distribution in Europe.

In pre-war Hungary the large, privately owned estates preserved valuable lands from cultivation and so saved extensive forest and marsh tracts from destruction. Because of the political changes after World War II, the large estates were taken over by the government. Fortunately, they were not divided into small plots or opened up for cultivation. Instead, most estates were turned into nature reserves, managed by a National Office for Nature Conservation. In this way Hungary is today rich in nature reserves, one of which has been declared a national park. However, the most important nature reserves of Hungary are those set aside to protect some marshlands which have a wealth of animal life and for Europe, unique birds.

Rumania has a very ambitious conservation program, in which national parks and nature reserves are one of the most important parts. For the moment there is only one national park in Rumania, but the Commission for Nature Conservation of the Academy of Sciences is planning to increase the number of national parks. By far the most important of the Rumanian reserves are those in the delta of the Danube, a highly interesting complex of wetlands and forests in various degrees of evolution. The flora and fauna are spectacular. The reserves were established in 1962 and are combined with carefully planned management and multiple use of the whole delta. This differentiated approach to the conservation and utilization of an area covering about 5,000 square miles is of great interest, because it indicates paths to be followed
in planning similarly extensive conservation and national park areas in Europe and elsewhere.

THE U.S.S.R.

The U.S.S.R. has quite a number of nature reserves which that country regards as being equivalent to national parks. They are often presented as such in publications, although their official Russian names are "State Reserves." However, the U.S.S.R.'s first real national park, for the protection of Lake Baikal, is presently in the planning stage. This area lies outside the European part of the U.S.S.R.

In its planning and management of nature reserves the U.S.S.R. has a conservation concept quite different from most other countries. These protected areas are to a great extent used for experimental work on introduced exotic plants and animals which are often competitive to native species and, therefore, change the original habitats. Hence, in the nature reserves of the U.S.S.R. economic points of view favouring exotic species are considered more important than the preservation of native species.

For example, the Askania Nova State Reserve in Ukraina, often classified as a national park by the Russians themselves, and the best known U.S.S.R. reserve, supports a wide spectrum of exotic species from five continents, as well as various breeds of cattle, while several larger native mammals, which in the past roamed this steppe, have gone. As for the most characteristic rodent of the steppe, the bobak, only its numerous mounds remain.

Of the more important nature reserves established recently the Ritsa State Reserve, created in 1962, may be mentioned. It is located in the southwestern Caucasus and protects forest associations found in no other mountain range in Europe. (Of course, it is a matter of geographic taste, whether one places the southern slopes of the Caucasus in Europe or in Asia!)
It is in the Fenno-Scandian parts of Europe that one finds the largest national parks and the most genuinely wild areas of the continent. This situation plus the fact that Scandinavia is not heavily populated, places a great responsibility upon the countries concerned, for in their planning of national parks they should foresee the recreational needs of the Europe of tomorrow. With the continuous rise in standards of living, an increasing number of Europeans will travel by car to the last wilderness areas of the continent, to escape from urban environments and highly cultivated or industrialized lands. This trend is already quite clear. Every year more foreign tourists visit the Scandinavian national parks, despite the fact that these areas have been developed either very little or not at all. Scandinavian national park administrators provide no facilities or only very modest ones inside the reserves. Hiking is necessary and visits to the interior of the larger reserves necessitates the mounting of an expedition. This feature seems to be of increasing value to a growing number of people.

In Finland, for example, the Lemmenjoki National Park in Finnish Lapland, the second largest in the country, has no road connection and is only accessible by boat.

Since 1909 Sweden has been the custodian of the largest national parks of Europe. In 1962 the sixteenth national park, Padjelanta National Park (204,000 ha) in Swedish Lapland, was established, and it is larger than all the others. It is contiguous with the Sarek and Stora Sjofallet National Parks and the Sjaunja Bird Sanctuary and the Tjuol-tavuobme Forest Reserve. This complex covers 840,500 ha and is the largest wilderness area in Europe. Unfortunately, it has not been kept entirely untouched. Sweden's government has shown very little respect for the integrity of national parks. A series of violent changes for hydro-electric installations have altered the Stora Sjofallet National
Park in a tragic way. Parts of the Sarek National Park have also been destroyed and a new development plan, again for hydro-electric purposes, now threatens the Sjaunja Reserve.

Sweden has seven national parks in Swedish Lapland only two of which have escaped from exploitation and partial destruction, despite years of energetic defense battles by conservation organizations.

One of the effects of all industrial activities in or adjacent to the most important Swedish national parks has been the opening up of these reserves and the whole surrounding region by roads. Suddenly, vast wilderness expanses have come within everyone's reach. The impact of human visitations has already shown in the course of a few years how vulnerable the vegetation and the fauna of these northern haunts are to such drastic environmental changes. The last refuge of many rare animals is now exposed to continuous disturbances throughout the year, particularly in winter when people use snow scooters.

Unfortunately, developments of the kind discussed here destroy not only the sites directly involved, but indirectly the whole region, endangering all the values for which the national parks were once created.

Since the establishment of the National Nature Conservancy Office in 1963 the planning of new national parks and other reserves has been initiated, chiefly in areas which have long needed adequate protection.

Norway has recently set aside two national parks and several more are in the planning stage. Some of them may be connected with existing and future national parks in Sweden.

Denmark has no national parks but a number of nature reserves in various categories. This system functions well and gives adequate protection to habitats, vegetation and fauna. Therefore, no national parks are planned.

The most important conservation event in Iceland during the last
few years has been the establishment of the Skaftafell National Park. It has not yet been gazetted as such, but it will be shortly, thanks to the World Wildlife Fund and the I.U.C.N. It is a remarkable area, a kind of living glacial refugium where vegetation and animals live in rather specific climatic conditions at the margin of the existing inland-ice. In this way it serves as a living replica of similar Ice Age conditions which probably prevailed in some coastal refugia in northern Europe during the last glaciation.

The Skaftafell National Park is also an example of successful intervention by international conservation organizations in, so to say, the national affairs of a country.

Another area of utmost importance that should be set aside as a strict nature reserve or national park is Surtsey, the volcanic island born through submarine eruptions in 1963. These eruptions have continued intermittently ever since and formed a piece of land with a diameter of more than one mile and an elevation of 173 m. The scientific value of this island is immense, because the colonization of plants and animals on newly created land can be studied in detail, provided that there is total protection. This is at present the case.

THE BRITISH ISLES

Since the establishment of the Nature Conservancy Great Britain has shown a very ambitious conservation policy for the "National Nature Reserves," which correspond closely to the international definition of national parks. However, Great Britain has national parks, but these areas are not true national parks. Though the British national parks are exploited and inhabited, they are nevertheless, of great importance for recreation and for the protection of particularly beautiful sites from industrialization and urbanization.

There are now at least 108 national nature reserves, of which
five cover more than 10,000 acres. Of the so-called national parks there are ten areas varying from 225 to 866 square miles. The selection of the national nature reserves is primarily scientific in order to conserve single species biocommunities or ecosystems. The planning of these reserves is primarily based on ecological considerations and leads to a flexible policy. In some cases the public may visit the reserves without restriction, in others there is no admittance. There are many intermediate arrangements between these two extremes. From the conservationist's point of view this is a realistic and sound management policy for reserve of high scientific value. Concessions given in a national park or equivalent reserve should never prove antagonistic or arbitrary towards the main values of the protected area.

_Ireland_ has no national parks.

**FUTURE PLANNING OF NATIONAL PARKS IN EUROPE**

When surveying the heterogenous national parks of Europe, it is evident how widely planning, utilization, management and research activities in such reserves differs from one country to another. The national objectives of conservation also vary, and this is reflected by the status of the national parks of different countries.

It seems to me that the policy adopted by the Nature Conservancy in Great Britain is the best approach to the planning of national parks and equivalent reserves. It is desirable to do likewise in the whole of Europe. Emphasis should be laid on conservation and this principle should never be lost. Research, education and recreation can go hand in hand with such an objective. Development, earnings, and other considerations must be secondary, but they are not always necessarily antagonistic to the prime purpose. In most European national parks developments for tourist facilities such as accommodations, trails, roads, bridges, airports, etc. do not need to occupy extensive areas of
a national park. If about ten per cent of the reserve will be affected by development, this sacrifice is worthwhile, provided that the ninety per cent will be given a fair chance to remain untouched except for minor hiking trails.

Obviously, all exploitation except tourism should be completely banned in national parks. Research should be encouraged. National parks are often ecologically complex. There is hardly any problem in a national park that can be satisfactorily solved without solid knowledge about the area. Only continuous investigations can produce the facts which form the basis for planning and management. Research also gives the data, which is necessary in providing accurate interpretative information for the visitor. Continuous research is the only way to detect in time, whether something is going wrong in a national park because of too much utilization.

On the educational side, the planning of national park museums is very important. This has been almost entirely neglected in Europe, where very few national parks have the museums or information (interpretative) centres, that have proved so useful to, and appreciated by visitors to North American national parks and also recently by those to some African parks.

It is also of vital importance that national parks employees at all levels of service be familiar with both the area and its objectives, for they often come in close contact with visitors and should be able to answer questions correctly, even if they do not belong to the interpretative services.

These points are just a few examples of what should be taken into consideration when planning national parks in Europe.

The national parks of Europe are poorer in natural history features than are national parks in North America, Africa or Asia. This situation cannot be changed. Although European national parks have
fewer attractions in wild plant and animal species, their great value is their display of living landscapes which were once characteristic over large areas of Europe. Therefore, it is very important when planning the European national parks that are to preserve this heritage, to ensure that they are not spoiled by irrelevant activities; activities which are detrimental to the very features for which a national park may have been set aside in the first place.

REFERENCES


General Aspects

A large number of interesting and valuable documents deal with numerous matters related to the protection of natural areas and to the creation of national parks and equivalent reserves.

The relevant references show us that as far back as the fourth century B.C., Plato recommended that the hills of Attica be reforested so as to prevent erosion. Feudal lords in the Middle Ages were concerned with restraints upon the felling of trees and game hunting. At Glaris, in Switzerland, a hunting reservation was created in 1569, and Garcilaso de la Vega mentions in 1609, the concern of the Inca civilization in protecting the birds and fauna of the guano islands. The Hague forests are said to be the first known case of protection as a result of an agreement made by the Prince of Orange and Netherland in 1576. However, it was Alexander Von Humboldt (1769-1859), who brought forth the well-defined need for the protection of Nature, thus coining

the idea of the natural monument and setting the foundation for ecology. The Mexican Government is said to have acquired the mines of the Carmelite convent of the Los Leones desert as well as neighbouring forests in 1856, to protect the springs of the region used to provide Mexico City with water. In 1864, the United States Congress transferred the Yosemite Valley, the "Sequoia" forest (Mariposa Big Tree Grove), to the State of California to be declared an inviolable reservation for use as a public recreation ground.

We could quote many more instances, in various American countries, where as far back as the Colonial Age the protection of the manifold species of nature was decided upon. But in fact, the origin and development of the real idea of national parks arose in 1870 when a group of explorers from the State of Montana (U.S.A.) under the leadership of Cornelius Hedges, travelled through the admirable and outstanding region of the present Yellowstone National Park and eventually began to consider the future of such natural wonders, proposing that they be kept under the authority of the federal government as a national park for the use and benefit of the people. Said proposal was eagerly supported by Congress and thus the establishment of the world's first National Park was enacted in 1872.

**Origin and Creation of National Parks in Argentina**

It was Dr. Francisco P. Moreno who after having gathered auspicious notions regarding the idea, spirit and function of national parks, favoured their creation in Argentina and on November 6th, 1903, bequeathed the 7,500 hectares bestowed upon him as a gift by the government, consistent with Law 4192, as a reward for his endeavours and concern during the exploration of the Patagonian Cordillera.

The great man, best known by his title "Perito Moreno," sent a letter dated November 6th, 1903, to the Minister of Agriculture saying
among other things: "During the excursions which I made in those years throughout the southern region, I admired beautiful spots and more than once I proclaimed that it would be adequate for the Nation to keep the ownership of some of them for the greater benefit of present and future generations, thus following the example of the U.S.A. and of other nations who own superb national parks." He added that, "Each time I have visited that region I have told myself that if it became inalienable public property, it would soon come to be a pivot of broad intellectual and social activities and therefore an excellent tool for human progress. One becomes aware there of natural substantial marvels which are already beginning to attract those investigators who will feel at ease in pursuing their fruitful researches. The marvellous setting of lakes and torrents, of gigantic forests, of steep mountains and of the eternal thaw located at a most outstanding site by the Atlantic Ocean, at the crossing point of the shortest route between Australia, New Zealand and Europe, forms one single range where the Tronador Mountain links on its peak two nations whose union is brought forth by nature and who will greet the forests of the giant."

When pointing out the aim of his donation, Perito Moreno declared patriotically, "I express my wish that the present perspective of its boundaries not be changed and that merely those constructions be made which grant every comfort for the sojourn of cultivated visitors whose presence at those sites will always prove advantageous to the regions thus definitely incorporated into our sovereignty."

This donation was accepted consistent with a decree dated February 1st, 1904. The government enlarged the area in 1907, by another 43,000 hectares and on the 8th of April, 1922, the national government formally created the Southern National Park, enlarging its area to an overall 758,000 hectares.
The government issued a law in 1924, by which a commission was formed for the benefit of the Southern National Park. It had to give due attention to all means of protection for the Park, also to developing and furthering knowledge about it and its aims. However, only as recently as 1934, has an agency responsible for the custody and administration of all such areas been created by Law 12.103, giving them their real characteristics of national parks.

The government submitted the draft of said Law to the Honourable Congress by means of a preamble pointing out that: "National Parks perform an undeniable social function and their importance has been acknowledged by governments of the most important countries who consistently have enforced the relevant laws. . . . Forming exceptional settings, the pertaining rules tend to keep intact the main features of the landscape, embellishing it without changing its original conditions. An adequate field for the knowledge and study of nature is thus offered, which contributes moreover to enhance people's cultural assets."

Although in some countries scientific research constitutes the main purpose of national parks, in others tourism receives preferential attention. Law 12.103, establishing the basis for national parks in Argentina, comprises both these aims, which may be summarized as follows: (1) to keep the nature of national parks and to direct the country's attention to them for appraisal and study; to encourage frequent visits in order to enhance their high spiritual value for recreation, public education and scientific research; and (2) to protect those parks from whatever might change the continuity of their natural setting or lessen their value as expression of beauty; to maintain their primitive flora and fauna and their typical areas.

From 1934, when the National Parks Service was created, as a self-ruling agency but dependent upon the Ministry of Agriculture and Livestock, until the present time, eleven national parks and one natural
monument have been established in Argentina. As can be seen from Figure 14, six of them are located along the Patagonian Range of the Andes, the remaining ones are located in the Patagonian Steppe, Subtropical Misiones Forest, and Tucumán Bolivian Subtropical Forest with two in the Chaco Park.

This paper would become too extensive with exhaustive descriptions of the ecological characteristics, vegetation types, etc., of each of these national parks. For this reason, they will be referred to only briefly so that those interested in these areas may get a general idea about them as well as comprehending more clearly the following discussion of their development and planning.

*Nahuel Huapi National Park* is located in the southwest part of Neuquén Province and northwest part of Río Negro Province, on the Andes range, between 40°20' and 41°30' south. It was created consistent with a law dated 1934* and is overall, 785,000 hectares. It aims at protecting the flora montana and pedemontana and lies within the Subantarctic Forest Zone. It has an interesting fauna, its most remarkable components being on the verge of extinction, important imbriferous basins and beautiful scenery, with many large lakes and mountains—the towering Tronador peak is 3,554 m. high, covered with wonderful and interesting glaciers.

*Lanín National Park* is located west of Neuquén Province, in the Andes range, between 39°10' and 40°20' south. It was created in 1937 and covers 395,000 hectares. This National Park has a rich and varied flora especially outstanding are its *Araucaria* (*Araucaria araucana*), "Raulí" (*Nothofagus nervosa*) and "Pelin Oak" (*Nothofagus obliqua*) forests. Furthermore, it has an interesting fauna and really beautiful

*Its origin goes back as far as 1903, consistent with P. Moreno's donation as mentioned earlier in this paper.
Fig. 14 Location of the National Parks of Argentina
scenery, all of which have, in addition to their scientific significance, a particular appeal for visitors.

Los Alerces National Park and the Puelo annex are both located in the Province of Chubut on the Andes range between 42°20' and 43°10' south. The National Park was created in 1937 and consists of 263,000 hectares; in addition it contains Puelo Lake measuring 23,000 hectares. The giant "Alerce forests" (*Fitzroya cupressoides*) are stands of trees which are thousands of years old; there are furthermore other tree, shrub and herbaceous species distinguishing this National Park from the others. This one also, has magnificent settings formed by colourful lakes and many waterways.

Perito Francisco Moreno National Park is located in the northwest area of Santa Cruz Province, and like the preceding parks it is situated in the Andes range, at 47°30' south. It was created in 1937 and has an overall size of 137,000 hectares. The flora of this National Park differs greatly from that of the other ones and besides it has a richer fauna. Because of difficult access, to date it has been one of the less frequently visited national parks, but henceforward it will appeal to a great many tourists because of its unusually beautiful scenery.

Los Glaciares National Park is located in the southwest part of Santa Cruz Province on the Chilean border, between 49°10' and 51° south. It was created in 1937 and covers 600,000 hectares. This beautiful National Park offers a fairly similar flora and fauna to the preceding one, but it differs in a special way with its marvellous gigantic glaciers and icebergs, together with an immense lake, displaying a really overwhelming richness of colours and wonderful settings.

Laguna Blanca National Park is located in Neuquén Province, between 39°3' west and 70°20' south; it was created in 1940 and is only 11,250 hectares. It is a characteristic sample of the Patagonian Plain
and has representative shrubs and herbaceous vegetation of that phytogeographic area. The main purpose for the establishment of this National Park was the protection of the fauna, especially the "black-neck swan" (Cygnus melanooriphus).

Iguazú National Park is located at the northwestern part of Misiones Province at the confluence of the Alto Paraná and Iguazú rivers. It was created in 1934 and covers 55,000 hectares. Phytogeographically it is located in the Misiones Subtropical Forest. This National Park offers highly interesting floral species and a significant zoological representation for important scientific research, and at the same time it contains the marvellous, world-famous Iguazú waterfalls.

El Rey National Park is located in Salta Province between 20° south and 64°40' west. It was created in 1948 and is 44,162 hectares. Phytogeographically it is located in the Tucumán-Bolivian Subtropical Forest and its rich flora is comprised of scientifically highly interesting trees, shrubs and herbaceous species. Moreover, it presents an interesting stock of authoctonous animal life. This National Park was set up to display the scenic marvels and at the same time to protect and conserve the natural manifestation of these forests.

Río Pilcomayo National Park is located at the northeast corner of Formosa Province, 25° south, 58° west, on the Pilcomayo River. It was created in 1951 and has an overall area of 285,000 hectares.* Its corresponding phytogeographical region is called "Parque Chaqueño" (Chaco Park), the National Park being composed of manifold and rich flora typical of that region; the "Caranday" (Copernicia alba), in particular, should be pointed out. There is in addition, a choice and abundant fauna of quadrupeds of great interest protected in this Park. Furthermore, this National Park has beautiful settings created by its

*Recently its area has been reduced to an overall 60,000 hectares, excluding a large area spotted with many hamlets.
palm groves and lagoons, etc.

**Chaco National Park** is located in the Chaco Province about 100 km distant from its capital ( Resistencia). It was created in 1954 and in size it covers only 15,000 hectares. This National Park is also part of the Parque Chaqueño and has been reserved for its rich flora and fauna. The main concern in this National Park lies in the protection of a typical area of "quebracho colorado" (*Schinopsis Balansae*).

**Petrified Forest Natural Monument** is located in the Santa Cruz Province at 47°45′ south and 68° west. It was created in 1954 and has 10,000 hectares, set amidst the Patagonian Plains. The purpose of this Natural Monument is to protect the petrified forests with their "Araucaria" trunks (*Araucaria mirabilis*). Specimens of these trunks range up to 3 m in diameter and 100 m in length, and are of special scientific value. The evolution of these petrified forests is estimated to have started more than seventy million years ago.

**Tierra del Fuego National Park.** As far back as 1910, and more recently in 1946, the national government had intended to set aside reserves for the creation of a National Park in Tierra del Fuego, but only as recently as 1960 did this project become a reality with the enactment of Law 12.554. The Tierra del Fuego National Park is located on the southwest area of said territory, contiguous to the Chilean border, and has an area of 63,000 hectares, comprising manifold aspects of natural beauties and scientific values. Visitors may enjoy a landscape of changing colours ranging from a peaceful and picturesque brook to majestic mountains and glaciers. The Beagle Channel and the Cami Lake (also called Fagnano), provide the onlooker with a magnificent sight. There are moreover, the "Lengua" (*Nothofagus pumilio*) and "Guindo" (*Nothofagus betuloides*) forests, which together with other vegetation, spread from sea level to 600 m high, covering mountain slopes and showing different shades of foliage in the various seasons.
The most outstanding features of Argentina's National Parks have been summarized, but now this report goes on to consider their development and management, the aim of which is better control and protection of these areas.

As Nahuel Huapí and Iguazú National Parks were the first to be created by law, both of them benefitted from administrative predilections concerning their promotion. Therefore, as we review development of the Nahuel Huapí National Park, for instance, we learn that for many years, planning aimed at attracting tourists, so that the building of hotels, roads, and hamlets on strategic sites in the Park was fostered. If we add the presence of many private properties with forest and livestock exploitation in addition to the settlers, we become well aware of how difficult it has been to fulfill in an orthodox fashion, the philosophy which seeks to maintain the purity of a national park.

Although it is true that the area first reserved for Nahuel Huapí National Park (the area donated by Perito Moreno) was and still is in an undisturbed natural state, its subsequent increase to an overall 785,000 hectares (its present area), brought private properties, municipalities, authorized and intruding villages into its area. Afterwards sport camps, hamlets, etc., came into being, thus posing a most serious problem for the National Park administration, namely, the maintenance of standards established for its management, consistent with the aims set forth for its creation.

The preceding statement concerning Nahuel Huapí National Park is also valid for the remaining ones, although luckily some of them are more remote, have difficult access and remain undisturbed, thus allowing in the future, planned developments which will be consistent with the relevant standards.

It has to be admitted that the Argentine National Park
administration lacked perfectly clear and well formulated standards and most important, a measure of planned development for the national parks, consistent with the aims for which they were created. Therefore, as they were developed they conformed to a variety of needs, requirements and interests. However, the main aim was tourism and thus, an obviously slow but constant intrusion took place, frequently violating the basic purposes of these areas. As will be seen in the following, this intrusion brought home the immediate need to modify Law 12.103, so as to clarify ideas and especially, to reconsider the boundaries of each one of the national parks and leave out all those areas not conforming to the concept of a national park.

Taking into account these problems the National Parks Service, an autonomous agency administered by a Board of Directors, established a planning principle for national parks according to the following ranking: Conservative Exploitation Areas, Recreation Areas and Intangible Areas.

Conservative Exploitation Areas are those areas where human population is present and the utilization of existing natural resources is permitted.

Recreation Areas will be used for furthering tourism, granting tourists all facilities (hotels, roads, sport grounds, etc.) and everything else concerning recreation, rest and the enjoyment of nature.

Intangible Areas are those park areas kept in their natural form which are to be protected from human intervention and are only to be subjects for special study and research.

This ranking or zonation is not at all consistent with the basic philosophy of rational parks. Quite to the contrary, it has a bewildering effect upon visitors, giving them very wrong impressions and ideas when it reveals a national park that is subdivided into areas where the resources are utilized, areas where typical recreational
activities with their associated casualness take place, and only small, exceptional areas which are suitably maintained to conform to national park standards.

Summarizing, we may state that most national parks in Argentina were chosen and created with two well-designed aims: on one hand, with a poetical and spiritual notion and on the other hand—which might be the more substantial one—because of the immediate need to protect significant areas in the Andes-Patagonian Range from destruction by fires and pasturing—but with a lack of knowledge and clear-cut concepts as to the overall functions which these valuable areas should fulfill now and in the future.

Present Condition

Obviously, the national parks already in existence as well as those which have been recommended but not yet reserved by law, are outstandingly beautiful and display natural characteristics of great scientific, educational and recreative interest. However, we have also pointed out the difficulties posed for most of them in terms of a rational structure and logical planning to standards set forth in accordance with the aims and purposes of national parks.

The government recognized their situation and when it passed decree No. 654 ratified by Law No. 14.467, it declared:

That the project of establishing the National Park system in our country is based on the purpose of conserving for public property some of its most interesting and beautiful areas in their primitive natural condition.

That said purpose comprises various aims such as the protection of landscape due to its exclusive historical and artistic as well as scientific values, the latter on the ground of the natural condition of flora, fauna and geo-properties; the conservation of rare vegetal or animal successions on the verge of extinction and of greatest interest for biological research, thus aiming to offer adequate scope for knowledge and study of nature and to contribute moreover to enrich people's cultural assets.

That although National Parks may be useful as adequate recreation and relaxation sites, their main purpose bars whatever economical goal derived from exploiting their natural resources, so
that said areas may maintain their typical forms, without any alterations or changes not produced by nature itself.

In order to fulfill and truly respect the purposes for which the national parks were originally created, it is essential to establish strict rules in accordance with these purposes so that its aims may be properly safeguarded. Therefore, it should be borne in mind that in the said areas resources may neither be consumed nor their substances be destroyed by exploitation of their flora, agricultural waste, hunting, utilization of their waterways nor any other material interest. In other words, these "open air museums" shall be used only by present and future generations for enjoyment and research. Even so, the permitted uses, should be conscientiously regulated and standardized so as not to oppose the objectives, this meaning that every unavoidable improvement be pre-planned and then carried out carefully so as to harmonize with the wilderness and prevent fundamental changes in its beauty and resources.

In order to achieve the precise goal of what Argentina's National Parks are and should be, article 6 of the aforementioned Law stipulates that through the Secretary of Agriculture and Livestock, their present boundaries shall be designated in such way as to exclude everything not conforming to their set standards.

Since 1958 there have been several attempts to readjust the limits of the national parks, but up till now without any concrete results. Recently, through a resolution of the Minister of Agriculture, a special commission was established which was appointed to the task to study each national park with the purpose of excluding all areas which do not conform with the park concept.

This serious and significant task will permit the establishment of definite boundaries for the national parks and will also set the standards at which they should operate and will ensure adequate
planning in each case. Although it is impossible to carry out all these measures immediately, they should, however, be complied with as soon and as efficiently as possible and within the stated goal, unless weighty reasons make certain changes advisable.

Thus, at present the National Parks Service is carrying out an exhaustive study aimed at giving its national parks the required purity and settling the standards and overall planning conditions which are essential in order to prevent further area adjustment studies.

Finally, the design of a basic structure for national parks, the latter theoretically covering two types of areas each of which requires separate treatment, is deemed desirable and adequate. However, such areas should set a standard but not convey an image; i.e. when we refer to a national park we are talking about an area wherein container and contents should be neither touched nor changed. The above two areas correspond without a doubt, to those used as recreation areas and natural or intangible areas. The size of the former, that is the recreation area, will depend upon various factors and especially upon those various scenic spots (wilderness) to which the movement of the bulk of tourists would be oriented. Taken into account, however, must be the fact that tourists must in no way impair or diminish the significance and integrity of a national park's features.

In short, with the future boundaries of Argentina's National Parks settled, the planning of each park will be carried out in such a way as to maintain an equilibrium between conservation and protection of the whole park, and its use for recreation. In this respect lodging and recreation should be made available for tourists on a large scale outside the national park whereas sightseeing in the park should be done on carefully designed roads which lead the tourists to scenic or other places of interest. These spots should be located, if possible, next to those most magnificent and beautiful areas for which the park
was originally created and which can only be visited, studied and admired on roads or paths built according to standards that make them compatible to such expressions of Nature.

**National Parks of Other South American Countries**

The author of this paper, having been President of the Latin American National Park Committee (C.L.A.P.N.) of the I.U.C.N., and the Committee of National Parks and Wildlife of the Latin American Forest Commission (F.A.O.), has, as a result of his activities, obtained exhaustive documentation on national parks in almost all of the South American countries. In this respect, most of them have looked to Argentina as a leader and guide concerning the administration, development and planning of national parks. This fact should not be surprising, since Argentina was the first South American country to create national parks, and moreover, to clearly manifest and publicize their relevant aims.

Most South American countries, however—and I feel that this goes for Central American countries also—have not built up their national parks in accordance with the stipulated aims and standards. There are several reasons for this. On one hand, the responsible authorities (they are mostly subordinate to forestry services), have neither given due attention nor assigned a true value and significance to these reservations, merely contenting themselves in fulfilling the formalities required for the creation of national parks. On the other hand, there are problems of inaccessible locations which are rarely visited; and moreover, a lack of promotion, advertisement and subsequent adequate public education. But the main problem is the complex make-up of private property, licenced or unlicenced village dwellings, farmers, etc., in most of these national parks. They pose difficult situations and thus discourage those who have the task of maintaining and protecting such precious relics.
Most of these countries still have the opportunity to adjust their national parks and they should do so by passing the relevant laws to exclude all those areas which do not conform to the aims and standards set down for parks. And they should also plan for better administration, paying special attention to areas outside the parks which are designed for settlement and for furthering broad recreational and leisure activities. Thus, the inner areas of the parks may be kept intangible and unchangeable. The restriction of recreation and sightseeing within the parks to carefully planned roads and paths should be contemplated, allowing tourists to reach specially chosen sites where they may observe and admire those magnificent settings that are the reason for the national park's existence. These principles were discussed and reinforced during the recent conference in Bariloche, Argentina (1968) and it is plausible to state that many Latin American countries have begun with their implementation.

Unquestionably, the entire park constitutes a subject for study and research of such value and importance that an administration should assign technically and scientifically trained staff to it, and encourage, moreover, the study of Nature by other institutions.

During the Second Meeting of the Committee of National Parks and Wildlife held in Port of Spain (Trinidad and Tobago) on December 4 and 5, 1967, a document comprising the outcome of an inquiry referring to the condition of Latin American national parks was discussed. Four tables contained data concerning the number, name, location, size administrative and legal handling, staff and budget of National Parks, National Reservations, Natural Monuments and Virgin Reservations in twenty countries. After analysing the data the author of the document reached conclusions which are relevant to this paper and will therefore, be quoted:

(a) Obviously some countries do not have a clear notion—and if
they have, they do not act accordingly—about the meaning of National Parks. In this regard the case of a country with National Parks ranging from 3, 5 and 4 hectares up to 590,000 may be mentioned.

Without any doubt we can state that if we abide by the usual standard of National Parks, we could never accept an area as small as the aforementioned to be rated as such. Assuming even the case of National Parks as large as 2,000,000 hectares which unquestionably would contain valuable and spectacular items we are, however, forced to think that in the future so immense an area will be subject to pressures from material interests aimed at the resources existing therein.

(b) Among the well-settled standards and aims referring to National Park systems there is one which prevents repetition, and whose meaning covers flora, fauna geo-aspects and wilderness. Analyzing the geographic and phytogeographic location mentioned for the various National Parks, we are aware that in some countries as much as six of them have been established in the very same region.

(c) There are very few National Parks created in accordance with laws; most of them came into being by simply passing a decree or mere resolution. The latter is not advisable; for their protection and integrity National Parks should be created and founded by laws.

(d) Most National Parks operate depending upon Forestry Services, in few cases upon Government Agencies which administer the overall renewable natural resources; in one country, it is even subordinate to the Institute of Agrarian Reform.

(e) Whereas various National Parks are located closely to towns or cities other ones are many thousand kilometers distant from such places. Closeness to populated areas proves highly dangerous, as their influence becomes apparent especially through increased recreation activities, thus changing progressively the primitive conditions of the natural elements which should constitute the unchangeable assets of those areas. The very distant ones, on the other hand, do not fulfill their purposes either, especially to further knowledge and admiration by all generations.

As long as these undeniably magnificent areas do not form part of the National Park system, they should perhaps by typified as Natural or Virgin Reservations.

(f) The obviously limited financial support allotted to the specific Services may be held responsible for the fact that most National Parks have not reached a degree of development in accordance with the purpose of their creation, thus suffering the consequences derived from insufficient management and protection.

(g) Technical, administrative and park-management staff is insufficient; this is evident when reading the statement under (f).

(h) Pasturing, utilization of forests, human dwellings, fire, etc. pose many problems for most National Parks.

In the following we quote some other items from the above-mentioned document which provide basic understanding for a statement of
principles of National Parks:

(1) In a world needing ever-increasing areas for its sustenance those areas containing highly representative specimens of Nature should be localized and protected, thus constituting true open air museums for generations of all times wherein students, poets, artists and all people may admire the manifestations of a natural environment unchanged by men and contrasting to those areas which are subject to material exploitation.

(2) All areas to be set aside for National Parks or equivalent reserves should meet the necessary requirements for such designation and therefore, be declared of national interest and be put under the Nation's jurisdiction.

(3) In order to achieve a truly efficient custody over National Parks or equivalent reserves it is essential that the agency administering said areas be granted sufficient autonomy as well as adequate financial means so as to effectively perform its duties.

(4) Although said areas are being visited by an ever-increasing number of persons, the administering agency, considering the particular characteristics of, and defined aims and standards set down for, said areas, should be the only one to regulate the circulation in, and management of, these areas.

(5) As there still exists highly important ecological regions in most Latin American countries, and there is the possibility that in view of their contents, National Parks can be established within their boundaries, it is urgently necessary that such areas be determined and acknowledged.

(6) As education and training are the most efficient means for the conservation of renewable natural resources, it is essential that Latin American countries give utmost attention to those aims.

(7) As the aim and purpose of National Parks and equivalent reserves in the conservation of their typical elements (flora, fauna, geo-aspects and wilderness) as well as the study and research of said elements, and moreover, to offer spiritual recreation, those who are to be held responsible for their custody shall be professionals and scientists.

(8) The scope of a National Park or equivalent reserve should constitute a unit of logical size, comprising an area which would allow efficient administration of its contents, so that it be in the least way affected by outside influences.

(9) In order to fulfill the basic philosophical principles regarding National Parks these must be kept free from any material use whatsoever and primarily everything concerning their scientific and educational value should be emphasized more than the recreational aspects.

(10) The National Park system determines the necessity of excluding those units which do not conform to its aims; of enlarging areas, should this prove essential, thus adding to the value of their contents and allowing more elements to increase the beauty of wilderness and further education and research; and of eliminating
all legal means which enable the exploitation of any of their natural resources not consistent with the purpose of said areas.

(11) In order to prevent misinterpretation of the purposes and aims regarding National Parks and equivalent reserves, each one of these should be as different as possible from any other in their material and integral aspect.

(12) Designs constructed for highways and roads to be in each National Park should aim exclusively at their protection and integrity in order to allow people to become acquainted with their most outstanding aspects, but without impairing either their integrity or their stability.

We could add many more perils but above all we must convey one with the following message:

Those who are in charge of the administration of National Parks should co-ordinate their work with those in charge of the conservation of the other renewable natural resources of their country because only in this way will they be able to guarantee the perpetual existence and prevent their spoilage of the National Park System in times to come.

Conclusions

1. Argentina was the first country in South America to establish national parks, starting in 1903.

2. From that year until 1934, when Law 12.103 was passed creating the administration for these areas and clearly setting down the philosophy and standards regarding their use, conservation measures were only undertaken to try to protect the area then called the National Park of the South, from impairment through fire and exploitation.

3. From 1934 (Law 12.103) attempts to further the interests of Nahuel Huapí National Park and Iguazu National Park were begun and at a later date reservations for future national parks and other areas were obtained by decree, being later consolidated by law and today being subject to certain developments.

4. In spite of Law 12.103 having established the relevant purposes, the Argentinian National Parks do not conform completely with their purposes because they include within their
limits private properties, forest exploitations, livestock breeding, hamlets, etc.

5. The condition stated under the preceding item is about to be adjusted by means of an exhaustive study undertaken by a special commission which, besides setting down new boundaries for the national parks, is preparing the relevant standards and will advise accordingly on the planning of each park.

6. Intensive and free recreational activities are intended to be carried out outside the national park boundaries. National parks planning will take into consideration the construction of roads primarily intended to direct tourists towards strategically located sites, and will always try to ensure that this movement may enable the tourists to enter and leave the area on the same day. Naturally, the construction of cottages, campsites, etc., has been planned for those who wish to stay longer, especially nature lovers, students, naturalists, and researchers.

As for those other South American countries with conditions similar to, or even more difficult than those in Argentina, they still have time to carry out exhaustive studies in each one of their national parks so that they may conform to a planning concept similar to the one described in this paper.

Moreover, it is imperative that all those countries which have not established national parks so far but which do have the required conditions for doing so, should proceed accordingly before it is too late.

All existing as well as prospective national parks should conform to clearly established standards and aims, and for each of them, planning should be carried out in such a way that they can satisfy the use (recreation, scientific, educative) for which they are intended,
taking into account, however, the integrity and continuity of the ele­ments (flora, fauna and/or geo-aspects and scenic), which originally motivated their selection as samples of the finest manifestation of Nature.

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PROBLEMS IN NATIONAL PARKS MANAGEMENT IN EAST AFRICA

A. de Vos*

Because of their outstanding animal displays and often attractive scenery, the national parks of East Africa are drawing increasing numbers of tourists from all over the world and they are therefore important in providing much needed foreign exchange for the development of the three East African countries concerned. But are they adequately managed? And is their future secure? These are some of the points I wish to discuss in the hope that this may create a better understanding of the problems confronted in East Africa today.

At the First World Conference on National Parks held in Seattle in 1962, certain guidelines were developed which are considered acceptable as standards for national parks management the world over. The conclusion was also arrived at that management based on scientific research is not only desirable but often essential to maintain some biotic communities in accordance with the conservation plan of a national park or equivalent area. Are these guidelines acceptable to Africans generally, and suitable to African conditions?

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Let us first of all consider the attitude of the average uneducated African toward national parks. To the majority of these such parks are still European institutions, established for the enjoyment of the tourists and of no particular concern to the indigenous people, other than that parks may add funds to government coffers by attracting these tourists. There is, fortunately, a small but increasing number of Africans who enjoy visiting national parks, and also there is better understanding of the role parks play in conserving the national heritage. The prevailing attitude however remains that parks are to be tolerated mainly because they provide required funds.

One might well ask what the future brings for national parks in view of the rapidly increasing human populations and consequently, accelerating pressures on the land. It seems that if national parks are to remain untouched, it will be essential that they play an increasingly significant role in the economy of the countries concerned. The cardinal question is then: how can this be achieved with due reference to policies governing national parks management and without damage to the living resources of these parks?

Since parks are the major attraction for the tourist industry, it really is of little consequence how their recurrent costs are met and no undue significance should be laid on whether or not the revenues of any park cover its costs of up-keep. If a park runs at a loss, it is a matter of policy how losses are going to be covered. Recurrent costs of parks can be met from general government revenues, from tax on the tourist industry, or from entry fees—or more likely from a combination of all three.

One unfortunate situation is that in East Africa today there are inadequately defined national policies governing the purposes and objectives of parks management. As long as these remain ill-defined, it will be most difficult for those charged with management and maintenance
of parks to do an adequate job. Fortunately efforts are under way to rectify this situation through the African convention for the conservation and management of wildlife.

The general objective of managing national parks should be to maintain the ecologic scene as it was before men started drastically to interfere with his environment. Native species of wild animals and plants should be preserved in maximum variety and in reasonable abundance. A special effort should be made in East Africa to maintain a representative collection of the spectacular variety of species of animals and plants that are present in undisturbed habitats.

Ecological Management Problems

A basic consideration should be that the management of the environment be kept to the absolute minimum consistent with the basic goals of park management. However, neither animal numbers nor the vegetation remain static and there are circumstances when man must actively disturb the processes going on, usually to maintain some habitats that are being destroyed by certain species of animal.

Those charged with the management of ecological aspects of national parks have many problems on their hands that cannot be readily solved. Many of these problems originate from outside the parks, which can generally be considered "ecological islands," subject to direct or indirect modification by activities and conditions in the surrounding areas. These influences may involve such factors as immigration and/or emigration of animal and plant life, changes in the fire regime, and alterations in the surface or subsurface water.

Even the largest national parks in East Africa do not appear to be self-regulatory ecological units. For instance, the Serengeti National Park, covering approximately 5,800 square miles, does not really serve as such, since hundreds of thousands of animals migrate
beyond its boundaries at certain times of the year.

While until recently there was relatively little pressure on the land surrounding the national parks, this is no longer the case everywhere and in some instances there is intensive agriculture practically right up to the boundaries of national parks. This problem is bound to get worse. This situation was elucidated by Wheater (1968) for Murchison Falls National Park, Uganda. Here agricultural settlement along the southwest boundary not only results in increased poaching, but also game damage to crops. He suggested that in order to prevent further agricultural encroachment along the boundaries of this Park, it would be essential to prepare a land use development plan for its surroundings, including controlled hunting areas, game reserves and ranching areas, but excluding further intensive agricultural settlement.

Because of increasing pressures on the land, wildlife is getting more and more confined to or forced into the boundaries of national parks. Herds of animals which used to migrate in and out, according to the availability of food, will tend to spend a much longer proportion of their time in a park. Migration or movements outside parks are tolerated less and less by the indigenous population. Particularly elephants become increasingly confined to parks and reserves, resulting in increasing pressure on the available food resources. Sometimes, as in the case of Mt. Kenya and the Aberdares National Parks, wildlife is prevented by game moats from leaving the boundaries of parts of these parks. Since these mountain parks are incomplete ecological units, this is bound to create problems, such as overbrowsing of part of the range.

Fire-induced grasslands and wooded grassland, which may carry large numbers of many species of plains game, are largely man-produced habitats which are so characteristic that their disappearance would constitute a very important and serious loss. The use or the control
of fire can be a very powerful tool for the control or alteration of the flora. Decisions on its use are inherent in a management plan. In most parks uncontrolled fires come through every dry season, and the management decision will be either to let them come through, or to prevent any fire from coming through. To control a fire so that it occurs at a predetermined time or interval of years may be the ultimate solution, but this requires well-trained personnel and adequate equipment.

Another problem may be that larger predators, such as lions and cheetahs, move out of the protective confines of parks on occasion and get killed-off in the process. That, of course, results in reduced predator pressure with possible consequent build ups in prey populations or in disease incidence among the prey.

One point to be considered is under what conditions it would be admissible to introduce species of animals or plants into a national park which are not present in it. There appear to be at least two circumstances under which this might be allowed: (1) when a species has been known to be present within living memory, and the habitat is still suitable for its existence; and, (2) when a change in vegetation after the creation of a park creates a suitable habitat for a species that is present in the surroundings of such a park.

When certain herbivores exceed the carrying capacity of the range, damage may result. This has been described for elephants in Murchison Falls National Park (Buechner, 1963) and in Tsavo National Park (Glover, 1964), and reported for hippos in Queen Elizabeth National Park (Laws, pers. comm.). In Tsavo, the browsing by elephants on trees and shrubs has resulted in opening up scrub forests to plains-type vegetation, which has allowed the habitat to become more diversified and plains animals like zebra and oryx to proliferate. Whether or not this is desirable is a debatable issue and depends on parks policy, but Laws (pers. comm.) argues that this may be a desirable
development in Tsavo National Park where the biotic communities are not sufficiently diversified to be attractive to tourists.

In some parks, like Tsavo and Nairobi National Park, artificial reservoirs have been established to diversify the habitat and to provide more reliable sources of drinking water to wildlife. In Tsavo, one of these reservoirs is used for Tilapia production. No doubt, the movements of some species of wildlife are affected by this development. The provision of additional watering points may be considered since if inadequate water is available the animals might move out during the drier parts of the year. However, the provision of such additional water may have a very considerable effect on animals numbers and, consequently, on the vegetation.

A Special Problem: The Harvesting of Surplus Animals in National Parks

Much controversy has raged as to whether or not harvesting of wildlife could, or should, have a rightful place in parks management. One of the guidelines adopted by the First World Conference on National Parks states that "where animal populations get out of balance with their habitat and threaten the continued existence of a desired environment, population control becomes essential. This principle applies, for example, in situations where ungulate populations have exceeded the carrying capacity of their habitat through loss of predators, immigration from surrounding areas, or compression of normal migration patterns."

It seems that in East Africa inevitably decisions will be required for animal species that have become excessively numerous in national parks. The controversial issue seems to be whether animals should be removed only to solve an ecological problem or to obtain additional funds by selling meat and other animal products. In my opinion, the removal of animals for an ecological purpose should have clear priority over meat use for straight profits. Biologists, however,
continue to argue about whether or not removal of animals fits an ecological purpose. Some of them maintain that overpopulations of a species are usually a temporary phenomenon, and that, given time, such populations readjust themselves to the available food supply by reduced natality. Others are of the opinion that once one (or more) species has (have) a detrimental effect on the habitat one can ill-afford to let nature run its course and that, anyway, one might as well harvest the annual surplus if there is no danger to the survival of the species concerned. One inherent danger here might be that animal harvesting, because it is profitable, might become an objective to itself and not a subsidiary management tool, but this can be regulated by policy.

I think that it is dangerous to generalize too much about these issues and that, in fact, each park offers its own specific problem in this regard. This does not imply, however, that there should not be national guidelines dealing with the harvesting of surplus animals in national parks. In some parks such as the Serengeti, Tsavo and Queen Elizabeth National Parks, substantial numbers of ungulates could be removed annually because their intrinsic rate of production is so high. Provided that the main objectives of national parks management are not challenged, I see no reason why considerable numbers of hippos, elephants and buffaloes should not be harvested on a sustained yield basis in the Queen Elizabeth National Park. The same reasoning would hold true for the utilization of elephants in Tsavo National Park, and for wildebeests, zebras and Thomson's gazelles in the Serengeti National Park, without harm to the main objectives of national parks management.

Examples of Mismanagement

There is, unfortunately, much evidence of mismanagement of national parks in East Africa today and I will try to illustrate this with examples.
In Nairobi National Park, the most heavily used park in East Africa, visitors are allowed to drive anywhere. This results in unsightly car tracks being obvious all over the place and locally in erosion. In the Ngorongoro Crater a new track is often established parallel to the old track when the latter gets in poor shape. Considering the relatively high traffic density in the Crater, this is a practice that should be avoided and the only alternative is the construction of more durable roads, which is now underway. In Lake Manyara National Park a gravel pit has been opened up for the development of a tourist road right up against the wall of the Rift Valley which has been quite unnecessarily scarred to form a visible eyesore from a number of viewpoints in the park.

Another example is that populations of animals are permitted to do irreversible damage to the habitat. The most flagrant example of that is in the salient of Aberdare National Park where, for the sake of having lots of animals in view at the famous "Treetops," particularly elephants and buffaloes have done serious damage to the habitat, because they are enclosed by a game moat. Wildlife populations are so high in the centre of Murchison Falls National Park that the range is in a bad shape, and wind and sheet erosion can be readily noticed.

One of the most serious examples of mismanagement of a national park is, in my opinion, that fishermen's villages are allowed to sprawl without adequate planning or supervision in Queen Elizabeth National Park. I am not against the presence of these villages; considering the huge protein resource available and with the considerable need for same this can hardly be avoided. But villagers are allowed to construct any kind of hut helter-skelter. The least that could be done is plant trees around these villages to hide them as much as possible from the tourists.

Perhaps a minor consideration is the provision of salt in certain
obvious places along roads in Nairobi National Park, presumably to enhance game viewing. Not only are these heaps of salt eyesores, but salting seems an unnecessary management practice.

The Needs for Planning

There is an obvious need in East Africa to plan not only for better management of the national parks but also of the wildlife resource generally. Boyd (1968) has suggested a "grand plan" for wildlife administration, embracing the functions of the presently constituted national parks, game and forest departments. He argued that these departments should use a common survey approach to assess the available wildlife resource and that they should plan on a conjoint basis for the development and utilization of this resource.

Diverse needs should be recognized by the use of parks, or parts of them, as research areas, educational centres, or recreational areas.

Boyd stated that, "If some of the revenue from tourism, game cropping and foreign aid is invested in management of the habitat, the feedback to the primary resource in terms of a sustained or improving wildlife spectacle could be achieved." It seems to me that there potentially is a real problem shaping up in national parks management in East Africa today. More and more money is spent on building bigger and better lodges, swimming pools and other amenities to accommodate the tourists and to provide recreation for them but at the same time little effort is made to manage the habitat and populations of wildlife that these people come to see, often at great expense. If this trend continues, it may end up that we are killing the goose that is laying the golden eggs.

Another problem is that not all species of wildlife are represented in national parks, or are not represented in large enough populations. For instance several subspecies of hartebeest (Hunter's and Nakuru), are not now protected in such parks in Kenya and it is
presumably possible that they might be eliminated altogether in view of the fact that yearly thousands of acres of land designated for intensive settlement lose most of the wildlife.

Since most national parks are not large enough to serve as self-contained units for the existence of all species of wildlife, it will be essential that buffer zones be created around them in which wildlife is given at least a certain amount of protection, and where intensive agriculture and settlement is not permitted. It stands to reason that wherever agriculture and settlement is allowed to exist to the boundaries of wildlife areas, the wild animal population will be adversely affected. Many of the animals are bound to wander beyond the boundaries of these reserves, and thus conflict with agriculture. Buffer zones would protect farming interests and at the same time would be useful for harvesting excessive populations of wildlife that might build up in the wildlife reserves as a result of protection.

Another problem is how to introduce visitors into national parks in such a way that they have a minimum effect on the animals, the scenery and the habitat. This will involve controlling the areas in which they are allowed access by the correct placement of roads and tracks, camp sites and lodges. Too often park headquarters are established in scenically attractive places in the centre of national parks, while they could just as well be situated somewhere along the edge where they would interfere less with natural amenities.

Also, since inadequate numbers of Africans visit the national parks, a much greater amount of money and much more attention needs to be devoted by management to allow more Africans to visit the parks and to try to make them more wildlife conservation minded. Uganda started the idea of taking children's parties for free into the parks including all their costs, except food. Tanzania has built hostels for visits of organized groups of African youth. Yet much more needs to be done
along these lines.

So far, unfortunately, inadequate headway has been made in planning for wildlife within the total framework of land use planning in East Africa. Some people concerned with parks and wildlife resources have not fully come to accept that these resources should be developed and exploited in furtherance of the total economic goals of their country. This is not surprising since the subject of land use planning is relatively new, even in the developed parts of the world! Generally, those concerned with a master plan for economic and resource development are not aware of the economic advantages of national parks and for this reason there is a tendency in East Africa toward the conversion of parks and wildlife habitat into more intensive agricultural and forestry uses.

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THE PLANNING OF NATIONAL PARKS IN JAPAN AND OTHER PARTS OF ASIA

Tetsumaro Senge*

I. OUTLINE OF JAPANESE NATIONAL PARKS

1. Scenery in Japan

Japan consists of four main islands, stretching from north to south along the edge of the Asian continent like a bow. A high mountain range (more than 3,000 metres high) passes along the narrow strip of islands, and topography in general is relatively steep. To support its reputation as a volcanic country, Japan has as many as sixty active volcanoes. The highest peak, Mt. Fuji (3,776 metres) is the most representative of the Konide type of volcanoes. Encircled by the sea, Japan is blessed with many beautiful beaches and islets.

Due to the cold and warm currents which wash Japan's shores, its geographical position (from latitude 45 N to 25 N), and the meteorological influences of the Asian continent and the South Seas, the climate is fairly complicated and changeable.

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Generally, there is a clear distinction between the four seasons. In the winter, snow falls, ice forms, and skiing is possible over more than half of the country. Plentiful rainfall enables trees and plants to grow thickly, and forests cover nearly two-thirds of the land. Their geographical distribution ranges from subfrigid to subtropical zones. There are many birds but few large animals.

In addition to this natural environment, the rich heritage of culture, such as architecture, events and customs adds to the uniqueness of Japanese scenery.

The Japanese people have loved Nature since olden times, and this attachment has manifested itself in poetry, painting and literature. In fact, Japan's traditional flower arrangement, tea ceremony and gardening were born of this love. Protection of Nature and recreation in Nature have been practised since ancient times. That is why a considerable number of people visit national and natural parks today.

2. History of National Parks

The "national park idea," which aimed at preserving outstanding scenery representative of the country and providing the people with new opportunities for recreation as well as improving their health and education, was first inspired by the creation in 1872, of America's Yellowstone National Park. In Japan, the National Park Law was enacted in 1931 and even before World War II, twelve areas were so designated under this Law.

After the end of the war, and with the return of stable living conditions and the rehabilitation of the national economy, the number of park visitors showed a notable increase. As a result, a re-examination of existing national parks was urged and new parks were created.

In 1957, the National Park Law was abolished and a new Natural Park Law enacted in its place. This Law embraces national parks,
quasi-national parks and prefectural natural parks as natural parks, and forms the natural park system.

National parks are those which are representative of Japanese scenery, and are designated and administered by the State. Quasi-national parks come next to national parks in terms of natural scenic beauty, and some of them are located in the outskirts of big cities—for the main purpose of outdoor recreation. Their designations are made by the Welfare Minister on request from the prefectural governors. Prefectural natural parks are designated and administered by the Prefecture.

As of March, 1968, national parks numbered 23 (1,963,649 hectares), quasi-national parks 30 (679,482 hectares), and prefectural natural parks 280 (2,073,843 hectares), accounting for 5.3 per cent, 1.8 per cent and 5.6 per cent, respectively, of the total national land. (Table 10).

The administration of these parks is in the hands of the Welfare Ministry, and the Welfare Minister makes the decisions as to the designation of national parks and quasi-national parks as well as the park program, based upon the opinions of the Natural Park Advisory Council, composed of scholars and experts from various fields.

<table>
<thead>
<tr>
<th>TABLE 10</th>
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<tr>
<th>NATIONAL AND QUASI-NATIONAL PARKS IN JAPAN, 1955-1967</th>
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<tr>
<th></th>
<th>1955</th>
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<tr>
<td>National Parks:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>19</td>
<td>19</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Area (ha)</td>
<td>1,640,000</td>
<td>1,750,000</td>
<td>1,960,000</td>
<td>1,960,000</td>
</tr>
<tr>
<td>Quasi-National Parks:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>13</td>
<td>19</td>
<td>27</td>
<td>30(2)</td>
</tr>
<tr>
<td>Area (ha)</td>
<td>410,000</td>
<td>480,000</td>
<td>660,000</td>
<td>680,000</td>
</tr>
</tbody>
</table>

(1) Area is represented in round figures.
(2) Ten quasi-national parks are to be designated during 1968.
3. Zoning System for the Protection of Nature

The natural park system is basically the same as those of other countries but has some unique characteristics. In the United States, Canada and many other countries, national parks are created on State-owned land and used exclusively for park purposes. But in Japan, narrow and densely populated, with an old history and a heavy dependence upon natural resources, the land has been developed for industrial purposes and parcelled-off into many complicated ownerships and rights of management. Under such circumstances, it is almost impossible to create national parks on State-owned land alone. Regardless of ownership, therefore, parks are designated while a zoning system as seen in city planning is adopted in national park planning to preserve Nature and maintain or improve facilities.

Presently the ratio of land ownership within the areas designated as national parks is 61.8 per cent for State, 16.8 per cent for local public bodies, and 21.4 per cent for private. The ratio for quasi-national parks is 42.7 per cent, 16.9 per cent, and 40.4 per cent, respectively.

The sections of State-owned land supervised by the National Park Bureau of the Welfare Ministry and used exclusively as parks are comparatively small in extent with the major portion consisting of national forests which are administered by the Agriculture and Forestry Ministry. The latter also co-operates in regard to national parks.

The park areas have been sub-divided into three categories, depending on the degree of importance for preservation of their scenic beauty and natural aspects, as well as the need for utilization of certain sections within a park: (1) Special Protection Area, (2) Special Area, and, (3) Ordinary Area. Restrictions within these respective areas are being enforced accordingly.

The Special Protection Area is kept strictly as a natural
reserve, and spots such as woodlands of surpassing beauty, specially-designated localities set aside for preservation of wild fauna and flora, those with special topographical and geological features of scientific value, as well as cultural assets such as historical and archaeological remains, are so designated.

The Special Area is further divided into three classes. The first class is subject to almost the same restrictions as the Special Protection Area. The second and third class areas, slightly inferior in scenic value, are administered so as to ensure proper nature protection and park use while regulating industrial activities.

The Ordinary Area essentially has little bearing on parks and is so designated for the sake of nature protection and area use. With no special restrictions enforced, this area, together with the third class section of the Special Area, could be called the buffer zone.

Such a zoning system is decided as part of park planning. Park planning, consisting of two phases—protection and utilization, is worked out after the Welfare Minister hears the opinions of the Natural Park Advisory Council.

TABLE 11
DISTRIBUTION OF ZONES IN NATIONAL AND QUASI-NATIONAL PARKS, JAPAN

<table>
<thead>
<tr>
<th></th>
<th>Special Protection Area</th>
<th>Special Area</th>
<th>Ordinary Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Parks</td>
<td>172,990ha (8.8%)</td>
<td>1,162,844ha (59.2%)</td>
<td>627,750ha (32.0%)</td>
</tr>
<tr>
<td>Quasi-National Parks</td>
<td>16,145 (2.4%)</td>
<td>406,923 (59.9%)</td>
<td>256,414 (37.7%)</td>
</tr>
</tbody>
</table>

(1) The first class Special Area includes national parks (58,439ha) and quasi-national parks (37,975ha)
(2) The Special Protection Area is now being expanded.
(3) National parks with many Special Protection Areas are: Shiretoko 21,317ha (51.5%), Chubu-Sangaku 63,921ha (37.6%) and Minami Alps 9,181ha (25.6%).
4. Park Planning for Park Use

Park planning for park use is determined along with the protection program. It decides the locations, scale, etc. of park roads, trails, accommodations, picnic areas, outdoor recreation facilities, parking lots, necessary facilities for traffic and transportation, sanitation, education, etc.

The basic facilities are built by the State or with the government's financial assistance, and the others by prefectural and lower local governments. Fee-charging facilities such as lodgings, cabins, ski-lifts, ropeways, golf courses and ferry boats are run as concessions by individuals or corporations with State approval.

In park planning, various facilities are concentrated in centres of national park utilization which correspond to "villages" in American national parks. Some of the villages which have existed since before the enactment of the National Park Law are being renovated, and new villages are also being built on the land which the Welfare Ministry's National Park Bureau has acquired—mainly national forests—according to the master plan. As in the United States, the State maintains and improves such public facilities, gives concessions to private enterprises for the management of commercial facilities and even leases the necessary land. The development of such "villages" is making fairly satisfactory progress.

II. RECOMMENDATION BY THE NATURAL PARKS ADVISORY COUNCIL

In November, 1966, the Welfare Minister requested the Natural Parks Advisory Council to make recommendations concerning the form the national parks system should take under likely future social and economic changes. The council quickly responded by setting up a special committee which, after eighteen months' study, produced a set of recommendations in March, 1968.
Behind the Welfare Minister’s request were these factors:

1. **Social and Economic Changes**

Japan’s development has been remarkable in recent years, and considerable changes are taking place in all phases of society, economy, politics, culture, etc. The National Life Council, an advisory body for the Prime Minister, envisions, as follows, what national life will be like around 1985:

   (a) *Population Structure.* The population is expected to increase to 116,458,000 from 98,275,000 in 1965. This is not a sharp increase, but the population density will rise above the present 262 per square kilometre. No small changes are likely to occur in the age structure and the structure of the employed population.

   (b) *Urbanization.* Concentration of population and industry in cities is notable. In 1965, the city population accounted for 68.1 per cent, but this ratio is expected to reach 78.2 per cent in 1985. This trend is manifest especially in Tokyo, Nagoya, and Osaka which are forming megalopolises.

   (c) *Income Level.* Per capita national income is expected to rise from only $690 in 1965 to $1,500 in 1975 and $2,500 in 1985. It will increase most in big cities. In the consumption phase, spending for recreation is on the increase.

   (d) *Working Hours.* Generally, working hours are about 45 a week, but in an increasing number of large enterprises, the five-day week system is being adopted. By 1985, the five-day, forty-hour week will become commonplace. Agriculture will also undergo structural improvement and rationalization, enabling farmers to take holidays regularly.

   (e) *Transportation.* By 1985, the trunk railway lines (about 4,000 kilometres in total) throughout the country will be speeded up
with super-express trains running at an average speed of 200 kilometres per hour, and travel will become much easier. The popularization of automobiles and the construction of highways criss-crossing the country will encourage motorization. The rapid development of aviation will also enable holiday-makers to reach any national park in a day.

In 1967, the diffusion rate of automobiles was one car per twenty-six persons, and is likely to rise to one for five, in other words, one car for a family.

2. Effects on Natural Parks

(a) Increased Leisure and Outdoor Recreation. Increased leisure and national income are inevitably increasing recreation demand. Due to population concentration in big cities and public hazards, people are seeking quieter places and cleaner air, and hence the greater demand for outdoor recreation. The development of transportation and the increasing motorization encourage this trend.

(b) Sharp Increase in Visitors to Natural Parks. In 1962, visitors to national parks totalled 124 million and those to quasi-national parks 68 million. In 1966, their numbers soared to 202 million and 128 million, respectively, extraordinarily high when compared with other countries. Out of the 23 national parks, those with fewer than 1 million visitors during 1966 numbered only three, and popular, easy-access parks were visited by millions of people. The latter included Setonaikai (41 million), Fuji-Hakone-Izu (52 million), Joshinetsu-kogen (18 million), and Nikko (14 million). Of the 27 quasi-national parks, the number visited by fewer than 1 million people was only nine, and those close to big cities, such as Biwako (37 million), Yatsugatake-Chushinkogen (12 million) and Minami-boso (11 million), were often utilized by holiday-makers.

In utilizing natural parks, motor cars are becoming the main means of transportation, with the result that the pattern of travel is
shifting from big groups to smaller or family groups.

Camps, national hostels, youth hostels and other low-priced accommodations are increasingly used, and natural, rather than urban, recreation is being preferred. Mountain-climbing, hiking, camping, swimming, angling, skiing and skating are in vogue.

(c) Protection of Nature. Industrial development promotes urbanization and mushrooming factories, houses, etc., are causing the destruction of natural scenery in the environs of cities. Even in places away from cities, extensive industrialization is going on as a result of expanding transportation networks and the progress of technology.

Increased outdoor recreation will further increase the number of visitors to natural parks and result in greater over-use of parks. Expansion of roads, parking lots, accommodations, camping sites, etc., is feared likely to further destroy natural scenery.

3. Important Problems

Important problems facing Japanese natural parks are: (1) Zoning system, and, (2) over-use.

(a) Zoning System. Japan's natural parks are so designated irrespective of the ownership or right of management of land involved. They are classified into three categories according to their scenic beauty and natural aspects and use value. This zoning system may be the best conceivable method in narrow, densely-populated countries like Japan, where land is held by many small owners. However, this system has to be adjusted with land ownership, property rights, industrial development, etc., and Nature preservation always meets trouble. Measures are needed to ensure that important areas which are indispensable for parks are used exclusively for that purpose.

Problems lie in the fact that twenty-one per cent of Japan's national park land, and as much as forty per cent of quasi-national park land is privately owned.
(b) Over-Use. Although Japan is small, it is well-developed in terms of transportation, and national parks can be reached easily. For example, Hakone Parks is only one hour and a half from Tokyo, and Nikko, two hours. Even the farthest park can be visited in a day by plane. Most of the parks are within the distance of a daily or weekend use from populated cities.

In Japan, the use of parks is concentrated on the spring, summer and autumn seasons, and their over-use is pronounced at these times. Visitors to Nikko are estimated at 120,000 a day and to Hakone 200,000, in their busiest times. Traffic is so congested that, the natural parks' main purpose is negated. In those where skiing is possible, winter is the busiest season; in mountain areas, climbers form long queues from the foot to the summit; and some parks are visited all the year round, giving Nature no time to rest. As a result, many of the national parks are suffering from over-use, disfigured by mounting piles of waste and refuse left by visitors, and destruction of the natural beauty.

To avoid such a situation, drastic measures are needed, such as the improvement and expansion of park facilities, park planning for larger areas, creation of more natural parks, and the setting aside of recreation areas. Otherwise, Japan's national parks will be "crushed" under the enormous mass of visitors.

4. Future Direction of Natural Park Administration

(a) Re-examination of Park Planning. To ensure proper protection and use of parks, the present park planning should be re-scrutinized—with special emphasis on those most over-used.

(b) New Natural Parks, etc. For the strict protection of Nature and to accommodate the growing number of visitors, new natural parks and recreation areas must be created.
(c) **Improvement of Facilities.** Improvement of public and recreation facilities within parks will be pushed.

(d) **Stricter Protection of Nature and Management.** Protection of Nature, park management and guidance for park visitors should be strengthened.

(e) **Spread of the Park Protection Idea.** Measures should be taken to make the general public more conscious of park protection.

5. **Basic Measures for Immediate Future**

(a) **Securing of Natural Parks, etc.** The designation of national parks has been almost completed, and others will be designated soon. (The Natural Parks Advisory Council has already recognized ten quasi-national parks). Quasi-national parks will be created near cities, mainly for outdoor recreation.

Recreation facilities for 280 prefectural natural parks are needed. Besides these, the creation of new recreation areas will be studied. New types such as marine parks and parkways will be set aside as natural parks. Above Marine Parks, investigations have made considerable progress, and their great merits have been realized. Legislation should be revised to include them in the Natural Park Category.

(b) **Establishment of Park Planning.** In the light of changing situations, park planning should be re-examined so as to ensure proper protection and use of parks. More Special Protection Areas and roadless reserves such as the Oze area in Nikko National Park must be created. Some planning is needed for much utilized areas in order to alleviate their over-use. As in the United States, land classification should be adopted in park planning.

(c) **Strengthening of Protection.**

(i) **Acquisition of park land.** The Natural Parks Advisory Council recommended in its interim report that private
land within Special Protection Areas which form the nucleus of parks should be purchased from its owner. Adoption of this began in 1967, but has made no satisfactory headway due to the lack of a budget and contents. This idea should be propelled more actively.

(ii) Establishment of Strict Nature Reserves. The Strict Nature Reserve, corresponding to America’s Wilderness Area, is a roadless reserve, completely free from industry or anything mechanical, and intended for strolling so as to appreciate natural scenery and study natural science. Such reserves will be created within a Special Protection Area.

(iii) Improvement of park management set-ups. Management of parks under the zoning system is extremely complicated, and its streamlining is urgent. In the meantime, there are presently about 800 voluntary rangers, including scholars, teachers and conservationists. Their efforts are bearing fruit, but their number should be increased.

(iv) Beautification. Since piles of waste and refuse left by thoughtless visitors are seriously spoiling parks, a greater budget should be earmarked for park beautification. Also, efforts are needed to form local organizations, or to enlist the co-operation of existing ones, for park beautification.

(v) Restoration of Nature. Parks destroyed by natural calamities, deforestation, construction of facilities or over-use will be restored or improved. In some Special Protection Areas in national parks, over-use causes some changes in vegetation, and scientific investigations and restorations are needed. In
quasi-national parks, efforts will be necessary to develop semi-natural pastoral scenery.

(d) Improvement of Facilities.

(i) In national parks, and quasi-national parks which emphasize the protection of Nature, attention should be paid so that various facilities provided do not spoil the natural surroundings. The types, scales and designs of facilities, and outdoor recreations, will be limited to those which will not spoil the natural surroundings. But in quasi-national parks in the environs of big cities, many such facilities are inevitable.

(ii) To cope with the increasing use of cars, the construction of roads, parking lots, picnic areas, roadside lookouts, camping sites, etc., will be pushed.

(iii) To encourage the use of parks by foot, climbing trails, hiking courses, nature trails, etc., will be improved.

(iv) For better communication with Nature, nature trails, visitor centres, museums, roadside exhibits, etc., will be established.

(v) Facilities will be concentrated in developed areas or villages as far as possible.

(vi) Camps, national hostels, youth hostels, national vacation villages and other low-fee yet comfortable facilities for youth and family travels will be increased with government financial assistance. As regards such private concessions as lodgings, transportation, restaurants, refreshment stalls, etc., appropriate guidance and supervision will be given to ensure they do not clash with natural surroundings. Every
facility will be offered for loan extension to them.

(e) **Diffusion of the Nature Protection Idea.**

(i) **Education at schools.** This idea will be thoroughly taught through school education, group excursions, summer schools at mountain resorts, etc.

(ii) **Public education.** Such public education will be promoted through newspapers, T.V., radio, posters, leaflets, ranger talks, camp fires or national park rallies which are held every summer.

(iii) **Promotion of Nature protection techniques.** Japan is backward in techniques on the management and restoration of Nature. Closer co-operation with natural scientists is needed, and specialists in this field must be trained.

(iv) **Introduction of a Nature Conservation Charter.** A Nature Conservation Charter will be drawn up through national movements.

**TAIWAN (THE REPUBLIC OF CHINA)**

During Japan's rule, three excellent national parks were designated.

1. **Arisan-Niitaka (Yu-Shan-Ali-Shan),** the highest mountain in Taiwan, 3,997 metres high, was a park covering a wide area of 185,980 ha, including Ali-Shan and mountains over 3,000 metres high.

2. **Tsugitaka-Taroko (Hsueh Shan-Taroko Gorge),** the second highest mountain park (3,884 metres), included a mountain area which was higher than 3,000 metres, and Taroko Gorge, a gorge of international scale. This was Japan's biggest national park (272,590 ha).
3. Sozan (Grass Mountain), the smallest park, including Daitonzan mountain ranges, volcanoes and hot springs is located northwest of Taipei.

Since the restoration of Taiwan to the Republic of China, after World War II, these national parks are not officially recognized nor managed as such. In 1965, Dr. George C. Ruhle, of the National Park Service of the United States of America was invited by the government to conduct a survey of conservation problems in Taiwan. In 1966, Dr. Ruhle presented an Advisory Report on National Parks and Reserves for Taiwan which embodied many recommendations. The report proposed to designate Yu-Shan and Hsue-Shan (Taiwania National Park) as national parks, Taroko Gorge as a national parkway and Ali-Shan as a recreation area. So far the government has not designated any of these parks and areas, but has just sent an official to the United States to study park management. The government concentrates its efforts on the improvement of tourist areas and resorts to earn foreign exchange.

However, since 1961 the Taiwan Forestry Bureau has provided annual appropriations for the development of forest recreation areas under the concept of multiple use of forest land.

In 1964 the Chinese Association for Conservation of Nature and Natural Resources was organized by civic and academic leaders to assist governments in promoting the cause of natural resources conservation.

THE REPUBLIC OF KOREA

Stimulated by the First World Conference on National Parks held at Seattle in June, 1962, the move began to ferment the establishment of national parks, especially in the Chiri-san area, about seven hours by express-train from Seoul. The government also began to encourage this move, the national parks law was enacted in March, 1967, and the National Park Committee was formed in October of the same year.
Chiri-san was the first area to be designated as a national park in the Republic of Korea, covering an area of 43,892 ha.

Park planning concerning protection and utilization has yet to be worked out.

Other parks likely to be added to the national park list include Hanna-san (8,180 ha), Souraku-san (2,040 ha) and Pei-rei-sudo, but they are small in size.

INDONESIA

Indonesia has 117 designated areas, such as strict nature reserves, bird and animal sanctuaries, monuments, nature parks and so on, totalling approximately 3 million ha, or about 2.5 per cent of the total forest land of the country.

The importance of these reserves is not appreciated yet by all the people. The government's efforts are focussed upon the protection of rare species of fauna and flora such as the Javan Rhino, Orang-Utan, etc. But the big animals are still the victims of illegal hunters outside the nature reserves, and of shifting agriculture which through depletion of forest cover, is causing the complete disappearance of some big animals.

At a Forest Conference in December, 1964, a new conservation policy was approved. In this policy, "integration of reserve with tourism" has been included, and in pursuit of the use of nature reserves for recreational purposes, some areas in Java, Sumatra, Bali, and Komodo have been opened to both native and foreign visitors. The Director of Forestry is working towards developing other such reserves and to make arrangements for more attractive tourist areas without damaging plants and animals.
Summaries and Discussion

Chairman: J. B. Cragg

Panellists: T. Swem, S. M. Brandborg, K. Curry-Lindahl,
I. N. Costantino, A. de Vos, T. Senge, M. Buchinger

SUMMARIES

CRAGG: Ladies and gentlemen, we have wandered over many fields in the course of the last two days and I think that we should try to find out from this afternoon's discussions, whether there are lessons from other parts of the world which can be applied, in a constructive way, to the Canadian scene. We will start off with Mr. Swem.

SWEM: (Mr. Swem summarized his paper on Planning of National Parks in the United States.)

CRAGG: Thank you Mr. Swem. Our next speaker, Mr. Brandborg will address us on The Wilderness Law and the National Park System of the United States.

BRANDBORG: I shall attempt to show parallels between the Wilderness Law, its enactment, and its implementation, as these processes have involved people at the grassroots level and the very hard problems which you in this great country must also face today. Sigurd Olson, President of the Wilderness Society, has admonished our working circle many times. He has said in so many words that the greatest wilderness opportunities in North America today are to be found in Canada. And
I think as of now, we of the Wilderness Society obligate ourselves to give you within the academic circles, within the professional circles of provincial and national government, and within the groups of citizen organizations all of the help, moral support, and I hope, financial support that we possibly can. You have a great challenge and we want to stand fully behind you in meeting this.

One thing I think we all should recognize is that this is a bloody fight we are facing. We are facing the lumber interests, the mining interests, the oil interests, all of these groups in coalition, and if the professional and academic people in this fine assembly feel that they can continue to confine their efforts to high-level conferences such as this one without projecting into citizen groups, I fear that the battle will be lost in Canada.

I can tell from the expressions that have come from this imaginative group that we are going to see the active involvement of these technically-trained people. They are going to bring background facts that will back up the working conservationist at the citizen level. But I hope each one of you will go home with the understanding that you are going to participate within your community. I learned today that there was no active citizen group in the City of Calgary--one of the biggest cities in this great nation. There is no one who is taking up the cudgels for Banff, Jasper or any of these other problem areas that we see right here in our own back yard.

My written presentation shows some of the differences between the agency recommendations for wilderness protection and those of the citizen groups. In some cases, there is a wide disparity. In recent months, we have seen that these differences are coming together; we hope that they will come all the way together. We see that basically all of the wildlands of the national park system should be protected under this law. There will be exclusions for developed areas and
highways; there will be some exclusions for over-view type interpretive facilities. These things many of us accept. But at the same time, we are not at the stage where we will permit great wildland areas of the national parks to be let out of these designations. And we face a continuing struggle within the bureaucracy of the National Park Service to make this point clear. We have great leadership within the National Park Service, with many people doing their very best to realize the ultimate goal of having the Wilderness Law complement the 1916 National Park Act as a protective mechanism that will prevent development and intrusion—the things that should not occur within our national park areas.

I would say that you Canadians in speaking of a park system that represents less than one per cent of your total land area should abandon your apologetic terminology; that you should become aggressive in carrying out a broad-scale inventory of wild and other lands that you feel should be preserved in perpetuity for the people of this nation. Again, this is a fighting war. No one particularly likes to take on the Shell Oil Company, the mining company, the people down on main street in Calgary and every other community that are going to oppose the dedication of parks and wildland areas, but you and I must be into these battles right to the hilt. We cannot hold back.

I hope that from this Conference we will see your commitment to these fights and to the development of citizen leadership that will bring about the necessary pressure on those people who are within your provincial and national governments, who will take direction if you give the necessary leadership.

CRAGG: We will have the next paper from Dr. Curry-Lindahl.

CURRY-LINDAHL: (Dr. Curry-Lindahl summarized his paper on *The Planning of National Parks in Europe.*)
CRAGG: Thank you for what to Europeans certainly, is a very difficult topic. We will now turn to South America, to Mr. Costantino.

COSTANTINO: (Mr. Costantino summarized his paper on *The Planning of National Parks in Argentina and Other Parts of South America*.)

CRAGG: Thank you very much. Now I shall turn to Dr. de Vos.

DE VOS: (*Problems in National Parks Management in East Africa* was summarized by Dr. de Vos).

CRAGG: Our final presentation will be from Mr. Senge.

SENGE: (Dr. Senge summarized his paper on *The Planning of National Parks of Japan and Other Parts of Asia*.)

**PANEL DISCUSSION**

CRAGG: This afternoon we have had a series of papers which have presented major problems in a variety of countries. We have heard about the problem of mass recreation and perhaps it is a feeling of my own, but I think that North America has tended to think too much of mass recreation and not enough about the other aspects of conservation in relation to its national parks. I may be wrong. Perhaps I shall be criticized in a short while.

We have heard about mass recreation, about the battle for wilderness; we have heard about parks where game has to be cropped and will have to be cropped in the future, and we have heard, from Japan in particular, of how they can have national parks, how they can conserve nature in a country which has a very high population density. Now, I am quite sure that out of all these papers there are lessons for us in Canada and I put the question to the panellists. How can the experiences which they have had in their own countries help us in Canada with the problem of planning, or perhaps I should
say replanning, our whole attitude to national parks, to conservation
areas and other reserves of that kind?" I shall ask Mr. Swem to start.

SWEM: During the past two years I have been fortunate enough to visit
several of the national parks of the world. I visited the Swiss
National Park in which you are allowed only to travel along trails.
There is a very, very high degree of management and protection.
Through Mr. Senge's efforts I was able to spend several days looking
at the national parks of Japan and after that visit to his country,
I think I developed a greater appreciation than ever before, of the
basic issues and questions of just how we will protect or preserve
our national parks in the days to come. The situations that he
emphasized today are extremely real in Japan and how they have been
able to do the excellent job they have, with the very heavy use that
most of their areas receive, struck me as being really remarkable.

It is difficult, of course, to listen to these different talks--
people from all over the world discussing park problems and what is
needed in each of these countries--and to try to come up with any
definite conclusions, but my own observations would be that in all of
our countries we have pretty much the same basic challenges to one
degree or another.

I would like first, to briefly mention the great need to
establish a widespread public understanding of national parks and what
they mean to the culture of a nation. We are living in days when we
hear much about communication and if ever there is a program where we
should improve our communication, I think it is that concerning the
national parks. This is a challenge to any of the countries that we
have been talking about this afternoon; to fully develop an under-
standing of a national park program and what it means to the people
of that country, and to develop a strong active support for it.

When we are talking about national parks in particular, if we
are to do the best possible job, we must control the land. Generally speaking, I think that this control must be in what we would call "fee title." Perhaps through some of the other techniques that have been worked out--these have been quite successful in some of the parks of Japan--we may get by with a lesser type of control--through means of zoning or purchase of lessor interest. But whether we are talking about new areas or existing areas, if we are going to do the job that is necessary to protect these unique examples of our heritage, we must control sufficient land. In many of our countries there has been hesitation to allow the agencies to go ahead and acquire land but I think, again, that this is where public understanding and support is going to be necessary if we are going to be able to acquire the lands that will be necessary for new areas, or for land acquisition to eliminate many of the problems within the existing areas.

There was one other problem that was quite apparent in the discussions of the various countries' representatives today and that had to do with the management of the parks. I think there is general accord that we have to know more about the resources in our parks and how they can be used wisely. But I think management goes beyond this. I think we have to consider more the use of satellite areas or adjoining areas or recreation areas to siphon off some of this use. I happen to be one who believes very deeply in the categorization of a national park system. I feel that in our country we have gained much by establishing the Natural Area category and separating the recreational areas from that. I think we have been able to build higher walls around our natural areas and in the years to come, because of this categorization, we are going to be able to do a better job of protecting and managing them.

We are all going to have to give more thought to the control of visitor use. We have been talking around this for years, I know, but
we are getting closer and closer to the day when we are going to have to take more positive action. Most of these, of course, fall within the realm of management—controlling the number of people that visit areas or portions of areas and, of course, related to this is the determination of carrying capacity, as best this can be done. In our discussions with Japan this spring in the United States, we had lengthy conversations about the need to determine carrying capacities for our areas and then try to do something about them.

CRAGG: Thank you very much for an admirable summary of some of the points. And now we shall switch to Europe, I shall ask Dr. Curry-Lindahl whether he has any observations on the question I have put to the panel.

CURRY-LINDAHL: I would like to emphasize that Canada as a very large country, covering more than half of a continent, has a very wide responsibility to set aside intact ecosystems. This responsibility is not only towards its own citizens but also towards the whole world.

The world of tomorrow will fully realize the importance of having intact ecosystems in various parts of the world, not only as a kind of playground for scientists, but also as areas for comparative studies—comparisons with areas which have been heavily or modestly used. We need such comparisons from which governments, landscape planners and, in fact, society as a whole, can draw conclusions and lessons that the intact ecosystems can teach us. Without these intact areas we have nothing for comparison and this, I think, would be a shortcoming for the future existence of mankind.

These ecosystems, of course, are extremely important in themselves and this need not be emphasized.

Such large areas could, of course, be used as national parks because they would be preserved and if a representative ecosystem is
preserved in the form of a national park, it is not necessary to exclude all other activities so long as these activities do not really smash the intact stage of the area. Tourism or a very modest home could be allowed, provided that it really fits into the prime purpose of such an area.

I can inform you that in the new African Convention for Conservation of Nature and Natural Resources which has been signed by the heads of African states this year, one article deals particularly with ecosystems. This article, in fact, obliges the contracting states to set aside representative ecosystems and habitats within their respective countries. If something similar could be decided upon for other continents as well, we could finally have a kind of global pattern of preserved ecosystems which we badly need for scientific use—as I told you before—for comparisons in the future.

CRAGG: Now I shall ask Dr. Buchinger to speak on behalf of Dr. Costantino.

BUCHINGER: I will begin with what, according to Ing. Costantino and myself, Canada might learn from Latin America. It would sound rather too conceited if he maintained that you can learn anything from us, but there are a few items which might be called to your attention.

First of all, establishing communications between the different agencies of the government and the public is not really such a difficult task as it seems. I.U.C.N.'s Latin American Committee was formed in 1964, and until then, most national parks in Latin America were, so to say, in a latent state.

Now, practically without any exception, we are having new parks established or parks systems being prepared in all Latin American countries. In Columbia the Agrarian Reform is hiring universities to make some ecological surveys of lands where national parks should be established. The chief of a newly established section of the
ministry called the Institute for Renewable Natural Resources, has sent me copies of ministerial decrees which establish three national parks.

As for Ecuador, the chief of the Parks Service and Forest Service has sent me a decree in which the President of Ecuador has established a new natural reserve with the intent that this reserve should be ecologically studied in order that a national park with the correct boundaries may be established later on.

Chile, a country with quite a number of national parks--few of which made the World List because of considerable confusion--is to hold a meeting where conservation problems will be discussed and the organizers are anxious to have other countries present. So, you see, it takes only a few dedicated people, working in co-operation, to have a whole continent on the move.

The sort of model we get is very important for we can learn, I believe, from the mistakes of other countries. One great confusion in Latin America is that many people who do come to the United States get the concepts somewhat mixed up. There is quite a difference between "national parks"--and here I mean the concept of Yellowstone--and other lands managed by the National Parks Service. In the Short Course which was recently held in the United States for park administrators, most of the foreigners became quite confused about the importance which is given to recreation and recreational areas, because they did not quite get the idea that those recreation areas are not really national parks.

Of course, everything which is confusing also has a good angle. For instance, in Argentina, as you have heard from Ing. Costantino, we had a long battle with our Nahuel Huapi Park because there were so many tourist facilities and private inholdings in the Park. At long last the decision was made that we would prefer the Argentinian nation
to give up part of its land so as to maintain the national parks in a desirable condition.

I feel that our continent has proven that we can do something quickly—change our attitudes towards national parks and also, that we have to depend on each other. Curry-Lindahl mentioned the bad example which the Council of Europe has set by giving a diploma for certain parks that are not really national parks. From Nicaragua I received a plan for national parks which was absolutely disastrous. It was a hodgepodge of national parks, zoological gardens and so on, and later I found that it was modelled after a European country.

SENGE: In Japan most of the national parks and the quasi-national parks are near big cities and already experience the pressures of the weekend or daily use. But in the United States and Canada, the large national parks are mostly located in the west of your countries while most of the people live to the east, and so the parks are a considerable distance from your populated areas. So, setting up recreational areas is important in the highly populated areas for daily use or weekend use.

To quote from the National Parks Policy of the National and Historical Parks Branch of Canada:

It is not surprising that the value of nature has not been emphasized in the administration and policy of our National Parks. After all Canada is a young nation and it was not many years ago that a significant percentage of the population lived in or very close to wilderness, or at least in rural surroundings. Even now many citizens, but not all, are within convenient reach of large natural areas. There is not present among Canadians in general, a strong desire to seek wilderness enjoyment.

I must admit that I find this a very surprising statement.

DE VOS: In terms of buffer zones I think something can be learned. In Zambia, for instance, the two national parks are surrounded by buffer zones which are either game reserves or designated for extensive land use, and no human settlement is permitted in these buffer zones. I
think that this integrated approach to national parks management—
game reserves, forest reserves and intensive-extensive land use—is
a very nice pattern to follow. Of course, it is very difficult to
apply in Canada because here we have a completely different condition.

With regard to game cropping, I said that it is possible to
harvest large surplus animals in national parks on a sustained yield
basis, but I should emphasize that it is not necessary to harvest all
these animals in national parks. If the policy requires that they are
harvested outside national parks, this can be done as well. I know
that limited wildlife utilization is already going on in Canada but
some of the principles and some of the management procedures that are
being followed in Africa might be useful to people in charge of the
National Parks of Canada.

Finally, I would like to refer to the Serengeti Research
Institute. I believe that the research work that is going on in the
Serengeti is unique and that the approach to research that they use
there can, indeed, help people in Canada, in terms of taking another
look at the total environment or total ecosystem in national parks.

In the first place, the systems approach to research is being
used there. The whole of Serengeti National Park is now grided; they
have base lines and they have quadrats that are marked with cement
squares that can be located from the air. These are all put on air
photographs and, therefore, they can relate animal movements,
territorial behaviour and everything else to a grid system.

Also, they take an approach to research which is all-inclusive;
that is, they really study the ecosystem from the point of view not
only of animals and plants, vital sociology, range management, but
also, they include soils and the effect of animals on soils and
microclimate in quite considerable detail. They are also interested
in the place of individual man in the total ecosystem, the combined
use of certain animals on a certain part of the range, and there has been exceedingly good work done on predation.

They now have sixteen wildlife biologists and related scientists working more or less continuously under the auspices of this Institute.

CRAGG: Thank you. I shall now turn to "Fighting" Brandborg to wind up this discussion.

BRANDBORG: It seems that people the world over are feeling the squeeze. In the United States we see a great ground swell of concern about the land resource; we see the recent passage of major bills which stand as landmark conservation achievements. The American people, in the sense that we include all North Americans, have grown up in close association with wilderness. While you in Canada enjoy a great resource as of today—you still have much that is left—it is apparent that our industrial society is taking a tremendous toll. People are crowded into the cities. Eighty per cent of us are suffering from all of the psychological manifestations of being pushed together in a highly industrial, technological society. We do not know what is happening. We know that all kinds of things are breaking out to show that we are not well; we are not well physically; we are not well mentally. This is going on in Canada, as has been pointed out by many of the speakers in the course of this Conference, just as it is in the United States.

So, we come to one basic conclusion: that the people of Canada are probably just about as much prepared as the people in the United States to move ahead in doing the kind of good work to stake out wildland areas for preservation—within a broad concept of sound inventories—to give us those ecological complexes that should be preserved in a total perspective. The people see this need; they see their requirements—that they must have open spaces. They are ready
to see this need where they have not yet come to this realization. Now, the readiness is the test. We, here, have a nucleus of leadership. We have a great representation of technical people, of professional people that have the broad overview, but how are we going to build this group into a political force?

We had a presentation from Mr. Pat Goldsworthy this morning, a comment in reference to the hearing procedure. This gentleman is one of the core leaders in the very impressive effort within the United States to bring about the establishment of the great North Cascades National Park, a culmination just two weeks ago, of an effort that has taken years.

We see in this kind of movement the involvement of people—people at the local level again. I think it is our goal to bring about the responsible involvement of people wherever they are going to be able to work effectively within the communities across their nation. We come to the basic fact that we are living in democracy in both of our countries. We have all of the prerogatives of the democratic system to exploit. We are also aware that the American people and the people of Canada have shown a certain reluctance to make the great plunge.

Earlier, someone spoke of the trend of people to disassociate themselves from these battles. There is a feeling of futility—they have given up. They say, "Between big governments, between big industry, between big labour, between all of these forces, I, as an individual, have little role; I have little place to fit in." What we are facing now, is the practical job of showing these people how they can do this vital work.

Now, the product of their efforts is the realization on the part of people within the communities and provinces of Canada that just a few can make great changes in the patterns of government. We
have a rule of thumb in the Wilderness Society that, if we have twenty-five activists in a state who have been through two or three battles, or maybe only one, we can win almost any war. We can stop the Bureau of Reclamation; we can stop the great mining companies; we can do anything as long as we abide by one principle. That is, that we stick to the public interest; that we serve the principles of the public concern for these resources; that we represent, through the active involvement of people, the public stake in what is being decided in these public land areas.

The politicians within our bureaucracy: some were very candid within the course of this meeting; they allowed that they responded to pressure; they allowed that they needed the constructive support from citizen groups. They have tremendous problems. They are buffeted by those who want to open all of the national parks for commercial development; by those who want to put the oil rigs in the dedicated areas of our National Wildlife Refuge system. They feel these pressures daily and if they do not have an aggressive, articulate, zealous citizenry behind them in protecting the public values in these areas, they will fall by the wayside. But many of them are ready to respond. They will rise to the occasion; they will fully uphold the principles that you lay down for the protection of the public estate if they know that you are there.

Basically, our challenge is one of developing leadership at the community level where people can get a great light in their eyes because they see what they themselves have done for the betterment of humanity. Norman Cousins in the Saturday Review of Literature a few years ago, said that the greatest need of the American people today is not for more chrome-plated cars, not for more thick carpets in their living rooms, not for all of these things that really are of such superficial importance. The need of the American people today is, in
his words, "For involvement in issues that bring them to the conclusion at the end of a lifetime, that had they not been there as individuals, the world would not be as good a place as it is because of their having taken part and having played an active role."

This is a great thing that can be done for people in the conservation movement. After an experience in this kind of exposure, they become active in all arenas of our society. They become concerned with the problems of the ghetto; they learn the political techniques; they scare the politicians that are indifferent. This is the only thing that the indifferent politician understands. If you tell him that you will clobber him on the next election day, he gets the message. I think we are on our way. I think we can do it in Canada. As I have said before we need a new coalition and I think this great Conference sends us down the road.

CRAGG: Thank you.

DISCUSSION FROM THE FLOOR

HARROY: As Dr. Buchinger has said, it is evident that Canada can do much more to assist other countries than vice versa, especially those in the Tropics. One good example is what is now being developed in Turkey. Our International Commission on National Parks has had the good luck to have the assistance of the Canadian National Parks Branch, and Lloyd Brooks spent some weeks in Turkey preparing a plan for them. This is a very good kind of co-operation.

There must be compatibility in the parks between research and conservation on one side, and recreation and all the social aspects. Some speakers have said that it would be better to place the problem of conservation and research under the responsibility of one group, operating perhaps, inside the park framework, or perhaps, outside the parks. Kai Curry-Lindahl has said that the best example in the
world is that shown by the United Kingdom where recreation is found in the National Parks, and conservation and scientific research has been concentrated within one specific organization, the Nature Conservancy.

This solution is perfect for the United Kingdom but it is a solution I should never dare propose for low-finance countries. I would never dare to separate conservation and recreation, and say one institution or organization should take care of research and conservation, and another look after tourism and recreation, because all the budget available would go to tourism, and every year they would say, "Sorry, no money for research and conservation; next year it will be better, but this year we very much regret that it is impossible to budget for that."

Perhaps the United States and Canada with their great reservations and sanctuaries should have an American "label of quality," so that it would be possible to give this same label to other countries of the Americas. It would help a lot, just as we hope that our United Nations' list will help, to encourage Latin American governments to develop what Dr. Buchinger is pushing so hard for—a better parks system in South America.

CRAGG: Thank you Dr. Harroy.

YEOMANS: I would like to point out the realities in British Columbia which holds probably the greatest wildland reserves in Canada, and I address you Stewart Brandborg more than anyone else.

Those of us from there who believe in the wilderness concept would certainly welcome your enthusiasm and fire, particularly at a meeting with the deputy ministers. I think you would find, if you came out, that the real "voice in the wilderness" would be yours—along with ours. The situation is very serious; there is no
sympathy whatsoever, that I can ascertain, within political circles towards any concept of wilderness. It is an extractive economy.

Also, the Sierra Club has all sorts of resources available for us to use, but they have found that they have been rebuffed by Canadians, that there is sensitivity along these levels. I say that this is a barrier to what needs to be done and I do not know how we are going to get over it.

CRAGG: Well, ladies and gentlemen, I am sorry but I have got to bring this meeting to a close. On behalf of all of you I want to thank the various speakers who have come here from all parts of the world to help us solve Canadian problems and I do feel that this afternoon's session has helped us forward to a considerable extent.

ADDENDUM

Program arrangements precluded lengthy Discussion from the Floor in this session. However, one delegate at the Conference, I. G. Simmons, submitted a written discussion on the papers presented in the session. Dr. Simmons' contribution has been included as an addendum to the foregoing discussion.

SIMMONS: The comments made by Curry-Lindahl and Harroy on the European park situation do not, in my opinion, represent a large body of opinion in those countries. The I.U.C.N. concern with species preservation rather than with the quality of the environment as a whole, is probably of no great value to Canada in formulating a national policy for the management of land and biotic resources. The following discussions aim at a somewhat wider context.

The National Parks of England and Wales

These areas, mainly uplands used for hill farming, forestry, water catchment and recreation, are cultural landscapes with perhaps
a few pristine ecosystems in, for example, the mountains of Snowdonia in North Wales. Because of the need to control development and to reduce the conflicts between recreation and other land uses, they were designated "national parks" under an act of 1949. They form the highest element in a system of protected areas and also have "nature reserves" within their boundaries. Because they are not "natural" ecosystems (and practically nowhere in Britain can claim that status), and not devoted largely to wildlife preservation, Curry-Lindahl and Harroy deprecate the use of the term "national park." It seems to me that the term ought to be used for the areas which a nation prizes most highly, and not be subject to the arbitrary imposition of terms based on management purpose. During the period (c. 1930-1948) in which the battles for legislation were fought, few other terms were in use and the term "national park" is an appealing one to politicians who might otherwise be uninterested. Once designated in law, there seems little point in altering their titles.

**National Parks and Cultural Landscapes**

Many areas which the I.U.C.N. regards as "proper" national parks have a large tourist element in their use; increasingly this may lead to ecological changes. The clearing of timber for views, the changes in animal behaviour, and the prevention of forest regeneration in campgrounds, the pollution of streams and the use of pesticides, are examples. Although the tendency is to concentrate these influences and/or eliminate them from the park, it remains true that many national parks have their ecosystems affected by human influences. In particular this is true where part of a watershed is outside a park--it is noteworthy that the Redwoods National Park Act 1968 authorizes the Secretary of the Interior to try to eliminate harmful practices on watersheds partly inside and partly outside the new Park--and where a
migratory animal spends part of its annual cycle outside the park, as happens both in North America and Africa.

Again, so little work has been done on the land use and landscape history of apparently natural areas that we do not know whether there has been any anthropogenic modification. The moorlands of Britain were largely thought to have been natural until paleo-ecological research demonstrated otherwise; the vegetation of Yosemite Valley has been shown to be largely in a seral state following the cessation of stock grazing by early settlers and, more importantly, the removal of Indians who fired large areas in order to encourage the oak trees whose acorns were their principal source of starch. The work done at Calgary on the Canadian Rocky Mountain Parks demonstrates later but significant human effects on landscapes now emparked. Since, in North America, the early travellers often recorded the use of fire over large areas by aborigines, and in Africa the very presence of savana suggests long-term human pyrogenic effects on the ecology, work not as yet undertaken may well show that many "natural" landscapes are, in fact, cultural.

The same applies to the National Nature Reserves of Great Britain which Curry-Lindahl and Harroy have stated to be more like "proper" national parks. Little detailed work has been done on their history but it is probably, for example, that many of the woodlands result from management, especially since they are of single-species composition, that many of the grasslands and moorlands were largely created by grazing and the heathlands by fire, and that lowland bogs reflect agricultural fertilization practices. Even the Norfolk Broads have been shown to be large medieval peat cuttings.

The Relevance of the European Experience

In areas where some strict protection is necessary but where
public pressure is high, then a strict system of zoning coupled with good interpretation services is helpful. This has been practiced by Czechoslovakia in the mountain national parks of the Krkonosse and High Tatras, (the publicly-available information on the latter is poor but there is a detailed analysis and design for the master plan), and by the Dutch on their State Nature Reserves, which often adjoin forest recreation areas. Here, specially designated "footprint" maps emphasize the recreation areas and draw the people, although entry to the preserved areas is not often forbidden.

The day-use needs of the urban population are obviously one of Canada's foremost problems. The work of the Netherlands has been outstanding in this field. One of the features of their system is the creation of special bodies to develop and manage particular areas, such as a large lake or a forest-heath system. The bodies consist of representatives of all levels of government including the municipalities from which most of the users come, the state resource agencies and private enterprise. Government finance is available for capital development but not, regrettably, for maintenance costs. However, the work of such bodies, such as the Utrecht Hill-Area Association, the Kennermerdune National Park Foundation and the Loosedrecht Lakes Association, together with the Netherlands Forest Service (which manages most of its forests with recreation as a prime aim), have produced an impressive array of day-use recreation areas.

Several other examples of European practice could be cited, along with malpractices to be avoided, but perhaps these examples will show that the potential for useful interchange of ideas with Europe is far greater than indicated by the presentations at the Conference.
FIELD TRIP TO BANFF NATIONAL PARK

Saturday, October 12th: Evening
Sunday, October 13th: Full Day

The Guide for the Field Trip constitutes Appendix A of this volume.
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THE MANAGEMENT OF CONCESSIONS AND OTHER SERVICES IN NATIONAL PARKS IN THE UNITED STATES

Thomas F. Flynn Jr.*

OBJECTIVE OF CONCESSIONS MANAGEMENT

We in the United States often equate park management with managing resources and serving people. Concessions management is an integral part of park management; and while we in concessions must know about the resources and continually learn from the resource managers, we are most directly concerned with serving people. To properly serve the people who visit the parks we feel that we must satisfy their physiological, recreational and perhaps even their social and esthetic needs.

The needs of the park visitor will vary of course by the kind and extent of resources available, the objectives and uses of the park, the relative isolation from services, the commonly used modes of transportation, the attitudes and social values of social groups, etc. Consideration of these factors will help the park manager determine whether a hotel, restaurant, or interpretive transportation system is needed,

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where facilities should be located, the size and capacity of facilities and the precise nature of the service to be provided. Because the park visitor leaves a normal, routine environment where food, shelter, clothing and protection are readily available to him these needs must be provided in the parks if he is to learn from, to enjoy, and to be inspired by his park experience. We therefore, view our job—concessions management—as that part of park managing which sees that necessary food, lodging, supplies, fuel, transportation and health services are provided visitors at reasonable cost and at acceptable quality.

We in the United States National Park Service see that visitor services are provided through contract with private persons. Through the contract, we ask private persons to spend their capital to build the needed facilities and to operate them as private businesses.

Our basic system of providing concessioner services goes back nearly 100 years—to the Yellowstone Park Act,¹ which among other things provides that the Secretary of the Interior shall have "exclusive control" of the park and that he may:

grant leases for building purposes for terms not exceeding ten years, of small parcels of ground, at such places in said park as shall require the erection of buildings for the accommodation of visitors . . . .

This authority, which is also an expression of policy by our Congress, has been made generally applicable to all parks under the custody of the National Park Service by the 1916 Act,² which established the National Park Service. Other laws and administrative directives have supplemented the basic system of reliance on private persons to provide concession facilities and services, but none has made a basic change of the Government-business partnership that we have created. Once the decision had been reached to rely upon private capital and private operations to care for the needs of the travelling public who visit the parks, the next most important policy decision was
Policies

Within any organization, policies help to achieve consistent behaviour among partially autonomous units of the organization. Policies are guides to the decision makers that restrict choices within appropriate institutional limitations, but permit the exercise of some discretion. To be effective instruments of management, policies must of course be established by appropriate authority such as the national legislature or higher level executives. Recently, the Congress of the United States restated in statutory language the important, historic policy on the development of concession facilities:

that such development shall be limited to those (facilities and services) that are necessary and appropriate for public use and enjoyment of the national area in which they are located and that are consistent to the highest practicable degree with the preservation and conservation of the areas.⁴

This policy statement restricts our development choices—facilities must be necessary and appropriate for use and enjoyment and their development must be consistent with conservation and preservation of parks. Conversely, the statement permits park management to decide what is necessary and appropriate for public use and enjoyment and to decide how to develop consistent with conservation of the park resources for each park. This determination of the how, the what and the when is the function of our plans and programs.

Plans and Programs

To me, planning implies thought before action and programming implies putting these thoughts into a logical sequence for action. In this general sense, planning and programming are constantly taking place at all levels of an organization. I wish to restrict myself, however, to the institutional sense of planning—the development of pre-action documents which will serve as a guide for the development and management of any particular park. When reviewing or implementing plans,
concession managers are most concerned with the objectives of visitor use and development for the park which identify the need for, or which will affect, concession operations. With this information and a good deal of experience, we can begin to prepare programs to assure the development of general visitor use items such as roads, trails and visitor information centres that is co-ordinated with the development of food and lodging facilities by concessioners.

The Prospectus

Once the need for a particular concession has been identified in the planning process on the basis of approved policy, we prepare a prospectus for distribution to the business community. The purpose of the prospectus is to invite private persons to make offers to construct facilities and to provide services that have been identified as necessary.

The Contract

When we have selected the best qualified applicant from among those who responded to the prospectus, we negotiate and agree upon an acceptable contract with him. This contract will state the concessioner's commitment to the United States in terms of the facilities to be constructed; the payment of fees and the adherence to standards and guidelines of maintenance of facilities, on non-discrimination in employment and public service; on safety and sanitation and other operational concerns. The contract will state the commitment of the United States to the concessioner in terms of the services which may be provided, of a preferential right to provide additional services and of an interest in property constructed by the concessioner, called a "possessory interest," which is compensable beyond the life of the contract. Thus, we have broadly stated an exchange of commitments between the government and a private party within the policies, plans and
Construction Plan Approval

Under the concession contract, we ask the concessioners to prepare plans and specifications for buildings and other structures for our approval. In our review of the concessioner's plans, we (Offices of the National Park Service and the United States Public Health Service) consider structural safety features, design, ease in maintaining a sound and sanitary facility, and harmony with surroundings and with the park's architectural theme, among other factors. This procedure allows the concessioner (and his architect) to create the kind of facility that will best serve his purposes within the limitations we have set for his operation.

Operational Standards, Guidelines and Criteria

In addition to the construction of the lodge, restaurant or other facility to serve the needs of the park's visitors, we are concerned with the price and the quality of that service. Our objective of course is to maintain both reasonable rates and high quality service. To meet this objective, we ask the concessioners to submit proposed rate schedules to our park superintendents for approval and we establish operational standards which cover safety, sanitation, visitor convenience and comfort, good maintenance practices and efficiency.

The rates on rooms, meals, tour boats or buses and other services must be reasonable. Under the policy given to us by the Congress of the United States, reasonableness of rates is judged primarily by:

comparison with those current for facilities and services of comparable character under similar conditions . . . 5

With this criteria, our park superintendents decide whether a concessioner's proposed rate schedule should be approved, rejected or modified.

To assure acceptable quality of service, we have developed...
made in 1918 when the then Secretary of the Interior, Franklin K. Lane, gave Stephen T. Mather, the first Director of our National Park Service, an outline of the administrative policy for the Service, which included this statement:

As concessions in the national parks represent in most instances a large investment, and as the obligation to render service satisfactory to the Department at carefully regulated rates is imposed, these enterprises must be given a large measure of protection, and generally speaking competitive business should not be authorized where a concession is meeting our requirements, which, of course, will as nearly as possible coincide with the needs of the traveling public.³

The governmental controls that we impose on the concessioners' operations include approval of rates, advertising matter and articles of merchandise and we require adherence to operational standards covering public health, sanitation, visitor comfort and convenience and efficiency of operations and other concerns.

Thus, our system of providing services to the public involves three broad elements: (1) the National Park Service authorizes private persons to construct facilities and to provide services to fulfill predetermined needs; (2) in return for the obligations to provide these facilities and services, the private persons are given a large measure of protection from competitive businesses; and, (3) the National Park Service controls or regulates critical elements of the concessioners' business operations to protect the visiting public and the general public.

TOOLS OF MANAGEMENT

We have several tools which help us manage the concessions in the parks so that necessary and appropriate services are provided visitors at reasonable cost and at acceptable quality. Today, however, I will restrict my discussion to seven such tools.
operational standards and guidelines which we make available to the concessioners. Then, as examples, we check their advertising to see if it is accurate and objective; we look over the merchandise (especially souvenirs) to see if it is appropriate and in good taste; and we inspect food and lodging facilities to determine whether the concessioner is adhering to safety and sanitation standards.

**Evaluation of Operations**

In light of the operational standards we have developed, we evaluate the concessioner's operations as we have found them through our inspections and other investigations. As concession managers per se, we restrict our evaluations to determining whether the concessioner is satisfactorily performing the required services under the contracts. As park managers, though, we broaden our evaluations beyond satisfactory service to the public to try to judge the impact of concessioner operations on the use of the park by the public and vice versa. If, for example, large concentrations of visitors at a concession facility begin to adversely affect traffic patterns or to endanger a fragile natural resource, various levels of management must begin to work together to reach a solution.

With the broad view of evaluations that I have noted, we believe that the National Park Service can accomplish its management objective—to see that necessary and appropriate services are provided visitors at reasonable cost and at acceptable quality.

**CURRENT TRENDS AND PRESSURES**

The forces of change are constantly pressing us to rethink our policies and plans; to reconstruct our buildings and roads; and to redefine the meaning of quality of service. In my country, we see, feel and shape an accelerating pace for change almost daily. We are not
alone. I find, for example, in the statement of National Park Policy for this grand host nation the following quote:

Although the purpose and intended use of National Parks has not changed since their inception, the social, economic and cultural characteristics of the people have and will continue to change. This changing way of life has made it necessary to alter park policies to maintain the role the parks were dedicated to play in the lives of the people of Canada, while at the same time ensuring that those things which represent the purpose of the parks will not be encroached upon. Examples of these changes are the acceptance of modern roads and overnight sleeping accommodations.⁶

Within the framework of this clear statement on the effect of change, I wish to pinpoint those forces of change which appear to me to be most relevant to the concession manager.

People: Numbers, Classes and Activities

In rising from about 106 million in 1920 to over 200 million last fall, the total population of the United States has merely doubled over this 37 year period. I say "merely doubled" because other demographic factors have had and are having a more profound impact on the parks, and ultimately on concession services, than general population growth. The population statistics reflect the dramatic change from a relatively balanced industrial-agrarian society of 1920 to the highly complex, urban society we have today. Then about one-half of our population was classified as urban, but in 1960 nearly seventy per cent of our people were so classified. Recreational activity, as measured by visits to our park areas, has increased nearly 72-fold from 1920 to 1960. The 72 million visitors we welcomed in 1960 were only about one-half of the total number of persons who visited our parks last year, just seven years later.⁷

Not only have our park visitors become dramatically more urban and more numerous, but their numbers are increasingly drawn from the middle-class. When our parks were in their infancy they were located far from the centres of population. Generally, only the wealthy or the
once-in-a-lifetime vacationer could afford either the time or the money to take a transcontinental train trip to view the isolated wonders of Yellowstone, Glacier or Grand Canyon. Today, a broad base of our population can afford the predominant means of access to the parks—the family automobile. Our people have increasingly more leisure time. Also, the centres of population are demanding and getting more nearby parks (we call them recreation areas) to satisfy their thirst for recreational activity. With more generally middle-class people in the parks, who have much more leisure time and more funds for leisure time pursuits than in years past, you might expect the conflict for the use of the parks to intensify. Water-skiers, fishermen, and swimmers may all want to use a body of water but they obviously cannot use the same location. Resource managers can make water area zoning plans and we, as concessions managers, can make the zoning effective by, for example, separating the bait and tackle shop from the beach bathhouse—so that the swimmers and the fishermen do not congregate in the same location.

Service Industries: Trends in Lodging, Food and Transportation

Looking over the same 40-50 year period that we have demographically and sociologically, we see tremendous changes in the service industries within which our concessioners may be categorized.

Lodging for tourists and other transients was confined up until the recent past to large and luxurious hotels. Today, with people travelling by personal car in small family groups, the motel better serves the need for overnight shelter.

In the food service industry, we see an even more rapid pace of change than in the lodging industry. Fast, efficient and limited-menu types of food establishments are springing up all over our land to serve a young population which wants to eat quickly. With the availability of refrigerated and/or heated transportation systems, food facility
designers are beginning to develop centralized kitchens which produce food for service to customers at outlets several miles away. We believe that these and other new concepts will help us better satisfy the food needs of our park visitors in the future.

Several new and exciting transportation systems are being developed which may help us move people to and through our parks. The increasing availability of mini and shuttle buses, several new types and capacities of boats, tramways and other vehicles is giving us several alternative means of providing complete transportation service to our park visitors.

When we began to develop policies, plans and procedures for concession programs about fifty years ago, our choices for satisfying the needs for food, shelter and mobility were severely limited by the country's economic development, by the style of life to which our visitors were accustomed and by the comparatively primitive technology of our service industries. These factors which once limited our choices now present challenging, unstable and complex alternative means for satisfying the needs of our park visitors.

A Response to Change

The American National Park Service is going through an exciting period—a period when the acceptance of change is high and the adoption of new techniques and new concepts to deal with that change is prevalent. We have broadened our management objectives for the areas we administer so that preservation of natural resources and historical integrity is joined by emphasis on active participation in outdoor recreation. We have reoriented our planning process to be more responsive to broad regional or societal demands and we are restating our administrative policies more clearly to guide us in the realization of our objectives.
Equally important to those of us who direct our concern toward concessions, is the development of new and sharper tools for their management.

The most crucial new tool was given to us by our Congress. It reaffirmed the traditional policies of the National Park Service on concessions by passing the Concessions Policy Act of 1965.\textsuperscript{8}

I look upon the reaffirmation of traditional policies as a new beginning because these policies were being questioned in many quarters before the Congress acted. Now we have clear, authoritative guidelines within which to work.

To give us a uniform approach and comparative data, we have prescribed a system of accounts classification which we ask our concessioners to use when reporting their finances. This tool helps us determine a proper basis for franchise fees or rates to the public, and it will make the audit function far simpler than a multiplicity of accounting systems. We hope, too, that with this relatively new system we can predict relevant trends in the concessioner's business activity and perhaps use some data generated by the system to pinpoint efficient or inefficient practices.

Since we must continually evaluate the concessioners' performance to determine if they are serving the public in a satisfactory manner, we are preparing standards for that purpose. These standards cover some of the more critical factors of any visitor's enjoyment of a park, his safety, health, comfort and convenience. We have borrowed ideas for these standards from the hotel and restaurant industry, from other management groups within the government and from academic authority. To look within our organization we feel that clear, written statements of acceptable performance are necessary when several individuals with diverse backgrounds and interests are responsible for judging the performance of individual concessioners doing business in unique park areas.
Thus, we hope that the standards of acceptable performance will facilitate internal communication within the National Park Service, as well as enable us to judge each concessioner's performance fairly and objectively.

The manager's role would be simple and— I suspect— dull, if policies, systems, plans and standards automatically produced results. It takes people, not ordinary people but trained, knowledgeable persons to carry out policies, to create things from plans and to apply standards to facts. We are at the present time training our central office employees in Business Administration at the graduate school level, our park superintendents in concessions management generally, and our uniformed staffs in sanitation.

To create a more effective dialogue, we are beginning to hold seminars for the mutual exchange of ideas between park managers and concessioners. We believe that the park visitor will more easily find the conditions that make his visit enjoyable if we and the concessioner both know and exchange as much knowledge as possible about the quality of service.

To look in the future, I believe that we in concessions— whether in the government or in private business— are going to become more involved in park planning and in the programming of facilities. We have already begun to ask the concessioners to take part in the preparation of park master plans. We expect their participation in the planning process to grow. Conversely, we believe that the government will increasingly consider factors when planning that we left to private consideration in the recent past. This is especially true when several of our parks are becoming unfortunately crowded with automobiles and people are congregating in greater densities than in the urban environment they sought to escape. With proper placement of overnight facilities (including campgrounds), with the establishment of rapid service food
facilities and with the adoption of efficient transportation needs, we can go a long way toward alleviating or preventing congestion. We feel, therefore, that as park managers we are going to participate more fully in the planning for the design, location, capacity and function of concession facilities than we have in the past.

CONCLUSION

In the broadest terms, I believe that the concessions manager will want to clearly state his objective, know how best to use the tools of management that are available to him and learn to deal effectively with change.

The objective of concessions management, as we view it, is to see that the park visitors' needs for food, lodging, transportation and other services are identified and provided at reasonable rates and at acceptable quality.

Our role as concessions managers is, I believe, to use the tools of management—policies, plans, contracts, standards, evaluations, etc. --to achieve the objective. Social change, however, continually presses us to restate policies, redesign facilities, and redefine standards, etc. Concomitantly, technological change gives us new opportunities to feed, house and move more visitors with diverse needs and aspirations better and faster and more efficiently. We believe that the concessions manager—whether he comes from the public or the private sector—will play a larger and more vital role in the planning, development and management of parks than he has in the past.

FOOTNOTES


3 Compilation of the Administrative Policies for the National


51965 statute, Section 3(c), see 3 above.

6National Parks Branch, Department of Northern Affairs and National Resources, National Parks Policy (Ottawa, Canada, September 1964), p. 11.


81965 statute, see (3) above. The purpose of the statute was to state in legislative language rather than administrative prose several of the more important, traditional policies which have guided the concession program of the National Park Service since its inception.

9For example, the National Park Service estimates that during some summer evenings 25,000 or more people may crowd into the 10 square mile area of Yosemite Valley in Yosemite National Park.
To discuss the subject of Townsite Administration and Management in National Parks, it is necessary to have an appreciation of the development of the Canadian Parks System, and the origin of the townsites within it. Each park in the System was established at different periods in time, and under a somewhat different set of circumstances. However, they all have one common purpose. That purpose is to ensure that these areas will "be maintained and made use of so as to leave them unimpaired for the enjoyment of the future generations." Townsites in parks, if not initially conceived for the purpose in several cases, did in fact, early in their life become centres to serve visitors who came to enjoy the natural values that the areas offered.

The Park System of Canada was inaugurated in 1885 with the establishment of the Hot Springs Reserve—an area of ten square miles—near what is now the townsite of Banff. The System has since expanded to nineteen parks across Canada; six with significant townsites or

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visitor service centres and the others with a minimum of commercial concessions in them.

In the latter part of the nineteenth century, before Banff was incorporated within the Park, a number of small coal mining communities developed, including one known as Siding 29. It was located one and a half miles from the present Banff townsite. Enthusiasm, however, for the hot springs was such that it prompted the enlargement of the initial ten-square mile Reserve, and stimulated the surveying and establishing of a new townsite closer to the hot springs. Movement to the new townsite was led by the Canadian Pacific Railway, who relocated its station in 1888. Residences and businesses quickly followed. Thus, the townsite now known as Banff is really an outgrowth of the public reserve enclosing the hot springs and Sulphur Mountain. To quote Mr. R. C. Scace:

Dominion Administrators seemingly had but one primary purpose for the Banff [Townsite] area, in the period 1885-1886—the acquisition of the Hot Springs for public use and their protection against commercial exploitation.

Interest in the natural values of the hot springs quickly expanded and in 1887 the reserve was enlarged to 260 square miles and designated as Rocky Mountains Park.

At the time that the townsite was being surveyed and developed, the system of land tenure was being worked out in Parliament. The Rocky Mountains Park Act of 1887 established that the Park would be under the control and management of the Minister of the Interior, who, through the Governor in Council, could effect regulations for "the Lease for any term of years of such parcels of land in the Park as he deems advisable in the public interest, for the construction of buildings for ordinary habitation and purpose of trade and industry, and for the accommodation of persons resorting to the Park." The term of lease was subsequently established at forty-two years, a nominal annual
land rent was charged and the lease contained a renewal clause. The government of the day obviously felt that land tenure arrangements had to be sufficiently flexible to encourage investment of private funds and settlement by the public. It also realized that it was necessary to exercise control of the settlement and free-enterprise developments on public land, to direct village growth. The resulting leasing system had some of the characteristics necessary to leave the control of the lands in the public domain. But land management procedures were informal and being informal, variations occurred between parks.

The leasing system so developed, worked well in the early stages in the parks and in the development of townsites within them. It encouraged the construction of homes by persons resorting to the parks and provided the security of tenure necessary for business establishments to be economically feasible, under the circumstances that prevailed at the time. Considering the methods of transportation that were then available, distance and the limiting economic factors of that period, it must have been difficult for the administrators of those days to imagine that overdevelopment could ever occur. However, it is interesting to note that even at this point in time, certain people were concerned that this might, in fact, occur. Mr. Thomas A. Mawson, in a 1913 report on the proposed artistic lay-out of Banff, made the following comment:

The problem now before us is how to open nature's storehouse and yet not despoil it; to delimit and reserve it for those who seek its beauties for its own sake.

After World War II, the number of visitors to the parks increased at such a rate that by the mid-1950's, it became obvious that overdevelopment of many of the parks and particularly the townsite areas was a distinct possibility. This change resulted from many social factors—an increased interest in travelling, led by those who had seen military service abroad in World War II; improvements in
travelling methods, improvement of highways; new and faster vehicles; better trains, air travel; commercial bus lines and so forth. A significant factor in all this was the upsurge in the economic conditions of the country generated by the release of considerable amounts of forced savings, increased wages and the increased production following the war. All these forces resulted in a general reappraisal of national economic policies, urban development policies, urban transportation systems, housing policies, farming methods, manufacturing methods, management practices and almost every facet of our national lives. Reappraisal of park policies was consistent with this post-war reevaluation. The reappraisal of park policies commenced in the early 1950's, developed through the mid-1950's, and was gradually applied through the years 1957-1960. It culminated in the National Parks Policy Statement issued in September, 1964 by the Hon. Arthur Laing, then Minister for National Parks. The foreword to this statement clearly enunciates the guiding principles:

Familiarity with the principles on which National Parks Policy is based will enable both legislators and administrators to make a constructive contribution towards maintaining the National Parks for the benefit of the people of Canada and assuring that this representative portion of our National Heritage will endure for future generations.

A further quotation from the National Parks Policy Statement will demonstrate that the changes which have occurred since the mid-1950's are not of an arbitrary nature, but are the result of careful study and the sincere desire of the government to execute its responsibilities for these National Heritage areas effectively:

Although the purpose and intended use of National Parks has not changed since their inception, the social, economic and cultural characteristics of the people have, and will, continue to change. This changing way of life made it necessary to alter Parks policy to maintain the role the Parks were dedicated to play in the lives of the people of Canada, while at the same time, ensuring that those things which represent the purpose of the Parks will not be encroached upon.

This is the guiding principle behind the reappraisal of the parks
policy and is the guiding principle behind the administration and management of townsites and concessions in the parks today. To achieve this purpose meant that certain policies and procedures had to be adjusted. The new policies initially appeared very harsh and uncompromising: for instance, the adoption of a policy for restricting residence in the parks, rather than the 1880's policy of encouraging the development of large, expensive homes for people resorting to the parks. This policy of restricting residence to only those persons who have to live in a park by reason of their business or employment there, has been necessary to ensure that the size of the townsites (which are really Visitor Service Centres), are clearly circumscribed, keeping to a minimum the impairment of the national park's value. The policy does, however, recognize that there is a need for services to be provided for the visitors and that the people who provide these services do have a need to live in close proximity to their place of employment. With improved methods of travel, increased affluence in our society and increased leisure time, it is quite conceivable that without such a policy, a community of summer homes, many times larger than the present townsite, might have developed, increasing the demand for municipal services and increasing significantly the expenditure of federal government funds to provide them—not to mention the erosion of the natural values which make the parks the outstanding attractions they are today.

Restrictions were also imposed on the number and type of businesses that should be permitted within a park. Since the purpose of the Visitor Service Centre is to serve the visiting public, it follows that only those businesses required to meet the public need should be permitted. It is contrary to our policy to permit the establishment of any type of business that does not directly serve the visitor, or those people whose permanent residence is necessary
within the park. The establishment of manufacturing plants, whole-
saling or warehousing outlets would not be permitted under our policy since these could be located equally as well outside the park bound-
aries. We have also restricted applications for businesses that are sufficiently represented, since with the limitation of space, any proliferation of one type of business would reduce the land available for other vital services. Moreover, it is not our intention to allow businesses in a park just because someone wishes to establish there. We must be satisfied that there is a need for the facility. Surveys have been, and are being, conducted in the Park System to determine visitor needs. The findings of these surveys will be related to the capacity of existing businesses to serve the visiting public and to identify additional business requirements or extensions of current services.

Perhaps the most important element in our new policy, from a park's management point of view, is the discontinuation of issuing renewable-type leases. This policy is designed to permit the Department of Indian Affairs and Northern Development to review, at the end of the lease period, the need for the service provided, or the use to which the land is being put and to relate this to the concepts developed in the long-range plan for that area. Through the vehicle of this periodic review, the natural values of the area will be preserved (redevelopment instead of more development), and the then current needs of the visitor can be provided for. The new leases are for a maximum period of forty-two years. In the case of residential leases, although improvements as well as the land revert to the Crown upon termination, provision is made for payment of compensation of improvements at fair market value. In the case of commercial leases, improvements revert to the Crown without compensation on expiry of the lease. This is common commercial practice in business leases in both
Canada and other countries. The commercial lease agreement does provide, however, that if the business is providing a needed service to the visitor, and has been operated in a satisfactory manner, the incumbent management will have the opportunity to continue operating the business for a further period of at least ten years. The prime reason for the different treatment between residential and commercial property is that under the Canadian Income Tax Act, depreciation on improvements is a deductible expense on the commercial property, while depreciation on residential improvements is not deductible.

While the lease policies which were applied during the early stages of national parks administration adequately met the needs at that time, the major economic, cultural and social changes that have occurred in our national life, have forced us to re-examine these policies to ensure that the purposes for which the parks were established are successfully achieved.

In 1970, a land rental review will be carried out to adjust rental fees which, up to now, have been nominal. This is necessary to meet present day economic conditions. Therefore, the annual land rent effective in 1970, will be based on current land values as determined by appraisal. I should emphasize that this is a land rental and not a municipal tax levy. Nominal land rentals may have been easy to justify in the formative days of the parks; under today's economic conditions, this is certainly not the case.

Many other areas of national park administration are being re-examined and, where it is found necessary to effectively control land use, new zoning regulations have been adopted. We have also adopted more rigid building standards, as have most municipal authorities in Canada. In harmony with good town planning, we are researching the possibility of developing a building motif for all structures within individual parks. We are hopeful that this will be accomplished
in the near future. It is our intention that all our policies relating to the administration of national parks will be continually and constantly reviewed to ensure that we keep abreast with the rapidly changing conditions in the country and in the world.

It has been a fundamental cornerstone of park planning and policy since the parks' inception in 1885, that private enterprise would play a significant role in the development of visitor facilities in at least the major parks. This is evident in the role played by the Canadian Pacific Railway in the early days of development at Banff. It is also evident in the part played by the Canadian National Railways in the development of Jasper. It is, I suggest, evident in the present day leasing policies, particularly the commercial leases. It is our intent that involvement of private enterprise will be encouraged and continued for as far into the future as our planning, at present, takes us.

So much for our history, our growth and our policies. I would like now to turn your attention to the matter of administration and management of townsites.

The townsites in our national parks vary in permanent population from about 50, in the case of Waskesiu, to about 3,500 in the case of Banff. I would like to point out, however, that because they are visitor-oriented, they are subject to a seasonal influx of employees that brings the summer population, exclusive of visitors, to two or three times their permanent population. For example, a restaurant with a winter staff of 5 persons, may increase its staff to 20 during the summer months. A bank with a permanent staff of 13 may increase this to 20 or 21 for the summer months. A motel, which in October is operated by the owner and his wife, may in July have a staff of 8 or 10. Many businesses close down completely for the winter months, so no staff is employed. In Banff Park, one employer alone who, in winter,
has a staff less than 50, in summer employs over 1,200. Thus, towns such as Banff or Jasper with a permanent population of 3,000 to 3,500 may have a population, exclusive of visitors, of 6,000 to 10,000 during the summer months.

This resident population plus visitors and seasonal employees is, of course, the figure which is used in the development of our townsites. This means for instance, that the water supply systems must be capable of serving users that total several times the permanent resident population. It means that the garbage collection system must be capable of handling the extra garbage generated by this influx. Streets that handle 200 - 300 cars per day in the off-season, must be capable of handling several thousand in July and August. Parking facilities which appear as a great waste of space in winter, are entirely inadequate in July, and housing accommodations designed to hold 3,500 permanent residents must hold in June, July and August a seasonal staff that probably doubles that number. It is evident, therefore, from the foregoing that the problems associated with administering townsites are somewhat different to those problems found in the average Canadian community. Normally, municipal services are designed to meet the needs of the residents. In park townsites, they have to be designed and constructed to meet the needs of the residents, the seasonal labour force, and the large influx of visitors. The challenge in townsite administration within the national parks, is to blend together the policies essential to preserve the natural values of the parks and those designed to effectively serve the visitors basic needs; and those policies which are designed to accord to the resident an opportunity to participate in the social, municipal and economic development of the visitor centre complex within the total park community.

How is this challenge met? Are the systems developed ideal?
The simple answer to the first question is that the challenge is met in many ways. Administrative problems are constantly being reviewed to ensure that the quality of service to the visitor is maximized and that the communication necessary to ensure harmonious relationships with all the groups in the park community are functioning effectively. In the fields of education and hospitalization, for instance, it is recognized by the national parks administration that these are provided for by provincial legislation, and the residents have been encouraged to elect representatives to local boards to participate with the provincial government to provide these services within the parks. Similarly, in the areas of the humanities, such as recreation programs, cultural and community activities have been left primarily to local and provincial authorities so long as they affect only the permanent resident population and do not conflict with the objective of preserving the park complex. Local service groups and school boards have been major influences in these areas. The financing of these services in most areas is accomplished by a system of taxation on real property levied pursuant to the appropriate provincial legislation at the request of the elected board and supplemented by a system of provincial grants. In some cases federal grants have also been made.

The Minister has always reserved the right to control such matters as land administration, eligibility for residence, business licences, personnel and financing. This is necessary so that he can effectively dispatch his responsibility to Parliament to have the parks "maintained and made use of so as to leave then unimpaired for the enjoyment of future generations," which is in its very essence, a trust responsibility. The Minister, however, has always been prepared to receive advice from local organizations such as the Advisory Council, Chamber of Commerce, school boards and so on. This advice often pertains to the areas of zoning control, public health,
traffic and parking, sidewalks, street lighting, utilities, etc., as well as those matters which pertain solely to the permanent community. The cost of developing and operating municipalities within the whole park, forms a part of the federal government budget, and therefore, the Minister as stated before, must answer to Parliament for his stewardship. It is, therefore, essential that he has final control and must exercise this control in such a manner as to carry out the purpose for which the parks were created.

The answer to whether this system is ideal, is "no" since this would imply that in the field of human relations, culture etc., we live in a static society. Since this is not the case, continued development and change will be a part of townsite administration. To ensure that consideration is given to all groups providing services in a park, the administrative problems are constantly under review, studies are conducted, and a dialogue is being developed to ensure that in the formation of future policies, each group is aware of all the factors.
The paradox of today's problems concerning the existence and potential growth of urban centres in the Rocky Mountains National Parks is expressed in the hopes of administrators of yesteryear that such townsites would flourish and thereby "benefit" the parks which they occupied. This optimism which persisted over many decades, has precipitated complex land management problems relative to the introduction of a formal National Parks Policy in the 1960's.

This paper seeks to describe the establishment and development of Banff townsite in Banff National Park and briefly its relationship with the national park idea. More specifically, the history of land use and of those who influenced it is examined. Questions are posed concerning the future management of Banff, now a community of about 3,400 residents, and other park centres.

Three distinct periods of development are recognized for Banff and accordingly, the paper is successively divided into the Spa, Resort

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Fig. 15 Banff Townsite Area, Banff National Park
and Service Centre periods which respectively approximate to the following sets of dates: (1885-1910); (1911-1945); (1946-1968).

**THE SPA AT BANFF**

Banff was surveyed and settled when the prospects of resource exploitation motivated substantial European penetration of the upper Bow River valley in the 1880's. Resource extraction in the form of furs, wild meat and minerals had been intermittently pursued for some decades but a more immediate and sustained exploitation was possible with the construction of the Canadian Pacific Railway (C.P.R.) in 1883.

A number of small frontier communities facilitated the extraction of coal, copper and timber. Silver City flourished briefly at the foot of Mount Eisenhower (1883-1885); Siding 29 functioned as a C.P.R. depot and service centre near the present site of Banff (1883-1897); and coal communities were established at Anthracite (1886-1904), Bankhead (1904-1923) and Canmore (1889-; Fig. 15). Impermanence of operation attended all these frontier towns except Canmore, a trend apparent in frontier exploitation throughout western North America. The C.P.R. line persisted to provide the railway company with a direct interest in future activities in the area about Banff.

The early extractive activities were still engaged upon at the time the first public reserve was set aside in 1885, and were to continue for some years thereafter as the youthful Dominion Parks policy was being initiated and developed. These activities did much to change the landscape about Banff and elsewhere in the present National Park. Yet, misrepresentations of "unspoiled natural landscape" and of "animal and plant life that have lived for centuries in their natural surroundings" persist in official and popular literature.
The Hot Springs

The existence of hot springs on Sulphur Mountain had more positive implications for settlement in the Banff area than had those resources upon which the other communities owed their presence. The parties professing "discovery" of the springs in 1882, shared a common optimism with respect to the long-term commercial implications of the phenomena but their vigorous attempts to acquire ownership were forestalled by the government.6

The decision to reserve an area of ten square miles on Sulphur Mountain in 1885, came from William Pearce who as Superintendent of Mines in the Department of the Interior, was instrumental in the establishment of many of today's western national parks (Fig. 16). Settlement other than with government approval was forbidden within the reserve's confines, incumbent squatters having to accept the tenure arrangements by which land would become available.7

Dominion administrators seemingly had but one primary purpose for the Banff area—acquisition of the hot springs for public use and their protection against commercial exploitation. Sir Thomas White, Minister of the Interior, anticipated that Canadians and Americans would be attracted to Banff:

not only by the virtue of the waters, but also by the beauty of the scenery and the excellence of the climate, and it is very important that the springs be managed from the beginning in the best possible manner.8

Government concern as to the cost of proposed developments at Banff was in part, alleviated by the active co-operation of the C.P.R. Company which viewed the promotion of this and other mountain resorts as fundamental to the receipt of passenger revenue on the cordilleran section of the transcontinental line.9

Developments at Banff were intended to follow the pattern established at the spa of Hot Springs, Arkansas, and White's proposals for
just such a community in the Rockies were approved by the Privy Council in July, 1886. As plans for this spa were being put into effect, events occurred which led to the extension of the original reserve and its designation as Rocky Mountains (Banff) Park on June 23, 1887. The spa was incorporated in the ten by twenty-six mile rectangle which constituted Canada's first National Park.

Later, the Park boundary was to vacillate, the Park's overall growth being indicative of a preserve idea beyond that connected with the hot springs. The presence of a large park area about the original spa obviously was to be influential in the growth and development of a townsite at Banff. Moreover, the government's desire to have control of all land designated as a park should be noted. This control committed the federal body to direct responsibility for future land uses and their management throughout the National Park.

Surveys for the spa which was to be located adjacent to the original reserve, were begun in 1886. Blocks were designed in such a way as to seemingly resemble contemporary planned spas in Europe, and in 1887, Prime Minister Macdonald optimistically reported:

I have no doubt that [Banff] will become a great watering-place and that there will be a large town on the south side of the Bow River, where the government have laid out a town plot. I have no doubt that the Canadian Pacific Railway will lay out a town plot there.

He added that:

a portion of the park offers some beautiful sites for villas, and I believe the plan of the architect lays these out, to be leased to people of wealth, who will erect handsome buildings upon them.

While regulations for the management of the spa and Banff Park were to be primarily based upon those applied to Arkansas Hot Springs Reserve (and not upon the Yellowstone Park example, as one might suppose), the government nevertheless expressed concern as to the adequacy of these regulations insofar as they had influenced conditions at the
Fig. 16
CHANGING BOUNDARIES OF THE ROCKY MOUNTAINS (BANFF) PARK

- Banff Hot Springs Reservation - 1885
- Lake Louise Reservation - 1892

- 1887
- 1902
- 1911
- 1917
- 1930

- B.C.-Alberta Boundary and Western Boundary of Post-1902 Park

(5) 0 5 10 15 20 Miles

(After Byrne)
American spa. In Arkansas, a lack of federal interest and control had enabled the townsite of Hot Springs to develop, primarily through commercial exploitation of private land about the hot mineral springs.  

John R. Hall, the Canadian government's observer believed that:

> absolute government control, and management under medical supervision, is the only solution of the question that will ensure the maximum of benefit to those sufferers requiring the aid of the Hot Springs of Arkansas.

Hall's concern as to how land use management might be satisfactorily invoked in Arkansas, had obvious inferences for Canadian procedures at Banff. Interior Minister White underlined Banff's advantage:

> commencing as we do at Banff with a clean slate, it appears possible to adopt such regulations as would minimize the evils complained of at the Hot Springs of Arkansas . . .

Predictably, because of the problems encountered at Hot Springs, the form of land tenure to be applied to Banff became a focus for discussion amongst park administrators.

**Land Tenure**

Parliament sought to establish some form of land tenure which would evade the problems associated with freehold at Hot Springs yet produce revenue to the Crown from a spa of hoped-for international repute. Hopefully, the system adopted would place the government in a position of absolute control of land uses.

According to the Park Act of 1887, regulations might be effected for:

> the lease for any term of years of such parcels of land in the park [the Governor in Council] deems advisable in the public interest, for the construction of buildings for ordinary habitation and purposes of trade and industry, and for the accommodation of persons resorting to the park.

Discussion of this clause in Parliament evoked comments that a leasing system would provide the government with "full and thorough control" of the Park, enabling it to "impose conditions which will prevent the introduction of much that is to be found in such places, and which is not
desirable should prevail." Distribution of Crown land on a freehold basis it was feared, might induce a general decline in the quality of land use and the government's ability to manage municipal developments.

Adoption of the leasing system necessitated decisions as to periods of tenure and right to renewal. Proposals that lease periods of twenty-one years be introduced were opposed by Prime Minister Macdonald on the grounds that "people will not build handsome houses on 21 year leases. If there is to be a limit at all, there must be the right of renewal." His suggestion was adopted, leases being issued with a renewable "in perpetuity" clause. These so-called "perpetual leases" provided for a constant annual rental to the government for the first forty-two years at the end of which period a review of rental would take place. Thereafter, leases would be renewed for a like term of years under similar conditions of tenure. Transfers of lease were possible but only in the event of government consent. Nevertheless, as events transpired, there were to be exceptions to the status quo—such as the issue of at least one 999 year lease to the C.P.R.

Annual rentals for lots ranged from $2.50 to $10.00, individual rents being determined arbitrarily on the size, quality and intended use of lots. The rentals produced an insufficient revenue relative to overall operating costs yet even by 1912, lots were available for only $8.00 to $15.00. The leasing system had long-term implications in part, because the leases were issued to cover long periods and could be renewed indefinitely; and in part, because later government modifications to the lease did not fundamentally change its character until after 1958. The basic issues of right to lease renewal, maintenance of quality in land use, etc., which proved contentious in the 1880's were to become so again after 1958 when visitor pressures on existing facilities
required that existing tenure arrangements be re-evaluated. In short, the form of tenure which the government thought best to assist the development of an exclusive spa survived the function it was originally intended to fulfill and was applied to a fully-developed national park townsite.

Controlling Groups

The Dominion Government and C.P.R. Company dominated early developments in and about the spa of Banff.

The Dominion Government. Government activities or services took many forms. Limited appropriations required that the Department of the Interior concentrate on certain facilities, being guided by its own concept of development priorities. Thus, improvements to the hot springs and the local landscape, the preparation of a coach-road network, (today's network), and the introduction of certain resort-like facilities usually exhausted annual appropriations to 1900. Thereafter, the introduction of some municipal services to the growing community broadened the range of facilities amongst which appropriations had to be distributed.

The landscape "improvements" and facilities provided are of interest. Trees and other vegetation were planted periodically to compensate for the repeated decimation of the area by natural and man-made fires. Stumps "and other unsightly objects" were removed. Government facilities ranged from a weather station, the data from which was much publicized, to a Museum of Natural History, animal paddock, zoo and aviary. A variety of exotics, some introduced by the C.P.R., inhabited the faunal enclosures.

Municipal-type service provision really began with the original village surveys and introduction of cheap, long-term leases. There was as yet, little agitation from the residential population for
service improvements but as early as 1909, local dissatisfaction was expressed over water and sewer rates.24

Federal assumption of the role of municipal government permitted administrators to initiate services as they saw fit but also implied a willingness to become responsible for the provision of most of the public services that would be needed in the village. Of course, Banff's isolation at this time necessitated federal responsibility with occasional exceptions, as in the provision of electricity by the C.P.R. from its coal town at Bankhead. Doubtless, no one visualized the variety of services that would be required (or demanded), and the costs that would be involved as the townsit developed. However, the casual introduction of municipal services in the nineteenth century established the precedent which committed the government to its role of provider in the future.

Because Banff and other permanent park communities represented integral units within the boundaries of their respective parks, municipal-type services were not functionally separated from general park administration. Consequently, financial records for Banff Park were not used to establish the basis of charges to residents for services and utilities in the townsit. Many types of service charges levied at various times were not based upon any one financial policy. The system, which persists, has been described by administrators as "complicated, difficult to administer and impossible to defend on the basis of real economic values."25

The Canadian Pacific Railway Company. The monopolistic privileges enjoyed by the C.P.R. in the western national parks as a whole reflected contemporary procedure in many American parks where railroads were the principal means of access to the public lands.26 Profiting from its seeming monopoly in the "villa" section of Banff, the C.P.R. constructed the impressive Banff Springs Hotel and was associated with
other prominent hostelries erected near the hot springs. Thereafter, the company embarked upon a program of activities similar to the government, designed primarily to attract a fashionable clientele from throughout North America and Europe. Ocean-spanning advertising brought the desired patronage and visitations to Banff increased rapidly in the years to 1910. Three thousand visitors were recorded in 1887; 56,400 in 1910.

Attractions and landscape improvements likewise complemented the government's efforts. Promotion of events such as Banff Indian Days and efforts to restrict railway fires as well as to restock dynamited fishing waters near the spa epitomise the C.P.R.'s role in these matters.

In sum, because of its broad commitment to spa development, the C.P.R. became a significant agent in decisions relating to the management of Banff.

The Residents. The spa's small but growing resident community (see Table 2 in Nelson), was supported by seasonal occupations such as guiding, provisions of accommodation and livery stable operations. For a select few, there was the possibility of large profits. Yet Banff retained the characteristics of a frontier community as evidenced by village developments north of the Bow River and reports of land speculation, poaching, timber felling, drunkenness and illegal movements of whisky. Isolation and casual local administration brought an element of pioneer independence and associated self-centredness to the community. Banff was permitted no local self-government and no political structure beyond representation through a Member of the House of Commons. From 1905 a representative Member also sat in the newly-established Province of Alberta's Legislature. But local administration duties were the responsibility of the Park Superintendent.
Settlement and Land Use

The land use implications of the events described were significant. The desired settlement in Banff was undoubtedly stimulated by the land tenure policy. Generally, leases were available to whosoever sought them although exceptions seemingly involved the larger lots. Uncontrolled distribution enabled speculation, and "blanketing" of lots resulted. Lessees anticipated that transfers of lease—a procedure to which the government usually acceded—might prove remunerative. Consequently, residential development took place on widely scattered lots throughout the spa.

Those who retained their leases, were able to influence business development and government schemes for townsite management in later years. As automatic renewal of leases became standard practice in land management from the outset, the influence of private citizens relative to their possession of leases could become a very significant factor in community development.29

By adopting such a casual attitude towards management, the government rendered impractical, land leasing as a form of land use control. Indeed, something resembling a freehold arrangement resulted from the policy adopted.

The result of development was the occupancy of much of the present townsite area north of the Bow River by 1910.30 Continued expansion undoubtedly would have its attendant planning problems but this need not have concerned the government if in its capacity as landlord and municipal government, it would control the character of development.

Emphasis on these historical matters eliminates any thoughts as to Banff representing an unwanted development in the National Park's landscape.31 Rather, its continued expansion vindicated the measures adopted by its administrators to give it form and growth but carried the penalty of decreased control of land uses.
From 1911 to about 1945, increases in the regional population, accompanied by technological innovations as expressed through improved communications, accelerated the processes of growth at work in Banff. But the land use implications of improved accessibility relative to generally unmodified townsite management procedures were enormous, especially when viewed in the context of changing concepts of what a national park stood for in Canada.

Changes in Communications and Visitor Characteristics

The government at first excluded motor travel in the national parks, but eventually embarked upon a road construction program. By 1918, cars had "practically driven the . . . slower tally-ho off the roads." Between 1914 and 1926, Banff was linked to Calgary, Radium Hot Springs and Field; and in 1940, to Jasper. Later improvements culminated with the opening of the new Trans-Canada route through the Park in 1958-59.

This shift in government policy from about 1911 undoubtedly stemmed, in part, from pressures exerted by regional citizens groups, but more so from the "big revenue" which administrators hoped the motoring public would yield. Significantly, J.B. Harkin, a resolute advocate of parks roads, was appointed Commissioner of the newly-established Dominion Parks Branch in 1911.

Roads and their improvement progressively removed Banff's isolation, permitted mass access and in association with boundary amendments and other circumstances, made the village the focus of human influence in the Park. Beyond its immediate limits, the wildlands extended in graduated degrees—distorted by landscape configuration and avenues of movement—to reach a climax in little used "wilderness areas," such as the upper Red Deer River valley.
Visitations to Banff assumed a pattern that is evident today; large seasonal influxes, significant contributions from the regional population, particularly from Calgary, and a trend towards short periods of residence in the village or Park. 41

Growth of the Resort

The original concept of Banff as a spa could not fully account for the degree and character of settlement and development which occurred in the period being considered. Certain new functions such as Banff's role as a summer home colony, entertainment and education centre contributed towards one main function: that of Banff as a recreation focus or resort town.

Growth was expressed in three ways; gross increases in population (Table 2), areal expansion of the village and the physical developments therein.

A number of additional blocks were surveyed and opened to the public at various times, and land uses occupied what might at first be thought of as distinct categories: residential, commercial and institutional. Yet properties thus categorized operated in many instances in a recreational capacity as, for example, in the provision of tourist accommodation. A variety of urban developments, many of them viewed as undesirable yet left uncontrolled, hardly conformed to the high quality developments originally visualized for Banff. Most lots carried land-consuming single family dwellings, many functioning as summer homes.

A broad range of businesses and commercial activities were permitted, and invariably duplicated, many being oriented towards meeting the recreational needs of the public, for example, dance halls, pool halls, bowling alleys, beer parlours and souvenir shops. Some reflected the needs of any resident population: clothing and drug stores,
shoe repair shops, laundries, etc.

Public and institutional land uses such as schools, churches, etc., were comparable to those found in any provincial municipality of similar size. These facilities had been introduced at an early date and were recognized by the government as being essential to townsite growth. Functional specialization did occur insofar as many properties were required for park administration and maintenance, and also in the establishment of Banff School of Fine Arts on Tunnel Mountain. Although Banff developed a general land use pattern similar to urban communities beyond the Park, the function of the village as a resort is shown by the mixture of real land uses in each individual land use category. Obviously post-1945 attempts to zone land uses within the existing urban area were to pose great problems for townsite planners.

Urban growth also necessitated a broader application of the government's service policy and larger appropriations to support it. Introduction or improvement of services often followed visitor's complaints or, more usually, local agitations. Residents, businesses and organizations made no contribution towards the cost of most of the services and were subsidized where charges were made. In instances such as hospital, welfare and education services, responsibility lay elsewhere and made for a growing provincial interest in the development of Banff.

Controlling Groups and Agencies

The development of Banff was strongly influenced, if not controlled, by the federal government, the C.P.R. and residents. New influences noted hereunder were not destined to become really effective until after 1945.
The Federal Government. The mechanisms for land management were as previously described, but stress on development rather than control facilitated, for example, continued issue of "perpetual" leases. Thus by 1967, 741 such leases were operative out of a total of 949 for the townsite. A speculator's market in leases persisted and despite some efforts at control:

the right as owner of the freehold to refuse to consent to a transfer of a leasehold does not appear to have been used to control the type of land use.

Ground rents remained low. As late as 1950 "prevailing residential rentals" were reported as being $8.00 per lot. By 1960, the highest rental totalled only $100.00.

Low rentals together with subsidized municipal services, implied a situation increasingly to a resident's advantage, especially as service costs to the government rose through municipal improvements.

K. G. Crawford et al. have observed that the only use of freehold powers by the government was to require leaseholders to improve the standard of maintenance of their property before renewals of leases or consents to assign or sub-lease were made.

The Canadian Pacific Railway Company. Changing social habits brought changes in the C.P.R.'s program. Advertising, "special rates" and "special events" were all designed to attract the general public. In the latter instance, the Winter Carnival, Banff Regatta, Banff Springs Highland Gathering, etc., sought to establish traditions for Banff.

Because the C.P.R. was permitted so much scope for development, land use conflicts seemed inevitable at some stage. For example, a government campground made way for expansion of the company's golf course and the C.P.R. was instrumental in the siting of the airfield. The company was having a say in local developments to the point where the government no longer made independent decisions.
The Residents. From the outset federal support of free-enterprise facilitated diverse private undertakings. The arrangement precipitated residential demands for organized representation and the right to pursue liberally-controlled promotions. Since, in such circumstances, political patronage and regional support generally stood behind the free-enterprise motive, many local aspirations were acceded to by the government.

Representative organizations such as Banff Advisory Council and the Board of Trade served one or two main functions—the expression of municipal and business aspirations of Banff residents and entrepreneurs. Generally, while these groups recognized the government's right to final deliberations in townsite management, certain aspects of municipal operations were seemingly greatly influenced by the residents.

An unusual but very significant agent for change was Banff School of Fine Arts, established in the townsite in the 1930's. The School's main expansion was to come after 1945 when as a prominent user of land and channel for local opinion, it operated in a very much broader capacity than was seemingly originally anticipated.

The Provincial Government. The Government of Alberta, although interested in national parks as recreation areas and sources of tourist revenue, was as yet, content to have its federal counterpart promote the necessary developments such as auto routes and townsites. A fuller expression of provincial interest in Banff's development was to come after 1945. During the 1960's, in response to the federal government's decision to apply more rigorous controls to land use in townsites, particularly through a revised leasing policy, the provincial government lobbied strongly for a liberalized facilities-development policy. Ultimately, in 1968, the Alberta Legislature unanimously supported a Resolution that park townsites in the province be placed under provincial jurisdiction, ostensibly to terminate
supposedly "unfair" treatment of lessees and entrepreneurs but more probably to facilitate added commercial development.$^{53} 

The Interest from Calgary. Ease of access and proximity to Banff, relative to other large urban populations, emphasized Calgarian influences in townsite development. Recreational opportunities, often associated with summer home ownership, encouraged a continuing pattern of short visits to the mountains. Simultaneously, a mutual desire for greater regional economic development fostered organizations like the Calgary-Banff-Lake Louise Tourist Association which advertised the resort facilities in Banff Park. Again, these early elements of cooperation were to flourish after 1945, when great efforts were made to bring first the 1968 and then the 1972 Winter Olympics to Banff.$^{54}$ Today, editorials in the Calgary Herald, for example, prove fitting testimonials to a strong community sympathy that exists for comprehensive facilities-oriented developments in Banff.$^{55}$

Townsite and Park: A Hiatus.

The period 1911-1945 saw Banff emerge as a major resort, locally, nationally, and internationally, offering varied attractions more or less independent of the Park in which it was located. Yet, efforts were being made to protect the Park's landscape and wildlife from a variety of economic activities—lumbering, mining, hunting, and so on: a spirit of conservation expressed by the National Parks Act of 1930.$^{56}$ Significantly, the recreational industry was a major exception to the policy of excluding commercial activities from Banff Park. Hence, in the Banff townsite area, a focus of facilities-oriented recreational activity, the emphasis lay primarily with the development of a landscape where little importance was attached to man's impact upon biotic processes: the pollution of the Bow River, for example.
Tremendous increases in public use of national parks after 1945 necessitated a reappraisal of existing townsite management procedures as well as of the whole of national parks policy. Following studies such as those by Crawford et al. (1960) on townsite administration, Oberlander (1961) on land use problems in townsites, and the "Glassco Commission" (1962-1963) on revenue and rental matters, formal parks policy statements were introduced in 1964 and 1965. These state in general terms how the government proposes to maintain the quality of national parks while accommodating the people who visit them.

Park lands will be zoned according to prescribed land uses, existing urban communities and other selected sites such as Lake Louise and Saskatchewan River Crossing, being designated as "visitor services centres" in zones of maximum public use.

In these centres leases which do not carry the guarantee of renewal will be available to residents and entrepreneurs alike. Improvements by lessees on their lots will ultimately revert to the Crown with compensation being paid only in cases of residential leaseholds. Permanent residence in parks will be restricted to those persons engaged in the administration of the parks or the supply of necessary visitor services.

Theoretically, in existing townsites, the revamped leasing policy will facilitate government control of land uses, eliminating other groups from influencing administrative decisions. Yet, predictably, the selection of Banff as the first of the services centres has prompted self-interested groups (many of them are a product of the post-1945 era), to oppose the practical aspects of revised policy. Disagreement between these groups on specific matters heightens the conflict.
In new services centres such as Lake Louise only basic services will supposedly be introduced. But will not Lake Louise eventually develop into another Banff? When does a "service centre" cease to function as such and become instead just another "townsite?" How do we avoid the emergence of pressure groups such as those identified for Banff wherever new national park populations are established? Will additional services centres in future years create more urban nuclei in our parks? Are the services to be provided in these centres compatible with national parks purposes?

The wisdom of introducing these services centres together with additional roads such as that proposed for the upper Red Deer River valley, must be evaluated in the long run. But significantly, present policy concerning the operation of existing townsites seeks only to accomplish what park administrators proposed in the nineteenth century -- comprehensive land use control through the use of leases, licences, etc. Only, today's planners no longer have White's "clean slate" (page 776) of undeveloped land on which to attain their objectives, and must seek solutions to the land use dilemma created by their predecessors.

FOOTNOTES

1 The principal townsites are Banff, Jasper, and Waterton Lakes.

2 National Parks Branch, Department of Northern Affairs and National Resources, National Parks Policy (Ottawa, 1964).

3 A. R. Byrne, Man and Landscape Change in the Banff National Park Area Before 1911 (Studies in Land Use History and Landscape Change, National Park Series #1. Calgary: The University of Calgary, 1968).


5 R. Scharff, Canada's Mountain National Parks (Toronto: Musson Book Company, 1966), pp. 1-2. Published in association with the Natural and Historic Resources Branch, Department of Northern Affairs and National Resources. See also, the National Parks Service's, "Unspoiled," "Let's keep the beauty that came with the country" advertisements (e.g. Maclean's Magazine, May, 1967, p. 91).


9. The C.P.R.'s resort operations were extensive and varied and included hotels at Banff, Lake Louise, Field, Revelstoke, Glacier and North Bend; lodges at Lake Wapta, Lake O'Hara, Yoho Valley, Moraine Lake, Emerald Lake; and tea houses at Lake Agnes, Plain of Six Glaciers, Twin Falls. Significantly perhaps, the first known proposal for a "reserve" came from W. Van Horne, the C.P.R.'s General Manager, in 1883.


15. *Ibid*, p. 84.


21. For example, the provision of a water and sewer system in 1905.

22. See Byrne, *op. cit*.


National Parks Branch, Department of Northern Affairs and National Resources (1964), op. cit., p. 30.

Ise, op. cit.

Scace, op. cit. p. 56.

Ibid., pp. 41, 56, 59.

A classic example is found on Banff Avenue where undeveloped lots with perpetual leases lie adjacent to recent motel developments.

Scace, op. cit., p. 60.


For example, the population of Alberta and Calgary respectively, in the years 1901, 1911 and 1961 were: 73,022, 4,091; 374,295, 43,704 and 1,331,944, 249,641.

Regrettably, there has been no comprehensive treatment of the history and policies of the National Park movement in Canada. For short commentaries see for example, A.R. Byrne, op. cit.; W.F. Lothian, "A Brief History of National Parks Administration in Canada" (Ottawa: National Parks Branch, 1955), 12 pp.; and Annual Reports of the National Parks Branch.

Lothian, op. cit., p. 4.


M. B. Williams, Through the Heart of the Rookies and Selkirks (Ottawa: King's Printer, 1928); The Kicking Horse Trail (Ottawa: King's Printer, 1928); and, The Banff-Jasper Highway (Saskatoon: H. R. Larson Publishing Co., 1948).


J. B. Harkin, personal communication to N. Luxton, Banff, June 8, 1912. Norman Luxton Papers, Glenbow-Alberta Institute, Calgary.

Department of Northern Affairs and National Resources. The Origin and Meaning of the National Parks of Canada. Extracts from the papers of the late Jas. B. Harkin, first Commissioner of the National Parks of Canada. (Saskatoon: H. R. Larson Publishing Co., 1957) Distributed by the National and Historic Parks Branch.

Byrne, op. cit., p. 130. See also Dr. J.C. Nelson's paper in this volume.

S. B. Jones, "Human Occupance of the Bow-Kicking Horse Region, Canadian Rocky Mountains" (unpublished Ph.D. thesis, Harvard University,
1934); G. D. Taylor, "1962 Travel Survey, Banff, Jasper, Kootenay and Yoho National Parks" (Ottawa: National Parks Branch, 1964). Mimeographed. Selected entry totals for Banff’s East Gate (fiscal years), show the rise in Park visitations:

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1944-45</td>
<td>112,058</td>
</tr>
<tr>
<td>1957-58</td>
<td>768,049</td>
</tr>
<tr>
<td>1965-66</td>
<td>1,906,373</td>
</tr>
</tbody>
</table>

42. D. Cameron, *Campus in the Clouds* (Toronto: McClelland and Stewart, 1956).


63. For example, on the status of Banff as a provincially-administered townsite. The Financial Post, April 13, 1968; Calgary Herald, May 14, 1968; Banff Crag and Canyon, May 15, June 5, 19, 1968.

64. J. R. B. Coleman, (1967) op. cit.; and Department of Northern Affairs and National Resources. Private Development in Lower Lake Louise, Banff National Park. (n.d.)


CONCESSIONS AND SERVICE ARRANGEMENTS
IN VARIOUS PARTS OF THE WORLD

Maria Buchinger*

When I was asked by Dr. Nelson to collect data on concessions in national parks I wrote to my friends and contacts in different parts of the world requesting data on concessions in their countries.

From Colombia I received a letter pointing out that they do not have any policy for concessionaires yet but the government is interested in the matter and could I please send them the proceedings of this Conference in Calgary which might provide them with some guidelines.

The papers presented by Professor Senge and Kai Curry-Lindahl summarize the situation in Asia and Europe.

In Argentina we have a few hotels in the national parks and the prospective concessionaires are requested to make competitive bids for the concessions. As you have heard from Ing. Costantino the Argentinian government has recently decided to re-establish the boundaries of the national parks which will, in the majority of cases, leave the hotels outside the parks.

One of the problems which faced concessionaires in Argentina

*Dr. Buchinger is identified on page 534.
was that rates of service could not be changed without the government's permission. One can imagine the consequences in a country where inflation has not been uncommon. Some ten years ago the food in the Iguazu Hotel in the park of that name was extremely poor. Many people became sick and even the daughter of the manager died from food-poisoning. To appreciate the dilemma in which the concessionaire found himself, one has to consider how expensive it is to transport food to this isolated place.

From some Latin American countries I received rather startling responses to my questionnaire. One administrator even wrote me two letters; an official letter to my office stating that his country does not have concessionaires in national parks; another letter came to my home address asking whether I was "out of my mind" by sending around such a "loaded" questionnaire—had I forgotten that the purpose of national parks is absolutely incompatible with the hotel business inside the parks? If I had by any chance changed my opinion and attitude on such an important issue I was informed that I should resign from my post as Secretary of the Latin American Committee on National Parks.

There were other communications which were more or less in the same vein. Amongst these were two from Colonel Jack Vincent in Natal. His comments were as follows:

To answer your query is not going to be a difficult task, although the result will not be what you hoped for! I much regret that I can let you have no material about concessions and concessionaires in this country, for the simple reason that they virtually do not exist.

Here in Natal, in our 30 parks and equivalent reserves, there is only one establishment which could perhaps be vaguely described as a concession. There is one hotel, which existed in an area brought into a park, and this continues just as a straightforward lease to continue running the accommodation and nothing else.

For the rest, and this goes for other wild life conservation authorities elsewhere in the Republic, we strongly disfavour any form of private enterprise within any proclaimed reserve. There
have been many politically inspired attempts to gain entry into what can be called the reserves market, but we have successfully resisted them all and will continue to do so.

In our opinion the only way in which a conservation department can boost its revenue and, indeed, gradually build up a state of affairs where it could continue to conduct its business even supposing government and like grants have to be reduced or withheld, is by trading in its reserves. There is of course good money in such ventures and we have no intention of allowing private enterprise, of a kind which is often utterly disinterested in the future of the wild life, taking an ill-deserved "rake off." In other words, conservation bodies hereabouts sell their own accommodation facilities, as well as curios, brochures, etc.

Some folk say that a conservation authority cannot conduct hotels or like facilities for the general public, of the standard which the latter require and/or demand. The answer to that is that we do not try to. In our considered opinion the wild life sanctuaries should be maintained as rural as possible; we employ camp superintendents who conduct very well the simple type of accommodation we provide, and with a very high standard of cleanliness. Our attitude is that if people do not care for the simple life which we feel is part and parcel of the wild life reserves, then they can go elsewhere for their recreation. For the most part we carry this even further, and in most reserves we will not be bothered to handle foodstuffs of any kind. We supply cutlery, crockery, beds, linen, servants, in fact everything except food or drink, both of which people have to bring with them. We also supply gas frigidaires, so that for their permissible short stay, people can safely bring some fresh foodstuffs.

As proof that this technique is entirely acceptable I can say that all our accommodation is virtually booked up for months ahead, and at holiday periods we have to draw lots to see which applicants can be admitted. There is a lot in the psychological viewpoint, which I have always maintained, that if you ask a person how his holiday was enjoyed, the reply, more often than not, says that the food was poor or very good and the enjoyment in like ratio! When you supply no food you receive no complaints, and we find that people stay in our camps on the most meagre rations and go away saying what a grand time they had!

If you try to run luxury hotels or restaurants the result is that you have to employ personnel of a kind which has little place in a wild life sanctuary, and will probably do you down anyway; whereas if some outside folk run them they usually contribute greatly to the degradation of the habitat. We find that there is a tendency, because of the popularity of the reserves, for luxury hotels to spring up outside the reserves and in their near vicinity, but that is all right too, because enough folk prefer rural living (for a short time) to fill all our camps, and we can derive good revenue from entry fees paid by the others.

Mention of hotels springing up in the near vicinity of, yet outside of the reserves, reminds me to interpolate that all developments for the reception and entertainment of the tourist and the visitor should, in principle, be either just outside of the sanctuaries,
if that is possible, or at least peripheral.

I refer, of course, entirely to wild life sanctuaries, areas set aside primarily for the conservation of wild fauna and flora, and not to places which I would call those of public resort or recreation.

Camps, that is to say hutted camps or cottage accommodation, even small ones, tend to grow; they also employ staff, who, in turn, have to be housed. Later you find it essential to add all kinds of repair and maintenance facilities, together with a hundred and one other things which in the initial stages are quite unforeseen. In fact, before you know where you are, there is a surfeit of activity, especially on the roads leading to the said camps. This is all very well when the accommodation is on the periphery, but quite disastrous as well as increasingly expensive in road upkeep when within the reserve.

As for vehicles, to me the best and quite most obvious plan of all, is to prohibit or restrict as much as possible the flow of private cars through reserves, for two main reasons. The one, because of road upkeep; the other, and more importantly, because when the individual or two or three persons in each private car leave the reserve they are no better educated to conservation than when they entered it. In fact they will probably have done no more than count 'heads'. If, on the other hand, the wild life watching can be done from a bus, with a good interpretive service, the result should be the sending away of a number of better conservationists and friends of the wild life for the future. Of course such restriction of private cars is difficult, but it should be a target. As you hint, buses are expensive to buy and maintain, but however you have to 'cut your coat' the visitor should be taught something. If no other course is possible it should be done as he enters the reserve.

So there you are, we have no concessionaires, we know nothing about them, and, so far, have done very well without being bothered to find out anything about them. When I was in the U.S. National Parks I appreciated the undesirability of concessions, indeed the danger of them, because when people become wealthy, they tend to acquire influence in certain political and other circles, and thereafter they are apt to be able to dictate policy. We prefer to do what we think is right, with the future of the wild creatures the first consideration, and to do it without fear or favour! This attitude, I am sure, is the only one if you wish to build up a wide circle of allies among folk who count.

Naturally not everybody views concessionaires in an unfavourable light. To the details given by Mr. Flynn it is of interest to add that a news release from the United States Department of the Interior dated September 20, 1968, deals with the cutbacks in National Park Service operations. Point three of the program recommended by Director Hartzog and approved by Secretary Udall reads as follows:
3 - Assign National Park Service campgrounds to concessioners for operation on a fee basis wherever possible. (See Point 8 for campgrounds not operated by concessioners.)

To complete this brief survey I wish to mention one service which seems to be receiving unanimous support, and where the type of operator be it the federal or local government, or private enterprise, is not overly important. I refer to bus services which should replace private cars in national parks.

The tendency all over the world and especially in Latin America, is to provide ample parking lots for private vehicles outside park entrances and to have a bus service starting from the point making loop trips on small, well-designed roads. This eliminates the practice of building two- or four-lane highways which do so much to modify the landscape of national parks.
We would first like to extend congratulations to The University of Calgary, to Dr. Nelson, and to the National and Provincial Parks Association for successfully convening this conference, and thereby bringing to Calgary and Banff experts from around the world. We welcome the opportunity to set forward our views for the following reasons:

1. We cherish our Park and our hometown of Banff.
2. We are closest to the actual situation.
3. We feel that we should have some part in the administration of our affairs.

It may be felt that our paper is too critical of the present administration. However, we wish to state quite frankly that we have much respect for the administration of the National Parks in Canada. The Warden Service has done excellent work in fire protection, mountain rescue, guidance to climbers and hikers, and the protection of wildlife. Hiking trails have been built and maintained with considerable diligence.

Our real concern however, is with the mental attitude of the

*G. A. Leroy is President of Banff Advisory Council, Banff National Park, Alberta.*
administration towards the townsite and its residents. The friction and resentment between the two bodies is a severe handicap, one which must be removed if we are to restore a working harmony.

The Advisory Council and the Residents

The Banff Advisory Council was instituted some fifty years ago, by the federal government, its object being to provide the means for a continuous dialogue between the residents and the departmental officials. Hopes were that the government would use the council as a means of consulting the people's opinion in administrative matters affecting them.

However, although we talk and correspond with the Department of Indian Affairs and Northern Development, we have ceased to communicate. Our representations have no longer any meaningful part to play in the decision making that goes on above. A case arose when we objected to a bridge complex, on the grounds that it would destroy the beauty of the area involved. We were told that the plans were not yet finalized and that we would be informed when they were concrete. A poorly chosen word perhaps—but nevertheless a typical response to a typical problem.

We feel certain that this group assembled here appreciates how easy it is for the residents of Banff to become attached to their hometown, to its purpose, and to its heritage. Beyond this, however, we do realize that we, the residents, are here primarily to serve the visitor. This does not mean, as is widely believed, that we are all wealthy proprietors. A breakdown of occupations shows a ratio of proprietor to wage earner similar to that of any town of comparable size. Furthermore, many residents have been serving the travelling public for most of their lives, and some are fifth generation Banff residents. Finally, the problem of summer residents (apart from seasonal workers) is a relatively minor one.
The Townsite

The townsites that exist in national parks have been called mistakes, intrusions, anomalies, service centres, or just bedroom space. Whether these remarks are appropriate is not for us to say. The fact remains, that such townsites do exist and have taken on the nature of permanent features. We do not feel that the attitude of, "let's make the best of it" is sufficient. Every avenue must be sought to turn what may have been original mistakes, into actual opportunities and advantages.

To further elaborate, we state that the visitors should see examples of town planning and arrangement that will be impressed upon their minds, and which in turn will help them in the development of their own town, city, or farm-site. It would be a paramount mistake if they were to leave with the feeling that the monuments of man, in the midst of extreme natural beauty cannot in themselves be beautiful.

To prevent such a thing from happening, we suggest that small playgrounds, parks, and trees should be maintained in abundance. Residential and business building sites should be well landscaped and clean. The proposed asphalt-concrete jungle, with buildings designed for maximum use during the period of a short lease, seems a tragic incongruity in a natural setting such as the Banff area presents.

However, the ultimate decision as to how the townsite should be maintained, or how many visitors it should accommodate, is not for the handful of townspeople to make. The national parks are the property of the Canadian people, and are for the benefit of them before anything else. Canadians sincerely interested in national parks should have a larger voice in the important decisions. Such decisions should not be left entirely to civil servants.

We repeat, emphatically, that whatever is done, must be done correctly, congruent with impressing and educating the visitor. To
create a favourable impression with wilderness areas and an unfa­vourable impression with the townsite, leaves the job half undone. The lack of security we feel, will drive the developer to conform strictly with the rules, rather than with the total spirit and purpose of the national parks.

**Pollution**

One of the most significant negligences of the administration involves the disposing of garbage and sewage. The dumping of raw sewage into a clean mountain stream (river) is an atrocity which should not be tolerated. In a locality where every bit of natural landscape is worth preserving, exceptionally thorough and efficient means of garbage disposal is a necessity. The considerable size of the town, especially in the summer, urgently recommends the use of a proper incinerator, and burial of residue materials.

As it is, methods presently in use encourage the increase of predatory birds, mammals and insects, which then imbalance nature by reducing other species. The sites of the disposal areas are unsightly, and probably contribute to the reduction of desirable wildlife and beauty. Here again it is incumbent upon us to set the example for the others to follow.

**Visitors**

As it is our purpose to serve visitors in the Park, we naturally welcome all who have heard of Banff, and wish to see it for themselves. However, there are a great number who are not avid climbers, hikers, or naturalists, those who are usually need little or no encouragement to come, and are usually satisfied with what they find. Therefore, we suggest that for the less intrepid visitor there should be walkways or footpaths in the immediate vicinity of the town. The presence of wildlife near the town should be encouraged, for example, a beaver pond
should be permitted to replace the desolate and even squalid area at the rear of the motel strip. A museum of natural history, and an interpretive centre should be highlighted in the heart of the townsite, a focus for the traveller’s enjoyment of the Park. The fish hatchery, now removed, was once a source of pleasure and education for all ages. It should be replaced. More projects of the nature and magnitude of the beautiful gardens around the government’s Administration Building should be carried out.

Administration

We of the Banff Advisory Council feel that there must be significant local involvement of residents in the administration, if they are to have pride, confidence, and security in their developments and services to the visitor. Such involvement is non-existent when the administration is centralized two thousand miles away. Guidelines set down by an organization such as National and Provincial Parks Association, would allow persons to work with unselfish desire to improve their environment free of the political pressures the government claims. A committee of such a group could be located nearby to ensure that such guidelines were adhered to. All park employees should be concerned and involved in this work, for everyone will agree that a spirit of service, concern, purpose and appreciation, cannot be legislated, but can only be fostered by local involvement.

Businesses

We suggest that visitors to the national parks are best served by family-based developments, in which the proprietor is personally present to see to the comfort of his guests. In such a situation, the proprietor wishes to welcome them, to encourage them to return, and to have his business recommended to their friends.

Such a family enterprise however, depends on the security of
tenure, and the opportunity to build up an equity. The adage, "behind every successful man is the hard-working wife" has particularly apt application to the accommodation business, and mother by her very nature, wants to leave something for the children. Moreover, the business man must have some degree of involvement in local government. This lessens the possibility that decisions harming his neighbours or his business will be made by persons who do not understand the problems. We refer here to changes in traffic patterns, or building and zoning regulations.

If the business man is not given absolute security in his relations with the national parks administration, he will, we fear, try to extract all he can from the visitors and invest it outside the park, where an equity can be built up, and there is little that legislation can do to prevent this.

Financial

Where should the money for such improvements come from? In a town that is based on only one industry, as in many other places, it is the consumer who pays for the better services. However, many visitors are not consumers. Many drive up for the day, and many others stop only a few hours on their Trans-Canada route. Those who stay in tents and trailers use the facilities, but do not spend in proportion to those who stay in commercial accommodation, and eat in restaurants.

We feel that the country as a whole must continue to bear a large share of the burden of the financial responsibility. Otherwise, visitors who patronize business places will be called upon to pay the way of the non-patronizer. Residents should not, when they have no representation in decision making, have to pay taxation, except in the form of reasonable land rental. Surely a country that staged Expo 67 can afford the continuing and long-lasting source of enjoyment, relaxation, and education that the townsite and the surrounding area can
Finally, we come to the cause of the greatest discontent in park
townsites, namely the problem of land leasing. We frankly saw little
wrong with the former renewable-type lease, even from the viewpoint of
the Canadian public. The Department could, and did recover leases by
compensating the leaseholder for the improvements he had added to the
land. The change in leasing policy seems to us totally inexplicable,
and it has proven in application to be a source of friction and a frus-
trating nuisance to the townspeople.

Our suggestions with regard to the leasing policy are as fol-
lows:

1. Leases should be standardized, there should be no question
of interpretation or change by administrative action, order
in council, or Parliament.

2. Expired leases should be replaced by new standard leases,
or recovered by the government with compensation to the
lessee.

3. An acquired or transferred lease should be a standard lease,
in this way the new owner of the improvements can finance
his acquisition.

4. All lease rentals must be determined by a revealed formula.

But, above all, residents must maintain a pride of ownership
equal in intensity to that normally displayed outside the parks. Such
pride will, we feel, diminish in proportion as the time left to own
will diminish in a terminal lease situation, and the result of this can
only be a general deterioration in the appearance and outlook of our
town.

We thank you for your attention, and sincerely hope that you
understand us a little better.
I wish to congratulate Dr. Nelson of The University of Calgary and his staff, and Mr. Gavin Henderson of the National and Provincial Parks Association and his staff for the excellent preparations for the current Conference. The quality of the papers and the obvious knowledge of the participants is a clear tribute to them and their ability to bring together the most learned men and women in the field of national parks philosophy.

I approach this subject with some humility. I say this because some of the material previously presented has caused me and other members of my Committee to take a second look at the whole problem of maintenance of national parks in relation to the western Canadian situation. As Chairman of the National Parks Committee, I can state two aims of our Committee:

*The content of this submission differs substantially from that originally included in the Background Papers distributed prior to the Conference. The revised text was presented by Mr. Scott during the Concessions and Services Session, (eds.)

†Fred Scott is Chairman of the National Parks Committee of the Calgary Chamber of Commerce.
1. To assist in finding a reasonable solution to the problems of the Bow River Corridor as they exist between Banff and Lake Louise in Banff National Park;

2. To assist wherever possible in the acquisition and maintenance of wilderness lands for the benefit of all Canadians, today and tomorrow.

To date the second aim has not been too heavily pressed. Based upon the historical background of Banff National Park, it is our conclusion that the resort concept was the underlying concept in Banff National Park's creation. It was our view that this pattern has been upset unnecessarily.

However, much has been revealed at this Conference, some of which has always been accepted by us and other parts of which were not acceptable to us whatsoever. After listening to the papers and to the discussion and considering the problem in the light of Canada's present needs, the list of acceptable facts has grown greatly.

For example, Mr. John I. Nicol in his paper enunciated two principles, the first being the doctrine that national parks must carry a national significance for all Canadians and thereby deserve eternal preservation. The second principle was his single purpose doctrine.

The first doctrine would be quite acceptable so long as it does not confine our attentions only to existing national parks. The second was rejected completely by us based upon the circumstances to the west of Calgary as we know them. We are aware of five classifications of zoning as they are contained in Mr. Brook's paper. We have always felt that five classifications were not adequate as they were too restrictive and they should be supplemented by at least two or three more. I now state without any hesitation, that the weight of argument advanced here has caused us to reject our previous conclusion and to agree wholeheartedly with Mr. Nicol. There can only be one single purpose for a
national park. That is, of course, the maintenance and preservation of natural life and landscape.

The second example would be found in Mr. Clawson's paper in which he made the statement that non-essential services (lodges, campgrounds, gasoline service stations, and others), be eliminated. He also indicated that private automobiles should be substantially reduced or eliminated. We now agree with this conclusion provided, of course, that it can be reconciled with the present situation to the west of Calgary.

As a further example, Mr. Nash quoted Mr. Gavin Henderson's gloom re implanting the preservation goal in Canada. It is our thought that Mr. Henderson may not be quite so pessimistic at this point as he was. This Conference has gone a long way to reinforce some of his beliefs.

There are other examples in this vein but I think that the point has been illustrated.

It is very clear then, that the maintenance of wilderness areas in a natural state and the acquisition of further wilderness areas for eternal preservation are problems of such gravity as to be worthy of the attention of all Canadians, not just professors and civil servants as the present participants at this Conference mainly seem to be.

In this maintenance and acquisition field our Chamber has not been overly active. And yet, two years ago our brief to the Standing Committee on Northern Affairs and Natural Resources recommended the acquisition of the Cypress Hills and the Dinosaur Valley and their dedication as National Parks. We have no information of any nature on any federal action re these acquisitions.

Certain criticism has been levied at the Province of Alberta for its work in the parks role. Even without considering the useful remarks that were made by the Alberta Parks Planning Supervisor a few days ago, it is noteworthy that out of approximately 29,000 square miles
of national parks in Canada, more than 21,000 square miles lie in Alberta. Most of this has been acquired since 1905, the date of this province's incorporation. Is not, then, the voluntary transfer of lands of some value? It now remains to be considered as to whether or not the slings and arrows ought henceforth, to be directed to certain other provinces in which there are few or no national parks.

Some considerable publicity has been given to the leasing policies of the present administration. It now seems clear that consideration of leasing problems in relation to national parks is superfluous. If there are no developments in national parks then obviously, there are no facilities to be leased. In short, the policies of leasing ought to be somebody else's headache, not national parks administrators'.

In this regard, however, I ought to draw the distinction between the normal residential or commercial lease on the one hand, and the contract offered to an operator of a small lodge which is essential to hikers in remote areas. The former type of lease confers rights and in law, these rights are known as rights in rem, that is to say, rights to a thing or a property. It is my view that no one should have rights in a national park of that nature. The latter contract pertaining to the operation of an alpine hut or a shelter or a lodge on a hiking trail is of quite a different nature. This contract confers a right in personam which is a personal right, or may be more simply described as a permit for an operation. No land rights are thereby conferred. These, then, are the proper type of rights to be offered in a national park.

Further, we need not consider grouping of facilities or even the construction of facilities themselves. Facilities are not acceptable in a park because they have no place in wilderness.

The policy directed toward limitation of number of visitors to national parks causes some serious concern. Its justification is advanced on the basis of: too many visitors, too much wilderness erosion.
With this, we agree, but we are not in agreement with the methods of limiting the numbers of visitors as proposed. It is our view that much of this visitation problem is the result of advertising. However, if the uni-purpose doctrine is applied to all national parks, the limitation of visitors would immediately become one of our lesser headaches. If you take all resorts out of the parks, what attraction can you find for the average person in the invitation "come hike with us."

In this regard, we take serious exception to some of the misleading advertising which is coming out. For example, please note the Canada Year Book for 1967 as it pertains to Banff National Park:


Yesterday, October 13th, 1968, you were taken on a tour of Banff and Lake Louise. What resort facilities did you find open? Very, very few! Almost without exception, the best accommodations were closed until next June.

And to include "Skoki" in such developments is ridiculous. Skoki is merely a hut that accommodates twelve overnight sleepers.

In short, high-powered advertising merely compounds the problem of overpopulation of this underdeveloped tourist-catching area. I shall come to a couple of solutions shortly.

It certainly seems clear that while the present parks policy directs "benefit education and enjoyment" to the products of nature or history, this policy is not supportable by history. Banff National Park, for example, was not created for that purpose at all. However, it is clear that this policy as it is now set out, is surely the best thing for the future of our heritage and is clearly acceptable.

I find considerable confusion, however, in certain other policy statements and I would quote them:
1. The basic purpose of the National Parks system is to preserve for all time areas which contain significant geographical, geological, biological or historic features as a national heritage for the benefit, education, and enjoyment of the people of Canada.

2. The provision of urban type recreational facilities is not part of the basic purpose of National Parks. Such recreation facilities in harmony with the purpose and the preservation of a Park may be introduced as required to meet recreational needs; but always so as to minimize impairment and not at all if substantial impairment is inevitable.

The foregoing illustrates a basic conflict in the philosophy of our policy makers. A woman is not a little bit pregnant. She is or she isn't! In the same context I cannot equate minimal impairment with substantial impairment. Impairment, big or small, is impairment and any impairment is a curse in a wilderness concept except for the odd development for an essential use. I shall return to this later.

I further look at a general statement dealing with three categories of parks on the basis of purpose and use and take strong exception to it. Two foundations for such antipathy are clear:

1. Such categorization is in direct conflict with the basic principle of uni-purpose for a national park.

2. The application of the principle is totally inconsistent.

In this regard, Banff and Jasper, among others, are included in the parks which are basically scenic and nature parks.

And yet Mr. D. B. Coombs, formerly Western Region Director of the National Parks, in his Annual Report for 1967, says:

In 1966 the Department hired a firm of qualified consultants to carry out a feasibility study of the Marmot Basin and their report recommended the eventual provision of eight or nine lifts with related facilities which if constructed will handle 45,000 skiers per day. The concessionnaire has already built two "T" Bar lifts and it is understood that the company plans to proceed with the construction of the primary chair lift next summer. The balance of the development will then be phased over the next few years.

How can the foregoing quotation be justified for the development in the Marmot Basin when that Marmot Basin is located within the Jasper National Park? Is such development of a basically scenic nature?
It is pointed out to us that Banff National Park has been endowed with five Superintendents in five years. It is suggested that inconsistency such as the foregoing would drive any superintendent out. Could you take the pressure of sorting out these policies?

I am also concerned with earlier papers dealing with continuation of research in national parks. How can research be justified if it causes changes in the landscape? Look at the Sulphur Mountain Cosmic Ray Station, if you want an example. I shall return to this, too.

Many statistics can be advanced to show the steady increase of tourism in the western Canadian National Parks. In this regard, I can only quote Professor Hamill in his earlier paper where he states: "The chances of reducing the tourist pressure on Banff National Park are less than nil." Can he be wrong in this conclusion? Well, it depends upon what we do now and in the future.

The first item of business I suggest is to bring your name into line with your aim. Professor Harroy commented on Saturday afternoon on the French word "parc" and if my memory serves me correctly he associated this word with the word "preservation." If this is so, then it seems clear that we have plundered the French language to our detriment.

For example, my wife sends our children out to play in the park. As an artilleryman I will site my guns in a park. As an infantryman I can say that I left my automobile in a park, and if I were wealthy to boot, I might own a large house on an acreage which land I could very well call a park. These few examples demonstrate that the word "park" is not capable of an accurate and unique definition. Why then should we not be talking in terms of a national preserve, a national recreation area, or a national research area, in order to differentiate between the purposes for that property? May I advance certain ground rules in the acquisition and maintenance of national preserves:

1. The property in question must have a national significance
in order to justify its preservation.

2. There must be applied to it the uni-purpose dedication, i.e. the maintenance of wilderness to the exclusion of all other purposes.

3. The area chosen must be large enough to accommodate the species of flora or fauna to be preserved and yet not be so large that areas thereof become inaccessible and therefore of value to no one.

4. No roads or trails on which wheeled or tracked vehicles can operate ought to be permitted. Auto access ought to be allowed to the fringe of the preserve only. The violation of this principle will inevitably erode wilderness.

5. There ought to be no constructions within a national preserve except alpine huts or overnight lodges for those who have enough gumption to use their feet in preference to their seat.

6. The majority of trails should be of such duration as to allow the user to get in and get out in one day, except where special reason may dictate his longer sojourn in the preserve.

7. Research ought not to be allowed except those types which can be done visually or which are similar to occurrences exercised by nature.

8. Direct limitation of visitors ought not to be permitted. It is false and misleading and a denial of natural justice to deny access to a man who may have driven some 2,000 miles to visit the preserve. The same effect, I suggest, will be achieved by cutting back on the publicity directed to certain overpopulated preserves. If that fails, then merely cut off the road access on one pretext or another some three
miles or so from the preserve. You are now worried about over visitation? Don't hold your breath.

9. Mr. Stewart Brandborg indicated that areas with development and highways should not be taken into a national preservation. This is perfectly correct.

10. Highways, campgrounds and facilities should be developed on the perimeter of a preserve so that those who cannot hike can still see and admire their national heritage from their car by looking into it.

There are probably many other criteria which also ought to be applied to the situation.

In short then, for the non-wilderness uses that were formerly carried out in national parks, establish your national research areas and your national recreation areas. What can be simpler than this?

However, we now approach the thorny problem of the existing parks with their roads and railroads and communities and facilities. With all due respect, I believe that the solution was advanced by Dr. Costantino and Dr. Buchinger, both of whom come from South America. They put the finger on a serious Argentinian situation by referring to the Nahuel Haupí Park in which the City of Bariloche was located. They also referred to the Lanín National Park in which the City of San Martin was located. They further pointed out that in both Parks freehold landowners farmed parts of the land. They suggested that this situation had been a thorn in the side of the Government of Argentina for many years until someone realized that the best answer was, firstly, to exchange the freehold land in the park for as good or better freehold land outside the park and thereby cause the contained land to revert to nature, and, secondly, to redraw the boundaries of the parks to exclude the two cities in question. At that point they indicated that a permanent and lasting solution had been found.
In the Bow River corridor we have a sow's ear. I am not saying there is anything wrong with a sow's ear but there certainly is a problem in placement if you have a Berkshire ear affixed to a Yorkshire hog and this, I suggest, is what we have. There is no way of removing these sows' ears—the Canadian Pacific Railway line, the Trans-Canada Highway, and the communities and adjacent developments—physically from the Park. Legally, however, this would easily be accomplished by amending the boundaries as was done in Argentina in order to preserve the existing and remaining wilderness.

And may I suggest that now is the time for all of us to act to preserve our wilderness. Do you realize that it is presently proposed to construct a highway to run northeast from Lake Louise by cutting up the Pipestone Valley to cross over into the Red Deer River valley and then to cut south to Lake Minnewanka and thence to Banff? This highway will absolutely ruin many hundreds of square miles of wilderness as they now exist. Unless the uni-purpose doctrine is accepted and permanently established in areas in which it can be established now, further erosion of the remaining wilderness within this National Park will occur.

And now a word about additional acquisitions. We suggest that no provincial government is nowadays going to give, voluntarily, land to the federal government for such purposes. There must be a quid pro quo. Thus, it behooves us to endeavour to bring provincial and federal governments together for the purpose of barter. We suggest, for example, that the federal government could agree to renovate or reconstruct a historical site in exchange for the deed to lands which ought to be preserved. In this way, the federal government spends money in the province and acquires what it needs as well. The second type of barter, of course, is even simpler, i.e., land on which development has occurred in exchange for undeveloped land.

Mr. de Laet said on Saturday that there was no problem which
could not be solved by mutual application of good will. I believe him completely.

What then can we do in the Chamber of Commerce to help? May I suggest the following:

1. We could allocate funds to retain a consultant to evaluate Alberta property for inclusion in preserves.
2. We could endeavour to convince every Chamber of Commerce in Canada that land preservation is good business.
3. We could endeavour to bring governments together to discuss problems of acquisition and maintenance of wilderness.

I pledge myself to carry out within the limits of my ability the foregoing. What are you prepared to do?
Summaries and Discussion

Chairman: R. C. Scace

Panellists: A. Monday Morning: T. Flynn, W. McKim, M. Buchinger, R. C. Passmore

B. Monday Afternoon: T. Flynn, W. McKim, M. Buchinger, R. C. Passmore, G. A. Leroy, F. Scott

Monday Morning

J. G. NELSON: I have been approached by a number of people attending the Conference on the possibility of a summary session or a resolutions session. Now, this was considered at the time we drafted the scheme for the Conference and on the basis of the ideas that were present at that time decided not to have a summary or resolutions session. I do not want to go into the reasons for or against this at the moment but I must take cognizance of the political forces that are now working to get some kind of summary or resolutions session.

So, tomorrow morning, following the session on Planning for the Future, we will hold a Summary Session. I have asked Douglas Pimlott, Bill Yeomans and Gavin Henderson to serve as a small committee to which you might submit your ideas for summaries or for resolutions. If there are any points which you think should come into the summary you may wish to submit them. Moreover, if you have any ideas on resolutions you may want to submit them to this group which will work today to try and put these into some sort of summary cum resolution form and I will attempt to have them prepared so that each member has a copy for tomorrow morning.
SCACE: Both of today's sessions are on Concessions and Services. This topic is of great interest to those of us who have studied the national parks situation in western Canada and I look forward with particular interest to this morning's presentations because they are of an international flavour. I hope that some of the points which come out of these presentations and the discussion will provide some useful information with respect to the concessions and services problems which we do face in Canada. I would like to introduce the first paper which will be given by Mr. Tom Flynn.

FLYNN: (Mr. Flynn summarized his paper on The Management of Concessions and Other Services in National Parks in the United States.)

SCACE: Our next speaker is Mr. McKim who will speak on Townsite Administration and Management in Canadian National Parks.

McKIM: (Mr. McKim prefaced his summary with the following remarks:) With due respect to previous speakers who have eloquently presented their thoughts on the philosophy of wilderness and preservation, I would like to suggest to you that the national and provincial parks are in the people business, for it is only when people enter the picture, albeit they are naturalists, ecologists, bird watchers, scientists or just the average John Citizen—they are the people we in the Administration have to concern ourselves with. And the Administration has to balance these pressures with a trust responsibility of leaving the parks unimpaired. Therefore, as we have previously heard, it is in the interaction of man and nature that is the problem to be solved.

Meanwhile, administrators must deal with the things as they are and strive to satisfy the needs of man in the broadest sense.
We have Banff townsite and we have other townsites to be administered and this is one of the things that I would like to hear discussed in some detail so that we might get some direction.

SCACE: (The Chairman summarized his paper on Banff Townsite: An Historical-Geographical View of Urban Development in a Canadian National Park.)

BUCHINGER: (Dr. Buchinger gave a Summary of Concessions and Service Arrangements in Various Parts of the World.)

PANEL DISCUSSIONS

SCACE: I will start off by asking Mr. Passmore if he has any comments to make on this morning's papers.

PASSMORE: Well, Mr. Chairman, I do not know how one could remain silent after that very interesting variety of conditions described to us this morning. For those familiar with the Canadian scene, particularly as it was outlined by Mr. McKim, we see one end of the scale. We go to the other end of the scale—the consensus which Dr. Buchinger found in her response to her questions of many national parks administrations—to the effect that services provided for park visitors should if possible, be outside the park altogether and that if they must be operated within the park, that they should be operated by the park administration itself. You can see how different this is from the situation we have here in Canada.

I have studied with some interest the legislation which Mr. Flynn commented on this morning and feel that this does give the National Parks Service in the United States a great measure of control over the types and quality of service performed by concessionaires within the boundaries of national parks in the United States. Here in Canada we have no comparable legislation at all, except that which is contained in the National Parks Act, which I feel is com-
pletely inadequate in giving a proper measure of control over the operation of concessions or tourist services within national parks. The Act, in fact, leaves the minister and the government exposed to tremendous pressures which I think they have very effectively demonstrated in the past, they are unable to hold back.

Part of this is a problem which must be common to both Canada and the United States in that it involves investment of private capital within park boundaries. Once, you have done this you must permit the individual who has made this large investment to make some kind of reasonable return on his money, which in Canada has often led to expansion of services well beyond what was originally intended by the concession agreement or the leasehold agreement.

I would like to ask Mr. Flynn if he were planning the pattern of concessions all over again in the United States, would he personally like to see the federal government making the capital investment and perhaps leaving the operation of concessions to concessionaires who would come in on some sort of long-term agreement?

FLYNN: The answer is "no" in federal areas, for a very practical reason. We only get so much of the federal budget pie for national parks. No matter what you are doing the total amount you are going to get is already pretty well determined in advance. Besides this, about six years ago during events which were to lead up to the 1965 statute, the proposition was made that basically, the federal government should build facilities and also give some consideration to operating them directly like some of the state park organizations do.

First, we looked at how much it would cost to buy them and discovered we were talking about a hundred million dollars. This was, I think, a low guestimate. At that time this sum was our total year's appropriation for running everything.

Then the point came up that we would have to get some money
for maintenance. Now, maintenance is a really tough problem. We find that if somebody owns something and has a financial interest in it they are going to take better care of it and maintain it far better than if say, the federal government owns it and the concessionaire is charged with maintenance.

We have some facilities that we own, usually because of a political accident in the sense that they result from the acquisition of inholdings in a national park. Alternatively, for example in Glacier Bay in Alaska, we go out with a prospectus to get private industry interested. If private industry has no interest then we have to go to Congress and say, "Look, the public need some facilities there if they are going to see the area." Congress then appropriates the money and we in turn contract out the operations. In this sort of case we really have to police it, but in the Glacier Bay example we are not even worrying about maintenance too much, because this chap is going to be very lucky to survive. If he did not have seven kids working for him who are members of his family, I do not think he could survive economically.

We think we have enough controls over the concessionaires and we do not have any desire to build the facilities ourselves.

SCACE: Thank you very much Mr. Flynn. Mr. McKim I was wondering if you have any comments at all about the American situation and how we might possibly review it in relation to our situation here in Canada, especially with respect to the legislative arrangements by which concessions are operated in the national parks of the United States.

I would also be interested in your views upon the possibilities of provision of concessions outside national parks in Canada.

McKIM: I think the second part is much easier to answer than the first. We, in fact, in operating the services within the national parks do invite private funds. We differ from the Americans insofar
as we give some possessory rights for at least a period of forty-two years, whereas in the United States they are able to police their concessionaires much more than we choose to do.

Mr. Flynn has indicated that if things are not going well they can recover this concessionary right and can actually force the concessionaire to sell what possessory interests he has. We do not do it this way in Canada. When businessmen are invited to invest their money, the operation is based on a forty-two year lease—ample time we feel, to make a fair return on any investment so envisaged at the beginning.

With respect to provision of facilities outside parks boundaries, if concessionaires had ever wished to establish themselves outside the parks they were quite free to do so, because it was on land which was owned by the provincial government and in this regard the federal government had no say in the matter. The pressures upon the federal government were to locate facilities within the parks and this is what they have done—rightly or wrongly.

But to answer the question from my own point of view, I think that if, as appears to be happening now, the various levels of government are willing to sit down and discuss the whole problem of national parks and recreational requirements for the country, then it is possible that the recreational areas could be some sort of boundary around a national park and provide all the facilities for visitors and for recreation, without any impingement upon a national park. But this is still some time away. A great deal of discussion has got to take place before this is ever arrived at and there has to be much coming together of provincial and federal thinking to achieve this particular objective.

SCACE: One very interesting example of the very great need for consultation between the provincial and national authorities comes to mind.
A proposal exists to build a visitor services centre in one of the national parks but it was only fairly recently discovered that the provincial government was also considering putting up some sort of service facility near the park boundary, a very short distance from where the visitor services centre would be located.

I think this is indicative of the need for far more than just national parks planning in relation to the park areas alone—it calls for a reassessment of all the public lands in the region.

I would like to direct my comments to Dr. Buchinger and ask her what she thinks on this particular point.

BUCHINGER: We are speaking of two different things during this meeting. First, some parks which do not as yet have problems may be developed in the way they have been planned. Secondly, we are discussing Banff Park which was designed in the manner of a European model of a recreation area and not after an existing national park in the United States. Hence there is the need to differentiate between what can be done about Banff and what should be a model for the future in order that Canada will have really suitable national parks.

PASSMORE: I think that Dr. Buchinger has made a very useful contribution here in distinguishing between what should be the policy in national parks yet to be developed, as distinct from the problem that now exists in some of the older national parks.

With regard to the policy which might apply to national parks yet to be developed or in current stages of development, I think the model may already have been established in the case of the relatively new Kejimkujik National Park in Nova Scotia. Mr. Reeve might perhaps explain the arrangements which have been made for providing visitor services outside the boundaries of the new park.
SCACE: Mr. Reeve, would you like to respond to Mr. Passmore's invitation?

REEVE: On the question of the federal government providing motel or similar accommodation in the National Parks of Canada, our policy has been and will continue to be very much similar to that described by Mr. Flynn. If accommodation is to be placed in a national park we will look first to the private sector to invest the necessary funds to provide the required accommodation. If the accommodation is vitally necessary and if there is a man such as in the Glacier Bay, Alaska example, the federal government will build the necessary accommodation and put it out on a concession. Further, the procedure we have followed is that when the opportunity for the operation of such a facility becomes more attractive to the private sector, we do give the private sector the opportunity to purchase those facilities and operate them on a leasehold concession basis.

With respect to the control of concessionaires, although we have not found it necessary to exert some of the controls that we could put into operation, they are indeed there. In our leases there is normally a clause that provides that non-compliance with the terms of the lease can result in the cancellation of that lease—which seems to me to be a very strong control. Also, it is necessary under our National Park Regulations for the operator of a concession to take out a business license and if his concession is not up to scratch we do have the power to refuse to issue a business license, thereby effectively preventing him from operating until he does put his shop in order.

As to whether or not accommodation should be provided in the national parks I refer to clause 5 on page 12 of our National Parks
Policy statement which says, "Where at all practical, especially in the smaller parks, overnight accommodation involving such major facilities as motels, hotels, stores and related services should be encouraged in areas outside the park boundaries."

With specific reference to Kejimkujik National Park in Nova Scotia, which is the newest park in our system, we have adopted the policy—because the park is relatively small, about one hundred and fifty square miles—that there will not be overnight accommodation such as motels and hotels in that Park. We have been working very closely with the Province of Nova Scotia in encouraging them to control the zoning outside the Park along the main highway and to set aside areas where motel and similar accommodations and facilities can be developed for the public which will serve equally well to what might be done inside the Park.

CURRY-LINDAHL: On our visit to Banff Park yesterday I was shocked at what I saw in the Bow Valley, although I was informed beforehand that the development going on was intense and involved only a fraction of the whole area of the National Park. What was striking was the fact there were so many development features which I found were not really necessary for the tourist facilities of the area. Furthermore, outside Banff townsite, I found it striking that so many of the buildings, for instance, Chateau Lake Louise, have been designed without any thought about how they fit into the landscape. Even if part of the valley is given up for development I think it is still important that all the buildings outside the townsite area should be planned in such a way that they fit into the landscape.

How do you give concessions for hotel buildings? Do you analyze their architectural design before giving these concessions?

McKIM: Buildings such as Chateau Lake Louise were built when control of designs was not enforced as it is today. There is no defence for
In answer to your question about controls—"Is the motif controlled today?"—the answer is "yes." At the new Lake Louise site, for example, an attempt has been made to blend the buildings more into the terrain and not to make them so obvious. But what you have seen overall is a growth from 1885 to the present day. It is still all there and to change it would be a major problem at this particular point, but change I think it will in time.

SCACE: Thank you Mr. McKim. Dr. Buchinger?

BUCHINGER: This discussion gives another point in favour of why there should not be any structures within a park because although we are very critical about what was built twenty and thirty years ago, I am quite sure that this was the taste of the people at that time. If we imagine that the buildings which we are planning now will please our grandchildren, I do not think we are on the right path.

WARNER: In analyzing the development of the Gila Wilderness Area over the thirty-odd years since its inception, I found that one of the philosophical tenets utilized by the administrators was that if there had been an incursion of any kind into the wilderness area, the only way to treat this was by the process of excision. If a road or a trail had been driven into the wilderness the only way of maintaining the concept of undisturbed wilderness was to redraw the boundaries in such a way that the road would be placed outside the wilderness area.

However, it is possible to consider the alternative—returning those areas which man has altered in some significant way to a natural state. We are not at this point in time committed irrevocably to accepting previous developments that occurred under previous philosophies of management. If we do not like something, except possibly in certain select areas where the investment has been
monumental, we can reclaim the natural values that were there. This is very well shown in the disappearance of Bankhead in Banff National Park.

K. NELSON: I cannot help but feel that we are placing too many pressures on our National Parks Branch, that the answer to these problems, especially if we follow the concept of keeping most of these facilities outside a park proper, lies with the local planning bodies, with regional planning bodies and with provincial governments. I suggest that where the problem really exists is in a breakdown at these levels and that this is where most of our emphasis should be placed and directed.

SCACE: Dr. Curry-Lindahl.

CURRY-LINDAHL: The common purpose of the Canadian National Parks is to ensure that these areas will be "maintained and made use of so as to leave them unimpaired for the enjoyment of future generations." I suppose that this statement refers to the living landscape in these national parks as well as the geological aspect, but how can this statement be reconciled with the degree of development taking place in the Bow Valley of Banff National Park? This Valley is, I think, in the opinion of many people, a very important part of the whole ecosystem there.

HARTWELL: Mr. Flynn, with respect to the National Parks of the United States, what criteria or factors do you actually take into consideration in terms of recovering for the public interest some return on the concession privilege in the national park.

FLYNN: We have two methods by which we do this. First, if concessionaires use any government facilities or structures that we happen to have no use for they pay us a rent for these, in addition to which we get a percentage of the gross. I received some figures before
coming to the Conference which are the total figures for all con­cessionaires. After a year's operation and before payment of the franchise fee, the concessionaires, when they got down to their net profit, left us with about one-third of the profit. I would say that on an average basis for say, the last ten years, we have received about thirty per cent of their net profit.

Although our fee is computed on gross it is not based on net profit. We started off by taking a percentage of net profit but this approach gets you into accountants' nightmares with respect to what a net profit is, and since accountants can figure many different ways we reverted to a percentage of gross. There is no difficulty in finding out what the gross is. We have access to their internal revenue returns which we do not have to use because the concessionaires give them to us anyway.

So, we do fairly well we think, but we get criticized because we do not take enough. Congress told us that in our Act the amount of money returned to the federal government was secondary to good service and reasonable rates to the public.

SCACE: Mr. McKIM, I mentioned earlier this morning that historically, there has been a lack of division between costs applied to Banff townsite and to the Banff Park as a whole, so there is no real basis at the present time on estimating what part of municipal services is actually supplied gratis by the federal government to the residents. Can you forsee that in the future an arrangement might be made where it would be conceivable that a municipal-type situation similar to what one finds in a provincial community might be applied in, for example, Banff or Jasper townsites?

McKIM: We have introduced townsite managers into our parks and this was with a view to making the townsite a functional element within the total park system. Also, with computer systems and costing
arrangements it is very simple to accumulate the costs of townsite administration.

However, within our policy at the present moment the government has accepted the fact that many of these facilities are applied to visitor services. In a normal Canadian community the municipal services are generally constructed for the permanent residents and the cost can be apportioned amongst them, but when you are dealing with the problem of the visitor service centre your services have to be constructed for a vast seasonal influx of tourists and at the present moment we have not worked out whether it would be fair to apply charges as a tax based on the residents. So, we have accepted that it is federal funds which provide the services.

It is all tied up with even a broader question which I have not heard discussed here; because of the special nature of national parks they do contribute mightily to the balance of payments in countries because of the influx of foreign exchange.

When you start to get down to what is a townsite, whether it should be self-supporting within the confines of the town, or whether it has to be supported by federal funds—I do not think there is any simple answer to this one.

BUCHINGER: Mr. Flynn mentioned that there is no public bidding for concessionaires but rather that they are hand-picked by the government or by the park authorities. What are the criteria which have to be followed to be sure that you are picking out the right person?

FLYNN: There is no competitive bidding. For a new concession there is public advertising through a national press release. We issue what we call a prospectus to our list of about five hundred corporations. Our planners have already told us what type of concession should be prepared, we put this into written form, we compute how much money
We are interested in about three things. We are interested in his competency in the particular field—his background. We are interested in his financial ability to do the job. We also set a rule of thumb which is rather old-fashioned but we like it: we tell him that he has got to put in a dollar of earnest money to every two dollars he borrows. We find over a period of years that if a concessionaire has a little of his own money in there and not all of the bank's, he has quite a bit more interest in seeing that the concession works. These are the basic points upon which we judge these people.

On an existing concession we have a completely different situation—again set up by statute. If the existing concessionaire has been satisfactory during his operation under his expiring contract, we still put out a public notice, sending this to everybody on our list so that they have an opportunity to make an offer. At the same time, the existing concessionaire, if he has been satisfactory under the statute and, as far as we are concerned, is a good concessionaire, has a preference to the new contract. We try to keep him.

When we have a concessionaire who is in financial trouble we have a horrible public service. We have had concessionaires go bankrupt, of course. We have even terminated a couple of them this year because of poor operation.

Traditionally, our concessionaires' ancestors, in the western parks particularly, were there before the parks. We have been criticized because we give concessions to people who have lived in the parks for generations and who really love the parks—there is no question that they do. I think they could make that much money or probably a heck of a lot more outside without governmental interference.
But we are now going through a trend in our country and I am sure it is happening in Canada too, to what we call conglomerates—huge holding companies which are trying to expand and are buying people out. At the same time, the second and third generations are not as capable operators as the first and second ones were. Right now, for example, our last railroad is selling out. The operator no longer wants to be in the park and as it is a happy mutual agreement, a conglomerate will probably buy him out. The subsidiaries of the conglomerates that we deal with are basically in the housing and food business.

We do not have any more hotels going up in the parks. That era has died and motel-type facilities or little cabins are about all we are going to have from now on.

ENGLAND: Much has been said with regard to concessions responding to demands of the public sector and I really wonder whether in planning many of the concession facilities in parks, we are, in fact, responding to demand. I would assert that as far as measuring and gauging demand, we are at the present time, terribly unsophisticated in this field. Quite often we allow facilities to be created which in themselves create consuming patterns. We go back, we look at the consuming patterns, we project these and say this is "demand." I think we are kidding ourselves a very great deal in this regard.

The advertising profession plays a very great role in this and unfortunately, it seems that most of our agencies dealing in the parks and outdoor recreation do not take advantage of the degree of sophistication in advertising—fail to advertise the natural attributes or types of experiences which could be gained from outdoor recreation areas or natural areas.

Let us sell the parks for their natural attributes; let us not go on building facilities which in fact are creating consuming
patterns and are not, in many cases, responding to demand.

PIMLOTT: A great many of the things we are talking about in terms of concessions are really being based on historical precedents. Now with respect to these forty new national parks which Mr. Reeve assures us are going to be established in Canada in the coming years, what kind of concessions will there be in these, where will they be—presuming a reasonable degree of co-operation and dialogue between federal and provincial levels? Let us take a situation where we can make a fresh start and everything does not have to be based on historical precedence.

McKIM: Let us not forget that we are very conscious of highly developed parks such as Banff and Jasper and let us not forget that we do have in the system some undeveloped parks. Take Wood Buffalo National Park as a case in point. It is a large wilderness area; there is virtually no development in Wood Buffalo Park. We are lucky if we have even a road going through it at all, but we do have a few problems because when the land was handed over there were some concessions for logging—and features like this are still found there.

When we do get some land we should start off on the basis that the land is unencumbered in any way whatsoever. Then you would have to answer the question posed in *Man and Nature in the National Parks*: "What is a national park for?" I do not think this Conference has even answered that question, so when we go into these other hypothetical stages we are just building new models and we are doing nothing. We will always have something until we decide what a national park is for. Earlier in this Conference we heard discussions on the biosphere, on ecological systems. Now, I do not know what part national parks are going to play in this total system in the end and nobody, I submit, has answered the question.

But if we start off by taking an outdoorsman's point of view,
I think we can answer the question by saying there would be no intrusion in national parks. You would come to the boundary of the park and make your own way in; the automobile does not enter. I might even suggest that in certain large parks we could look at new concepts for transporting people through the park system so as to create the least intrusion in the park. It could very well be a monorail.

The present problem that we face is disturbance to the landscape. Earlier, we had the concept of reclamation of natural areas. If we want to retain areas like Banff townsite within the national park, they could in time be reclaimed. They do not have to remain; you do not have to excise them from the national park areas.

As administrators we cannot solve all these problems because they are not within our area of authority to do so. We are given certain tasks to perform; we are given certain policies. As an administrator, I need and I welcome tools such as benefit-cost to help me to establish priorities, because only in the use of tools of this nature can we begin to give management some finite qualities that we can work with.

SCACE: Mr. Passmore?

PASSMORE: I take exception to one thing which Mr. McKim said. I personally do not feel that we are particularly fortunate to have a road going through Wood Buffalo National Park particularly since it goes so close to the Sass River area where the whooping cranes breed and where it may, through disturbance in the future, limit the expansion of the breeding area as the population of whooping cranes builds up—as we all hope it will.

I would like to attempt to marry together theoretical concepts of how a park may be developed with appropriately-placed concessions, and historical fact. The provincial park systems of Quebec and
Ontario historically had much the same start as Banff and Jasper, with big resort hotels and with private leases for summer resort homes. In both cases there has been a real effort made to revert to the theoretical approach. In 1954, the Ontario government began a policy of terminating leases in its provincial park system, purchasing some of the large resort hotels and in fact, demolishing many of them. They have made a sincere effort to help the landscape to recover to a fairly natural-looking condition. The same thing has been progressing in the Province of Quebec.

Now, these are not small park systems we are talking about. I cannot give you a figure for the annual visitations to the park system in the Province of Quebec, but in Ontario it runs to something in the order of ten million visits per year, which is in the same ball park as visits to national parks. They are still progressing in Ontario towards complete reclamation or complete elimination of private holdings of any kind within provincial parks, and they do invest public capital in whatever concessions they feel are necessary.

The fact that public capital is not available in very large quantities is perhaps a very excellent thing. I do not know whether Mr. Flynn would agree with me but it may very well be that if there had not been as much public as private capital, perhaps their national parks system would be better off at this point. What it does in Ontario, and anywhere else I suggest, is that it gives a great deal of encouragement to the tourist developer, the man with private capital, to provide the services on the periphery of the park—which we agree are necessary somewhere in the vicinity of the park. Private capital keeps them peripheral and does permit these people to develop their businesses without all of the restrictions that there must be if you are going to have private capital and private initiative in
business within a national park.

So, perhaps, the two ideas are not really incompatible. There are examples here in Canada where the historical fact has not prevented the theoretical policy from being implemented.

FULLER: I would just like to correct some of the things that have been said about Wood Buffalo Park since I have had about nine years experience in the area.

I tend to agree with Dick Passmore that, in a sense, it is unlucky that we now have a road in the Park, but let us keep two things in mind. One road is an access road for the village of Fort Smith which permits people and goods to be moved in and out of that village. This I think, could be justified in many ways. The other aspect of the road system is that there has recently been a great improvement in the road which, in a sense, ends blindly at the Peace River, some eighty or ninety miles from Fort Smith.

Some ten or twelve years ago when I lived in the Park, it took about two and a quarter hours to drive to a little lake known as Pine Lake, and on the way you would see perhaps two or three hundred buffalo by continually coming around little corners and unexpectedly sighting them. You now drive to Pine Lake in forty minutes and see no buffalo. The reason is, of course, that the road is wide, and all the curves have been engineered out of it. Such a road should not be built by a highway engineer with the mentality that we want to get people from A to B in the quickest and most direct way.

On the other hand I must correct Mr. Passmore for the remark about the whooping cranes. Although the road does pass close to the whooping crane nesting ground, the road itself will not limit the expansion.

JACKSON: I want to put a rather different viewpoint from the comments which have already been expressed. We have heard many comments such
as, "there should be no structures in a national park;" "we should stop building;" "we should not create new demands;" "we should return to a natural state;" that service centres should be outside the parks; that bus services should replace the private car.

Now, as an alternative to this I would suggest that many of these comments deny the legitimate needs of a changing society. We are forgetting our growing population; that the population of Canada and of the States is doubling and trebling at extremely rapid rates. We are forgetting the increasing demands for recreation and for conservation areas by a tremendous number of people, not just in North America but also in Europe. Remember the Jumbo Jet is coming along. Peter Oberlander mentioned the impact of the jet on Hawaii. Have we thought of the impact of the Jumbo Jet bringing five hundred people straight from London and Paris to the national parks in Canada within two or three hours? Have we forgotten the changing factors of transportation and mobility that national parks are getting nearer in terms of time and costs almost week by week? In my view, it is an economic and social impossibility to remove the railway, to remove the Trans-Canada Highway, to remove Banff townsite, to remove reservoirs?

Another point is that different types of people have very greatly different needs. Surely the approach to national parks should be to design the parks for a multiple variety of outdoor recreational purposes and, therefore, I would like to see very strict zoning of land and the provision of sites or areas in national parks to meet a whole variety of different purposes. For example, we need as of equal importance to each other, scenic viewpoints and conservation areas, walking trails and nature reserves from which man is excluded. We need areas for vehicle parking and we need areas in which no vehicles whatsoever are allowed. We need wilderness trails and we need a ten-
minute walk to a waterfall.

In other words I would accept Banff townsite and design Banff townsite as the best city in Canada because of its position in a national park, accepting certain uses and eliminating as many as possible, and designing the town in the best architectural terms. What I am arguing for is a very detailed design and management approach to all elements in a national park.

PASSMORE: I think the comments of the last speaker are, to me at least, an indication that throughout this Conference so far, we have failed to crystallize some of the very ideas that we came here to discuss.

In the first place, do we have a consensus here of what national parks are supposed to provide? And in this connection we did have a session on Other Alternatives, where although we may not have wrapped it up as neatly as we might have, it became fairly clear to me that national parks need not be expected to provide the full gamut of recreational fun-type activities that we find this term "outdoor recreation" being used to cover. Surely these other alternatives need to be explored and the other day in the discussion on Other Alternatives we did indicate that there must surely be some responsibility on the parts of other levels of government to provide outdoor recreational opportunities for the residents of a particular municipality, region or province.

Surely we cannot expect the national parks to have the multi-purpose recreation zones that the last speaker was just advocating.

SCACE: Dr. Myres?

MYRES: I would like just to support Passmore on this point. I think the answer to Mr. Jackson is that there simply is not enough room in the national parks for all the things that he would like to see there and therefore you have to pare your demands considerably and
decide which ones have the priority.

BUTLER: I would like to direct a comment to Mr. Passmore that whatever we do outside the national parks will not eliminate the problems within them and these problems are going to remain and get worse. As far as the Canadian National Parks are concerned, they should be open to as many recreational uses as possible, which do not endanger the environment. If I could quote from the National Parks Policy statement; "Each unit of a national park system was established because it represented a major recreation resource, worthy of preservation by the nation for public enjoyment."

This does not mean closing the national parks off and treating them as biological museums. Anyway the Canadian National Parks do not represent and were not intended to be biological museums or nature reserves as national parks are defined by the I.U.C.N.

SENGE: There are many towns and villages inside our national parks in Japan which were in existence before the establishment of the parks. Some were farm villages, but most of them are what we call hot spring villages. In these hot spring villages are many hotels or Japanese inns. However, matters such as size, design and colour of buildings are controlled so as to fit into the surrounding scenery.

I was sorry to see that in Banff Park there were so many motels similar to what one can see in the cities.

SCACE: Mr. Passmore?

PASSMORE: One comment was addressed to me and I should respond. It seems that in the English language we have many terms which are rather imprecise and which tend to change in their meaning over time. One of these is the word "recreation" and it has been suggested
that this term as used in the National Parks Act, means all the 
things which we now come to consider as falling under this umbrella 
term "recreation." I wonder whether the people who wrote the 
National Parks Act were thinking of "re-creation" rather than 
"recreation," as we now know it. If we thought of it in this way 
perhaps, we would get back to thinking in terms of uses which are 
more appropriate to the national parks.

SCACE: I will not attempt to summarize what has been said this 
morning. It has been a rather fascinating discussion and the 
impression I get is that many of us are feeling our way. 

This morning session is adjourned.
SUMMARIES

SCACE: We continue this afternoon with Concessions and Services and we are going to have two presentations from local organizations. These are submitted papers and it is with great interest that we look forward to receiving the papers from the representatives of the Banff Advisory Council and the Calgary Chamber of Commerce.

LEROY: (Mr. Leroy presented the paper submitted by Banff Advisory Council.)

SCOTT: (Mr. Scott presented a revised paper on behalf of the National Parks Committee, Calgary Chamber of Commerce.)

PANEL DISCUSSION

SCACE: I am going to start off by asking Mr. A. P. Frame to give his comments.

FRAME: I had prepared what I thought was a very devastating rebuttal to the paper originally submitted by the Calgary Chamber of Commerce. But the rhetoric and figures that I had prepared are of no value today because what Mr. Scott has just proposed is that the Calgary Chamber of Commerce, instead of what they appeared to be doing, which was advocating that Banff National Park be changed almost entirely into a recreational area, now advocate that it should be firmly established as a wilderness park.

I would like to throw in one word of caution. There is probably no worse person than a reformed drunkard, or a reformed smoker, and I would like to point out that there are quite a few of us here who are not quite so sure that all national parks should be simply wilderness areas where you would gain access by mule train or
some other primitive form of locomotion. We still feel that there is a place in Canada for national parks where people of my age and even older, can get into the park comfortably and enjoy the scenery and nature and where we can have at least, reasonable accommodations befitting our years.

So, the only real comment I have to make to Mr. Scott's paper is to say that it is my own opinion that one of the accomplishments from this Conference—and Mr. Scott credited that—has been a most welcome change of opinion on the part of at least some influential members of the Chamber of Commerce and if for no other reason, that has made this entire Conference a success.

SCACE: Mr. Passmore have you any comments to make?

PASSMORE: Well, like Mr. Frame I am left a little breathless by this switch of emphasis on the part of the Calgary Chamber of Commerce and I approve and applaud their change in attitudes toward what national parks should be.

I think one point which Mr. Scott has suggested in his paper but on which he has laid very little emphasis, is that in order to achieve what he suggests, I am sure he would want to see the most developed portions of the Park—and I am not sure what degree of development would be involved here—excluded outside revised boundaries of the Park. Personally I do not consider this such a shattering kind of thought at all and, as a matter of fact, have given a good deal of attention to the possibilities myself.

If I can use a medical analogy here it seems to me that in the historical fact of Banff and Jasper and perhaps to a lesser degree some other national parks—and without meaning to be unkind to the people who are operating concessions and other services—we have a cancer-like growth which, over the years, has shown a great ability to continue spreading its tentacles despite whatever stated
policy or whatever provisions there might have been in the National Parks Act and Regulations.

The new policy statement of the National Parks Branch as enunciated by Mr. Laing in 1964, seems to me to make an effort to wall-off this growing tissue in the hope that it can be confined. But on the basis of past performance I would not really have much confidence in the strength and durability of the tissue which the federal body is able to generate to wall-off the further spread. I would be more afraid that it would be a rather permeable tissue which would continue to allow this cancerous growth to spread and to destroy even more of the national park values in those cases where it exists.

My prognosis then for the patient is that unless something more drastic is done, his future well being is in real jeopardy, and I would prescribe surgery. I think this offers some hope of arresting the growth or at least getting it outside of the body where its growth will no longer continue to harm it.

I am not prepared to say what adjustments in boundaries should be made, but I know that ecologists, for instance, believe that some adjustments in boundaries would be desirable in order to encompass the whole range of a species like large ungulates so as to encompass whole ecological units; to encompass the range of predators which must now spend some parts of the year outside parks, where their numbers become decimated and as a result of which, the effect of predation is virtually lost within the mountain parks.

I think the group which should consult over this patient and recommend the final type of surgery to be performed would have to be very careful in their decisions and would have to make considerable study before they could make a good recommendation. But I do think that we have reached a stage of sophistication now where with careful study and thought, we could come up with a set of boundaries which
do what Mr. Scott wants done, and I believe that it is very well worthwhile considering.

SCACE: Thank you Mr. Passmore. Mr. McKim, have you any comments?

McKIM: I commend Mr. Scott on his skill in presenting his case. He has, in fact, persuaded Mr. Passmore to give him what he wanted in the first instance in his first paper—some segregation of certain corridors out of the parks. Mr. Passmore has concluded from the dissertation that has gone on, that this would be an acceptable thing to do.

I do not quite agree. In fact, in Mr. Scott's presentation he has argued very ably in favour of motherhood. Who can argue with motherhood? So when he poses the question of wilderness and puts all the "ifs" and "butts" around it, I have to wait a little longer to find just what is happening to me. I am sure that in some of the discussions I heard over coffee-break, not many more here are totally aware of what has happened in this switch.

When we have the opinion that we should treat this cancer by surgery we have to determine whether we are dealing with the whole body or whether we are breaking it down into smaller parts and dealing with the smaller parts.

When we look at the areas which have been set apart in this country for national parks, there is not too much land that we can add to them that does not have some intrusion at this time. Now whether that intrusion be a road or whether it be some form of development, what is very much more to the point is that in Canada we are having less and less available land.

Let us certainly consider what we are going to do with the national parks but I do not believe that we should give up any of the national parks at this point without very, very careful study. We have also had the opinion expressed here that we are looking
at recreation as a national group and that we should perhaps be thinking about re-evaluating the zoning technique to determine what zones are required—not just cutting them out from the parks and leaving them for some other body. I think we have to come together as a national body, as provincial bodies and solve a total problem—not just a simple wilderness problem. I do not think this problem is as simple as that.

SCACE: Thank you Mr. McKim. Dr. Buchinger, have you any comments?

BUCHINGER: Naturally I will not be able to speak about the Banff problem but I do have one argument with Mr. Scott. He mentioned that one should permit entry to as many people as wish to enter the national parks.

Now, I feel that we have to calculate the carrying capacity, which means we have to find out how many people can be permitted entry. Mr. Scott is very optimistic in saying that if you do not have propaganda for wilderness areas then people will not come. I would like to remind him of Mr. Senge's conference in Japan where he mentioned just how many people—several millions I think—are going into the parks, especially the wilderness parks, even if there are no passes. The same is true in Europe where the people enjoy hiking and which now seems to be coming into fashion in the United States and Canada.

Mr. Frame, whom I consider to be quite young, says he is too old to climb a mountain so he wants to have some special facilities. Now in the same context we could say why should hospitals be used only by ill or sick people? If we have a one-purpose park then we can have also one-purpose hospitals, but if we have multi-purpose parks then let us go and play golf on tennis courts and so on.

SCACE: Thank you Dr. Buchinger. Mr. Flynn, do you have any comments?
FLYNN: No, I am going to pass up on Banff. After that day out there in the snow I am not going to play in that Park.

SCACE: Mr. Scott. Do you wish to say anything at this point?

SCOTT: Thank you Mr. Chairman. I would just like to make one or two brief comments here.

Firstly to Mr. Frame; I assure you that his analogies were totally wrong. If he has got some Scotch I will demonstrate that I still have two essential vices.

Secondly, for Mr. Passmore; I agree whole-heartedly with the conclusion that he has reached in reference to the matter of the principle which I, in some humility, enunciated. I think if we can attack this problem from the point of view of aiming at a principle then, in that case, there are a lot of people in this world that are devil of a lot more qualified than me to be able to sit down and say, "Now where should it apply and where should it not apply?" I do believe that if we can get a basis of good will and understanding working towards a principle of maintenance of wilderness, we will achieve it—and it will be worked out by people a good deal smarter than I am.

As far as Mr. McKim's comments are concerned I do not recall discussing motherhood, but I do remember discussing something in its earlier stages.

Mr. Lewis and Dr. Buchinger talked in their papers about nature conservancies. At that point my mind was in something of a turmoil because enough had gone before to make me start re-evaluating the position that we have been taking. At that point I came to the conclusion that the nature conservancy societies really offered the very best chance we might have to conserve some of our natural wilderness, because they were able to approach the problem in a positive way—that is, they were prepared to say, "We have got some
money, we will go and buy it." Well, you cannot beat that; there
is just no way around it. If however, we can bring the various
levels of government together I think their efforts can be supple­
mented in a fantastic way.

Finally, Dr. Buchinger, "Thank you"; I agree with you on the
question of limitation. It is necessary. I would like to try to
do it in an underhanded way first, if you want to call it that. Cut
back your advertising, cut back your access; if that does not work
then I am afraid that the barrier will have to drop.

As far as the multi-purpose aspect is concerned, I am afraid
of it and this is why: I said from the floor the other morning
that if you have got an active force and a passive force both
working within the same area, guess which one is going to win out
in the end result. I do feel, and this may sound dreadfully radical
to you—I suppose it maybe is—that if you split parks into preserves,
recreation areas and research areas, you obviously have brought to
bear three different principles of government and they may well
be such as to be administered by different people, working in co­
operation with each other—but at least, not in the same pit being
jabbed by spears on one side and spears on the other. That, I
think, is a most dreadful state of affairs.

SCACE: Mr. Leroy, do you have any comment?

LEROY: Well, I think I am probably left out to a certain extent,
as we all are, by Mr. Scott's change. Now as to the switch: as far
as I can see, he proposes to make a National Recreational Area out
of the Bow Valley corridor—and this brings me to Mr. Passmore.
He brought out the analogy concerning the medical removal of a
cancerous growth and, being part of the cancerous growth, we in
Banff would be, of course, very interested in what is going to happen
to this growth when it is removed. This is my concern.
PASSMORE: That is a very good point. I understand that the land in the national parks in the western provinces was left with the federal government through the Resource Transfer agreements of 1930. These have since become Appendix A of the British North America Act. There is provision for revising them by simultaneous legislation passed by the federal government and whichever provincial government is involved.

Harking back to some of the concepts that we discussed this morning with respect to some of the intrusions, as we might refer to them, within Banff Park's boundaries; we might dismantle and attempt to obliterate them. Some we might have to live with for a period to allow leases to expire or invested capital to be regained. We would proceed on this basis and then hopefully, with agreement between the Province of Alberta and the Government of Canada, we would lay on a zoning plan which would ensure that the old Banff townsite, now outside the Park and falling under provincial jurisdiction like any other part of Alberta, would have concepts of zoning—of quality, of construction, of land use—applied to it which would be ensured through legislation.

DISCUSSION FROM THE FLOOR

EASLEY: I would like to ask Mr. Scott the democratic process he used to determine that "The overwhelming consensus of this meeting is that there should be no development in national parks."

SCOTT: First, I have been talking to a great number of you throughout this Conference—not as many as I would like to have.

Second, having read the papers I am of the opinion, and maybe I have misread the papers—it is possible—that really the attitude of the people who have given the papers has been slanted that way, and if I have misinterpreted these papers, I regret it.
HENDERSON: I think this panel has been one of the most significant discussions we have had at this whole Conference. The implications of what is being raised by the switch on Mr. Scott's thinking are tremendously encouraging. Mr. McKim was suggesting that we should go cautiously and I think it is essential that some means be worked out whereby there could be a complete look at this whole picture, now, by all interested parties.

But the really significant point is that we now have an expression of willingness for co-operation. We are not shouting at each other at a distance and I think I must congratulate Mr. Scott. But the next step is a very careful look by government and private organizations of all kinds.

DE VOS: We all seem to be in the company of wilderness lovers, converted or otherwise. I think it may be worthwhile Mr. Chairman, that we have a better look at some of the words that we have been using.

I must confess that this word "unimpaired" has been bugging me for a long time particularly as reference is made to this word in policy statements. I would like to suggest that "unimpaired" does not refer to a static condition, that we should relate it to our perception of wilderness and that our definition of unimpaired should be looked at on a sliding scale dealing with the changes in our modern society. Now, I feel that "unimpaired" does not imply that we should not modify conditions as they were found by the early pioneers but that we should try to leave them unimpaired as much as possible. It implies that we should try to protect the natural environment as much as possible against the impact of recreation seekers and the services that are provided for them—and for that matter even against the possible changes made by the researchers—with due regard to the changes in the technology and social economic conditions in society.

This implies not only that efforts should be made to prevent
the construction of new townsites, high speed highways, etc., but also to prevent or reduce influences that effect the perception of the primitive atmosphere of national parks, such as noises of airplanes, ski-doos, etc. It also implies that boundaries of parks should be readjusted so that species of animals and plants that were present in these areas when white man first started to drastically modify the environment will be able to survive, or those that have become extirpated within known history perhaps could be re-established. Also, we should make efforts to eliminate species that were introduced purposely or otherwise by man during the period that these national parks were being established.

HELLEINER: Like Mr. Henderson, I am encouraged by the rapport that seems to have been established here this afternoon, but I have some reservations. Mr. Trudeau has recently been cautioned not to impute motives in Parliament, but this is not parliament and I propose to impute motives to Mr. Scott.

He has suggested that the administration of what we now call parks should be divided into three, an agency for the administration of wilderness, an agency for the administration of research and an agency for the administration of recreation. I think that is a sensible proposal, but in addition, Mr. Scott made the statement that to preserve wilderness we should amass capital and buy it. I detect in that proposal a move on his part to divorce the wilderness agency from the public hands altogether. Is this your intention?

SCOTT: No, definitely not—under any circumstances, I merely mentioned that as being an effective way of obtaining wilderness because as I said, money talks and you can buy it.

But on the other hand, it is certainly not the best way. The best way by a long shot, is for governments to get together, work out their differences, set the terms of reference, and go at it.
SCACE: Dr. Buchinger?

BUCHINGER: While one purpose of nature conservancy organizations is to acquire land they are generally not land holding agencies. For instance, The Nature Conservancy in the United States was able to help local and also national governments to purchase some lands. We bought lands and then gave them to the government so as to make the national parks larger.

Generally, when one gives any land into the custody of a governmental agency or a university, there is a reverter clause which means that if there are to be any changes undertaken in the future, the land would revert to the donor agency. So perhaps, what both Mr. Helleiner and Mr. Scott really mean is that this is a good way to co-operate with the government so as to establish national parks in an easier way.

SCOTT: The principle of nature conservancies—how they go about doing their work—is not significant. That is to say, whether they go on principle to acquire land or as agent for an undisclosed principle, is immaterial in my mind, so long as the result of their work turns out exactly as Dr. Buchinger suggested.

KUSKA: I speak to you through the eyes of a landscape architect. First, we have been saying "parks are for people." Let us look at "people." What do they want in a recreation experience? I think if we take a poll of people the answer is that they all want something different. They all have different values.

Secondly, many demands made by people are incompatible with the carrying capacity of an area. Why do the masses of people make such absurd demands upon our national parks? They do not understand the consequences of the demands they are making. I like to give all people credit that they have the capacity to enjoy nature. But I firmly believe that many people do not have the knowledge nor the
In the United States we have neighbourhood parks, city parks, community parks, county parks, state recreation areas, state parks, national recreation areas, national forests, national parks and other types of recreation facilities. All of these serve a different purpose. Are all these parks necessary? Yes, because man is now congregating in greater numbers in the cities.

This means that many urban people are now becoming subconsciously afraid of the outdoors. I say that because in observing urban people when they make their exodus to a state campground, for example, they tend to pack in, just like sardines. They want companionship. Likewise I observe this type of activity in what I call the "freshman national park visitor." He sees something on television, he gets in his car, he goes to a national park, but he is afraid of this area and he does not know what it has to offer.

Should we cater to this person in a national park, or should you develop parks in Canada like state and county parks in the United States, that "condition" people to the out-of-doors? After the people condition themselves to the out-of-doors, in other words can feel comfortable in nature, then let them graduate, if you will, to the national parks and enjoy what the natural area has to offer.

One final comment; do you have a hockey league here in Canada for golden agers? Do you have a wilderness experience for golden agers? I feel that there is a time in our life when we experience different things, thus I am not really convinced that the national parks are for everyone in all stages of life and in health. Are we supposed to provide for every aspect of age and condition in a national park?

SCOTT: The question that people want something different and they all have their own different tastes, is one that you will never solve in
a given area, or a given situation. But there is no doubt that certain areas are more suited for certain types of activity than others and I think that merely by clever publicity we can cause some people to say, "I am interested in a natural experience dealing with water," and another man to say, "I want my hiking or my climbing." By accentuating the values in each particular area you can go a fair distance towards directing people into just about the area they really were looking for.

The second point, the carrying capacity--plan ahead. I could not agree more. Up to now, I have felt that maybe we were missing the boat on the business of planning ahead.

Thirdly, the Trail Use Survey: Banff and Yoho National Parks demonstrates a quite significant thing to my mind. Out of those hundreds of thousands of people that go into the Banff Park every year, shockingly few actually get out and use their legs. I was surprised when I read it, whether or not the author was correct in his assumptions that only so many people registered or did this or that. I think it deserves consideration from all of you.

Finally, you talk about being "conditioned" to the out-of-doors. I believe, rightly or wrongly, that people are slowly conditioning themselves. Look at the numbers of campers and trailers that are going into the parks now, where they used to insist on a nice hotel room, many people are pulling their own hotels with them. I say you are starting to get more people who are prepared to smell the out-of-doors in the morning and this is a good sign.

SCACE: Mr. Passmore:

PASSMORE: I was concerned earlier that the Banff and Yoho Trail Survey statistics were quoted here without further explanation and it certainly is true that a very small proportion of the people who visit national or provincial parks really do get out into the
wilderness. But I wonder if it is fair to assume from this that those who do not actually physically get out into the wilderness and some distance from the roads, are not also benefiting from the presence of wilderness. I have watched people in national and provincial parks camped on the edge of wilderness, tied down with the lack of qualifications to permit them to travel with ease in the wilderness—young children who would be difficult to take along—but camped there on the edge of the wilderness and challenged by it. I think they are benefiting by the presence of wilderness without having to really enter into it and so I believe the Banff and Yoho Trail statistics are misleading and that many more people appreciate the wilderness and are served by it than those who actually use it according to the Survey.

HUNTER: Mr. Flynn mentioned concessions legislation in the United States. Here in Canada, it is apparently in regulations and leases. As a matter of pure law I have not the slightest doubt one is as good as the other, but when it comes to practical handling of arrangements I would prefer to see these rules and regulations laid down as legislation. I think it gives the person who has to administer the rules and regulations a very much better chance of sticking to them. For one thing the regulations may not be so public as the legislation. We know from experience that orders in council get passed without good publicity. I come from British Columbia so you know what I mean about than.

I would like to see the rules and regulations that govern Banff townsite or any other townsites contained in legislation. There must be some discretion obviously, you cannot legislate for everything, but the basic principles should be in the legislation and the administrators should administer the legislation.

At the same time, it should not be impossible to stipulate
through legislation that all the existing leases are cancelled as of a certain date, that the new regulations take over from that time and that the compensation will be paid for those who suffer loss as a result of that change. It may be difficult to do politically; legally there is no harm in it at all.

Finally, educate the public. If administrators have the support of the public in carrying out regulations, legislation, or whatever it is, properly and forcefully, they will have much less difficulty from the oddball who wants to serve his own interests.

SCACE: Thank you. Mr. McKim, do you feel that greater legislation should be enacted with respect to the leasing system as it now stands in Canada?

McKIM: I think at this particular point in time we have enough legislation and it is very well set out. Hearings were held throughout Canada in 1966 on the leasing policy and I am sure that this has had wide publicity. The legislation is at this particular point in time, being resolved in the courts. The outcome will give a very clear picture of what the administrators can work with.

SCACE: Thank you very much. Mr. Passmore, just a quick comment.

PASSMORE: I do not want it to appear that Mr. McKim and I are antagonists and I am sure we are on the same side of the fence, but I would like to point out that the park legislation which now governs activities within national parks is the same which was in existence through these past few years while we have witnessed the development of Marmot Basin [Jasper Park] as a ski resort.

I do not think we can claim that it adequately protects the wilderness character of national parks. Moreover, the initial draft of the National Parks Policy had also been written before much, if any of the development at Marmot Basin took place, even though one must admit that much of it took place before the National Parks
Policy was proclaimed in the House of Commons by the Minister.

WARNER: In the course of your presentation Mr. Scott, you indicated that you saw the validity and general value of the undisturbed wilderness area, and a graded series of other uses for wild areas. You offered a possible redefinition of the national park as it now stands into three separate new entities—the natural reserve, the recreational area and the research area. However, I did not detect your descriptive boundaries to these. I did not perceive where the existing concept of national park was represented. For example, in your statement on the natural reserve, this was an area without roads, without developments and left in the wilderness condition.

Now, presumably in the absence of further data this would mean that all areas within the existing Banff Park or, presumably, national parks in general, that have roads or other developments of any kind would lend themselves only to the second or recreational category and not to your first. Could you clarify that please?

SCOTT: Yes, I certainly would clarify that. Too much has gone on to be reversed; some conditions I would prefer not to see must stay. For example, the Radium Highway clearly cannot be changed and yet, on the other hand, there would be no intention or thought that a recreation area should be established because the road is there. Likewise this applies to the Banff-Jasper Highway.

What I am saying is that in principle, you should try to keep wilderness areas wild and in that respect I do not think the automobile is a satisfactory intrusion into them. But what is there now cannot be turned back and, therefore, you merely take your areas with the greatest problems and you say, "Fine, we will redefine these into recreation areas without regard for the fact that areas we have retained still happen to have roads." In a narcotics case that I recently came off, the question was whether or not the accused
had possession. Well, in law, possession implies knowledge of what it is, consent to it being there and by judicial decision, an element of control. Each case then has to stand in accordance with the definition, so you try to determine what is control or what is knowledge and you do it the best way you can under the circumstances.

As far as the third aspect—research—is concerned, I think this is something that could well stand on its own feet because research is hurt both by recreation and by wilderness. In other words you do not get your freedom of action in that particular sphere, so that really it is a matter of sitting down, looking at what you have got and saying, "What is its best purpose?"

I do not want to appear dogmatic in regard to any particular inclusion, that is all.

SCACE: Thank you Mr. Scott. Dr. Buchinger.

BUCHINGER: Well, I would like to be a little bit dogmatic. As I see it, what you understand about national parks is something which is already laid down in the United Nations World List of National Parks and Equivalent Reserves. I notices your concepts are very much in accordance with this list which excludes recreation areas. Few national parks in some countries made it to the List because they were primarily recreation areas, as for instance, the National Parks of the United Kingdom.

BREWSTER: A few years ago I stated to some of the park officials that about three hundred people used the back-country in Banff Park. They said, "You are wrong, there were seven hundred and fifty this year."

"What the hell, seven hundred and fifty out of a million and a half people; who is using this area?"

There is one question I would like to direct to Mr. Scott: What happens to the cancer if it does not want to go out of the
National Park?

SCOTT: Well, having never asked the cancer I really do not know, I am sorry sir. All I can say is this, that if the "cancer" as you call it, has a better chance of becoming benign rather than malignant—malignant in the sense that it is a non-conforming use if you take the Park as being a wilderness area—and, therefore, becoming passive or inactive, then really I think it should be quite glad for the cobalt treatment, or whatever it calls for.

MacLULICH: I wish to comment briefly on this separation of areas for wilderness and research. A wilderness area intrinsically would tend to have some of the finest examples of certain ecosystems within it. If any research is to be directed for ecosystems, then surely it needs to be done where you have the finest examples in that wilderness.

If it is a really damaging piece of research then perhaps you can find some special way to possibly rehabilitate the area which does get damaged in that research. Usually research will not cause much permanent damage anyway.

I was actually shocked on Saturday as the amount of area devoted to skiing in Banff Park unfolded before our eyes during the day's outing. I was shocked at the number of great cuts down the hillside, right from timberline down the mountainside, and their not being concentrated in any region but spreading right from Banff townsite to Bow Summit.

Is there zoning? I have not heard any evidence that this is really zoned. If it is not, I am worried that this is a cancer going to spread through the Park, wider and wider, and each area that is used for skiing obviously is no longer of wilderness interest.

I am just conveying my feeling that this is another argument for strong zoning procedures.
McKIM: I want to reply to a previous speaker, and the last speaker's comments are applicable. I am quoting from the 1967 Statement on the National Parks of Canada to the Standing Committee on Northern Affairs and National Resources, and it has to do with ski development.

The Department has adopted the policy that it will permit the development of certain outstanding skiing areas in accordance with overall plans. Some do not agree with development to this extent; others want unbridled development. While some of the existing facilities are not ideally located or developed from a parks standpoint, we consider that a moderate amount of planned development can be permitted outside the Wilderness Zones without significant effect on park values.

Now, to go one stage further, on your field trip to Banff you were confined to the roads and Banff is not confined to the road system. If you want to see the wilderness in Banff Park you have to get on your feet and move through some of the trails that are provided for this experience. The Trans-Canada Highway does pass through a sector of the Park but is only a sector, and if you go back into the back-country into the wilderness you will not see these ski areas.

SCOTT: A gentleman suggested that he saw nothing wrong, for instance, with the Gondola lift and this type of thing. With this I highly agree in a national park or a national preserve. I see nothing wrong with putting a Gondola lift up the side of the mountain because, in so doing, you are enabling people to get a better look at their nature and their scenery. I do not have any argument against that principle at all.

I do, however, feel that if you stop and look at your maintenance of wilderness principle, the slashing that is created by ski runs and this kind of thing is not entirely in keeping. In short, I feel that skiing areas should be in a recreation area, because really, this defines its intention. This does not mean, of course, that the man who decides to put on his skis and go for a cross-
country hike should be denied access to wilderness—that is a fairly normal and logical type of thing in a wilderness area.

But I do feel that when you start getting down to the business of slashing for ski runs you are starting to push your maintenance of wilderness principle pretty far.

BUCHINGER: I would like to say something similar about scientific research. I am all for having research areas outside the park but if they are the last samples of ecosystems then I feel we have to think twice before we even consider using them for anything else other than for observation.

But in a country like Canada, I do not feel there is anything wrong if you set up a zone system and set aside sample areas of each ecosystem, one where you let nature do whatever it chooses to do, the second where we might retain nature by adequate management, and a third one where we can carry out research—and I would even add a fourth one where we will not do any research but we will let people do whatever they want—but under constant surveillance.

McKIM: I just want to clear the statement on the policy of research because we have had so much, and so I will quote from the same policy paper.

"It should be emphasized that no research, other than for park purposes will be carried on in a park if suitable areas for research exist outside the park. Scientific research can and does play an integral part in park management by contributing to the pool of information required in establishing appropriate public activities, physical developments and in providing for sound management of natural areas."

This basically is, our approach to research in the national parks.
SCACE: I should like to know if all contemporary developments in national parks are, in fact, part of a zoning policy or whether the historical precedent has been simply followed up as, for example, in the location of the Banff Park skiing areas—one near Banff townsite, one at Sunshine and the other one in the Lake Louise area. It is a rather interesting point. I also think it is important to bring this particular aspect up because it does imply certain problems in carry-overs from the past.

MADSEN: I am a little bit confused. Mr. Scott has turned around and is all for wilderness areas.

SCACE: How would you like to go about solving that one, Mr. Scott?

SCOTT: No, Mr. Chairman, I would not like to solve that one. Not one bit. That is going to be for somebody else to sit down and make the appraisal.

Now, when you are trying to analyse what ought to go or what ought to stay, I think you have to do it in this way. You have to determine whether or not the quantity of development in a particular area is of such a nature that really it cannot either be reversed or fit into the type of little alpine chalet that you need for your hikers, campers, climbers, etc. I think each development has to be looked at on its own to see just what part it plays either in recreation or maintenance of wilderness. I will not attempt to define for one second the definite areas because that is not the purpose of my paper.

EIDSVIK: I would like to speak, Mr. Chairman, to your remarks on the ski areas. The ski areas that have developed in Banff Park have developed in two ways actually. Historically, we had the Sunshine area, the Norquay area and the area at Lake Louise. Subsequently, the Winter Olympic interests which were working in the early '50's
and in the early '60's created a considerable concern within our Branch and within our Department.

At that time we enrolled a consultant who carried out quite an intensive study of the potential of these ski areas. At the same time, the zoning plans were evolving for each of the national parks in the mountains.

With the combination of zoning plans plus the consultant's study on ski areas, several areas were designated as having potential for further ski development without conflict in the zoning plans as evolved. Each of these ski areas had a designated capacity. A policy for winter recreation was evolved in '64-'65 and it is within this framework that the existing areas have developed.

EADY: One of the things that has come up throughout this Conference has been the mention of the automobile. I submit that a future Conference should consider looking into some of the wealth of information that is available on planning roads in park areas. There is quite a wealth of experience of this in the United States. The automobile is something that we have to live with. Recently, the State of Wisconsin completed a survey of their entire state in which they have mapped the resources of the state and are to use this in future highway planning. I am suggesting that people who are involved in park planning, whether it be for recreation, conservation or any other interest, should look into this matter of the experience available in highway planning.

In British Columbia last summer we attempted to make an ecological study of our highways system. Some of the information was rather startling: there were areas where we could have avoided substantial damage to the ecosystem had the biological aspect been considered as well as the engineering aspect.

MYRES: I noticed in the Guide for the Banff Field Trip that there was
said to be conflict between ski-doos and skiers in that Park. I would very much like to know under what mandate at all, ski-doos have been allowed to enter the national parks as a regular occurrence. This is something which has only happened in the last few years and it seems to me that this is a mechanised vehicle and that it is a mechanised vehicle which is taken off the roads. It has absolutely no place whatever in a national park any more than outboard motor-boats have.

It seems to me that everybody is entitled to know exactly why the national parks administration has permitted this to happen. Morally the thing is all wrong and the people who have permitted this thing to grow upon us did not really anticipate its growth; the machines suddenly appeared out of the factories. Everybody started buying them and they no doubt passed through the Park gates before most of the people at the park entrance knew what they were. Then they were unloaded at the terminal points and it has taken some time for people to catch up with the animal.

SCACE: I think that I should direct the question to Mr. McKim with respect to ski-doos.

McKIM: In answer to the question of the ski-doos, you in fact, answered your own question. These things came along very rapidly and before you know where you are, you are smothered. But the Department has reacted. We are in the process of developing a policy for ski-doos, but since I do not have it available, I cannot give you any details as to what it contains. The Department recognizes some of the factors that you brought out: the sort of noise; the fact that it can go practically anywhere; that it would be in conflict with some of the wildlife. All these factors are being taken into consideration and when the policy comes out, it will be a public policy.
SCOTT: There is one comment that arises out of the last gentleman's statements and that is: it is obvious to me that a detailed evaluation has got to be made both of lands within a park and the lands outwith a park. In that respect then, it is certainly my submission that it would be of invaluable help to employ consultants.

I certainly would recommend that the Department consider, very seriously, the retention of outside consultants to come in with a report on just what is the value of what we have—what is its best purpose, how can that purpose best be used and served?

CURRY-LINDAHL: I would just like to comment very briefly on the problem of ski-doos or snow scooters. In northernmost Europe during the last five to six years, these vehicles have developed into a real danger to wildlife, because people can go almost everywhere. Above the timberline especially, they move very quickly. They can run down wolves and wolverines, and so forth. Therefore, in Sweden, such vehicles are completely banned from national parks for the moment and we are now considering a special legislation that they shall be banned except under certain circumstances.

This is a very serious problem and I would recommend that you really consider this carefully, because it is obvious that such vehicles will increase in number in the future.

WORLEY: I feel that we have overlooked the role of non-commercial private organizations in national parks or provincial parks and other lands that are designated or may be designated in the future. I speak mainly about youth hostelers, boy scouts, girl guides, naturalists, and conservation societies, wilderness societies and other whose activities and ideals are closely associated with those of national parks.

These appreciative users whose activities serve to introduce and help educate people in the ideals of national parks, are now
largely ignored by the park authorities and I feel that because of this attitude they are alienating what could be their best potential propagandists and allies.

I would ask the conferees to comment on the desirability of these groups in national parks; that is, are they desirable and by what criteria shall they be evaluated? For example, some need physical facilities which are mainly buildings. And to what extent should they be encouraged or discouraged?

SCACE: Mr. Passmore, do you feel that such organizations and their facilities are compatible in our national parks?

PASSMORE: I think one's natural inclination is to agree with Mr. Worley that these are groups who are rather specially related to the national parks. Also most of them consist of young people who may have a particular appreciation for national parks.

They are likely to strengthen the feeling of people generally for national parks as we have been speaking of them this afternoon.

But when it gets to the point that these groups require special areas set aside for them or special facilities for their exclusive use, then one does begin to wonder whether they really are of value to the park or whether they are helping to speed its deterioration. I think the group campsite idea where these groups can be accommodated, where any such group could be accommodated, is one way of dealing with it. But the special, exclusive privilege of occupying an area and facilities set up for them seems a bit of an abrogation of national park principles.

BOGGS: Most conflicts that arise between parks interests or conservation interests and other natural resource developments, if they are not concluded in an amicable fashion, generally end up as a legal battle or litigation of some sort. And I think that this afternoon we have seen the benefits accruing to an organization which has access to a
legal mind. One observation that I have made is that in Canada there is somewhat of a shortage of lawyers who are trained in matters pertaining to natural resources, particularly in matters pertaining to the environment and aesthetics of the environment.

I would suggest that we should make representations to schools of law and to deans of law faculties, possibly across the country, to encourage lawyers or student lawyers to go into this area of legal affairs for it is definitely understaffed at the present time. If we could engage or assume the alliance of men such as Mr. Scott in our efforts to preserve the environment, I think that we would all definitely be the beneficiaries.

SCACE: Thank you very much. I think this has been an extremely interesting day, but I will make no attempt to summarize what has gone on. I think that today’s discussions will lead naturally into the session on Planning for the Future. I would like to express my appreciation to all the members of the panel for their excellent contributions to Concessions and Services. Thank you very much indeed.
VII PLANNING FOR THE FUTURE
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The Conference has already had an outline on the Canadian National Parks System--its origins, present developments and some of its broad problems. This paper will attempt to deal with the problems of meeting the current demands on these unique natural resources and the difficulties of expanding the system ahead of our advancing frontier.

Although we, as Canadians, are justifiably proud of our world-famous park system, we must admit that there is room for improvement. It has evolved mainly through the sporadic efforts of a visionary few, through accidents of geography and by political expediency. The result is a system acquired and developed in reverse to the settlement pattern. Not only is there an imbalance with regard to the country's population, but there is also a lack of representation of many important natural features. Only four of the eight major regions in Canada are represented and many major geographical and ecological features of national

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significance remain absent from the system. In fact, I am sure that if we were starting all over again, we would select a system of national parks somewhat different from what we have today. I do not think we would have straddled the main transcontinental transportation corridors. We would have also attempted to better relate preservation with the needs of people and the location of our population centres. Nevertheless, we do have one of the world's most outstanding national parks systems. Our primary problem today is to preserve what we have, to intelligently round out the system and, above all, to develop a public conscience and concern over the fate of Canada's National Parks.

Very serious is the fact that the Canadian National Parks is practically a static system, having had almost insignificant growth in area for nearly forty years during a time when there have been dynamic changes in every other national endeavour. The result of a static system, in the face of massively increasing interest in and demand for all forms of outdoor recreation space, is increasing density of use which now reaches serious proportions in smaller national parks and in local areas of the larger parks.

As an alternative to expansion of the system over which the federal government has little control, the National and Historic Parks Branch has sought to achieve a more appropriate use of the existing parks through better planning, through zoning, through phasing out of unnecessary facilities, by moving toward a more realistic fee structure and by attempting to encourage planning and development of intensive use and urban type facilities outside of national park boundaries.

There is now a provisional master plan for each of the national parks, setting forth the basis for a systematic program of preservation and development over the long term. Each provisional master plan outlines a five-category zoning plan from wilderness to high density areas (see Appendix for details). This is intended to give order to planning and
development, consistent with the management policies. A major objective of zoning is to ensure preservation of a major portion of each national park area in a wilderness condition, confining development to selected sites able to withstand the intensive uses these localized areas must sustain.

The policy statements announced some years ago, outline in some detail those activities which are appropriate and acceptable to the main national park purpose and those which are intended to be phased out over the long term as being detrimental to national park objectives.

A more realistic fee structure is gradually being imposed—primarily as a restraint on unlimited use of a fragile resource but also with the intent of getting a better economic return from funds expended on special facilities.

Planning within the park is now being correlated as much as possible with the use of lands outside national park boundaries. It is hoped that developments on these bordering lands will complement the facilities within national park boundaries. In the smaller national parks, where feasible, even the staff residences are being located in communities outside the borders of the park.

The relationship of national parks to other park systems and recreation areas is being carefully assessed. Inadequacies in other systems inevitably result in misuse and overuse of national parks if they attempt to assume a role which is more logically the responsibility of provincial, regional, or even city parks systems. Firm policies and effective preservation and development of existing parks, however, are only part of the solution to the problem. A national park system must grow with the country if it is to survive and maintain its basic purpose. The National Parks System of Canada has not kept pace with the nation's growth and in the last thirty years, only three rather small national parks have been added to the system. Nevertheless, during this long
period of minimum growth, major effort has been directed toward study and identification of those areas which should belong in the system. Eighteen such studies have been carried out in the last seven years, but only one has resulted in the establishment of a new national park. The reason for this lack of success is primarily due to jurisdictional problems. A two-way decision is required to establish a national park. First, the province must be willing to dedicate these lands to the people of Canada, free of all encumbrances; and secondly, the federal government must rate the lands being offered as being worthy of national park preservation. Needless to say, in all cases, it is this first condition of provincial acquisition and release of lands to the federal government at no loss that is the major stumbling block in setting aside a new national park.

The view often expressed by the provinces is that if these provincial lands are truly of national significance, then surely the funds required for their acquisition are a national responsibility. This view was again expressed at the provincial premiers' conference in Waskesiu last August. The dearth of new national parks over the last forty years is clear evidence that the present requirements of the province are too stringent and that within such a framework, effective national parks system planning becomes impossible.

A satisfactory solution to the problem must be found, and soon, or the National Parks of Canada will continue as a static system at a time when it is essential that a dynamic approach be taken to meet the growing needs of the nation. The national parks should be undergoing their most rapid growth to keep ahead of the rapid utilization of our lands for other purposes.

Our former Minister, Mr. Laing, stated that we need forty to sixty new national parks to round out the system and properly represent the natural features of this magnificent country of ours. He further
stated that this should be done not later than the year 2000, which is only thirty-two years hence. At our present rate of acquisition such a program would take three hundred to four hundred years to accomplish. The best opportunities for national parks are already fast disappearing, especially in the developed portions of the country and in the lands bordering our ocean fronts and major water bodies.

A critically important need at this stage is to seek out, designate and protect, through legislation, our prime natural features while there is still time. This is essential in every type of park system, but it is particularly true of national parks, due to their very special requirements. We are, after all, only talking about some 2 per cent of the total land area at the most; and as a nation, surely we can afford it, especially if the lands are selected with due regard to other resource requirements. It does not matter if development is deferred until funds are available and need is evident—in fact, why not moth-ball some of these prime national park potentials in a sort of land bank.

The process of national park system planning cannot take place in isolation from the planning of parks at other levels of government. There must be complementarity between systems through a clear understanding of the different roles played by different types of parks. This has not always been the case in Canada, consequently we have some provincial parks which would qualify as national parks and might more logically be administered as such. Alternatively, we have national parks which function more as provincial, or even regional parks, that should be released in whole, or in part, as such. The annual Federal-Provincial Parks Conference has done much to clarify the logical responsibilities in the park field at the various levels of government. Nevertheless, these inconsistencies still exist and probably always will.

The two largest provinces of Canada still do not recognize a
place for one or more truly outstanding national parks to round out the present system. This reluctance is not only due to the present requirements of the provinces to supply the land, free of encumbrances, as explained above but it is also related to the provinces' interpretation of the 1930 Transfer of Resources Agreement which placed resource management under the jurisdiction of the provinces. This right is understandably jealously guarded, to the point where the transfer of lands to the federal government for even so noble a purpose as a national park is not looked upon with great favour. In addition to the loss of sovereignty, there is always the fear that such lands may encompass important resources needed in the future economy of the province. One approach to overcome this problem is the core-plus reserve principle which works as follows: through a joint survey by federal and provincial resource people, a large area meeting national park requirements is defined. The primary features of this area are then pin-pointed and an internal boundary drawn which encompasses the minimum area required, exclusive of buffer lands, to define a viable national park justifying federal expenditure on its preservation and development. The surrounding land ultimately required to round out this core and guarantee the preservation of the key natural features is set aside in a special provincial reserve where mineral exploration and possibly other commercial utilization of resources is permitted. After a specified period of time, this surrounding reserve, or a major part of it, depending upon the effect of the resource utilization, is added to the national park core.

This concept of national park preservation lends itself particularly well to undeveloped countries such as ours, where spectacular mineral discoveries in lands, not previously noted for their mineral wealth, are still fairly commonplace. In drawing national park boundaries, it is always possible to minimize future conflicts with surface resources.
But the spectre which haunts provincial authorities when considering designating a region as a national park is that they might just be committing a yet undiscovered mineral bonanza to a state of permanent rest.

The National and Historic Parks Branch is also considering giving greater flexibility to present criteria for national parks, thus making it possible to include a greater variety of areas with a smaller demand on the resource base. In the past, the concept of national parks in this country was always that of a very large area—upward of 100 square miles in extent. It is increasingly apparent that there are many important natural features worthy of national park status which can be adequately protected through much smaller reserves of land. Criteria for shorelines, for instance, are best based on linear factors rather than on broad areas. Certain unique geological features, or even ecological features in special situations, might well be protected in reserves of several thousand or even several hundred acres, rather than hundreds of square miles. This would be particularly true if compatible uses of bordering lands could be assured, perhaps through zoning or special provincial reserves.

The Branch recognizes the need for categories other than the large wilderness areas which typify the western parks. Needless to say, these larger parks already in existence, will be increasingly important to the system, but the day of the broad sweep in setting aside national parks is certainly over. Parks will have to be selected with much more precision to ensure minimum conflict with other resources. New categories such as national shorelines, national waterways and national monuments, would do much to round out the present system without the usual demands on the resource base.

The national shorelines would be superb stretches of relatively undeveloped shorelines, such as exist on our east and west coasts and
along the Great Lakes. A national waterway might include a river system or interconnected lakes, again linear in nature. A national monument would describe a specific geological or ecological feature worthy of preservation. If we are to get the national parks system moving again, we will have to continue to explore new approaches in protecting the nationally significant natural features of the land.

With greater education and increasing sophistication of the nation, it seems certain our pioneer approach to land, as a resource to be exploited and depleted, will gradually give way to a growing appreciation of its natural wonders. The very fact of this Conference is evidence of such a nation-wide trend. Perhaps we are at last winning the race mentioned by H. G. Wells, fifty years ago, when he said, "Human history becomes more and more a race between education and catastrophe."

APPENDIX

NATIONAL PARKS ZONING PLAN

The zoning plan defines five zones: Unique areas, Wilderness Recreation areas, Natural Environment areas, General Outdoor Recreation areas and Intensive Use areas.

Class I

Unique areas. The distinguishing feature of these areas is that management objectives are aimed at the protection or preservation of the landscape rather than toward the onsite use of the area by man.

Class II

Wilderness Recreation areas. The distinguishing feature of this class is the controlled utilization of the landscape by man. The primary concern of management is the enjoyment of the landscape through a close,
personal contact with nature. Class II lands are roadless areas.  

**Class III**  

*Natural Environment areas.* The concept of the wilderness threshold best describes this land-use category. The area serves as a buffer between Class I or II land and the more intensively developed areas in Class IV. These lands form the natural backdrop which is so essential to many park features such as highways, parkways and lodges. The natural environment areas are critical in protecting the wilderness character of the park. Permissible development would be scenic, park roads.  

**Class IV**  

*General Outdoor Recreation areas.* These areas are those in which intensively developed recreational facilities are located or proposed. Included are major highways, campgrounds, and trailer parks, large day-use areas and similar facilities.  

**Class V**  

*Intensive Use areas.* The management and operation of the park requires land areas for administrative, operational or residential facilities. Lands in this category must be designated in non-critical areas. These areas should not be competing for space with land-use requirements in a higher category. They are to be designated in areas where they do not interfere with other park purposes.
DEMAND FOR RECREATION - AN ESSENTIAL TOOL FOR RESOURCE PLANNING

Gordon D. Taylor*

The methods available to planners of parks and outdoor recreation areas have been revolutionized within the last decade. Whether or not these planners have made the most use possible of the new techniques is not clear. Certainly they would have had to reorient their basic concepts and adopt a more sophisticated approach to the subject than had been usual in the early 1950's. The radical changes that have become available in planning offer the best possibility of providing solutions to conflicts such as those between use and preservation that haunt park managers. These conflicts still burst forth into public debate from time to time. The means to find the solutions exist; planners must have the wit to use them.

The new approaches to planning are growing out of research techniques now being developed in the field of recreation. Contributions to these techniques are being made by workers from many academic disciplines. It is the purpose of this paper to trace the development of one aspect of the new methods; the study of the demand for outdoor

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recreation and particularly some of the methods by which demand may be measured and how the resulting knowledge could be utilized.

Many parks people claimed, and some still claim, that the development of research techniques in recreation could not be accomplished. In moments of great condescension some maintained that even if the research efforts were successful they would be but scientific oddities. Parks existed in nature and no amount of sophisticated enquiry could change that fact. The large sums of money now being invested in this research indicate that there has been some success and that further success is expected. This success came about when people rather than natural resources became the focal point of study. Research into recreation demand will not assist in any way in the identification of another Banff. It will assist, however, in guiding the development and use of such a park.

The great pressures that people placed upon the limited supply of recreational resources aided the cause of scientific enquiry. These pressures forced a re-examination of the methods by which parks were located and developed. Clawson (1959 b) was one of the first to recognize in public that the possible demand for outdoor recreation would rapidly outstrip the ability of all areas to supply the space and facilities required. The problem resolved itself into such basic questions as whether all parks were alike, were they to be developed in like fashion, and were they all to be eroded by excess use. The logical approach was to determine what the pressures generated by an increasingly affluent society would be and what rational resource development policies could be established to achieve the joint goals of scenic preservation and recreational use.

Initial work in recreation demand was concerned with predicting the total number of visitor days that a given area would be called upon to accommodate in a given year (Clawson, 1959 a). Under this
concept all people or all groups of people visiting a park were assumed to be seeking the same experiences. In this way a market could be said to exist for a park such as Banff National Park. A later approach looked at the demand for each activity. Under this concept there was a market for camping, fishing, swimming, and so on. Demand was expressed in terms of a projected number of activity days for each activity. The planning problem became one of finding space and providing facilities to take care of the volume of use indicated by the projection. The nature of the task faced by the planner in these circumstances was stated succinctly by Ellis and Van Doren (1966).

The planner concerned with recreational demand is faced with two tasks. One is the problem of measuring demand levels for various outdoor activities in the future. However, he must also determine what spatial distributions the demand may take. The recreational system for a given activity presents a spatial pattern resulting from a complex interaction among people, facilities, resources and space. A change in any one of these, such as the conversion of resources to facilities by planning action, will distort this pattern. It is very important the planners and others in the recreational field be able to determine in advance what shape such distortions are likely to have, what magnitudes they might be, and to evaluate whether the distortions are beneficial or not.

"The State of Kansas" (undated) in a recent review of recreation concluded that:

Two factors appear particularly significant in determining the future recreational needs of the state: total attendance and participation by type of activity.

A study carried out by the University of Utah for the State Planning Program (1966) examined the participation ratio for individual activities. The survey covered a random sample of the state's adult population.

A third course for measuring recreation demand is now beginning to gain recognition. Instead of looking at total volume of visitors or at the expected participation in individual activities, interest is being focussed on the mix of activities that constitute a given recreational experience. Johnson (1968) put the problem this way:
We have had trouble understanding the demand pattern stemming from the Commission's focus on individual recreation activities. Its studies measured use . . . and use (or participation) in one year. Changing interests in the recreation product-mix are inadequately reflected in projections made from this static base.

In a slightly different context Wolfe (1966) concluded a study on recreational travel by noting:

A final point: It is extremely likely that the patterns of highway use are markedly different for cottagers, campers, day-visitors, and commercial guests. If this proves to be true, it is easy to see how complex the problem becomes of predicting the effect of a new highway on traffic patterns. The mix will be different, the traffic patterns will be different.

The key to the proper framework within which to study recreational demand was first outlined by Clawson (1959 a). At that time he developed the concept of the recreational experience which he defined as a package deal. It is now clear that the demand for any particular park which is, after all, a complex of resources and facilities is a number of different demands made up of the variety of activities that people may participate in at the site.

If we assume a park that offers facilities (or opportunities) for camping, picnicking, swimming, water skiing, fishing, hiking, and wilderness travel, we can hypothesize several demand schedules. First of all there will be the demand for the park as a whole. This demand will show the total number of visitors that may be expected under certain conditions of development and accessibility. It will not give a clear picture of the pressures that will be placed upon any given facility within the area. A second set of demand schedules will predict the pressure for each individual activity within the area; it will not tell us how the different activity demands relate to each other.

It is very likely that the demand for each of the various combinations of activities that are possible will be different. If this assumption is correct, then the demand for long-term camping and fishing will be different from that for long-term camping and swimming and so
on. A demand for long-term camping will tell little about the other variables included within the experience and could in effect, provide misinformation which would result in faulty planning and development--a misallocation of the resources available. Demand information developed on this approach should be the major product of any demand study.

We are thus faced with the obvious conclusions that each park or recreation area serves a variety of markets. While it is true that a general market for recreation could be described in the same way that an automobile market can be illustrated, such a market only sets the broad parameters within which the individual entrepreneur or manager must operate. As the automobile market is subdivided by such items in a variety of combinations as body type, body style, engine type, engine power, colour, size, power accessories, radios, tape recorders, and so on, the recreational market is broken down into a wide variety of activity and interest combinations that constitute the particular experience sought at any given time.

A family's or an individual's preference for a particular automobile combination probably changes very slowly over time. The same group's preference for a recreational experience can change quite radically. The experience sought in a few hours after work on a summer evening will be different from that sought on a Sunday, on a weekend or on a vacation. Thus a group may constitute part of several recreational markets at approximately the same time. In the analysis of data collected through the various facility-user studies being done as part of the Canadian Outdoor Recreation Demand Study, the combination of activities participated in during a particular visit will be examined. The analysis will be in terms of relating activity complexes to type of trip, type of accommodation, length of stay and socio-economic characteristic of the user. The detailed analysis may indicate that some of these variables are not significant, but until the analysis has been carried
out, they cannot be rejected.

The variety of data being collected and analyzed will permit the development and testing of a number of mathematical models. The use of models in recreation research is relatively new but the results that have been obtained to date indicate that such a procedure can be extremely useful. The early models developed by Clawson (1959 a), Trice and Wood (1958), Ullman and Volk (1962) and Taylor (1960) were based largely on population and distance. More variables have been added through the work of Knetsch (1965), Ellis and Van Doren (1966) and others. In a slightly different context, the work of Crampon (1966), Wolfe (1966) and Comes (1967), indicate the application of similar principles to the wider field of all recreational travel.

Before an adequate system of park and recreation areas can be planned and developed, it will be necessary to identify as many of the separate markets as is possible. It is through the development of suitable models that the multiplicity of markets involved will be defined. This identification will only come about over a long period of time but the eventual goal should never be lost. As the markets become known and the mechanism by which they operate are understood, it will be possible to make more rational allocations of resources to recreation. The differentiation between areas on a functional basis will be possible with the result that some areas will be able to be set aside for preservation while others will cater to more active recreation.

In addition these models will make it possible to test in advance the effects of a change in any of the related variables. The resulting information will enable planners to try out changes they propose, and also to be prepared for changes in pressures on the resource that may be caused by factors beyond the control of the particular agency concerned.

Parks which are dedicated for one specific purpose now have to be used for many purposes. The stated objectives of the area set forth one
goal, the actual practices in the area often indicate something quite different. The end product is confusion in the public mind and disputes between managers, groups of visitors and commercial interests. These dichotomous, trichotomous, or even worse situations will haunt park planners and managers until there is an understanding of the market mechanism. The subsequent translation of that understanding into a system of parks and recreation areas that will provide the widest possible range of opportunities as a reflection of the markets should be the goal of all park planners. These are broader applications of the concepts of recreational demand than in planning a system of park and recreation areas. The same principles apply to any aspect of the use of leisure time. People who are charged with the management of a community recreation program, of a cultural program, of a tourist development program, face exactly the same problems as do those who must manage the outdoor recreation areas. They are vitally interested in the markets they serve and can serve; how to measure them and how to predict their future behaviour as changes are made in any of the variables that play upon the market operation.

In all cases they serve a multiplicity of markets. There is not a single tourist market any more than there is a single park one. There are a great many markets, each requiring its own particular product combination for the satisfaction of the people involved.

Hence when conferences such as this one are held to discuss a particular kind of park, the participants must not only look inwards at the particular object under examination, they must also look outwards at the broad spectrum of leisure. Unless they take this broad look their approach to the problem may well be myopic. Each of the many constituent parts of leisure is important enough for independent study and discussion, but the wider perspective must be maintained, lest the whole pantheon of relationships that exist within leisure be overlooked.
The decision of an individual or a group to enter a particular segment of the leisure market at a given time is the result of the interplay of many variables, some known and some unknown. At times the decision may be to attend the theatre, to go swimming, to stay home. The result of any decision is to place a demand upon a particular complex of facilities and resources and not to place a demand upon all others. It is through an understanding of how these individual decisions reflect in group activity that effective plans and development for the use of leisure time will be achieved in an age where the problems of leisure and the means to utilize it are of increasing, possibly of vital importance.

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Public Attitudes to the National Parks

National Park planning and decision making being a function of government, the role of the public is first to decide what the National Parks are for and then to make sure that appropriate policies are followed. This may seem obvious, but the implications of that simple statement are enormously involved.

Canada has a National Parks Service second to none, but no administration in a democracy, no matter how competently staffed and directed, can plan realistically for the future without the backing of a widely-held, soundly-based conviction as to why we have National Parks.

So far in this country there has been nothing approaching a consensus on this point, although prior to the beginning of this decade the almost complete lack of public expression concerning the way the National Parks were being operated could logically have been construed by government as approval.

Since the original ten square miles surrounding the hot springs at Banff were set aside by order in council as our first National Park in 1885, the varied emphases of different administrations between development to encourage tourists and protection to conserve natural
conditions were never, until recently, a matter of serious public debate.

Up to the end of the last war, as far as most Canadians were concerned, the National Parks were remote, not only in distance and time, but also from the point of view of the cost of getting to them and accommodation once there. How successive governments in Ottawa decided the parks should be managed and developed was therefore of little concern to the average citizen and controversy, where it existed, was mainly politically inspired and of local interest only.

Canadians are now using the parks in unprecedented numbers, but it is doubtful if the average park-goer ever gives much thought to the purpose of the National Parks and what makes them distinctive beyond what he may read in a government folder. And if this is so, his impressions are almost certain to be muddled or only half formed. This is not said disparagingly, for it could hardly be otherwise.

Until the establishment of the National and Provincial Parks Association in 1963 and the newly-developed interest in parks of the Canadian Audubon Society at about the same time, there was no independent agency in Canada in a position to encourage a more penetrating look at the National Parks and how they should be used and managed than the often-quoted Section 4 of the National Parks Act:

The parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment . . . and . . . shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations.

As a statement of purpose, nothing could be more ambiguous. For those who like to think that the National Parks will be kept for all time in an essentially natural state, these words have a comforting assurance about them. At the same time, they make it easy to see nothing incongruous in calling for all sorts of activities and "improvements," each perhaps of little consequence in itself but which, taken together over a period of years, would inevitably add up to a major alteration
in the character of the parks.

Such inconsistency in outlook is simply the result of the philosophical vacuum that has existed in Canada so far with respect to our parks and wildlands in general. It would not be fair to blame past administrations for failing to define such a philosophy, especially when the whole force of tradition towards land and resources in our society is first and foremost in the direction of development and use for financial profit. We should remember, too, that the first National Parks in Canada were established with this object in mind. Tourism, to help make the transcontinental C.P.R. route profitable, has been cited as the main reason for creating Banff Park in the first place. In fact, it is doubtful if the Park would ever have been established had not these economic motives been uppermost in the minds of the legislators who drew up the 1887 Rocky Mountain Parks Act.

It is true that there were some protective aspects to that Act, such as the prohibition of leases, licences or permits that could "impair the usefulness of the parks for the purposes of public enjoyment and recreation," but these were apparently inserted for the benefit of the tourists, not from any conservation motive. The conservation movement had not yet been born. In fact before the National Parks Act was proclaimed in 1930, it was barely hinted that conservation was part of the government's responsibility towards the parks.

In a democracy, public administration reflects the prevailing concepts of the role and responsibility of government. If the administration of the National Parks in the past was lax and indecisive, particularly towards business and political pressures, allowing many of the parks to deteriorate into commercialized honky-tonk resorts as was claimed in an article in Maclean's Magazine in 1963, it is simply because the people of Canada themselves have been unsure about what
the parks are for. Encouraged at first to see them purely as money-making tourist attractions and later as havens of unspoiled nature, it is no wonder that confusion and controversy rages over what kinds of use are appropriate and what constitutes impairment. It is no wonder also that mounting frustration within the Parks Service itself drove an exasperated minister to cry out in the House of Commons:

How can a minister stand up against the pressures of commercial interests who want to use the parks for mining, forestry, for every kind of honky-tonk recreational device known to man unless the people who love these parks are prepared to band together and support the minister by getting the facts out across the country?

Conservation Organizations and Government Policies

The facts that the minister was referring to presumably concerned the kinds of pressure he was under to allow developments that were plainly for the short-term benefit of special-interest groups and not for the good of all Canadians of present and future generations. Undoubtedly he was thinking also of the facts necessary for the public to become aware of and concerned about the crucial issues facing park administrations everywhere as a result of the post-war surge in outdoor recreation.

With the Resources for Tomorrow Conference coming up, it was to be expected that the problem would get attention. Echoing the Administration's concerns, the Conference found:

There is need for an informed, organized, non-government association to promote the interests of park development and perform a watchdog role over those areas now reserved for park purposes.

Two years later the National and Provincial Parks Association of Canada was formed in answer to this keenly-felt need. Shortly thereafter a new administration, obviously encouraged by this development, proclaimed a detailed, comprehensive statement on National Parks policy, covering every facet of the use and management of the parks. The people
of Canada were at once faced with a choice they could no longer defer making.

Though not stated as boldly, the choice implied was this: either Canadians endorse a concept of conservation for the National Parks and see that they are planned and managed accordingly, or be prepared to write them off altogether as National Parks.

In announcing the new policy in the House of Commons, nothing could have been more unequivocal in support of conservation than the minister's statement—a viewpoint in sharp contrast to that expressed by our first Prime Minister, Sir John A. Macdonald, in 1887:

It [i.e. Banff National Park] is of the most varied description, broken by glens, valleys and undulations of every kind, and there may be places where the property may be used for industrial purposes without interfering with the beauty of the park as a whole.

In answer to rapidly changing conditions and increased ecological awareness, government thinking towards the National Parks has thus done a complete about-turn from its original prior commitment to economic objectives. In declaring its new policy in the face of certain opposition from some quarters and not knowing what support to expect from the public at large, the Government took a calculated risk.

The expected opposition showed itself immediately and has mounted with increasing vigour since. The crucial question therefore is: are the Canadian people aware of the crisis facing the National Parks and are they prepared to support a conservation policy and all that this implies? Without public support, any policy is meaningless.

As things stand, the answer to the first part of the question is clearly "no." How could it be otherwise? The news media seldom examine park problems in depth and the Government itself, for obvious reasons, is not anxious to publicize its difficulties.

Citizen organizations have traditionally been the means for
sharpening and crystallizing public opinion on conservation matters. In the United States particularly the tradition is strong, with the result that several well-supported groups function with great effect in the field of parks and wilderness preservation. Names like the Sierra Club, the National Parks Association and the Wilderness Society are household words. Here in Canada the situation is different. National conservation organizations have been late starters by comparison and are still weak and relatively ineffective in terms of membership recruitment and program.

Though on occasion they have fulfilled a useful watchdog function, efforts in this direction lose much of their meaning unless supplemented by a broad and continuing program of information and education carried out at the local and provincial levels as well as at the national level—something that has not yet been possible. Provincial organizations in Canada are concerned almost exclusively with provincial problems.

For the average Canadian, therefore, the only park crisis he is likely to be aware of is failure to find a vacant campsite with night coming on, a bunch of kids crying in the back of the car for their supper and a distraught wife wondering why they came on the trip in the first place.

If the public has no inkling that the very existence of our National Parks hangs in the balance and with conservation organizations having only a thin small voice and an even thinner pocketbook, is there likely to be enough support to enable the Government to carry out its policies and plans for the future?

While everyone is for conservation and against sin, the Government has given no indication of the criteria to be followed for balancing the use of the parks by people against the impairment of natural values, or at what point people, by their very numbers, deprive each other of the opportunity to enjoy the parks.
Admittedly, these are difficult questions and a great deal of research needs doing to find the answers. Nevertheless, the Government's policy is, in my view, weakened by its failure to stress that each park has a limited carrying capacity of visitors and that it is the Administration's intention to be guided by ecological and aesthetic considerations in the amount and kinds of use that will be permitted. A superficial reading of the policy is encouraging, but more careful analysis reveals that the guidelines for decision making are in many cases fuzzy and as wide open as ever to the winds of political expediency.

Take, for example, items 6 and 7 under the heading:

**Nature**

6. The construction of highways, fire roads, hiking trails, fences, townsites, artificial recreational developments and the like, are detrimental to natural history values in National Parks, but if essential should be developed so as to leave the least possible impact on nature and natural features.

7. Impairment of nature in general caused by visitor use or developments aimed at improving visitor use of a park should be kept to an absolute minimum. Any such impairment should be accepted only if it is justified by increased, improved or broadened use of the park in accordance with park purposes.

In both cases there is first an affirmation that the preservation of nature is the important point to be considered, then come qualifications—"but if essential" and "such impairment should be accepted only if it is justified"—that could negate the whole purpose of the policy.

An example of what can happen, lacking clearer guidelines for decision making, was the recent announcement that a four-fold increase in camping facilities, from 150 to 600 units, had been planned for Point Pelee National Park, a tiny spit of land of only six square miles jutting into Lake Erie and remarkable as a stopping-off point for a great variety of migratory birds and as the habitat of plants and trees not commonly found in Canada.

Obviously it was felt that this additional impairment of nature was "justified by increased, improved and broadened use of the park in
accordance with park purposes," although it is difficult to see how in view of the Government's rather explicit statement that "only when a National Park . . . is so small or fragile that the presence of a campground would impair the natural features that form the basic purpose for establishing the park should camping not be permitted."

As long as there is no better way for deciding the kinds and extent of development in the National Parks than the individual opinions of administrators and politicians, the way is open for the parks to slip in quality little by little, each step downhill relatively insignificant in itself and therefore going unnoticed until the parks cease to be National Parks except in name.

This is not a fanciful suggestion. The pressures that could bring it about are gathering momentum far more rapidly than the forces that are working to establish a harmony between people and the park environments.

First, there is the pressure from the increasing number of visitors. Present rates of increase of ten to sixteen per cent a year for all parks in Canada mean a doubling in park attendance over five years. Even if these rates of increase go no higher, it could quickly become politically impossible to hold the line against overdevelopment of the National Parks, regardless of the good intentions of the Parks Service itself.

Adding to these pressures are the efforts of special-interest groups to push proposals that are clearly at variance with the Government's objective to preserve for future generations the natural integrity of the parks.

Speaking for these interests in the Province of Alberta, the provincial government has charged that "the injustices and the threat to tourism that have arisen from the National Parks policy are caused . . . largely by a conflict between social progress and rigid adherence to concepts of wilderness preservation that are no longer applicable."
In its brief to the federal Minister of Trade and Commerce, the province urges a development policy for the Rocky Mountain National Parks that would transform them into a Canadian Switzerland, with small resort towns scattered throughout the valleys and a much wider range of entertainments and visitor service facilities. Backing up this argument in the brief is the statement: "by now the grapevine story is spreading all over North America that visitors should stay away from the Canadian National Parks unless they want to cope with crowds, queues, heavy traffic and poor service."

A similar, but more moderate, criticism of the Government's policy was expressed by a leading Calgary newspaper:

It is becoming evident that the restrictions in the parks policy are too heavy . . . A reappraisal in a manner calculated to put park administration and operation on a realistic footing is long overdue. All that is needed is a little commonsense . . . Tourists expect a respectable variety of service facilities . . . This means hotels and motels and restaurants and service stations and movie houses and swimming pools and many other of the amenities that have come to be associated with vacation habits.

A Calgary promoter was quoted in the same newspaper as seeing Banff become "an exclusively posh ski resort—the jet set playground of the future."

Few people at present have either the ecological understanding or the facts to enable them to evaluate these ideas and proposals on the basis of their ultimate effects on the parks. Perhaps half impressed by the arguments put forward in support of them and lulled by the soothing assurance of the National Parks Service that "All National Parks will be maintained and used so as to leave them unimpaired for the enjoyment of present and future generations," there is danger that many Canadians may find it easy to rationalize a much more lenient approach to the development of the parks than present policy allows, thus forcing the Government to do things that can never be undone and which all Canadians will later bitterly regret.
It is here that responsible conservation organizations have a vital role to play, by interpreting and publicizing the aims of conservation as it applies to the National Parks and by co-operating with governments to develop policies that will further these aims.

Conservation and the National Parks

At every resources conference, the need for more research is invariably stressed. An equally critical need, often overlooked however, is for clear presentation for public consideration of the choices and possible alternatives in conservation.

Whether or not the results of research aimed at long-term needs rather than short-run profits ever get translated into action is fundamentally a political decision. This puts the onus on the public.

While governments have a clear responsibility to assist the public in making intelligent choices, they can seldom do so directly on controversial issues in the resources field without serious risk. This is because, in government, policies are formed and carried out by separate and largely autonomous departments having in mind the needs and demands of the self-interested groups they serve. For this reason, the citizen organization becomes the essential instrument for making sure that the public is, in fact, given a choice.

In attacking the Government's National Parks policy, self-interested groups have acted entirely predictably, distorting the aims of conservation and heaping ridicule on its supporters. By taking and holding the initiative, they have forced conservationists into a defensive position, thus heightening the popular impression of conservation as a negative, anti-progressive philosophy.

To some extent this image is deserved. Conservationists tend to see their role solely in terms of saving natural values against forces of change that threaten to destroy them, instead of as the architects
of change along with the social scientists, engineers, urban planners and financial and resources specialists.

Change cannot be prevented. Man will continue to alter the face of the earth with increasing ease and rapidity. If conservation makes any sense at all under these conditions, it is in its ability to encourage a doctrine of social responsibility for the creation of sound, attractive and healthful environments in place of the present uncontrolled drift towards environmental breakdown—a situation that results very largely from continuing to accord priority to economic goals without regard to social and ecological imperatives.

It can be taken for granted that advocates of controls to limit the uninhibited use and development of land and resources in the interests of more habitable and enjoyable surroundings will continue to be pictured as crackpots and even subversive.

It can be assumed also that any suggestion that in our affluent society and in this enormous country we can afford such controls to enhance the quality and variety of outdoor recreational experience will be met with the protest that this is a highbrow view and that people want what they want—not what some politician or bureaucrat thinks they should have. Where National Parks are concerned, this means all the razzamatazz of resort-type recreational facilities and entertainments, networks of roads to open up the wilderness and more and increasingly elaborate campsites and other accommodations as outdoor recreation demand increases.

Such is the argument of those who fear that, given the opportunity, people would make a different choice—one that involves giving prior consideration to the inspirational and cultural values of our National Parks and the right of future generations to enjoy these values.

Conservation nowadays does not have to be defended against accusations that it is in conflict with social and economic progress. It just needs to be explained.
Conservation suffers from imprecise meaning—an advantage for those who seek to make it appear a harmless though perhaps useful activity as long as it does not interfere with the business of business and other "practical" considerations.

It is true that by giving undivided attention to these "practical" considerations, we have achieved a level of affluence never before possible and for this we can be thankful. It is also true that by thumbing our collective noses at any suggestion that we should give some consideration to maintaining pleasant and habitable surroundings at the same time, we have come dangerously close to the point where fulfilling such an elementary need may soon be impossible.

Maintaining and improving environmental quality is a fundamental objective of conservation—hardly an impractical aim in the present circumstances. Although conservation has a negative connotation, nothing could be more positive. As it relates to renewable resources, such as forests, soils, water and fish and wildlife, conservation implies management to ensure optimum yields on a continuing basis without using up or impairing the resource itself. No one nowadays argues against this management concept.

Though not usually thought of as such, a National Park is also a resource in its own right, and managing it to yield the values it has been established to provide is no different in principle from managing a forest. Both kinds of management have as their object the preservation of a resource in a way that will yield specific values indefinitely. The fact that the values of National Parks are intangible does not alter this principle.

As already noted, the Government's National Parks policy recognizes that certain developments and kinds of use are detrimental to natural values and should be kept to a minimum, but falls short in failing to make clear that ecological and aesthetic considerations must govern
in setting limits to use and development if the parks are to remain unimpaired.\textsuperscript{14}

While the public cannot be expected to understand the intricacies of ecology, the principles involved are not difficult to grasp. To appreciate the aims of park management and avoid being taken in by spurious, if plausible-sounding, schemes, the public needs to be made aware of these principles and have assurance that the Parks Service intends to be guided by them in planning and administering the National Parks.

Although the Government's park interpretation program is doing an excellent job within the limitations of a small budget and staff, park naturalists are inevitably restrained by their civil service status from relating the implications of conservation to government policy or to any situation having political overtones.

Interpreting conservation and establishing a climate of opinion on behalf of sound policies thus becomes the responsibility of non-government conservation organizations. I use the word "interpreting" here in its broadest sense. National Parks have many values, but possibly the most important of all in the long run is what they can mean for environmental quality everywhere.

The processes that make for ecological health, and hence tranquility and beauty in a natural landscape, follow the very same laws that govern when man shapes and manipulates nature for his own purposes. National Parks demonstrate these processes.

If we can learn from them and apply what we learn through science, art and technology, there is no reason why we cannot, if we want, create landscapes and communities that are as beautiful and soul-satisfying as nature herself can ever be. In setting aside as National Parks the finest examples of Canada's rich and varied scene and pledging to maintain them as "sanctuaries not only of nature, but for nature,"\textsuperscript{15}
we are, in effect, vowing the respect for nature that is the essential underpinning for such noble enterprise.

I suggest that this view of the National Parks is at once both more practical and philosophically appealing than seeing them in the popular context as places to go to "get away from it all." It is unrealistic to imagine that any park can be kept as an island of ecological response for very long if, in driving the nation forward for economic progress we don't give a lot more attention to environmental health in the rest of the country at the same time.

As I see it, therefore, interpreting conservation to the public means focussing on this broader concept of the National Parks. In saying this, I am not suggesting that the parks are not for people. I simply want to make clear that they have values that transcend their use as recreational areas in the ordinary sense, and that to realize these values the public must become aware of them and know what is involved.

The Need for New Policies

At the start of this paper I suggested that the role of the public in National Park planning and decision making is to decide first what the parks are for and then make sure that appropriate policies are followed. If it is agreed that the conservation of nature is the prime purpose of the National Parks, new initiatives are urgently needed if the Government is going to be able to fulfill this purpose in the face of an outdoor recreation explosion.

First on the list is the need for a National Outdoor Recreation Policy, the purpose of which would be to allocate Canada's resources for outdoor recreation so as to ensure for the future the widest possible range of opportunity in terms of variety, quality and availability. With the provinces having control of these resources, such a policy must be a federal-provincial venture with adequate incentives from the Federal
Government for provincial participation and co-operation.

The lack of a National Outdoor Recreation Policy is already forcing the Government to overdevelop the National Parks in some areas, threatening to make its Parks Policy a meaningless document, at the same time stalling the vitally needed expansion of the National Parks System.

Responsibility for correcting this unsatisfactory situation lies initially with Ottawa. The Government of Canada must be prepared to explore and adopt radically new solutions,¹⁷ not only in its relations with the provinces but also in the internal organization of the Government itself.

There is need for an Advisory Committee to the Minister, composed of ecologists and resource specialists outside of government who have knowledge and experience of the National Parks. The purpose of this committee would be to provide the Administration with the broad ecological perspective that is so urgently needed.

There needs also to be a clearer separation administratively between the Government's responsibility for the National Parks and its broader responsibilities in the field of outdoor recreation. Sooner or later, Canada will have to have an agency similar in function to the Bureau of Outdoor Recreation in the United States. The sooner the better.

As parks and outdoor recreation rate low in the order of the Nation's business, it is not likely that the Government will move quickly to introduce legislation for these new initiatives without strong encouragement from responsible conservation organizations.
FOOTNOTES


2. A. R. Byrne, Man and Landscape Change in the Banff National Park Area before 1911. (Studies in Land Use History and Landscape Change, National Park Series No. 1 The University of Calgary, 1968), pp.131-132.

3. Ibid., p.137.


RESEARCH NEEDS FOR NATIONAL PARKS
Robert C. Lucas*

National parks are complex entities, and in selecting and administering them we could draw upon an immense range of knowledge from a wide array of scientific disciplines. Most national parks have sections that run the gamut from wilderness to small cities, and the research needs are just as wide ranging.

First, we might ask if it is really worthwhile to try to list and organize all these research needs. With so many little-studied questions in the air, would we not be as well off with a more or less random choice of topics based on chance interests of researchers, accidental contacts, scientists' vacation plans, and "crash programs" when crises develop? Do we even know enough to assign research priorities? And if we do, do we have enough research manpower available, that is flexible enough to concentrate on high priority subjects?

I will leave some of these questions unanswered for now, and just point out that a relatively small research effort on such a wide variety of possible topics probably makes an attempt to concentrate and

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relate studies all the more necessary. Even if most individual research studies cannot be directed to high priority topics, there is something to be gained by increasing each scientist's awareness of the relation of his study to the whole system. Such awareness could both improve the study and make its interpretation in terms of park planning and management more effective.

PARK GOALS AND RESEARCH NEEDS

Research for national parks should be determined by park planning and management needs. Planning and management provide the essential perspective that defines research needs and suggests priorities for various lines of investigation.

The kind of management decisions involved in selecting and managing national parks, in turn, derive from general park goals. Two major goals are usually cited for national parks. One is the preservation of natural conditions. The other is provision for the enjoyment of these natural conditions—in other words, a special kind of outdoor recreation, using the term recreation in the broad sense of inspiration, esthetics, and so on. There are other benefits to be gained from the maintenance of natural conditions, such as providing living museums, reservoirs of biological material, subjects for research, aids for teaching, and so on, but many other areas also serve these purposes and they are probably secondary to enjoyment of natural conditions in national parks.

The two major goals are in tension. The particular kind of enjoyment a national park is meant to provide apparently depends on the natural quality of the environment. But enjoyment is impossible unless people visit the park, and people make an inevitable impact on natural conditions. Yet, the two goals—preservation and enjoyment—seem inseparable and, in fact, might be considered as one. The tension between the goals must be managed rather than eliminated by concentration on
either preservation or enjoyment alone. Neglect of either goal would seem to miss the national park idea. At one extreme, nature could be totally preserved for its own sake and no visitors allowed. This would do away with all enjoyment except the indirect satisfaction that might come from knowing an area was preserved. At the other extreme the park could become a general recreation area, but the natural conditions would be largely lost, and the special sort of enjoyment they afford also would be lost.

The national parks of Canada and the United States have similar goals and share most research needs. In fact, national parks share a great many research needs with other sorts of recreation areas. Both the national park wilderness and the developed, intensively used portions of parks have counterparts elsewhere. The Wilderness Act (P.L. 88-577, 1964) applies to both national park and national forest wilderness in the United States, emphasizing their similarity. Many provincial parks in Canada and a few state parks in the United States contain wilderness that differs from the national parks little more than the national parks differ from one another. The problems and research needs for national park campgrounds, roads, sanitation systems, and other facilities are shared with many other recreation areas, as are questions of interpretive efforts, recreation economics, and so on. The national parks, because of their complex nature, probably could supply examples of almost every type of recreational question. The combination of natural conditions and substantial recreational use, and the tension between them, is the most nearly unique characteristic of the national parks, and many of the most urgent research needs fall here. But even this tension is not limited to national parks. This commonality underlines the need for co-ordinated research that draws upon related studies of areas under many jurisdictions. This paper will discuss research in terms of national parks but the ideas should have wider applicability.
The national park goals of preservation and enjoyment suggest three key parts of the whole interrelated system, each with its associated research needs: first, the natural environment itself, and the effects on it of use and management; second, the visitors, and their interaction with the environment, with each other, and with management programs; third, the interaction of areas and forces outside the parks with parks, park use, and park management. Research on these three topics relates to park selection, to the development of policies to achieve general goals, and to management actions.

All of these topics are dynamic. They need to be studied as processes operating over time. Trends must be described and projections made. Some management decisions require information about the past and many programs would benefit from a clearer historical view.

Each of these three research topics requires some discussion of what it includes and how it relates to management.

**RESEARCH ON THE NATURAL ENVIRONMENT**

*Inventory*

The current natural environment needs to be inventoried objectively and in detail. Vegetation is probably the component of the natural environment most in need of being inventoried. Vegetation is fundamental to animals as their habitat, it can be altered greatly and quickly by man as land forms cannot be, and it is a major part of the scenery. But animals, water, and other components also need to be inventoried. An inventory has value for many management purposes (protection, locating developments, interpretation, etc.). It serves as a base for judging any management action. It is also an essential base for many sorts of biological research.
Historical Ecology

It has been suggested that the national parks in the United States aim for a "vignette of primitive America," which would require that "the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man."\(^7\)

This concept could be misinterpreted as striving to hold a park as it was on the day the first explorer topped a ridge and gazed at it.\(^8\) The objective seems to be rather to come as close as possible to the sort of scene that nature would have provided without modern civilization's influence. Change would be a recognized, accepted, and desired part of this scene. The static "snapshot," in fact, would be completely unnatural, and impossible to achieve.\(^9\)

Historical ecological research is needed, then, not to describe plants and animals in detail for each specific site as they existed on some historic day (which may have been generations before civilization made any imprint on the area), but rather to suggest what the typical natural conditions might be without technology's influence and how conditions varied as nature's rolls of the dice came up one way or another.

Probably only a few sheltered spots are still entirely in the natural, unmodified state. This requires that earlier conditions be investigated by historical methods and by biological sleuthing from clues in long-lived trees, snags, fossils, evidence of plant succession, and so on.\(^10\) Even if present conditions were unmodified, knowledge of natural variability would be enhanced by historical information.

Forces of Change

The forces that produced the natural conditions and the changes in these conditions need to be assessed as well as the modern influences.
Some natural influences were relatively constant—soil and climate, for example. Some processes were continuous and fairly gradual—growth and death over time, particularly, and even evolution itself. Other relatively infrequent and irregular forces were very powerful—fire, flood, windstorm, avalanche, and insect and disease epidemics. The modern influences include the natural forces, although often in modified form, plus recreational use, trampling livestock, exotic plants, insects and diseases, extinctions, drainage of adjacent land, and many more.

**Comparing Present Conditions with Natural Conditions**

With the sort of information discussed so far, it would be possible to compare the present condition of a park with a reconstructed picture of its natural condition, both in terms of plant and animal communities and the forces that make up their environment.

Furthermore, projections of future change under the continued status quo could be developed and compared to the natural situation. This comparison is not quite like pairing up two maps or photographs and checking them point by point. It is more a matter of holding up the present situation against a statistical normal distribution of past natural conditions to see how far the present deviates from the mean, how atypical it is, or whether it even belongs to the same class at all. Using trend data, it could be determined if the park was moving toward more typical natural conditions or farther away. These same questions could apply to potential new national parks.

**Developing Ecological Management Techniques**

If these comparisons show that the goal of maintaining natural conditions is not going to be achieved under the present management, plans could be made to reintroduce missing or reduced influences, or to find substitutes for them, and to minimize or eliminate man's effects, or to take steps to counteract these effects. For potential parks the
magnitude of the restoring or healing task could be weighed.

This is not a simple task. The goal of maintaining or restoring natural conditions can only be sought, never fully achieved. For example, the extinct passenger pigeon cannot be returned and white pine blister rust introduced from Europe probably cannot be eliminated. Influences from surrounding land may be reduced but not excluded. Complete isolation is impossible. The phrase, "a vignette of primitive America," suggests this since a vignette is a picture that fades at the edges.

Fire is probably the most altered influence. It was a major force in natural ecology, destroying and creating, and producing what the first explorers found in most places. Modern fire control is very effective, with radios, airplanes, parachutes, gasoline engine pumps, bulldozers, chemical retardants, infrared scanners, and so on as tools. As a result, fire has been greatly reduced as an ecological force for the last generation or so. But a complete hands-off approach to fire control in parks is also out of the question. Danger to lives and adjacent areas dictates some sort of control, and the parks and wilderness areas are too small a remnant and too valuable for us to allow a very large part to burn at one time. Furthermore, where fire has been excluded for decades, fuels may have built up conditions for an unnaturally severe fire.

The challenge to research and management is to develop the ability to let fire approximate its natural role as closely as feasible. We need to learn to control the unwanted effects of fire while allowing it back in the ecosystem. With better knowledge of park fuels, fire danger, natural fire barriers, and new control methods, and with better weather forecasts, park managers could consider letting at least some natural fires burn freely. The limitations inherent in this approach might suggest evaluating prescribed fires as a supplement, or ways of
producing similar effects somehow without fire.

The Need for "Managed Wilderness"

Deliberate planning and action, such as in the example of fire, seem necessary to offset the unintentional or unavoidable effects of civilization. The alternative, often called "preservation," seems self-defeating. Since the "preservation" alternative usually excludes certain natural forces, especially fire, it produces not preservation, but sure, steady change to something unlike the North American wilderness. The fact that the goal, like almost all goals is not 100 per cent attainable is no reason for not trying; the impossibility of achieving perfect justice or health does not stop efforts to improve law or medicine.

To some people, human manipulation to create natural communities is philosophically unacceptable as a contradiction in terms. Many other people, including a number of ecologists, accept the need for intervention. The real choice seems to lie between unintended, accidental, inescapable man-caused change away from natural conditions on the one hand, and conscious planning to minimize and offset man's impact on the other. Obviously, some approaches to ecological management are preferable to others, and better knowledge can help us to find ways of working with nature, developing a light touch and sensitivity, but total non-interference is simply not one of the choices, whether we like it or not.

The problem of offsetting man's direct impact, on campsites especially, is shared by national parks with many other sorts of recreation areas. Past research indicates that even light use produces large changes. Better ways of choosing more durable sites, increasing site durability, restoring deteriorated places, and controlling visitor and horse use are needed.
Recreational use poses a whole set of new, separate problems. I have already argued that "parks are for people," but in a special way. Sacrificing the quality of the park to people not only destroys the park, it cheats the people also. Managing a park and its use to provide a special experience calls for knowledge of visitors and their interaction with the natural environment, with each other, and with management efforts.

Knowledge of people, their activities, and their ideas could help park managers make decisions about limiting the numbers of visitors, controlling or influencing what they do, or striving for less use of some crowded areas or more use of lightly visited areas; and decisions as to what sorts of roads, campgrounds, visitor centres, or trails to build, where to build them and where not to, whether or not to reintroduce fire in the ecosystem, or what kinds of information programs to provide. Evaluations of park needs and of the suitability of potential areas, and many other management choices could be improved by this knowledge.

This does not mean that policy need be dictated by the attitudes or responses of present visitors. An opinion poll or a use survey is not a simple, direct prescription for management. Visitors' desires may be impossible to fulfill, short-sighted, selfish, or in conflict with others' ideas or with basic policies. Both attitudes and behaviour of visitors may be based on misinformation, may be changeable or capable of being changed, may be different from those of potential visitors, and may fail to reflect those of the dissatisfied "dropouts." Even with the best survey techniques, what people say does not always indicate what they would actually do. Attitudes and perceptions need to be analyzed and interpreted in a broader context and related to ecological knowledge and park objectives, but they cannot be ignored.
I will try to discuss visitor studies under three headings: use patterns, use quality, and values. The three topics overlap; all involve studying human behaviour and the factors associated with it. The term "use" is employed rather than "recreation" to make it clear that the whole experience is of concern, whether it is considered recreational, inspirational, educational, or esthetic in nature.

**Use Patterns**

We need a basic description for recreational use, as we did earlier for the natural environment. How much of what kind of use takes place where and when? Measurement methods need further development, but headcounting alone is not enough; knowledge of the activities or behaviour that make up the park experience are also needed, as well as a description of visitors in social and economic terms.

Very uneven use patterns seem common in many recreation systems. The distribution of use can be considered on many different geographical scales—between parks in a system, within a single park, and within a single area or development within a park, such as a campground. Wide variation in use is characteristic of all of these scales, and poses important management problems.

Within the national park system in the United States (excluding Monuments, Parkways, Seashores, etc.), parks vary from well over 6 million visits down to about 10,000—a 600-to-1 range. National forest wilderness areas vary through a range of more than 1,000 to 1 in use. Some of this variation may be a fairly clear expression of limited appeal or remote location, but many of the differences are not easy to explain with any accuracy. Planning for the future in existing areas and assessment of potential parks would be made easier if planners understood the various factors in drawing power and how changes in them may affect use.
Use varies within a particular park or related area, also. Some campgrounds, lakes, streams, roads, overlooks, and trails are heavily used while others are not. Part of this variation is inevitable, and some of it is probably desirable (since people's objectives and areas' capacities both vary), but often the imbalance makes inefficient use of capacity, and reduces the quality of the experience. We do not really understand the basis for this variation; if we did, presumably the capacity of developed sites, at least, would have been matched more closely to use potential. If park managers wish to disperse use more evenly, they need to know which factors affect drawing power, and how strongly, and how they interact. In a program to move accommodations outside parks, knowledge of how and why people choose places to stay would surely be helpful. The ultimate objective would be sufficient knowledge to predict site use accurately enough to guide efforts to influence use distribution.

Some factors are not subject to control, however. This would be true, for example, of topography or the size of a lake. Some types of manipulation of factors influencing use, for example stocking fish, may be inconsistent with national park objectives of maintaining natural conditions. If variables that can be altered by management, such as road design and location, access, and information, do not influence use strongly enough to achieve the desired use patterns, direct regulation would need to be considered. Research to predict the response to different sorts of regulations or fees would then be necessary.

Use can also vary greatly within a single recreation development, such as a campground, in ways that may be inefficient and hard on the resource. The reasons underlying this location behaviour also need study to enable planners to reduce extreme variation in use intensity.

Better knowledge is also needed of the basis for the type of activities people engage in, and the times at which they participate.
These aspects of use need to be studied in relation to the characteristic of both people and environment, including not only the physical resources but also management, information, fees, and similar matters. A basic social and economic description of park users—a sort of census—could help in relating studies of one park to others.

Use patterns—amount, type, timing, and location—are influenced by people's objectives and by what they know and think about the park environment, rather than directly by the environment itself. Studies of what people do and also of what they say about their objectives, awareness, and attitudes are essential for understanding and managing use, and even more so for management directed at the quality of the experience.

**Use Quality**

High quality is, or should be, the essence of the visitor's experience in a national park. This is a special kind of quality and it must be measured against park goals. Measurement of quality, even imperfectly or indirectly, is a critical need. Imaginative approaches are called for, probably drawing upon disciplines such as psychology and the developing techniques of the behavioural science-oriented architects and designers. Satisfaction is part of the quality of a park visit, but not all of it. The depth of involvement, the learning, the changes of attitudes that may stem from a park visit should also be included. Measurements such as these are the essential yardstick of success (or failure). In their absence, as now, we can only count visitors and visitor-days. Yet, the total recreational output from a national park should be defined as the number of visits times the quality per visit. Quality is not constant, and quantity alone can be a treacherous guide to decision making. More use does not necessarily mean more output; a lake producing 2,000 carp is not producing more
than one with an output of 1,000 trout by recreational standards.

Quality may be inferred partly by what people do, and which areas and activities they choose. This sort of interpretation could come out of the use analysis discussed above, and must draw upon it, since other factors, such as access, must be held constant if inferences as to preference are to be drawn from choices. Quality also may be judged by park experts, perhaps by a panel of independent appraisers. Finally, visitors might be questioned, perhaps both before and after, using psychological attitude scales, and so on. All of these approaches have shortcomings, and probably some combination would serve planning needs best.

Some important factors in providing high quality national park experiences may include the resource base or natural environment, use type and intensity, facilities, experience, knowledge, and tastes—and the social setting in which use takes place.

Research is needed on visitors' (and potential visitors') knowledge, attitudes, preferences, and responses to the natural environment, and their responses to man's influence on the environment. Even if it were assumed that the environmental management goal were set by ecological considerations alone, knowledge of people's preference could indicate needs for explaining or interpreting conditions and changes. Also, the "ecological prescription" is likely to have some leeway or include some range of conditions that would be equally natural. In this case, knowledge of the relative attractiveness or interest of alternative acceptable natural environments could be helpful.

It seems unlikely, however, that ecology can be a completely sufficient guide. The dual nature of the park goal—the maintenance and enjoyment of natural conditions—suggests that people's ideas must be included. Absolutely unmodified nature appears impossible, policy statements to the contrary notwithstanding, especially if parks are
visited and enjoyed. Some modification is inevitable, but how much is acceptable? In part at least, acceptability depends on visitors' standards. How much wear and tear on soil and vegetation can take place before the quality of the visitor's experience is affected? How is "deterioration" defined by the public? How is "natural" defined? Some parks, especially in eastern Canada and the United States, have been very much modified by past uses, such as logging and agriculture. This is a matter of historical record and obvious to the trained observer, but how much recovery must take place before most visitors will consider the scene natural again? The relation of this kind of information about attitudes to interpretative programs is important, and will be stressed in several instances below.

Research on carrying capacity, or the optimum intensity of use, is much needed. How much use is too much? How are quantity and quality related? The visitor's perception of crowding and his response to it undoubtedly varies greatly between people and parts of a park. The use standard that is appropriate on the roads and at visitor centres is probably very different from that of the back-country trail. Some degree of solitude may be a particularly important part of the park wilderness experience, as the U.S. Wilderness Act suggests, and the decline in the quality of the wilderness experience with increasing use intensity might set an even lower capacity for a particular area than would be indicated by ecological guidelines. Raising the capacity of the wilderness portion of a park will probably be much more difficult than expanding the capacity of the developed part, since wilderness capacity is largely a function of land area, whereas the capacity of developed sites is relatively more dependent on capital inputs than on land. As a result, regulation of use may be more necessary in the wilderness.

The quantity-quality issue must be related not simply to visitor
enjoyment but to the quality of the experience in terms of park goals. Some visitors may accept or even prefer the hubbub of a crowded park. But, crowding beyond some point may reduce the quality of the contact with nature that is the park's reason for being. This issue seems critical, even if some visitors are seeking something else and do not object to heavy use. The national park, like any other recreation area, serves and is intended to serve only a part of the wide range of varied outdoor recreational opportunities, and it must not lose sight of this.\textsuperscript{32}

Research can help management by defining visitors' objectives better and suggesting needs for alternate areas or visitor education. Key questions are: which kinds of visitors and which kinds of use are most dependent on the specifically national park qualities of the environment, and which could actually be accommodated better elsewhere from the viewpoint of both the park and the visitors? Beyond the question of amount of use, do certain types of use interfere with the kind of enjoyment the park is intended to provide without themselves producing this particular kind of experience? Waterskiing and speedboating might be suspect, for example, and visitors' attitudes and responses to such uses should be investigated.\textsuperscript{33}

The last set of critical attitudes focuses on management programs, including construction, regulations, fees, information programs, and so on. Attitudes concerning facilities, size and layout of campgrounds and other developed sites, trail and road standards, building design, and the like need to be studied in relation to park goals. For example, completely divided, double-track road systems have been proposed as a way of coping with heavier park traffic while providing a sense of close contact with the natural scene.\textsuperscript{34} The two lanes could usually be out of sight of each other, they could be narrower, with more curves and less extensive cuts and fills, and reduce the distracting tension of watching for oncoming traffic. Techniques for evaluating roadside scenery are
fairly well developed and could be useful in testing the extent to which one-way roads change the visitor's perceptions of the landscape and his reaction to it. The same approach could be used to evaluate novel modes of transportation, such as monorails.

Research on the effects of regulations and fees should provide knowledge not only on the quantity of use discussed before, but on its quality as well. What kind of use would be encouraged or discouraged by various policies, and how would these changes relate to park goals? For example, how does length of stay (less than a day and a half on the average in U.S. National Parks), relate to the quality of the visitors' experiences? Are short stays superficial and incapable of meeting park objectives? Perhaps a minimum length of stay is as desirable as a maximum limit. At the least, it would be useful to have information on the effects of encouraging longer stays and deeper involvement as against hurriedly "doing" as many parks as possible through a windshield.

Information and education programs are the major alternative to regulations and probably a preferable alternative to most people. A better understanding of the audience and of various ways of communicating with them could be useful. What sorts of visitors with what sorts of prior knowledge and experience are contacted by different approaches, and who is missed? How much can behaviour be influenced by education and interpretation? Is it possible to improve the visitor's experience and reduce inappropriate and incompatible activity through information programs?

If ecological research points to a need for some reintroduction of fire, how will the public react to this? Has a generation of effective fire prevention publicity created a rigid, negative opinion, as did the campaigns for buck-only deer laws in some places? Or are visitors, who probably are generally above average in education, already partially aware that fires are not necessarily unnatural or undesirable
in all situations? How well would they grasp explanations of the difference in the role of fire on lands managed for park and wilderness values rather than for timber or other commodities? This issue exemplifies well the need for attitude research to go beyond describing current attitudes. Knowledge is needed on who thinks what, how strongly, and why they feel as they do. How do experience and background affect ideas? How can ideas be changed through education, exposure, and time?

One last example will suffice for this section. How does the administrative use of mechanical equipment, such as helicopters, chainsaws, and bulldozers, affect the quality of the national park experience, especially away from the roads? It has been proposed that park managers use helicopters in place of horses in the back-country, since horses are destructive of the physical environment. But, how many visitors who would watch an approaching packstring with interest and a sense of fitness would feel that the day had been shattered by the intrusion of a noisy "chopper"? In a national park or similar area this is a relevant question just as much as what ironshod, half-ton horses do to meadows. Again, how much could education shift opinions?

**Values**

Studies of the value of the flow of services from national parks are also needed. The value of visitors' experiences, the symbolic values to non-visitors, and the scientific-educational values seem to be the main sorts of benefits. Values include economic estimates such as simulated market values and possible psychological and physical benefits. These need to be studied as they are affected by management and policy alternatives, not just described as a whole. This sort of information could help in setting park policies and plans, in assessing potential areas, and in determining the benefits from additional parks.
RESEARCH ON THE RELATIONS OF PARKS TO OTHER AREAS AND ACTIVITIES

No national park exists in isolation, and many aspects of its relations to other areas and activities pose important research questions that will not be answered if research attention is limited to the parks themselves.

Relation to Other Recreation Areas

One of the most important needs is to view a national park in relation to other parks and recreation areas as part of a total, interconnected system. This would include the park's relation to all the recreational opportunities and areas in its region, and to alternate or substitute areas in the whole system of a country or even a continent.

With regard to the park region (which should be defined as a relatively large region for places of national and international significance, such as national parks), the key questions involve the role of supplementary areas and facilities, such as commercial accommodations, state parks, reservoirs, ski areas, and so on, in relation to particular national parks. Light could be shed on this question by a better understanding of interrelations between parks and their regions in terms of present use patterns and by studies of the knowledge and attitudes that underlie use patterns. A key question is how much current park use takes place either because of a lack of alternatives or a lack of knowledge of them. This applies particularly to types of recreation whose appropriateness in national parks is questionable.

Research on the availability of recreation resources in the region would also help. In addition, general outdoor recreation research that would aid in defining recreation resources and resource quality for particular purposes could contribute to improved national park planning. In fact, any research that leads to better overall outdoor recreation planning is certain to benefit national park planning as well, because
of the close interconnections between parks and other recreation areas. How a particular park or potential park fits into the system of similar areas is also important. How much alike are various parks or related areas? Are they really one system and substitutes for each other to some extent, or is uniqueness in character and appeal more the rule? How does location affect the ability of one area to substitute for another? Can gaps in the system be identified objectively?

Relation to General Living Conditions

A national park is related not only to other recreation areas, but to the beauty and liveability of the whole country, and especially of the cities where most people live. "At Yosemite the tremendous weekend influx of visitors from Los Angeles ... is as much a commentary about the limitations of the environment of Los Angeles as it is about the attractions of Yosemite." It has already been pointed out that the overall relation of parks to social and economic characteristics of society and to population location and transportation systems needs to be studied, particularly for projecting demands and planning future park areas.

Economic Impact

National parks are not established to subsidize the economy of underdeveloped sections. Parks have their own and different justification. If an economic boost is what is needed, there may be better ways to achieve it. Still, some national park proposals are presented and defended in these terms (incidentally producing a difficult trap to escape from if later efforts to protect the park and the park visitors' experience become necessary).

However, no decision on national park or related area establishment or management can ignore costs and benefits, no matter how lofty the ideals. National park proponents often resist economic analysis,
partly on the grounds that park values are beyond price and probably partly because they associate economics with past anti-park propaganda. This is understandable, but it may be unfortunate. It is quite possible that thorough, objective economic analysis would be far more favourable to park, wilderness, and esthetic concerns than many people suspect. Economic analysis does not need to rule out recognizing intangibles. In any event, economic analysis is as applicable to national parks issues as any other sort of scientific study.\textsuperscript{40}

Benefits of park use have already been discussed under the value heading, but the effect on the regional and local economy should also be studied.\textsuperscript{41} This effect may include both gains or indirect benefits to business, jobs, incomes, property values, and taxes, and on the other hand, losses or indirect costs caused by the exclusion of some activities, such as mining, logging, or grazing from the park.

There is also a need for research on the direct costs of various ways of planning and managing recreation systems. Recent research on United States National Forest campgrounds, for example, has cast some doubt on common ideas about the savings associated with large campgrounds.\textsuperscript{42} The cost question is the other side of the coin on the question of quality as related to management programs. Both kinds of data are needed for decisions.

Economic analysis along these lines could help, at least in major resource allocation decisions such as the North Cascades or Redwoods. It is unlikely that simple answers can be provided, but the range of uncertainty could be reduced, and the value judgments focussed on key factors. Studies in depth of more-or-less normal situations could help greatly in developing the objective methods needed to improve upon the "crash" studies rushed through after controversy erupts.
Assigning priorities is one of the hardest things we do. This is just as true in our own lives as in research. We could all confess our personal failures to assign priorities and stick to them. Some general aspects of priorities can be discussed, but any detailed assignments must be made relative to particular areas, their objectives, and their use.

The management problems associated with people may be more in need of early research answers than the ecological management issues. I see three reasons for stressing social research in the near future.  

First, the human processes operate faster than the natural systems in most instances. Visits to national parks have been climbing rapidly for as long as statistics have been collected. Visits to United States National Parks have almost doubled since 1960. Attendance at Canadian National Parks has been growing even faster, about twelve per cent a year. Eventually, a slowing down and levelling off in attendance is inevitable—a continuation of past trends would require everybody to spend all of his time in the national parks before too long—but use may go much higher before any slowing down takes place. The effects produced on the parks by this use are changing just as fast. Impacts on the natural communities are also doubling every six or eight years. The experience of visitors is changing rapidly, almost faster than we can comprehend. Management decisions about developments, roads, accommodations, and so on, are compounding, and once made are very hard to reverse. In contrast to the rapid change in use and associated problems, most ecological changes are gradual enough to provide at least some grace period. Research on carrying capacities and the quantity-quality relationship seem particularly in need of early study. Foresight is especially valuable in this situation; it is much better to set an upper limit on use before it is reached than to try to cut back on established use.
Research related to redistributing use within a park or within a region is essential to implement any program of use control.

Second, there is less already known about the human questions. Much general ecological, wildlife, range management, and forestry knowledge now available bears on park natural environment management. Park managers' training generally is in these fields and the problems are more familiar and more tangible. An overgrazed meadow can be seen and measured with standard methods; visitor satisfaction cannot. Biological information also probably can be transferred somewhat more readily from one area to another and from one time to another than social data, which may more often need to be specifically tied to a particular time and setting, although general principles and theories should emerge from specific studies if these become more numerous in the future.

Finally, there is probably less relevant research underway at present on the social questions than on the biological problems. Without some added emphasis and support this will continue to be true. There also may be something of a "critical mass" effect. A small amount of research can hardly help but be scattered, with gaps that make the application to park management uncertain and inadequate. A major social research effort could lead to reinforcement of one study by another, and to a much more integrated body of knowledge.

On the other hand, there is an urgent need for park-related biological research, too, and this cannot be postponed without losses. Time marches on ecologically, and lost opportunities to describe earlier conditions and lay a base for measuring change are lost forever to a considerable extent. Historical research is inherently more difficult and less detailed than study of what is actually present; and historical study becomes harder and less precise as more time passes. What would we not give now for thorough, detailed records of park conditions 30, 50, or 100 years ago?
I believe that a substantial research program with a mission of aiding national park planning is essential, and that some sort of research organization, or at most several such organizations with this central concern, are necessary to give continuity and leadership to research.

Mission-oriented or applied research organizations could carry out needed studies, particularly the broader, long-term research. They could also encourage and support needed research by others, especially university scientists, and seek to relate such studies to other research so that they add up, and are not just unrelated fragments. The research organizations could also serve park managers by acting as central reference services to find existing knowledge and interpret it in terms of park problems.

Present research efforts are very small in comparison with the importance of the problem, whether this is measured in employees, budgets, or broad social significance. If research could make possible even very modest improvements in park planning and management, this could easily repay the costs of a research program many times the size of the present effort. The parks and related areas are too valuable, and change is too rapid and too often largely irreversible to continue to settle for our present inadequate knowledge and reliance on intuition and guesswork.46

FOOTNOTES


3 Enrique Beltran, "Use and Conservation: Two Conflicting


9Spurr, op. cit.

10Heinselman, op. cit., p. 444; Leopold, op. cit., p. 12.

11Leopold, op. cit., p. 5; Spurr, op. cit.


13Darling and Eichhorn, op. cit., p. 54; Beard, op. cit., esp.
928


14 Leopold, op. cit., p. 13; Heinselman, op. cit.


16 Stephen H. Spurr, Wilderness Management (the Horace M. Albright Conservation Lectureship VI), Berkeley: University of California School of Forestry, 1966; Leopold, op. cit.; Beard, op. cit.; Heinselman, op. cit.; Darling and Eichhorn, op. cit.


20 U.S. Department of Interior, National Park Service, News Release, "Park Travel up Five Percent in 1967," June 16, 1968. Great Smoky Mountains National Park reported 6,710,000 visits; Isle Royale 9,500. Visits per acre varied from over 2,000 to 0.02, or 100,000 to 1.

21 Unpublished Forest Service Recreation use information for 1967. Estimated use varied from 500 to 747,000 visitor days.


23 Darling and Eichhorn, op. cit., pp. 56-61.

24 L. D. Love, Summer Recreational Use of Selected National Forest Campgrounds in the Central Rocky Mountains, U.S. Forest Service Research Paper RM-5, 1964. Ten per cent of the camping units observed were used
almost constantly at the same time that about twenty per cent were never used.


28 Marion Clawson and Jack L. Knetsch, op. cit., p. 164.


30 Elwood L. Shafer, Jr., "Forest Aesthetics—A Focal Point in Multiple-Use Management and Research," reprinted from 14th International Union of Forestry Research Organizations (IUFRO) Congress Papers, 7, section 26, 1967. The discussion here is in terms of the "classical" natural national park, but if the objective is a particular historical, man-altered landscape, the question could be rephrased in terms of the closeness to this desired scene.


33 For one example, see Lucas, "Wilderness Perception . . ."


35 Donald Appleyard, Kevin Lynch, and John R. Meyer, The View From


37 Darling and Eichhorn, op. cit., pp. 55-56.

38 Hart, op. cit.; David N. Milstein, "Systems Analysis for Outdoor Recreation," Western Council for Travel Research Bulletin, VI(3):1-4, 1968. The importance of a regional viewpoint also has been stressed particularly by the National Parks Association, and rightly so, I think.

39 Darling and Eichhorn, op. cit., p. 78 (postscript by William H. Eddy, Jr.).


41 For a discussion of the methods and problems of measuring the value and impact of a national park, see Norman H. Morse, An Economic Evaluation of a National Park, Wolfville, Nova Scotia: Acadia University, 1965; also, Clawson and Knetsch, op. cit., pp. 211-286.


43 Clawson and Knetsch, op. cit., p. 4.


45 Heinselman, op. cit., p. 444.

It is safe to say that ecological considerations had almost no part in the establishment or design of any of the Canadian National Parks. Many of them of course were brought into being before this aspect of science reached a stature at which it could contribute. It is equally safe to say that most of the ills that beset our national parks have an ecological component, and arise from proceeding in the absence of policy objectives framed in ecological terms, and from decisions made in ignorance of ecological alternatives and consequences.

A reading of the history of our national parks makes it clear that the predominant motive in their establishment has been the desire to maintain under public ownership, for public enjoyment, areas of unique scenic beauty or possessing other unusual natural features regarded as national treasures. Thus on this continent hot springs, geysers, stupendous canyons, badlands of special attraction, great cave systems, beaches where these are scarce, lakes in arid lands and mountains of special appeal have acted as focal points around which parks have been created.

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Public enjoyment has been the avowed purpose of the parks and there can be no better. Serious questions have arisen however over the interpretation of this objective in more precise terms. It has been generally accepted that all forms of life should find protection in the parks and that our recreational activities should not include the so called "blood sports." It has been a matter of principle also that commercial destructive exploitation of any of the natural resources is inconsistent with primary objectives. Bitter controversy however still revolves around the appropriateness of highly organized competitive sport requiring considerable ecological alteration of the parks and catering largely to spectators.

In 1963 the United States Parks Service took a bold step forward in arranging for a thorough review of its policies with respect to the natural environment. As an outcome of its year of study the Leopold Committee proposed that in future parks policy and practice be based upon one novel principle.

The goal of managing the National Parks . . . should be to preserve, or where necessary to recreate, the ecologic scene as viewed by the first European visitors. As part of this scene, native species of wild animals should be present in maximum variety and reasonable abundance. Protection alone . . . is not adequate to achieve this goal. Habitat manipulation is helpful and often essential to restore or maintain animal numbers . . . Active management aimed at restoration of natural communities of plants and animals demands skills and knowledge not now in existence. A greatly expanded research program, oriented toward management needs must be developed . . .

This is clearly based upon ecological considerations. It makes it obvious that the full potential of the parks can only be developed in that context, and that environmental considerations are paramount in imposing constraints on our activities within the parks.

It is my purpose today to step beyond the generalizations in which principles must be couched and to refer to several more precise examples of the role of ecological science in the design and operation of parks.
It is now widely recognized that national parks have a much wider role than merely the provision of opportunity for the enjoyment of majestic scenery. Human ingenuity in designing ways of enjoying the environment is limitless and within the spectrum one identifies many forms of recreation that are appropriate to the natural or relatively unaltered environment. Beyond these however lie other roles not directly related to recreation. The parks serve as wildlife refuges, and, even more important, within their boundaries are preserved large segments of many ecosystems that are elsewhere rare or gone in the unaltered state. Each is an immeasurably complicated web of interrelated organisms, a treasure house of highly evolved genetic components that may some time serve man in ways not yet imagined. Each is also a store house of untapped knowledge available to researchers of the future, preserved as examples of the circumstances and mechanisms in environments unaltered by man. Each of these functions can be of almost equal concern at least in the larger parks, but wise management within today's expanded vision of the contribution of national parks to this and future generations demands a new sophistication of those responsible and a novel and more diversified supporting team of experts.

The ecologist has a vital role to play from the earliest negotiations that may lead to the establishment of a new park or altered boundaries for an existing one. It is at such times that boundaries can be adjusted to provide a maximum variety of habitat, flora and fauna, or to include areas of special value for viewing or for research. Then too, the admixture of summer and winter ranges for wildlife can be considered to provide the park with control of sufficient of all necessary wildlife seasonal ranges so that it can assure survival of nucleus regardless of changes outside the park. At this stage also wildlife problems can be anticipated and plans made for their avoidance. Areas where misuse of land has been proceeding can be given special study
and plans drawn for their exclusion, or inclusion depending upon the opportunities for redress.

Ecology and Physical Developments

It is in this area that the concerns and competence of the ecologist and the Regional Planner converge as each seeks for the constraints that principle and environment place upon their responsibilities. In any region some forms of habitat will be relatively scarce, others abundant. In the Rocky Mountain area, for example, the low elevation grassland slopes and the shrublands that are the winter ranges of the large game animals are in short supply while conifer forest is present in abundance. Under these circumstances recreational developments, highways, aircraft landing strips, campsites and all the trappings of human use should be undertaken in the conifer stands wherever possible, leaving the grass and shrubland for their more valuable purpose. In neither Banff nor Jasper Parks has this rule been followed with the result that hundreds of acres of valuable winter ranges have been consumed by roads whose primary purpose is to take people through the parks—not to provide enjoyment of them. The development of nature ways, low speed, winding byways for low density use, offer opportunity for fruitful collaboration between the planner, ecologist and engineer. Only the ecologist can specify the areas these byways should traverse. Their primary purpose is to provide recreational enjoyment, not transportation routes, and the engineer's task is to facilitate the primary purpose with all the skill and imagination given him. Meadows where game may be viewed will be skirted, salt licks and bedding grounds will be approached from the appropriate side, choice groves of trees will be left intact, ecological areas reserved for study will be by-passed entirely, fills and excavations will be kept to a minimum, hills and curves are a feature of the landscape to be enjoyed and lived with in sensitivity— not seen as a challenge to the bulldozer. Straight stretches of road
are to be avoided like the plague, unless they serve the recreational objective, they invite speed and boredom. Where lake shores or river banks are approached the objective becomes minimum disturbance for maximum artistic exposure of scenery and ecological diversity. The peak or glacier framed by trees, the beaver pond, the pondweed bed where moose will be seen morning and evening, exposed just enough and from the best directions for viewing and photography. Many small turnouts will be essential where one or two cars (not more!) may pull off the roadway to better enjoy the scene. There is no such byway in our parks today; to develop several would be a major contribution to national enjoyment. I would urge that the first one be named after the engineer with the skill and imagination to meet the challenge that the ecologist presents to him. He will be a rare species worthy of such commemoration.

After thirty-eight years spent in our parks I become progressively depressed by the complete failure of the highway engineers to respond to the unique demands inherent in national park roadways.

A subject of increasing concern is the impact on the environment of growing hordes of people. Trampling accelerates erosion, changes the characteristics of the flora, frequently to the encouragement of introduced weeds.

In Canada we have not yet identified the central ecological goals in our park management. Those adopted in the United States are worthy ones, even if difficult to attain. It is urgent that we define our own objectives as without them we are merely groping our way from one problem to the next with nothing on which to focus in deciding between alternative routes. Inevitably an ecological policy will involve us in new demands for information. To guide a flora into predetermined ways requires detailed understanding of the processes of biological change with succession, and the determination of the critical factors in the environment that guide and govern the changes. The trick is to steer
the processes toward our objectives without appearing to intrude. Many
details of human interaction with the environment in our national parks
have been discussed by the Canadian Audubon Society in its brief to the
House of Commons Standing Committee on Northern Affairs and National
Resources (1966).

Wildlife in the National Parks

I have already proposed that one of the conditions to be provided
in the design of a national park within which seasonally migratory large
game are a feature, is the control over the winter ranges necessary to
provide for the survival of nucleus populations exclusively within the
park.

At the same time we have become aware recently of the vexing
problem presented by excessive populations of certain large herbivores
that develop under park protection. The elk is a frequent problem
animal as it seems to lack some of the sensitive mechanisms certain
other species possess that permit them to respond to crowding by
reduction of reproductive rate short of starvation. The occurrence of
big game populations in excess of range capacity present problems of an
ecological nature—overgrazed rangelands on which the more fragile
plants are exterminated, accelerated succession into unpalatable species,
erosion of hillsides and the exclusion of herbivores that compete less
successfully. The removal of the surplus brings troubles largely
political in nature. So far we have not encountered the bitter jurisdic­
tional debates that have beset our American colleagues, and in Canada
surpluses have been successfully removed by park officials with maximum
devotion to the objectives and minimum disturbance to other life.

It is sometimes possible to plan the park boundary so that part
of the winter range of each herd lies outside and excess animals can be
removed by public hunting. This was possible on the east boundary of
Waterton Lakes Park and helped to reduce the elk problem there. However
many wintering populations develop such close allegiance to parts of the winter range that they refuse to move out even when feed is better elsewhere. This can complicate attempts to manage excess numbers of some species.

Major predators such as wolf, grizzly and mountain lion present special problems that have not yet been solved. They are important elements in the park faunas, but only the very large parks are large enough to provide the total range necessary for the maintenance of viable populations. Wolves present the largest problem due to their mobility. One wolf marked by me in the Rocky Mountain Parks was recaptured more than 100 miles from the den range. The park populations of these species are becoming increasingly valuable as they dwindle and vanish over much of the rest of Canada. Already the national parks provide the best opportunities for studying these mammals in order to acquire the information essential to their conservation.

With these species each park has its own problems, to be solved as an outcome of local research that exposes the available alternatives. The occasional accidents involving grizzly bears present special problems, because of their emotional content that tests the resolve and ingenuity of management. We have paid too little serious attention to the various ways of avoiding such accidents. I urged such studies twenty-five years ago, but to my knowledge the task has yet to be assigned.

Both for large herbivores and their carnivorous predators buffer strips between the parks and adjacent agricultural or ranching areas help to prevent conflicts of interest. However parks elsewhere (vide Nairobi) have had to fence potentially troublesome boundaries and that solution may become more widely necessary here. Elk Island Park adopted it years ago. Fenced parks, however, present ecological problems of their own as under these conditions it becomes even more difficult to manage the total environment in the direction of re-establishment and
maintenance of primitive conditions and there's more tendency to adopt a "ranch" concept of big game.

Changes in plant cover can produce ecological problems of a different category. The inexorable march of forest succession onto the critical winter ranges of the Bow and Athabasca valleys in Banff and Jasper Parks is gradually bringing us closer to some difficult decisions. Many of these winter ranges owe their existence to forest fires. They support a substantial part of the wintering populations of elk and deer as well as bighorn and moose. Their proximity to main highways makes the game easily accessible for viewing; it also makes it possible to apply 100 per cent fire control and to frustrate the normal mechanism for periodically setting back forest to grassland. Thus succession is steadily returning these ranges to spruce and pine in which feed potential is low and visibility obscured. We should be actively studying the alternative means for setting back the succession and maintaining the grasslands. If we don't, the wildlife stocks will be sharply reduced and the enjoyment of them will become more difficult. Yet the purposeful use of fire in a national park is hard to accept and at this stage we must admit that we lack the skill and knowledge to use it. The potential ecological consequences of various forms of action will be an essential element in such research.

Ecology and Human Health

Two aspects of this subject are of particular concern--the impact of wildlife upon domestic water supplies and the presence of animal parasites and diseases that can also attack man. Many mountain streams flow through heavily used winter ranges and drain bottomlands well populated with beaver. Conventional water treatment can provide water safe for human consumption despite its load of animal excrement. But some planning that provided for the use of streams that did not emerge from densely occupied animal ranges could lessen or avoid the conflict
Some of our parks harbour sylvatic strains of plague, Rocky Mountain fever, tularemia as well as Echinococcus—all of them potentially transferrable to man. Here again a thorough knowledge of the biology of these organisms can be used to direct human use of the park in places and ways that minimize the risk.

It is quite obvious that the full spectrum of objectives available to a national park can only be achieved by the studied involvement of ecological considerations at each stage of the planning and operation. No planning team can be fully effective if it lacks or ignores ecological data. The day to day operations will have constant demand for similar information. Even such hallowed precincts of the engineer as the location and design of roads, campsites, townsites, trails, refuse disposal can no longer be left to decisions based solely on engineering data. All have environmental consequences, and all should acknowledge constraints arising from their role in the overall objectives of the parks. Habitat management and the maintenance of full diversity within the living environment, the maximum opportunity for varied levels of sophistication in the enjoyment of the living organisms and the preservation of the genetic materials and the unaltered natural environments with their potential for new knowledge and future benefits to man, must be central to enlightened parks policy today.

REFERENCES


Summaries and Discussion

Chairman: N. Simon


SUMMARIES

SIMON: Mr. Brooks will speak on Planning a Canadian National Park System—Progress and Problems.

BROOKS: Unfortunately for me, this Conference caught me in this change of jobs and I find that I am trying to wear two hats now.

In my paper, I tried to point out that the basic problem of the national parks today is its incompleteness and the fact that for all intents and purposes it is a static system in an age of rapid and dynamic change.

The present system has other problems of course, many of which have been aired at this Conference.

The national parks have a conflicting responsibility in attempting to follow out the intent of the Act—how does one use and yet preserve. The zoning approach, I believe, is the best answer to this seemingly insoluble problem. It is physically, economically, and politically possible to apply. Most other solutions fail on one or all counts.

The leasing situation is a monstrous problem in which all the
errors of the past have been inherited by the present administration. But here again I believe the department has made an honest attempt at a solution which recognizes their basic responsibility to all Canadians, yet is as fair to park residents and entrepreneurs as possible.

Through the policy statements, a bold attempt was made to define what is acceptable in a national park and what is not. Imperfect as they may seem in the eyes of those who would take the extreme at either end of the use versus preservation scale, at least these statements were a solid bench mark—a beginning point, which no minister previous to Arthur Laing had the courage to spell out before.

I believe the National Parks of Canada have come a long way in the last decade in setting the stage for proper management of its lands and even though I am now wearing a provincial hat, I would be prepared to defend much of what has been done.

Now, I would not want you to go away thinking that all is well in the management of our national parks. What I am saying is that what has been done in the last decade or so is generally in the right direction. It is what has not been done that worries me. It is in the realm of new park acquisition that the National Parks of Canada must register their greatest failure. The growth of the system has been practically nil for forty years and this in spite of a rapidly advancing frontier which is obliterating any possibility of national parks in key areas; in spite of an obvious need in the future to distribute the massively growing visitation over a greater number of parks; in spite of the fact that the present system, due to the location of its major units, really only caters to the more affluent segment of our population.

Mr. Chrétien, the Minister of Indian Affairs and Northern
Development, spoke of adding forty to sixty new parks to the system by 1985. He also obviously recognizes the present failing. With due respect to his view, I do not believe he is facing the realities of the present situation which make it unlikely the provinces will make these lands available. 1985 is only seventeen years away. Seventeen years in the other direction takes you back to 1951, and since 1951 only two rather small parks have been added to the system—or one every five years.

Yet the jurisdictional problems and federal policies which have inhibited the growth of the national park system still exist and there is no evidence of change. A province has to acquire the lands for a national park and turn them over to the federal government free of all encumbrances. It would seem that if it is indeed to the national benefit that such lands be designated a national park, then surely it is a national responsibility to provide the often considerable funds required in their acquisition, and perhaps even to compensate the local government units for the loss of tax revenue which such subtractions from the assessment role often entail.

The cost of acquisition is certainly a deterrent to the province but even more unacceptable is the fact that once these lands come under federal jurisdiction, the province has no say whatsoever in their management.

Obviously, the resource management practices which go on within park boundaries must relate to those which take place outside and vice versa. Also, a national park profoundly affects recreation and tourist patterns throughout a region, making correlation of park systems at all levels essential, as described so well in Mr. Hart's works.

What I am getting at here, of course, is that even though
national parks must be managed by a federal agency, there must be a formal input to that management from the related provincial agencies. This implies a formally constituted national parks advisory board which could perform a variety of valuable functions such as advice on policy, review of plans, organization of public hearings, focusing of special skills such as are found in universities, and generally involving the laity. Mr. de Laet's paper describes a somewhat similar scheme with regard to provincial parks.

I do not see where such a national board would in any way weaken the authority of the federal department where the ultimate management decision must lie. Rather, it could greatly strengthen national parks endeavours and lessen uninformed public pressures on both administrators and ministers alike. Most of the controversy in the past was due to the absence of such a forum for exchange of ideas.

With a national parks advisory board and with more realistic federal policies toward the acquisition of lands, I believe the forty to sixty new national parks will become a reality.

My paper has, of course, been confined to national parks, as is the theme of this Conference. Yet I find it increasingly difficult to think of national parks in isolation from other park systems and other resource management related to recreation needs.

It seems to me that if there is one common theme running through this Conference, it is a realization of these relationships. There is also, I believe, a growing uncertainty on the direction of this nation with regard to conservation, preservation, and recreation in general. We seem to be floundering.

Could it be that we have reached a stage in the growth of Canada where we must look in much greater depth on the implications of land for these very special purposes and their relationship to
basic human needs. Mr. Scott mentioned yesterday that these matters are not just a matter for civil servants and professors to discuss. I must agree with Mr. Scott.

We need a far more comprehensive look at this whole problem, a dialogue which will fully involve all strata of our society. Out of such an enquiry or series of hearings could come a wealth of data which, when analyzed, might give the basis for much needed national and provincial policies on this very complex aspect of human need and management of resources.

SIMON: Thank you Mr. Brooks. The next paper, Demand for Recreation--an Essential Tool for Resource Planning, will by given by Mr. Gordon Taylor.

TAYLOR: Recreation has never been looked at as a commodity for analysis purposes to any great extent. And it seems to me that really it is no different than any other commodity. What we need to do is to understand the market mechanisms which make it work. In other words, we do not have a demand for recreation as such, except in a very broad scale. But what we have is a demand for a whole variety of things which people do with leisure time. And until we know what these demands are much more precisely than they are now, it is very difficult to make rational allocations of resources. It would be as if the automobile manufacturers made only Cadillacs. All the people that wanted Volkswagons would have to drive a Cadillac, and sometimes I think in our provision of recreational lands to the public, we are in this unhappy situation. We are trying to provide Cadillacs to Volkswagon users--and it does not always work.

I think that it has been said before but it is worth emphasizing, that no parks exist in isolation and no individual park exists in isolation. These areas are all related--and very closely related. You can draw this relationship right from your backyard.
on out to the most extreme wilderness that you could think of. The very obvious reason is that if a person makes a decision to have a barbecue in the backyard, to drink beer or to watch television, he is not going out to a public park. I think these are the kinds of things which we have to understand before we can begin to make reasonable allocations of resources. Now, the theme of the panel this morning is Planning for the Future and I do not think we are going to do that by looking back and crying over past mistakes. We have got to be prepared to look ahead and I think as Mr. Brooks has pointed out just before me, we have got to find new solutions, new methods of operation, before we—all of us who are concerned with this business—can provide the Canadian people with an adequate system of recreation areas. And I use that in its very broadest context.

Mr. Brooks has suggested the involvement of the province. I would go even further and I would think that the zoning of parks may have to be done by jurisdictional basis. In other words, we might want to think in terms of a park region in which more than one administration would be involved in the management of those lands. In this way—if you take an ideal situation—the core area might be a national park fulfilling its preservation role. It could be then bounded by a provincial park and then on out to a provincial forest and on out to the Crown lands or the private lands. This would not be joint management; it would be joint planning with individual management by the proper agency concerned. In this way I think you could overcome some of the problems of the rather large land requirements which are now needed for national parks.

I do not think it is reasonable to expect in this day when there is a tremendous concern about the proper use of resources, that large areas, such as national parks tend to be, can be devoted
to that single use. But I see no reason why that should not be the essential core of the area and the core will be defined in a variety of ways depending on the purpose for which the national park is created. In some cases, this core can be quite small; in others, it is still going to have to be large. Then your protection for that core through the buffer zones comes through the other administrations. Now this presupposes a good deal of co-operation and good will but it may be a more adequate solution than attempting to do it all under one agency.

As Mr. Brooks has pointed out, resources are a provincial responsibility. This has been fairly clear throughout our constitutional history. So that the allocation of resources to any use really comes down to a matter of good provincial planning—and then co-operation with other agencies for the allocation of lands which they may require.

SIMON: Thank you. The third paper, *The Role of the Public in National Park Planning and Decision Making*, will be delivered by Mr. Gavin Henderson.

HENDERSON: We must remember that nothing that has been said and done during these last few days is likely to have much effect until and unless the public gain similar understanding. It does not matter how good a park service we may have or how dedicated to a policy of conservation it may be if the public does not know or care what national parks are for and is not prepared to back such a policy.

We heard Professor Nash state his conviction that Canadians are fifty years behind the Americans in their appreciation and understanding of wilderness and the conservation of natural environments. I think he is right. We do not have the strong tradition here that exists in the United States. We have had no Thoreau in Canada, no John Muir or Stephen Mather, and no great public figure
like Theodore Roosevelt to arouse in us an appreciation of our heritage and a determination to conserve it while there is still time.

Until five years ago, there was no citizen's organization in Canada to be the voice of Canadians on behalf of their national parks. The National and Provincial Parks Association which was established in 1963 to do what the Sierra Club, the Wilderness Society, and the National Parks Association have been doing for so long, so successfully in the United States has had a hard struggle even to stay in business let alone initiate and carry out an effective program. All this does not mean that Canadians are basically any less appreciative of their heritage of nature than Americans. It simply means that until very recently we have not suffered the pressures that are now causing us to become concerned over the quality of our environment, including the availability of accessible open space for the use and enjoyment of nature which previously, we took for granted. It is no wonder that most Canadians looking at the map of Canada can say, "So what, who needs wilderness?"

I am not going to document again the pressures that are threatening the quality of our national and provincial parks and our ability to set aside and preserve the many areas that are still needed. I simply want to stress the absolute importance of a strong citizen organization at the national level if all we have been discussing here these last few days is not going to be just a big waste of time and money. While the government's National Parks Policy with its emphasis on conservation was an important milestone, it does not mean a thing if the majority of Canadians are not prepared to back it and assist the government in putting it into effect.

There are three major roadblocks here. First, there is the
deliberate assault on the conservation philosophy behind the government's policy by well-organized groups anxious to exploit the parks for commercial gain.

Secondly, there is the general ignorance of the public concerning national park values and the measures needed to protect and preserve these values.

And thirdly, there is the massive, creaking machinery of government itself that badly needs oiling and in some cases, new parts to enable it to carry out its policies and stated objectives with respect to the parks.

It is the purpose and function of the National and Provincial Parks Association to help to clear away these roadblocks by being the watchdog over our parks against the continuing threats from many quarters, by carrying out an effective nation-wide program of information and education, by advising and nudging governments with positive, well-considered recommendations, and by co-operation with all other national, provincial, and international organizations having similar objectives.

With regard to nudging and advising governments on these matters, in the short time that we have been in operation we have made some significant recommendations, that have been commented on by Mr. Brooks this morning, and similarly by Mr. Taylor. In 1966, we made a submission to the Standing Committee of the Department of Indian Affairs and Northern Development calling for a national outdoor recreation policy—not a federal government policy, but a national policy involving federal and provincial co-operation—with federal leadership, leading, we hope, to the establishment of an organization or a body at the federal level similar to the Bureau of Outdoor Recreation in the United States.

We have also been greatly disturbed by the matter which Mr.
Brooks raised—the lack of progress in developing new national parks. It seems completely outdated to have to stick to these requirements that the provinces turn over lands free of all encumbrances. We suggested a method of getting around this—not to substitute for national parks but to complement them—whereby lands would be left in provincial jurisdiction but managed according to nationally laid-down criteria.

We also recommended to the previous Minister, Mr. Laing, what Mr. Brooks has just mentioned, and that is an advisory board on national parks. I might mention that when Mr. Frame, our President, and I went to see the Minister, he personally seemed very much in favour of this idea. We feel in particular that there is the need for a better ecological perspective within the administration than there is at the present time.

I think the matter of hearings is very important and this is something I hope our association will deal with in the future. When the present provisional master plans are put before the public for their consideration, I think it is most important that hearings be held in different parts of Canada on the individual parks. For instance, I do not think it is reasonable to have a hearing just in the Calgary region on Banff Park or the Edmonton region on Jasper. These are matters concerning all Canadians and there should be opportunity for all Canadians to comment on these plans.

At yesterday's session Mr. McKim remarked that a policy was now being developed with respect to the use of ski-doos in the national parks. Well, my feeling is that this is the time for the government to consult interested organizations while the policy is being drawn up and not to wait until after it has decided what should be done—and then be subject to all sorts of criticisms and lobbying one way or the other. There also seems to be a great opportunity
that is being missed by the Parks Branch to collaborate and co-operate with universities in the particular areas where the parks happen to be: for instance, Calgary in this region, and in the Maritimes, the various Maritimes' universities. There is a great opportunity for research but the tendency is to hire consultants without using universities which could fulfill this role to the advantage of both the universities and the Parks Branch.

SIMON: Research Needs for National Parks will be given by Dr. Lucas.

LUCAS: A research needs paper or talk is not really a very enviable assignment. It is extremely difficult to avoid making it a listing with all the excitement of the inventory list from a large department store. But I am going to try to avoid listing research needs this morning. I intend to try rather to make some general remarks about research needs to try to place research needs in a perspective and make some suggestions about relative priorities.

National parks are extremely complex entities. I think this has become increasingly apparent throughout this Conference and I think that it has been the reason for some of the difficulties of communication that we are not all really thinking and talking about the same thing when we refer to a national park. In order to lay the groundwork for any discussion of research needs, I will have to define what I mean by national parks or at least give you my assumption with which I have worked.

It seems to me that the national parks include but are not synonymous with at least three major kinds of management areas. They are, they include, or may include, but are not synonymous with research natural areas. The same thing is true of wilderness areas and finally, recreation areas. All three of these tend to overlap but no one of them alone conveys the essence of the national park. And this breadth and complexity of the national park suggests that
the research needs also cover an extremely wide range and are very complex and diverse.

Research Needs, which is the title assigned to me, must be defined, I think, by the information requirements for park management and planning. We are talking about applied research, I think, when we discuss research needs. Research opportunities are not the same thing necessarily as national park research needs. Just as an example and without meaning any particular criticism of our host country, the Cosmic Ray Observatory in Banff National Park is an example of a research opportunity within a national park which has no relationship to the research needs of the national park.

The kinds of information needed for park management and planning in turn depend upon the national park objectives. We have tended, I think, at times here to have something of a debate between two rather polar viewpoints on the objectives of the national parks; the one stressing natural preservation, the other stressing recreation. This sort of people-preservation paradox has always tormented those concerned with national parks in both the United States and, I believe, Canada. However, it seems to me that these two goals are really inseparable. The national parks are meant to provide a particular kind of experience dependent upon the natural conditions in the national park. It seems that this tension between preservation and people must be managed, must be lived with, must be handled in the most imaginative way possible rather than eliminated by an exclusive preoccupation with one or the other.

I think that most of the very urgent research needs tend to fall in this tension zone. This sharing of problems between national parks and other kinds of recreation areas underlines the need for co-ordinated research that draws upon studies of the whole outdoor recreation system, of which the national park is only one part. I
think that research needs can be conveniently classified under three main headings. One would be the natural environment and the effects on it of use and management. Second would be the visitors and their interaction with the environment, with each other, and with management efforts. And thirdly, the interaction between the national park and its use and management, the interaction between the national park and areas and forces outside the national parks. All three of these problem areas are dynamic and I think they must be studied as processes operating over time. I think we do need historical views even if we do not always learn from our past mistakes and I think we need to emphasize and identify trends and attempt to make projections and predictions.

I will very briefly mention an important example in each one of these problem areas.

In terms of research on natural environments, I think probably the vegetation is the most critical element. It is fundamental to animals as habitat. It is subject to very large and very rapid modification by twentieth-century North American culture and finally, it is a major component of the scenery. And I think historical ecological research is a prime need. We in the United States have our Leopold Committee recommendation that the United States National Parks aim for a vignette of primitive America. This I would interpret as meaning that the goal should be trying to come as close as possible to the sort of scene that nature would have provided without modern man's influence. Change would be a recognized, accepted, and desired part of this scene. And I think that in order to work at this kind of a goal, historical ecological research is needed to indicate what the typical natural conditions were.

In terms of research on recreational use, we have a whole
new set of problems which are subject, I think, to research and which must be examined much more intensively than they have been. As I said, I think "parks are for people" but in a special kind of way, and managing the parks for this special experience requires knowledge of the visitors and of potential visitors and their ideas, their activities, their knowledge, their attitude. I might just mention that I do not for a minute believe that policy in national parks or any other recreation areas needs to be dictated by the attitudes of the present visitors. An opinion survey is not a simple prescription for management for a good many reasons. But we do need to know who thinks what, how strongly, and why. We cannot cavalierly ignore the people. We have to interpret their attitudes and knowledge; we have to place it in a perspective of the objectives of management for the area. We have to reconcile conflicting desires but I think we ignore it at great danger.

I think perhaps the most urgent human research need concerns the question of quality. We cannot even measure recreational quality crudely at the present time. And as a result of being able to measure quantity and count heads, but not quality, I think we have a dangerous bias built into our national parks and in fact, in general recreation planning. Related to this is that research on carrying capacities or optimum use intensities seems especially critical. How much is too much? How are quantity and quality related? Is the problem more one of conflict between types of use than a reaction to numbers? I am speaking here of carrying capacity in terms of the effect on the experience of the amount and type of recreational use rather than on physical changes in soil, vegetation, and so forth, recognizing that both of these need to be studied and need to be related. One reason, I think, why this problem is of such high priority is that foresight is so tremendously valuable in
this situation. Attempting to head off an over-use problem before it is developed or to prevent the development of incompatible types of use before they become established is so much, much easier than attempting to lock the barn door after the horses have been stolen.

This is especially a problem in terms of the wilderness component of the national park. In the United States at least, our rather shaky statistics would indicate a very rapid growth in the use of wilderness or back-country areas. Our national forest figures indicate something like two or three times as rapid a growth in wilderness use as in the use of the developed campgrounds and picnic grounds since the end of World War II. We have, in other words, a rapid increase in use, declining alternative opportunities as the unofficial wilderness becomes rapidly covered with roads—and I think that diminishing returns set in faster in terms of what we can do in intensified management or in increasing the capacity of the wilderness area. I think wilderness recreation is more dependent upon land area than its competing or alternative types of recreation which really depend more upon capital inputs than land area. And as one result, I think management or regulation of wilderness use will probably become necessary sooner than for other types of recreation.

My third area was research on the relation to other areas and activities. As we have been reminded, national parks do not exist in isolation. But I think we need to know more about the relationship of the national park to alternative or supplementary or substitute areas. One of the things that I suggest we need to know more about is the level of awareness and knowledge on the part of the public of these alternatives. A number of people have stressed the need for a diversified total outdoor recreation system and I endorse that completely. But wait, there are two other things that
we have to have to make a diversified recreation system fulfill its purposes. One is information on the relative balance between various sections or components of this total system; and the other need is an informed public so that people with their diverse desires can choose diverse recreation areas which correspond to what they are seeking.

Finally, a couple of remarks about research priorities—and I suspect that this is going to provoke some response. I think the management problems associated with people are more in need of early and increased research attention than the ecological management issues. I see three reasons for stressing social research in the near future. First, the human processes, I think, operate by and large at a much more rapid rate than the natural ones. Visits to the United States National Parks have doubled since 1960, and the figures that I have looked at indicate that the Canadian National Parks are experiencing even more rapid increases in attendance. This means that everything about the national park experience is changing at a rate which is almost too fast to comprehend, including, of course, the impact of visitors upon the park as a physical resource. And also associated with this rapid increase in use, the management decisions, the development decisions, new roads, new campgrounds, new this, that, and the other thing, are compounding and building up rapidly; and these are the kinds of decisions that once made, are the most difficult to undo.

Secondly, I think that we already know more about the biological aspects of the national parks than we do about the social aspects. We can draw upon more existing and I think relevant knowledge from fields such as ecology, forestry, wildlife management, range management and so on, than we can in the social science sphere.
Thirdly, there is much less current research being conducted on the social science side of the picture than there is on the biological. This is not to indicate that I do not recognize an urgent need for park-related biological research and this cannot be postponed without losses.

Present research efforts are very small in comparison with the importance of the problem, whether you measure this in employees or budget or broad social significance. If research could make possible even some very modest improvements in park planning and management, this could easily repay the costs of a research program many times besides the present effort. I think that the parks and the related areas are too valuable and change is too rapid and too often largely irreversible to continue to settle for our present inadequate knowledge and our reliance on intuition and guesswork.

SIMON: Thank you Dr. Lucas. Our final speaker is Dr. Cowan who will speak on *The Role of Ecology in the National Parks*.

COWAN: It is hardly necessary to reassert to this audience that the original motive for the establishment of the national parks was to provide, under public ownership, opportunities for the retaining of recreational possibilities in perpetuity. I think it is hardly necessary either to reinforce the fact that a second major role for these lands has been emerging; that they should serve the needs of science through access to relatively unaltered natural areas, not only for the sources of information as yet unlocked that these contain, but also for their component of highly valuable, highly evolved genetic material that we are almost certainly going to find a use for.

Returning to the first role, that is, recreation in the largest sense, I have referred in my paper and other speakers I am sure before me, have referred to the recommendation of the Leopold
Committee that examined the national parks and their objectives in the United States. To me the important thing about the Leopold Committee's recommendations was that they clearly indicated that it was not adequate to identify only ecological objectives, but that the proper purpose of the managers of the parks was to conduct themselves in a direct managerial sense to steer ecological forces in a predetermined direction. This, of course, brings us immediately into contact with Dr. Lucas' recommendations for research. We just do not know at this stage—even though I agree with him that the needs for social research are probably paramount—how to manage even one of our smaller national parks in the kind of direction that the Leopold Committee suggested was desirable.

I think we have got the makings of a first-class national park system which has already served the people of Canada very ably for a very long time. But as other speakers have indicated today, we are in a stage of very rapid social evolution where the whole framework of that which we are talking about must change. I do not propose to review step-by-step the items that I have laid forward in my paper. It is quite obvious that our social ingenuity is finding many more ways of enjoying our recreation.

An interesting paper that appeared a year ago categorized these into three different areas; "resource-directed desires," which are those that are explicitly directed towards kinds of resources or towards experiences that require specific kinds of resources. For instance, lying in the sun, or skiing, or swimming, or following your desires for photographing wildlife, or merely being alone in majestic scenery and solitude—these are resource-directed desires.

There is a host of other desires that are found in recreation that are "image-directed desires." We have images built up for
advertising and we are trying to acquire for ourselves certain of these images. How many people go skiing because they think they look quite smart in nicely fitting ski clothes?

And finally, there are "leisure-directed desires." These are desires that are really not directed towards any specific resource but towards finding a slightly more interesting way of spending your time that is not devoted to working. Some people use their automobiles as moving chesterfields on the weekends. Others simply go out and walk around aimlessly. There are thousands of these that come to our national parks.

I can distill my thoughts into two or, at the most, three major points of view.

The first of these is the diversification of our interest in wild land for recreation and scientific use which to me points inevitably to the urgency of rethinking the entire framework within which we express these needs. This has already been said by two speakers in slightly different words. It may even be necessary—I believe Mr. Scott said yesterday—to abandon some of our most time-honoured terms for what we are referring to, including even possibly the term "park." I have thought about this and mulled over this within my own self and with my colleagues on many occasions. If we could just find a better term than "park." "Park" means too many different things to too many different people to be really a very useful term anymore.

We need areas, for instance, that are specifically designed for outdoor sports that find their highest expression in majestic settings. And these will include not only areas for personal participation but areas in which the image-directed person can acquire his image, which involves showing off in front of lots of others such as in major competitions. And humans as problem-solvers, as
goal-attainers must have these opportunities in order to be happy. We might even include in this general category, public hunting ground and certainly, public photographing areas—or a host of other things that we have not yet thought about that I am sure will emerge if we really direct ourselves to rethinking the whole spectrum of what we are talking about in this category of general public recreation.

Obviously, in some of these areas other forms of resource use such as logging and mining would be quite compatible. But again, we have to identify these and place them where they should be. Wild land for game viewing and other types of activities that are presently associated by many of us with the national park concept, must remain one of the primary purposes.

We will need wilderness areas with all that these mean. I would like to point out the latest developments south of the 49th parallel with the declaration, I think, two weeks ago of this huge new area of wild recreational land in the State of Washington and the way this has been laid out is such that there are two separately designated recreational areas. There are two huge wilderness areas; there are two other areas in this new component which are very large or moderately large national parks in the conventional sense. All of these in a package. This is, I am sure, a step toward the new look—identifying ecological purposes and the recreational purposes and making them function.

We also need ecological reserves, specifically designated and reserved in perpetuity for scientific use. I am certain until we re-examine our position and clarify our needs, we will not find public enthusiasm sufficiently adequate to provide the new parks that we have heard about and which we desperately need. People are not going to go along with our needs or with our concept of our
needs until we have zeroed in on some of these new aspects.

There is an obvious need too that such designated areas be planned between the several levels of government in ways that has not been possible up to now. This was referred to by Lloyd Brooks and I enthusiastically agree with him.

Secondly, there must be adequate recognition of the role of ecology in the entire spectrum of the planning of all these areas. The role of the ecologist will differ in each of the different categories. Ecology and sociology are the root sciences in the planning and operation of outdoor recreational areas. We can no longer proceed as if the design and operation of such areas can be effectively conducted by engineers, economists, and a motley group of amateurs full of enthusiasm, full of dedication but with very little background—so little background that they really do not know where to turn to get the advice that they have so desperately needed.

Finally, I would zero in on my third point—education for use. And I think this is extremely important. Here again, I would like to return to my three categories of the recreational resource users—the people that want to flood upon our wild land. And I would return to the leisure-directed desires of a very large proportion. I think it would be interesting to do some sociological research to determine why our visitors are in the national parks. I am quite sure that you will find that very many of them have no real reason for being there at all. They are not geared to profit by their presence in the national parks. The national parks are not going to serve them a bit. They have stopped overnight because we have these great concrete sluiceways that take people into one end of our parks and vomit them out at the other end.

The rarest possible types of land in our Rocky Mountain Parks are the low level winter ranges, the aspen parklands and grasslands.
So where do we put all our highways? Where do we put our villages? Where do we put our airports? Right on the rarest kind of land we have got in our parks. It does not make any sense at all. But this is only a reiteration of one of many things.

I would try to identify these people and have a campaign of discouragement: try and get them to go and take their 300-horsepower chesterfields somewhere else because they have no business in a park. They are going to gain nothing from the experience; they are only going to gain frustration.

PANEL DISCUSSION

SIMON: I would like to call on Mr. Brooks.

BROOKS: I am stimulated by Dr. Cowan's paper and I would certainly agree with him on this matter of lack of attention to ecology in our national parks. This is one big area that the Canadian National Parks' administration has not really fully comprehended—that is, dealing with very complex ecologies. The fact that there is no ecologist on the National Parks staff is perhaps a matter of some concern, although use is made of people with this type of background through the Canadian Wildlife Service.

Dr. Cowan mentioned the location of the roads, airports, and so on along the valley bottoms where the really unique ecologies are found and he is certainly correct on that point. The very fact that we straddle the transcontinental routes has resulted in this situation, of course. Unfortunately, we straddled these routes years ago, and now we are paying the penalties of having to move people in great numbers through them in their 300-horsepower chesterfields.

I was also much stimulated by Dr. Lucas' comments on the need for research, especially the social research which is so very
essential. I do not know if I entirely agree that we are ahead on our knowledge of ecology as opposed to our knowledge of people; I think we are equally ignorant on both really.

SIMON: Thank you Mr. Brooks. Mr. Taylor, have you any comment you wish to make?

TAYLOR: I was extremely interested in Dr. Lucas' remarks on research and particularly the need for social research. One of the points he made in referring to this, is the fact that in the National Parks of the United States, they appointed their first research sociologist sometime this spring. So, at the official level, they have now begun to take an interest in the social problems which are being created by this ever-burgeoning mass of park use.

You will find that people use the parks which are available to them, and in some work that was done in the National Parks Branch before I left, we found that about two per cent of the population of Quebec visited national parks. This is not a surprising figure as there are no national parks in Quebec. When you get out to the west, into the Prairies, the percentage runs up to somewhere between thirty and forty per cent. It is easy to visit parks, so people do visit them. I do not think we can say that the people in Quebec are any worse off in their use of leisure time than the people in Alberta; they obviously make different decisions—and these are the kinds of things which I think we have to know.

What kind of alternate decisions do people make? And in what way can our knowledge of this decision-making process by an individual affect our allocation of resources, our planning, our design, our management?

SIMON: Thank you very much. Mr. Henderson, would you care to comment?

HENDERSON: I have just one remark relative to Mr. Brooks' comment
about the absence of any ecologically-trained person on the staff of the National Parks' administration. I feel that the ecological viewpoint is injected into the administration either by way of staff positions or advisory committee to the minister. It is very important that this individual or board is in a position to influence policy. In other words, I do not think it is good enough to go to some relatively junior person in the Wildlife Service for advice. And I think there needs to be much more influential use of either a person or a committee responsible to the minister or the policy-making process.

SIMON: Dr. Lucas.

LUCAS: Just a comment on Dr. Cowan's education for use. I think this is a very good idea. Something similar to this was also mentioned early in the Conference by Roderick Nash and I restrained myself from commenting then on the justification that he gave for this. He suggested, as you may recall, that a real solution to the problems of overcrowding generally in the national parks was to get the people off the roads and back into the wilderness. He was speaking more specifically of education for wilderness rather than just education for use.

A little playing around with figures will indicate how misguided that idea is for that purpose. I support it entirely in terms of what it can do for increasing the quality and the experience and the depth of visitors' experiences, but in our United States National Parks, something in the order of three per cent of the visitors actually get off the road for any appreciable distance. In the United States Forest Service system, about four per cent of the recreational use is wilderness use, and our annual increases run in the order of ten per cent. So, if we were not going to try to do anything more ambitious than simply divert this annual additional
flow of visitors into the wilderness area, we would have to triple or quadruple the intensity of use in the back-country in the very first year. And we already have problems of over use in this kind of back-country.

Let us talk more about trying to encourage people who are looking for something else to go where we can probably provide it more satisfactorily. If all they want to do is water ski, let us have the finest water skiing opportunity possible; it is amazing sometimes how different people's motives or objectives really are. I tried to probe into this in the Quetico-Superior area and one of the more surprising conclusions was that probably the two most different groups, in terms of their objectives, were those people taking a canoe trip with an outboard motor and those taking a canoe trip by paddling—just that one little difference of hanging a 3-horsepower motor on the back of the canoe seemed to be associated with a tremendous difference in objectives. The people with the outboard motor were going fishing. That is all there was to it. They were going fishing and the canoe trip was just a means to an end. The people who were paddling, on the other hand, had a very complex, diverse set of objectives—the whole experience really was what they were after.

SIMON: Thank you. Dr. Cowan, would you like to come in there?

COWAN: Yes, I would like to very much. I must say in starting that I much prefer Dr. Lucas' way of framing what I have said to my own.

One of the problems that we are having in all the universities—and I am sure that every one of you will have been only too well aware of this—is that we are becoming far too specialized in the conventional discipline sectors. This is leading to sociologists who no doubt, are excellent sociological researchers, but they know nothing whatever about the environment in which the organism
they are researching is living. At the same time, it leads to ecologists who are concerned with everything but man. And neither of these pictures make any sense at all. Now, we do see emerging in the universities—progressively and largely in the graduate sectors—interdisciplinary or multidisciplinary institutes which can bring the expertise of people-oriented individuals from many different centres of experience and these, I think, are the areas where we can find the greatest support for the sorts of things that all of us are interested in here.

I feel, and I am sure all of you would agree—it hardly needs to be said—that the most important place at which we start our research is with the research planning; it is just too easy to say, "Look, we do not know anything about this. Let us go and find out something about this." Well, that is no longer good enough. We have to really zero in on the questions we are going to ask the researcher to explore because until we have done this, I think we are wasting a lot of money and time. We are getting interesting information, but it is not really relevant to what we are trying to do. I, having participated in one of the United States Department of the Interior's study committees, find a great deal of advantage to be gained by this kind of approach. And it is an approach we have almost not used in Canada. We apparently find it much easier to operate in the tight little empire of the civil service and to have the equally tight little empire or diversified empire of the universities criticizing us on the other score.

Instead of bringing everybody together, try to work this one out by putting together six or seven people of very diversified experience as Stewart Udall did when he set up the Leopold Committee. He brought together a very powerful committee—powerful not only in the intellectual experience and background that it could bring to
the problems, but powerful in the influence that its recommendations could have on the general public. And in so doing, he built up a very knowledgeable and widely distributed group of people with diversified connections that could be very helpful indeed, in selling the programs that they were recommending to the public, in helping with the educational process. We have not explored this at all. And I think that we have a lot to gain by taking off from where the United States has been pioneering and moving forward in our own particular context.

SIMON: Thank you Dr. Cowan.

DISCUSSION FROM THE FLOOR

K. NELSON: A great deal has been said here this morning by many speakers about the needs for continuing research in these areas and we who are in the field that are faced with the practical problems of meeting needs, every day, are very, very concerned about the lack of effective co-ordination among the various fields of research that are ongoing today.

I would like to ask either Dr. Lucas or Dr. Cowan what efforts are currently ongoing or what can be done to improve methods of co-ordinating research efforts today.

SIMON: Perhaps Dr. Cowan would like to add to that.

COWAN: This is, of course, a question that bothers all of us who are engaged in the research venture, particularly in universities where militant individualism is the order of the day.

I think though, that a considerable amount of co-ordination can be built into the system at the planning level. I think the co-ordination in the various A.R.D.A. districts is going rather well. And I think that in the individual national parks, for
instance, when problems are identified—and at the moment I am quite confident in saying that those who are entrusted with the management of the individual national parks really do not know what the questions are that they must have answered—they will bring together people who will help them frame the questions—and this is not being derogatory to them. They have got other forms of expertise and they have been up to their necks in other kinds of problems. But you can get a lot of built-in co-ordination at the planning level and I think that there is a role in Canada for a fair bit of mission-oriented research directed towards solving the problems of specific areas.

The I.P.B. research programs that are now going on in Canada and which are, I think, working perhaps a little bit better than those in the United States, are proving to be a case in point. In one mission-oriented area that is being looked at by scholar ecologists on our campus, there are now thirty-five researchers working on unravelling the mysteries of one lake. Now, it is a question of identifying the mission. The mission could be much broader; it could be the 4,200 square miles of Jasper Park. But here you get co-ordination; everybody is zeroing in, slicing up the pie so that their relationships are obvious, and the close juxta-positions of these people who are all working out of the same headquarters makes it inevitable that co-ordination and interchange of ideas takes place.

So I think that we can look at it two ways, but I do not think that the bureaucratic way of trying to hold meetings is the most successful one in my experience.

SIMON: Thank you. Dr. Cragg?

CRAGG: I should like to make a brief comment following on Dr. Cowan's observations. Certainly it is the experience in Britain with the
Nature Conservancy that planning is the first essential in a research program. You have got to identify your problems and for every nature reserve under the Nature Conservancy, you have a management plan which clearly lays out the aims behind a particular reserve—and then you organize your research around it. Again, you have got to have interdisciplinary research. You have got to, in a sense, avoid multidisciplinary research. Too often people feel that you have got an interdisciplinary approach simply because you have chemists, physicists, psychologists, biologists, etc., working together, but somewhere or other you must have a plan and you must have that plan directed.

REEVE: I would like to take Mr. Henderson slightly to task on the ecological work being done in the parks by only "junior members" of the Canadian Wildlife Service. That was my understanding and I wish to come to the defence of the Canadian Wildlife Service, to say that they have some very fine and well-experienced ecologists who are doing some very excellent applied research in the parks for us.

Dr. Cragg has said that there is a need for a plan of what research work should be done in the national parks. Although we recognize there is a need for a great deal of ecological research in our parks, we feel that before we embark upon such research projects, we must know what we are doing and why we are doing it. Within the last three or four years, we have been able to build up a considerable number of people, small by United States standards I will admit, in our interpretive field. These people are trained biologists of various kinds and part of their responsibility is to identify within their parks what interpretation programs there should be, as well as to make an inventory of what they have in the parks.

HENDERSON: Mr. Chairman, may I just set the record straight on that.
I was not denigrating the members of the Wildlife Service. What I was trying to aim at was that in the highest level of policy making in Ottawa there must be someone who has an ecological viewpoint, preferably with ecological training. It is at the highest level where someone with a philosophical understanding of the need for the ecological viewpoint is most needed.

J. G. NELSON: If I recall correctly, Mr. Henderson was making his remarks in the context of the need for a scientific group or ecological, geographic, historical, economic group within the Parks Branch which might do certain kinds of planning for it.

I very much share such feelings. I have been appalled at the way in which planning has been carried out in the last few years. I would hesitate to use the word "planning" in any sense for what has been done as far as Banff National Park is concerned. If Mr. Reeve cares to return to the microphone and make comments on the scenic road program and the planning and the information that has been fed into the scenic road program for Banff National Park, I would be delighted to hear it. I suspect that what happened in the case of the scenic road program in Banff National Park was that a group of people looked at the traffic flow pattern. They looked at trends and demands. They looked at a number of people who might come by automobile and then they began to look at trends and demands. They looked at a number of people who might come by automobiles and then they began to look at valleys which might make neat ring roads from one point near the entry to the Park to some point of departure near its next boundary.

I make these remarks deliberately in a provocative tone, and I hope Mr. Reeve or some other member of the National Parks Branch will rise to the occasion.

SIMON: Would you like to take advantage of that, Mr. Reeve?
EIDVIK: In today's panel, we have two former members of the National Parks Branch. I would like to suggest to the audience here that Mr. Brooks and Mr. Taylor have been major motivators of a new approach to national parks planning in Canada. We have initiated through their actions, a study called the Canadian Outdoor Recreation Demand Study which is, in effect, an approach much like a beer salesman would take to see where he can sell his beer. That is one aspect of the program. I think another aspect that we should look at is a recently-initiated study in Waterton Lakes National Park of a pilot program for an ecological approach to the plan for that Park.

A third area I would like to comment on would be in the area of the Federal-Provincial Parks Conference which has not been discussed in this group to great length. The Federal-Provincial Parks Conference was initiated as a result of the 1961 Resources Conference. In the Parks Conference the technical sessions which are comprised of the directors, the planners, and the naturalists from each of the provincial governments, meet annually and discuss policies and approaches where our co-operation can best be directed. Biannually the deputy ministers of each of the provinces meet to formulate policies for which the technical sessions can operate. The last meeting was held in Algonquin Park approximately one week ago and, I think, will bear considerable fruit in the area of federal-provincial co-operation in the parks field.

Now, as to Dr. Nelson and his—what I call—"pet project"—the opposition to the proposed Cascade-Red Deer Road: I can only say that it is a proposed Cascade route; that we will be carrying out ecological studies with members of the Canadian Wildlife Service, with land use specialists in the field of forestry, and we will be assessing each of these routes over a long period of time. Roads
cost dollars and dollars do not come easy, these days.

As for the approach taken in the initial selection of these routes, I would say they were based on approximately five years of intensive study of the mountain parks. It was not until two years ago that the actual information collected by the planning division was, if you would put it that way, regurgitated in the form of provisional master plans. Now planners, like ecologists, always feel the need for more information. Administrators must get on with the job of providing for the tremendous increase in park visitation. So in this respect, I would say that having followed the valleys, driven the roads, flown the parks, read the many reports that have been produced over the years, the road proposal is more than a line on a map.

SIMON: Professor Warner?

WARNER: It seems that in Quebec there is already a very serious problem of private land acquisition interfering with public use of lands. This probably is occurring throughout at least the southern parts of Canada.

I would like to ask the entire panel—assuming this to be a very serious issue and possibly the limiting factor to the evolution of a truly significant national parks system in Canada—why we are indeed committed to the traditional approaches to land acquisition, or if there are entirely new innovations, new concepts in acquisition, new approaches to the question of obtaining title of lands that would be suitable for these forty to sixty new parks that are envisioned by the planners. If they are thinking along this line, are there new ways we can go about this?

SIMON: Thank you. Mr. Taylor, would you care to comment?

TAYLOR: I have not got the complete answer. I think one of the purposes
of my remarks was to indicate that there is new thinking going on. I think what both Mr. Brooks and I have said is that people are thinking about new approaches. Now, what this new approach finally will be, I do not know. How long it will take for these to reach fruition is something else again.

PIMLOTT: Mr. Chairman, I beg you to deal with this in terms of the Canadian context. This question is being begged. It is this question of who owns the land, who controls it that is important here. Let us bring this out clearly.

COWAN: This is actually the great $64,000 question, as Dr. Pimlott knows. It is the question that lies behind the unplanned growth of our cities—the octopus-like engulfing of some of the best agricultural lands in Ontario, British Columbia, and elsewhere by the unplanned expansion of cities where the profit is greatest for those who would gain the profit. I think the dead silence that greeted your challenge, Doug, is testimony to the fact that this is a problem of such magnitude that there is not anybody here that can really answer the question the way it must be answered—and it lies centrally behind our entire economic orientation rather than ecological orientation to land ownership and land development. Do you not agree?

PIMLOTT: I agree, but I say that the answer is still limited. Of these forty national parks that Mr. Reeve suggests we need, I would say that at least thirty of them could be established on Crown lands which are now under control of the provinces. There is not a problem of direct land acquisition for at least thirty of these. In Ontario roughly ninety-five per cent is under the Crown.

Our British North America Act says that this land is under the control and under the management of the province. So the only way we can appeal on three-quarters of these potential parklands in
Canada, is to appeal to the provinces in terms of bringing a sense of national unity; appeal to them in the sense of the contribution that parks will make in terms of our cultural, our natural heritage—as part of our culture. We can ask the provinces to set aside in a small way this intense feeling of their own jurisdiction in terms of advancing the national park concept as part of the total unity of Canada. And then, when we get down to the other ten per cent where we must have the national parks in areas that are privately owned, where we find the organization problems—then we have this other problem. But three-quarters of them can be obtained if we say that this would be an important contribution to Canada as a whole. I think that we should appeal to Canada as a nation to forget about the British North America Act in this sense.

As you remember, throughout this Conference I have urged, "Let it stop at that." Let us all go into national recreation with the full recognition that this should be the provincial area. The federal people should take the initiative; the responsibility should be that of the provinces.

BROOKS: I feel that this type of appeal is very good but I think it will fall on deaf ears unless the provinces feel themselves to be much more participants in this national parks selection—and national park management in particular.

One of the strange feelings you have when you work in Ottawa, as I did for nine years, is that you almost feel as if you are really a member of a foreign country. It is nice to get back to Canada again.

(Laughter)

This is not a very happy situation where you are always dealing with people who do not trust you, or feel that they have no say in what you are doing. And I really feel that much of this can
be overcome by a formal means of carrying on a dialogue between the provinces and the federal body on these matters of carrying out the management of existing national parks and proposed national parks. The provinces feel that instead of simply setting these up as a piece of federal land, they are giving it to a foreign country and they are no longer going to have any more say in it. I think this is really one of the basic reasons for this reluctance to designate land as a national park.

ENGLAND: I would like first to respond briefly to the protestations of Mr. Eidsvik of the National Parks Branch over Dr. Nelson's concern about the Cascade-Red Deer Road--his "pet project." I think in some cases a lot of this is recognizing the need for reassessment after some static has been forthcoming and, therefore, I applaud these "pet projects."

Now, I would like to put a question to Lloyd Brooks with regard to zoning or the methods in planning within the national parks at the present time. Zoning has been a very ineffectual and clumsy tool in urban areas and I am wondering whether it is going to be a great answer to the problems in national parks.

I wonder if zoning just is not too susceptible to the ebb and flow of certain cultural value systems which may last five or twenty years. During this process, if you re-zone to accommodate these changes, in effect, over the long run, you will lose out on the ideals you are setting up. So I would like to address this question: "Do you think zoning really offers us a great hope in managing national parks?"

BROOKS: I do not know a better solution to reconciling these conflicting uses in our national parks. How, there is some apprehension--the word "zoning" today seems to stir people up, and with some reason, because city zoning has been notably unsuccessful. But I
do not think you can compare city zoning to the zoning of a national park. They are really two different things. And I think city zoning is far more susceptible to change than would be the type of zones we are proposing for national parks.

ENGLAND: I would beg to differ in that regard. I wonder if it would not be better, in the case of certain areas, to define these and give them a firm statutory base which is not susceptible to the adjustments we have come to know with zoning.

BROOKS: I would agree with you that this should be the ultimate goal. Once we have clearly recognized what the wilderness zone is in a national park, it should be set up by statutory means. But the zones we have proposed up to now on our provisional master plans are somewhat tentative, for the simple reason we do not have enough information to be absolutely sure that we have, for instance, defined a viable wilderness zone. Do we really know if this contains all the interrelationships of the different ecosystems? We do not know. We do not know that much about it. So the first run at zoning is done by the broad brush, and we could not start to set them up through legislation at this stage.

SIMON: Dr. Cowan, would you like to come in there?

COWAN: Yes. I would like to turn back for a moment to this interesting question that led to the brief exchange between Dr. Nelson and Mr. Eidsvik. I am prepared to accept what Mr. Eidsvik says, that there was a lot of thought went into the route that they finally proposed for this scenic road. But we all know that the results which you get out of a study depend upon the instructions given to the study group, and the point that I would like to raise is this: were the instructions adequate to explore the various possibilities?

For example, the Red Deer is a very beautiful valley. Has
anybody examined the cost of building a mini-rail through it rather than a road? In an electrically-operated mini-rail, every traveller would be viewing; the rail could be elevated or depressed to take advantage of the view. You do not have to follow the valley bottom; it is just as easy to put a mini-rail up on the next bench. It would be quiet; it would be fumeless; it would be ecologically undestructive because wild animals could continue grazing right under your mini-rail right-of-way. It seems to me that this is the sort of thinking we should be doing.

Roads: the way we are building them now, they are majestic things and monuments to engineers; they sweep through great curves; they gobble up square miles of rare territory. But is this any longer the best way of taking people quietly into the right environment to see the things we want them to see through the magnificence of our Rocky Mountain Parks or other parks of equal magnificence?

SIMON: Mr. Reeve, perhaps you would like to comment.

REEVE: I have detected in what the panel has been saying and what has been said over the last few days, that there is indeed a great need for setting aside more outdoor recreation space in Canada. Considerable reference has been made to what Mr. Chrétien said, and what I have said—that we believe there is a need for at least forty to sixty new national parks in Canada today. Mr. Brooks has also emphasized very clearly that under the present system whereby the provinces are required to turn over the land for new national parks free of all encumbrances to the federal government, that he just does not see any mileage being made as long as that policy exists.

Now, recognizing that there are limited funds available to all of us and recognizing Mr. Brooks' proposal—that the federal government should in some manner share in the cost of acquisition of these new national parks—what should be the approach of the federal
government towards parks? What should it do? Should it be taking as its first priority provision of new facilities in existing parks and provision of a few new national parks, or should it take as top priority the acquisition, as quickly as possible, of these forty to sixty new national parks—even though they may sit for many years before funds are available for their development?

BROOKS: There is no doubt in my mind whatsoever, to that question. I think we must acquire these lands even if they are in mothballs for fifteen or twenty years.

I know the political difficulties of this are great. Once a national park is designated, everyone wants to go and visit it and everybody wants to see things done, wants to see it developed. I realize the difficulties full well, but there is no doubt in my mind that acquisition and designation of land for parks at this particular stage in our history is the most critical issue before us.

Moreover, I would say that we must focus in on our shorelines. These are the lands which are disappearing most rapidly and will be most unavailable in a very few years ahead. We know that land values are skyrocketing, but this is particularly so on shorelines. Generally, land appreciates, I think, at something like ten per cent a year on ordinary land, but shorelines appreciate sometimes double the value in one year. For some reason lakes, rivers, and ocean frontage have tremendous appeal to people and these are the parts most appreciated—the ones that are water-oriented.

HENDERSON: There is no doubt, of course, that government funds are in very tight supply. But traditionally, the Treasury Board and the government as a whole, puts national parks and recreation very low on the totem pole in its overall budgeting. I think it is most important to get this message across to the public.

What we are talking about today is to develop a public
opinion that will "force" the government, if you like to use that word, to change its priorities. There is only so much money in our gross national product to be allocated, and governments react according to where the pressure comes from.

SIMON: Mr. Taylor, would you like to add to that?

TAYLOR: I would like to add one other item to the list of priorities. It must be the identification of those areas which should be preserved. This does not cost much money—and I really think we need to know where the areas are and what the full dimension of the problem is. This is something we could be doing without worrying about whether we are changing the system of land acquisition or not. I would like to suggest this as one of the high priorities for the immediate future.

SIMON: Mr. Jackson?

JACKSON: Mr. Henderson has referred to the need for public support, public opinion, public involvement. I would like to make one suggestion in an attempt to achieve this to far greater measure; that is, to have a Canadian National Parks Day. There could be an annual issue of stamps depicting national park scenes, and on this particular day, it could be arranged that through the broadcasting media, television, etc., wildlife conservation films would be shown. It could be arranged that newspaper articles are incorporated in various papers for public discussion; I would like all universities to be involved on this particular day—holding open seminars to discuss some of the problems which we have been discussing here today.

And, above all, we need to try and get the public behind this need for forty to sixty new parks, to resolve these problems of land escalation which denies parks for conservation areas in many
localities.

SIMON: I think that is a very good suggestion. I think the N.P.P.A.C. would be very glad to explore it further.

MYRES: Mr. Reeve has shown himself to be a very able politician. He turned what was a question into a question which he then threw back at the panel. So I do not think it is unfair to ask him to actually try to answer Dr. Cowan's question.

Dr. Cowan's question was pretty difficult to answer because the first half of it said, "Is there, in fact, any need for any further roads in national parks"? Now this raises the question as to whether we are talking about national parks or wilderness areas, but as it was in particular reference to the Cascade area, it does seem to me that even if he cannot answer that part of the question, Mr. Reeve should comment on whether he has anything against minirails—which he did not refer to at all.

EIDSVIK: I would like to try that. I look at both Dr. Cowan and Dr. Nelson as colleagues in the solution of our problems in the parks rather than adversaries.

My view on roads is basically that the question is one of access to national parks. The means of access is an open situation and certainly, I think the suggestion of a mini-rail, or electric train, approach is another that we have to look at; these are some of the reasons why road proposals put forward are not firm proposals.

Contrary to what may be the opinion here, I am not a highway engineer; I am a forester. I have an ecological background. I am a park planner and the road is a means of access. I think the chairlift and the gondola lift are better means of access—less scarifying to the landscape and quite acceptable as a means of access and as an alternative to roads.
No, we do not need a lot more roads.

J. G. NELSON: We have been talking on the one hand about what seem to be small things, for example, the proposed Red Deer Road. It is a "pet project"; it affects a small area and it may not seem important. We have been swinging from that kind of thing to fundamental large-scale questions such as how do we get various levels of government, particularly provincial-federal governments, together so that they use their public lands, and for the things many people want. I think, however, that they are all related. When we were thinking about structuring this Conference, and particularly, thinking about the Planning session, we had greater difficulty in trying to think how we might separate all the various levels of planning, but it has been shown that objectives in each instance are vital before one begins to plan; and that one must decide what it is one is talking about. If one examined thoroughly what one's objectives were for the Red Deer and similar areas before one began to think about changing them in some specific way without regard to overall objectives, then one might come up with a different set of alternatives. I think, similarly, if we go to the higher level problem and think about relationships between federal and provincial parks, we must then extend it to urban areas. We must also extend it to private enterprise.

We must then begin to try and think about what we want each of these levels of government to do. No one has as yet said anything about the relationships between the federal government and urban areas. It would seem to me that we must develop some system whereby there is more aid not only in a technical sense of setting up objectives and acquiring information and working towards goals, but financial aid to urban areas.

I think we also have something to learn in setting up various
alternatives and objectives from the United States. Someone might be willing to comment on the use of the Soil and Water Conservation Act in the United States as a means of setting aside recreational areas in rural areas which are managed by private enterprise.

My basic point then is that many of the principles at all the levels are the same. And if we begin now, after this Conference, to examine what we really want national parks to do: do we want national parks in the west to serve as provincial parks? That, in my mind, is in a way, what is happening. In eastern Canada, the provincial park system is an entirely different entity and there are very few national parks. This raises considerable questions of public investment.

In my mind we are at a watershed. I think it is necessary to try to define national parks in terms not only of the historic flow, but what we see in front of us. And what I see in front of me is the need for large areas relatively free of facilities right across the country. These areas should be designed and located in such a way as to serve national purposes in the sense of providing a variety of different environments that Canadians in all parts of the country can see; providing a series of representative areas showing different ecologies right across the country; a series of areas which show something of the differing history of the country.

For example, Canadians still tend to think by and large, of the history of Canada as the history of Ontario and Quebec, and we have very little in the way of vivid concrete manifestations of the very interesting history of western Canada which is overshadowed, by the way, not only by eastern Canada, but also by the American west to the south. I think also that these areas and other specific ones could serve as the kinds of reservoirs that Dr. Cowan was talking about.
COWAN: Why national? Why not provincial? We know from our bitter experience that the farther you get away from the local scene, the less vulnerable you are to locally-imposed changes. The smaller the decision-making group, the more vulnerable it is to our highly economically-oriented culture.

We are a resource extracting country and the temptation to use local political power to gain access to pieces of the natural resource that you would like to extract for your own private purpose is very great indeed. And the area within which you are operating—the smaller the arena, the more likely you are to get away with it. When you have people from coast to coast involved in decisions that will influence something which is regarded as a national treasure rather than as a city park, the actual politics of protection are more likely to be successful. I think this is the greatest single argument that I have seen for the designation of areas as national rather than local.

Having said this, I am also very interested in seeing different kinds of liaison worked out so that the provincial authorities could have very considerable say in the establishment of principles and participation in the ongoing process of policy rather than day-to-day management. Once the principles are made they should be tied down by statute and changeable only by statute at the federal level if we are going to have any control at all.
CONFERENCE SUMMARY
AND RESOLUTIONS

The small committee which had been requested by the Conference Chairman to receive submissions from conferees for the Summary Session prepared a Conference Summation and two Resolutions which were distributed to the conferees after the session on Planning for the Future. These drafts were considered by the committee to represent the consensus of the conferees and each draft was presented as a motion to be voted on by a show of hands from the floor.

1. The first Resolution pertained to support for the National and Provincial Parks Association of Canada. The motion for adoption of the Resolution was put by Dr. D. Pimlott and seconded by Mr. R. C. Passmore. The Resolution was carried unanimously.

RESOLUTION

Whereas few countries can rival Canada for the beauty and variety of its landforms and natural environments;

and Whereas far-sighted governments have had the vision to dedicate some of the finest of these as national and provincial parks to be a heritage for the
benefit, education and enjoyment of the present and future generations;

and Whereas the rate of population growth and urban and industrial expansion throughout Canada has tended to create certain problems in the management of existing areas as well as to make it vital to act quickly to set aside key examples of those remaining natural environments not now adequately represented in our national and provincial parks systems;

and Whereas the securing and management of these areas for the purposes for which they are established depends ultimately upon enlightened and informed public opinion;

Therefore be it Resolved: That the participants and delegates to the Conference on The Canadian National Parks: Today and Tomorrow, held at The University of Calgary from October 9-15, 1968, do hereby:

1. Thank and congratulate the National and Provincial Parks Association of Canada and The University of Calgary for having brought together leading authorities from around the world to help clarify and seek solutions to the many critical problems facing national parks and equivalent reserves in this country; and

2. Unanimously endorse the need for strengthening and expanding the efforts of the National and Provincial Parks Association of Canada as a citizen supported information and educational agency serving all of the people of Canada.

October 15, 1968 Calgary, Alberta.
2. The Summation and Resolution was moved for adoption by Dr. Ian McTaggart Cowan and seconded by Mr. W. C. Yeomans. The Summation and Resolution was carried unanimously.

SUMMATION AND RESOLUTION

CONFERENCE ON THE CANADIAN NATIONAL PARKS: TODAY & TOMORROW

CALGARY, OCTOBER 9-15, 1968

The Conference, sponsored by The University of Calgary and The National and Provincial Parks Association of Canada, brought together about 150 Canadian and international professionals from governments, universities, and conservation and outdoor recreational organizations, as well as some representatives of the public at large, to examine the role and functions of national parks in an urbanized Canada and the world. The Conference reaffirmed the world concept that the primary function of national parks is to preserve representative examples of Canadian natural and historic features, for the recreational, educational and scientific needs of present and future generations.

A very real concern has been manifest at this Conference over the number of current uses of national parks which are proving inimical to the concept of preservation. This leads us to the conclusion that the national parks must be viewed in the broader context of total social needs for outdoor recreational space and environmental preservation. There was further recognition by the Conference that parks and open space needs constitute only one aspect of the total demands now being placed upon our national landscape.

It is of utmost importance that the consolidated viewpoint expressed by this group be presented to governments at all levels since they bear responsibility for the planning and utilization of landscape resources throughout Canada.

Three major assumptions underlay deliberations of this Conference:
1. The Canadian constitutional character makes the responsibility for provision of outdoor recreational and research space within the nation both complicated and unique.

2. The combined post war phenomenon of affluence and disposable leisure time has given rise to accelerated public outdoor recreational demands which have placed radically increasing pressures not only upon our national parks and outdoor recreational space, but all other landscape resources as well.

3. The problems of providing adequate parks, recreational and other types of open space areas has become one of the major problems in an accelerating urban society.

Taking these assumptions into consideration, the following have been identified by this Conference as major concerns for consideration by all levels of government in Canada.

(a) There is a need for clarification and definition of the functions of national parks, their structure, purpose, and potential, in relation to the total system of outdoor, recreational, research and wilderness space in Canada.

(b) There is a need for improved communication and co-ordination in park and recreation planning matters within existing governmental structures and particularly between government and the public.

(c) There is need for assessment and integration of existing and proposed municipal, regional, provincial and federal legislation and policies relating to recreation and open space planning; in fact, for all land use and environmental resource use planning where duplication of efforts or shortages now occur.

(d) It follows that there now is a current national need for an
integrated national outdoor recreational planning framework within which to provide guidelines and co-ordination of federal, provincial and regional park and recreation planning efforts.

(e) There is also recognition amongst the varied disciplines and professions represented at this Conference that parks and outdoor recreation space needs represent only one aspect of the social-economic demands now being made upon our total environmental resource capabilities. This will call for an even broader examination of environmental interrelationships.

It is now therefore strongly recommended that the government of Canada take initiative, in consultation with the provincial governments, in establishing an independent investigating body with suitable expertise and of Royal Commission or equivalent status. Such a body would make recommendations for the development of a national policy for governing the use of land for preservation of outstanding natural features and ecological systems; for the provision of the spectrum of outdoor recreational needs, and for carrying out necessary research. Such a national policy should also identify federal, provincial, regional, and municipal government roles as they relate to the provision of outdoor recreational opportunities for an urbanized Canada.

The investigating body would also be charged with making recommendations relative to an organizational framework which will be necessary to achieve the objectives of policy co-ordination and communication. This body would further have the responsibility of assessing park and recreational needs in relation to other social demands now being made upon our environmental resources and those expected in the future.

In view of Canada’s unique constitutional nature, it is imperative that the investigating body be constituted so as to provide true regional representation.
Time is of the essence in this matter. Human use pressures upon Canada's parks, recreation areas and open spaces are rapidly accelerating, with consequent irrevocable damage, in many instances, to the resource base. This Conference urges early action in meeting the challenge thus set forth.

October 15, 1968

Calgary, Alberta.
APPENDIX A

GUIDE FOR FIELD TRIP TO BANFF NATIONAL PARK, OCTOBER 12 and 13, 1968

R. T. Ogilvie* and R. C. Scace†

SATURDAY, OCTOBER 12TH

From Calgary to Canmore, the modern Trans-Canada Highway follows the south side of the Bow River valley. This road is the principal east-west artery through the Canadian Rockies and it is currently being four-laned from Calgary to Banff Park. (Should the highway be four-laned through Banff and Yoho National Parks?)

Calgary - Rocky Mountain Front

The "foothills" area between Calgary and the Rocky Mountain Front is one of transition between the prairies and the mountains.

Physically, the area owes much of its present form to the activities of the Pleistocene and post-glacial periods. The glacial deposits are underlain in the eastern part, by folded and faulted foothills structures which mark the western edge of the Alberta syncline and the Tertiary Paskapoo sandstone. Westwards towards the mountains, the rocks are mostly shales of Mesozoic Age with a Northwest to Southeast strike.

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†R. C. Scace is identified on p. 770.
The cultural landscape has changed fundamentally during the past century although evidence of earlier European interest and influence in the area is manifested by reports in the journals of fur trade explorers (Thompson and Fidler for example), the construction of Piegan Post (Old Bow Fort) near the Mountain Front in 1832-1833, and the field explorations of the Palliser Expedition (1857-1860). Today, the ranching industry supplants the Indian-bison landscape, with the Stony Indian Reserve serving to illustrate how the Dominion Government resolved the question of what to do with the indigenous population in the nineteenth century.

The Stony Indians lived primarily on bison, sheep, goat, elk, etc. When the bison was exterminated from its Alberta range towards the end of the nineteenth century, the Indians concentrated upon mountain hunting. The continuation of this practice after the establishment of Banff National Park was for many years a matter of concern to the Park's administrators.

The foothills area offers a variety of recreational experiences but it is only within recent years that the potential of the area, particularly the provincial forest reserve, for example, has been acknowledged. Evidence of a growing interest in the area for facilities-oriented recreation is shown in the construction of a ski-complex in the Kananaskis Valley, the development of summer cottage sites, and an inventory of the recreational potential of the Stony Indian Reserve. The highway traverses a small and rather insignificant provincial park immediately prior to entering the Mountain Front.

Rocky Mountain Front - East Gate, Banff National Park

A short distance beyond the Mountain Front, the Trans-Canada Highway crosses the former boundary of Banff National Park. In 1902, the park area was increased from 250 square miles (1887-1902), to approximately 4,900 square miles. In 1930, the eastern boundary was
drastically modified and today's Park encompasses an area 2,564 square miles.

That part of the Bow Valley included in the park to 1930—the "Canmore Corridor"—reveals in its landscape the variety of economic activities which have been introduced over a span of years. For instance, Canmore Mines Limited, the last active representative of the once common coal mining operations in and adjacent to the Park, was established in 1891. The Western Canada Cement and Coal Company's cement plant at Exshaw was established in 1905. The then Park Superintendent was enthusiastic about such developments and his comments are a revealing insight to what was considered an acceptable park use in the early twentieth century:

The industrial assets of the park have been increased ... by the establishment of a Portland Cement Mill of large capacity ... an important step in the building up of western Canada ... the new town of Exshaw, the centre of a great manufacturing industry, has arisen out of the Bow River.

The cement operations have expanded recently and may be easily seen from the Trans-Canada Highway. Note the smoke stack and the "Mountain of Limestone." (The rocks of this major north-south thrust fault are of Palaeozoic and Pre-Cambrian Age and are tilted steeply to the west). William Van Horne, General Manager of the Canadian Pacific Railway (C.P.R.) proposed in 1883, that the Lac des Arcs area be set aside as a park area. Surveyors were sent out but no reservations took place. This incident is the first known attempt to reserve land in the Rockies for the benefit of the public.

Westward, the coal-mining activities are evident. Up to the present, five entries have been made on the bituminous and anthracite seams. Most are on the south bank of the Bow River and east of Canmore. The Number Four Mine can be seen adjacent to the Trans-Canada Highway.

Until the late 1950's Canmore produced coal almost exclusively
for the C.P.R. locomotives, with small amounts going to steam and heating markets. To offset the coal's disintegration into worthless slack, a briquette plant was established in 1925, but large slack piles are still evident. Today, Canmore Mines Limited has a labour force of 250 and sends most of its coal to Japan.

To those interested in resource policy, land use conflict and landscape change, future developments here are of interest. With a new large-scale coal contract signed recently, Canmore Mines plans to start strip mining in conjunction with its underground workings. The stripping will be carried out in the valley side south of the Bow River and up several of its tributaries. Inadequate damage and reclamation regulations are complicated by the fact that the coal lands are owned outright. It is possible that conflict between this industry and those dependent on recreation (for example, the Pigeon Mountain ski area which is adjacent to a future strip site), may be a result. (Another ski complex near Canmore Village is currently being developed on a site first cut by local people many years ago. The significance of these ski developments will become apparent when viewing similar developments in Banff Park).

The community of Canmore consists of several district sections. Along the south bank of the Bow are company-owned residences for miners, the company store, and the mine offices. Across the river is the so-called "government town," set up when Canmore was in the Park. For years it was a shack town. North of the "town" is the latest extension of Canmore, a mixture of better quality homes and tourist establishments. This sectionalization created many disputes, and prevented the incorporation of Canmore until two years ago. As a result, only now are privies, septic tanks and wells being supplanted. Canmore is not a model mining community, but compared to coal towns elsewhere in Alberta it is certainly far from the worst. Furthermore, its appearance and
economic interests provide a somewhat startling comparison to Banff
townsite, only fifteen road miles to the west.

Although some cabins and associated tourist facilities have ex­
isted in the Canmore Corridor since before World War II, most of the
motels, summer cottages, etc., to be found near the highway are a pro­
duct of the tourist boom of the last few years. Of particular interest
is the Harvie Heights summer cottage subdivision, located on a terrace
about one mile from the Park's East Gate. This subdivision was opened
in 1958 as a consequence of direct requests to the Alberta Department
of Lands and Forests. One hundred and ten lots were opened and sub­
sequently, conflicts developed between persons wishing to use their
cottages for leisure purposes and those wishing to establish permanent
residences. There are perhaps fifty permanent residences in Harvie
Heights with thirty to thirty-five persons commuting to work in Banff
each day. This total is bound to increase as residence in Banff town­
site becomes more difficult--because of the contemporary National Parks
Policy--and there is considerable provincial interest in the provision
of additional recreational facilities in the Canmore Corridor generally.

In sum, these various aspects of settlement and economic activity
in the Canmore Corridor have produced a landscape in marked contrast to
that which is apparent immediately to the west of the National Park
boundary. (How much federal-provincial co-operation has there been in
this Corridor? Has anyone given serious consideration to planning the
area as a buffer zone in relation to proposed National Park zoning
decisions?)

The East Gate of Banff National Park was constructed as a Relief
Project in the 1930's, and is a fine example of the Park's architecture
of that period.
East Gate - Banff Townsite

The most striking feature from the East Gate to Banff is the degree of forest regeneration following fire, characterized by lodgepole pine and aspen; and the relative lack of man-made features. However, there is an abrupt transition to an urbanized landscape as one enters the community of Banff.

SUNDAY, OCTOBER 13TH

Banff Townsite Area

Several national parks in western Canada contain townsites which support year-round populations, for example, Banff, Jasper, Waterton Lakes, Yoho (Field). These centres were established at an early date in their respective park areas. They have continued to develop as multi-functional urban nuclei on public land managed primarily for landscape and wildlife protection. Banff, with a resident population of approximately 3,400 persons, is the largest such community and in recent years has been the focus of much controversy concerning land use and management in national parks.

Preliminary archaeological investigations suggest that settlement may date from immediate post-glacial times. Certainly, the area was familiar to the Indian tribes of the Columbia River valley and eastern Rockies during their transmontane travels. In 1841 and 1847 respectively, Sir George Simpson and the Reverend Robert Rundle became the first known Europeans definitely to visit the area; Old Bow Fort Fur traders probably preceded them. Intermittent visits by white man continued until 1883 when the arrival of the C.P.R. line encouraged permanent settlement. The projection of this railway line along the Bow Valley was probably the most important single factor in the historical geography of the Banff Park area.

Resource exploitation in the area was facilitated by the
establishment of small, impermanent frontier communities; for example, Siding 29 (1883-1897), Anthracite (1886-1904), and Bankhead (1904-1923). Hunting, mining, and lumbering continued after the first public reservation about the Sulphur Mountain hot springs in 1885, and persisted for many years thereafter. These pioneer activities, together with repeated burnings of the Upper Bow valley in the late 1800's and early 1900's, greatly altered the landscape, and conservation practices were only gradually introduced as the youthful parks policy was tested and developed—particularly in the years following 1911.

Banff townsite was conceived of, surveyed and developed from 1886 as a luxury spa community within the confines of the Rocky Mountains (Banff) National Park (established in 1887). Spacious lots (Sulphur Mtn.), landscape "improvements" (planting of trees, shrubbery), luxury hotel accommodations (Banff Springs, Grand View Villa, Sanatorium), popular attractions such as an animal paddock, zoo and aviary, a network of coach roads (the present motor roads), and generous leasing arrangements were intended to make Banff a "resort" comparable to contemporary European examples as well as Arkansas Hot Springs (today a National Park), after which it was designed.

The C.P.R. did a great deal to boost the image of Banff as a resort and the federal government pursued a similar line, irrespective of the protection policy it was developing for the National Park as a whole. The advent of motor traffic after 1911 and the construction of a network of roads through the mountain parks emphasized Banff's resort role. Not until the 1950's and 1960's did the federal government begin to introduce measures which in some way might restrict the kind and degree of developments which are presently found in the townsite. Contrary to the opinions of some, the "Banff problem" is not easily solved for it has broad social and economic as well as philosophical implications beyond the boundaries of Banff Park.
Biologically and ecologically, two general conditions are present in the Park: cordilleran and boreal. Approximately one-third of the vascular plants have a cordilleran distribution, and the remaining are of boreal distribution. Banfield (1958) indicates a similar pattern for the mammals of the Park; approximately one-third of which are cordilleran in their distribution. Ecologically, the eastern mountain ranges and the lower elevations are boreal in nature, having lower precipitation with the maximum occurring in summer. The Main Ranges, closer to the Continental Divide, and higher elevations are more cordilleran in nature, having higher precipitation and a pronounced winter-high distribution pattern.

The east slope of the Rocky Mountains, in which Banff Park occurs, has had vast parts of its area burned. Forest inventories of the east slope region indicate sixty per cent of the timber consists of fire-successional stages. Fire has been a major ecological factor in this region, although human activity has greatly increased the frequency and extent of fires. From a study of the age-structure of fire-successional lodgepole pine stands, it was found that thirty per cent of the stands originated during the Early Park Period (1887-1911), whereas forty-seven per cent of the stands date from the Prospecting and Early Railway Period (1850-1886).

The climax forest in the Rocky Mountains is spruce-fir (*Picea glauca*, *P. engelmannii*, and *Abies lasiocarpa*). Near timberline two additional tree species compose the forest: alpine larch (*Larix lyallii*) and whitebark pine (*Pinus albicaulis*). Lodgepole pine is strictly a fire-successional species; ecologically it is highly adapted to colonizing burned-over land. Another important fire-successional species is aspen. Douglas fir occurs widely in Banff Park at the lower elevations, and is mostly fire-successional to the spruce-fir forest. However, there are a few Douglas fir stands on dry, south-facing slopes which
are climax.

The gross forest pattern in the Park has been strongly determined by fire history. Fire-successional lodgepole pine or aspen stands cover most valley bottoms, the lower valley sides, and the south-facing slopes. Wet habitats immediately adjacent to streams, bordering lakes, and around mires have greater protection from fire and are occupied by spruce-fir stands. Also, the high valley slopes and timberline region are less frequently burned and are vegetated by spruce-fir forests.

*Mount Norquay Road Viewpoint.* Immediately adjacent to the road is a climax stand of Douglas fir; the trees are widely spaced with grass and low shrubs between the trees, giving a savannah-form to the Douglas fir stands. The forested slopes below and on the right flank of Mount Norquay are mixed lodgepole pine, aspen, and white spruce. At the bottom of the valley extensive peatlands can be seen bordering the Bow River and Vermillion Lakes.

A good view is obtained of Banff townsite and it is apparent how the community's layout has been influenced by the encircling mountains and the low-lying peatlands. Notable components of the Banff townsite area seen from the viewpoint include Banff School of Fine arts, Banff Springs Hotel, the Recreational Grounds, the Cosmic Ray Station and the Cave and Basin.

The first skiing activities on Mount Norquay were undertaken in the 1930's. The site was to have been used for certain skiing events had Banff been successful in its bid for the 1972 Winter Olympics. Today, the Mount Norquay ski slopes represent one of the three major downhill skiing areas in Banff Park.

*Mount Norquay to Lake Minnewanka.* As one crosses Fortymile Creek the first of two garbage pits may be seen lying upstream in a fenced enclosure. Refuse is burned in this pit and in the other pit near the easterly traffic circle on the Trans-Canada, garbage is buried. The
latter pit is a popular spot for visitors to watch black bears feeding, and Park authorities have provided a parking area for the public's benefit. Nearby and thinly hidden from the Trans-Canada Highway by a cover of trees, lies a large automobile dump. The Buffalo Paddock lies adjacent to the highway. In 1897 the Park obtained its first bison (*Bison bison*), a bull and two cows purchased in Texas by T.G. Blackstock, of Toronto. In 1898, another thirteen head were obtained from Lord Strathcona's herd in Manitoba and the paddock was enlarged to 500 acres. By 1908 there were one hundred and seven bison and in 1909, a large number were shipped to the new Buffalo Park at Wainwright, Alberta. The herd has been kept at about eight to twelve animals in recent years. Their appearance in the paddock coincides roughly with the start of the summer tourist season. Five elk were the first animals kept in the paddock (1890). A zoo was begun in 1903 and at various times bears, including polar bear, Persian sheep, a wolf, yak, mountain lions, red foxes, Angora goats, bighorn sheep, antelope, monkeys and "nine varieties of pheasant" were kept. The zoo was moved into the village in 1906 and since 1947, bison have been the only animals in the park held in captivity for display purposes. The original Siding 29 was located in the vicinity of the paddock.

Slightly to the southwest of the Trans-Canada Highway is the federal government works compound, a fair view of which can be had from Tunnel Mountain later in the morning. The federal government also operated a "salvage" sawmill at this location, up until the early 1960's but since then operations have been discontinued.

Banff airfield lies contiguous to the buffalo paddock. In 1922 surveys had been made to locate emergency fields for fire protection purposes. Little was done until the 1930's when the present site was prepared as a relief project. An area adjacent to the Banff Springs Golf Course had originally been selected but the C.P.R. objected to
this stating that "the flying machines would be more or less a menace to the (golf) players and the machines, through accident or otherwise, might tear up the course." The government accepted the C.P.R. suggestion to develop the present site (1934-1936). Recently, there has been agitation to have the airfield facilities improved and expanded.

To the right of the Trans-Canada Highway across from the airfield lies the Indian Days Ground. This event was originally promoted in 1897 by the C.P.R. and Banff residents. The Stony Indians continue to congregate for a day or two each year as part of Banff's tourist attractions, but because of poor support from Banff's business sector, there were suggestions in 1968 that the event might be discontinued. The land between the Trans-Canada and the Banff access road was proposed as a development site for certain of the Winter Olympic events. The Archway and Bel Plaza Motels, like the Timberline Hotel at the foot of the Mount Norquay road, are inexplicable departures from the concentration of commercial services in Banff's built-up area.

The National Cadet Camp occupies an area of 2,755 acres. The letter of agreement was formalized between the Department of National Defence and the Department of Northern Affairs and National Resources in March, 1954, and is valid for an indefinite period of time. The agreement stipulates that the camp may not be used by any organization other than the Royal Canadian Army Cadets. The camp is operated during July and August only and is attended by youngsters selected from Royal Canadian Army Cadet Corps across Canada. The camp has some other facilities in the Cascade Valley.

In 1904, the C.P.R. opened the Bankhead Coal Mine four miles to the northeast of Banff. In 1905, the Park Superintendent saw Bankhead as "a town that will advance and prosper ... a model mining town." A spur line ran from the main C.P.R. line and a population of 1,000 soon occupied the area. Bankhead was responsible for some very
"un-parklike" scenery. Also, the effect of the coal mining settlements on the landscape was not entirely local; the continuous demand for pit props led to further modification elsewhere in the Park. During the years of its operation, Bankhead supplied Banff with electricity. There is still much evidence of the coal town to be seen, especially the World War I Memorial, the church steps, spoil heaps, basements, etc. and the cultural and historical significance of this area has encouraged the National and Historic Parks Branch to recently introduce directional signposts. The road to Lake Minnewanka passes through fire-successional stands of lodgepole pine and scattered aspen; regenerating white spruce forms the undergrowth in these stands.

The Cascade Fire Road which leads to the Red Deer River valley departs from the warden's house. For some time there has been a proposal to develop a scenic highway from here which would ultimately exit near Lake Louise. Plans for this highway now seem to be well advanced, although its effect will be severe on the alpine and virgin forest vegetation as well as the grizzly bear, mountain goat, and bighorn sheep along the route.

*Lake Minnewanka.* The lake cuts abruptly across a great thrust block of Palaeozoic rocks, between an unnamed peak (7,580') of the Palliser Range to the north and Mount Inglismaldie (9,725') to the south. The lakebed is a glacially-deepened ancient channel of the Bow River. Note Mount Aylmer (10,375') to the north, a summer haunt of bighorn sheep.

Prairie settlement in the early 1900's increased the demands on the natural resources of the Park. A consequence of the establishment of the Western Canada Cement and Coal Company's plant at Exshaw in 1905 was a growing demand for power. This, together with the pressing need to regulate the Bow River for flood control and irrigation led to the Calgary Power Company's developments on Minnewanka in 1911 and 1912.
A small dam (Devil's Creek Dam) was already in existence, having been constructed by Park authorities to "improve" the shoreline and to maintain the lake at a suitable level for boating. (The dam had been originally proposed in 1886).

Calgary Power obtained permission in 1911 to break this dam during the winter months, thereby increasing the low winter flow to the downstream Horseshoe Falls plant. This measure did not appreciably improve flow; much of the water released froze before reaching the downstream dam. In 1912, following a Dominion Water Power Branch survey in the upper Bow Valley, permission was granted to build a dam across Cascade River. This river originally narrowly bypassed Lake Minnewanka to the northwest but the dam diverted its flow into the lake, thereby raising the level of the water by sixteen feet.

After World War I, "the long-range objective [of Calgary Power] became one of expansion of power supply to areas beyond Calgary, Cochrane and Canada Cement." The Kananaskis Falls and Ghost River plants were built on the Bow in 1914 and 1929 respectively, but attempts to utilize the Spray Lakes and Kananaskis Lakes (both inside the Park, south-southeast of Canmore), as storage areas, and efforts to increase Lake Minnewanka's capacity, were repeatedly turned down. However, boundary amendments in 1930 and 1949, permitted the desired developments on the Kananaskis and Spray Lakes respectively. In 1940, the company obtained permission to build the present dam at Lake Minnewanka because of "war plant requirements." "Minnewanka-Cascade was the site most capable of being developed with the speed necessitated by the urgency of the wartime situation" (Calgary Power spokesman). The decision to build the dam continues to be a matter of controversy. The present dam, canal and power plant (on the Trans-Canada) were completed by 1942. The lake was raised by sixty-five feet and the power plant's capacity set at 46,000 h.p. (1957). The water level in Lake Minnewanka fluctuates
about thirty-five feet annually, exposing an unsightly shoreline.

Closure of the Bankhead mines caused the government to supply Banff with power from a small hydro-electric station near Lake Minnewanka (1924). Calgary Power bought this plant in 1941 and assumed responsibility for power supply to the Park. The term of license is for fifty years (i.e. from 1942).

Endemic fish in Lake Minnewanka are Lake Trout (*Salvelinus namaycush*), Rocky Mountain Whitefish (*Prosopium williamsoni*) and Suckers (*Catastomus app.*). Among the exotics are Cisco (*Leucichthys sardinella*), introduced from Lake Superior in 1916, Common Whitefish (*Coregonus alucaformis*), introduced in 1953, Splake (*S. namaycush* and *S. fontinalis*), introduced in 1957 and Atlantic Salmon (*Salmo salar*), introduced more recently into Cascade River.

A small "suburb" of Banff was laid out on the shore of Lake Minnewanka and lots made available in 1909. In 1913 a new townsite was laid out and lots were taken up for summer cottages, chiefly by Calgary people. The community disappeared in the 1940's when Calgary Power paid compensation to leaseholders. (A similar lakeside community still exists on Lake Edith in Jasper National Park). Lake Minnewanka is the only lake in Banff Park on which power boats are permitted to operate.

*Lake Minnewanka to Bow Falls.* Several points of interest can be noted. The road follows the Calgary Power canal, passes Two Jack Lake campground before descending to the old coal town of Anthracite. The route passes by small stands of Douglas fir. Between the lake and the campground, on the left of the road, there is a lodgepole pine stand densely infected with dwarf mistletoe (*Arceuthobium americanum*). The infections appear in the form of small "witches-brooms" and twisted and thickened branches in the crowns of the pine.

At Anthracite, some examples of freehold may be seen, a market-garden has been established beside the spoil heaps of the old coal mine
site and the Calgary Power Cascade Powerhouse may be noted.

On Tunnel Mountain, the campground and trailer court, the Banff Springs Golf Course and some examples of early bungalow camps dating from the 1930's will be seen. The road will descend through Banff School of Fine Arts to Bow Falls Lookout where fine views of the Banff Springs Hotel and Bow Falls can be had. At this point too, the problem of water pollution will be noted.

Bow Falls via Banff Avenue and Fox Street to the Archives. Several aspects of the urban morphology of Banff can be observed on this route including the effects of the "perpetual" leasing system. The opening of the Archives of the Canadian Rockies in 1968 represents a significant effort by interested citizens to collect and make available to researchers the wealth of archival material that is available on the Rocky Mountains of Canada.

Banff to Lake Louise

Between Banff and Lake Louise, the Trans-Canada Highway continues to follow the Bow River valley, as does its predecessor, now known as Highway 1A.

From the Vermillion Lakes area a fine view is obtained of Mount Rundle. It is one of the fine examples of the fault-block or "writing-desk" mountain type found in the front ranges of the Canadian Rockies. On the scarp face of Mount Rundle a sequence of resistant cliff-forming Palliser limestones, easily weathered Banff Shales and resistant Rundle limestone go from the base to the summit.

The three mile section of highway west of Banff is frequented by mountain sheep. A salt lick below the highway provides the attraction as do the artificially seeded ditches during winter and spring. The grass also attracts large numbers of elk elsewhere on the highway.

On the south side of the Bow Valley a conspicuous road is seen winding its way to the summit of Sulphur Mountain. This route, which
is not open to the public, provides access to The University of Cal­
gary's Cosmic Ray Station. This is one example of how the pursuit of
scientific research has led directly to the impairment of the National
Park's landscape.

Highway 1A - Aspen Range Enclosure, 6.0 miles from Junction with
Trans-Canada. Here is located a fenced-in plot near the valley bottom
in the aspen winter range of elk. The plot was established in 1944 by
Dr. Ian McTaggart Cowan. Within the plot there is abundant white spruce
and aspen reproduction, willows (*Salix spp.*) and dwarf birch (*Betula
glandulosa*). The shrub vegetation outside the enclosure shows heavy
browsing, and the bases of the aspen trunks are heavily scarred by elk.

The impact of elk on the Park's flora is historically of relat-
ively recent occurrence.* Elk were abundant in the foothills in the
mid-1800's but suddenly declined in the 1880's and were considered ext­
tinct in the Banff-Jasper area during the period 1900-1920. In 1917,
sixty-three elk were introduced from Yellowstone in exchange for five
sheep donated to the Smithsonian Institute; in 1918, forty-one more
were released, and in 1920, a further 196. The elk population of the
Park was estimated at 1,000 in 1925, rising to 4,000 in 1943. This
represented the peak of elk abundance in the Park. The rapid expansion
can be attributed to an abundance of fire-created range and the virtual
absence of predators. Damage to the Park ranges was evident by 1939,
and was considered serious by 1944. The first organized slaughter re­
moved twenty bulls in 1937. Since 1942 elk slaughters have been held
each winter, the maximum being 352 in 1945-1946. In recent years the
objective has been to remove about 200 per year, the present elk pop­
ulation being estimated at 2,000-2,500. Some of these winter on ranges

*This summary of the history of elk is taken from: D.A. Blood,
"Proposed Itinerary for Field Trip to Banff National Park, Sunday, April
4th, 1965," prepared for Canadian Society of Wildlife and Fishery Bi-
ologists (mimeographed).
outside the Park. Furthermore, some elk have been live-trapped and exported to elk-depleted areas; for example, to the Spirit River area of Alberta.

**Lodgepole Pine Stand, 0.4 miles north of Johnston Bungalow Camp.**

Below the road is a typical example of an older lodgepole pine stand. The pine is even-aged, which is characteristic of all the fire-successional lodgepole pine stands. The pine in this stand is 125 years old. The annual rings show rapid growth for about the first fifty years, followed by a decline to very slow growth at the present time. Aspen are scattered through the pine stand, with an age of ca. 105 years; indicating that the aspen became established within about twenty years after the fire which initiated the pine stand. Throughout the stand there is abundant white spruce reproduction. There are also a few large trees of white spruce, which are 105 years old. Twenty years after the fire which gave rise to the pine stand, spruce began seeding-in and has continued to do so up to the present. The age-structure of this stand is thus: even-aged aspen (excluding root-suckers), and uneven-aged white spruce.

**Eisenhower Junction Area.** The Eisenhower Junction area dominated by Mount Eisenhower (Castle Mountain), is significant for a variety of reasons. The Castle Mountain thrust fault passes through the area and effectively divides the highly folded and faulted young rocks of the front ranges from the gently dipping Pre-Cambrian, Cambrian and Ordovician rocks of the main ranges. The contrast is nicely displayed in comparing Mount Ishbel, a front range peak, with Mount Eisenhower or Pilot Mountain which are main range peaks.

In 1883, Silver City was established as a "boom town" at Eisenhower Junction after a discovery of copper ore in the area. The settlement reached a population of 1,500 before it collapsed in 1885. During its brief existence the community's inhabitants participated in mining,
brick-making and lumbering but Silver City's decline is usually attributed to a lack of high grade ore and high freight rates. Today very little direct evidence of the town is found in the area. Indirect evidence is found in a considerable area of timber cutting on the slopes of Copper Mountain. Even-aged second growth lodgepole pine forests are evidence of the forest burning which took place about the community.

Rejoin Trans-Canada Highway at Eisenhower Junction. The extremely dense, young lodgepole pine stands bordering the highway have been artificially thinned for "scenic improvement" of the roadside landscape. Between Eisenhower Junction and Lake Louise is Taylor Creek. At this point the Bow Valley is relatively wide and ridges of ground moraine provide a rolling terrain. This terrain was to have been the site of the cross-country ski races had Banff's bid for the 1972 Winter Olympic games been successful. Many of the courses were, in fact, surveyed and cut. In 1968, the area became a favourite pre-emption of ski-doo operators. The recent arrival of ski-doos in Banff Park has been the cause of concern to many people and conflicts between the operators of these machines and cross-country skiers are not unknown.

Lake Louise

The name "Lake Louise" refers to the lake itself, the townsite and to the general area. The townsite is situated at the confluence of the Bow River and its major tributary west of Banff, the Pipestone. The townsite is essentially a service and maintenance centre, as is evidenced for example by the National Parks Branch compound immediately adjacent to the Trans-Canada Highway.

This Lower Lake Louise community is destined to become one of Banff Park's Visitor Service Centres and already the new townsite area has attracted a number of private investors. To the north of the Trans-Canada Highway may be seen the newly-developed Park maintenance residences which are included in the overall plan for the Service Centre.
(Are such nuclei desirable additions to the national parks? How compatible is the townsite—ski complex—dense road network with the national park environment?)

On the slopes of Mount Whitehorn to the east of the Lake Louise townsite is situated the Whitehorn-Temple ski area. Many of the ski runs in this complex were developed as part of Banff's unsuccessful Olympic bid, and again, this ski area had its origin in a small, pre-World War II development. In the mountainous area to the east of Mount Whitehorn are the headwaters of the Red Deer River, one of the largest regions of "wilderness" remaining in Banff National Park.

**Lake Louise to Bow Pass**

The Banff-Jasper Highway, another depression relief project, passes through some of the most spectacular mountain scenery in North America. From the highway near its junction with the Trans-Canada Highway, Kicking Horse Pass, one of the major routes across the Rockies, is visible. The pass received its unusual name after Dr. James Hector, a geologist with the Palliser Expedition in the late 1850's, was kicked by a packhorse!

**Hector Lake Viewpoint.** As the Banff-Jasper Highway passes along the lower slopes of Mount Hector, a series of well-developed cirques and truncated spurs is visible across the Bow Valley. Hector Lake (named along with the peak after James Hector), and the large delta at its head, are also clearly visible from the road. The mountains visible are still part of the main ranges and are made up of Pre-Cambrian and Cambrian quartzites and Cambrian limestones.

The forest in the area has been strongly affected by a number of agencies. Today, the influence of snow avalanches is strongly impressed on the forest. Behind the Hector Lake Viewpoint is the remains of wet-snow avalanche that occurred in March, 1968. This particular avalanche, which is unusual in size and location, resulted from extremely warm
winter temperatures.

The opposite valley slope is covered with old-growth spruce-fir forest. At upper timberline can be seen small stands of alpine larch. The stands here are at the northern latitudinal limit of this species.

A short distance along the highway from the Viewpoint there exists an old-growth spruce-fir stand. This forest has an uneven-age structure, with all age-classes present from seedlings to the oldest trees. There is abundant regeneration of both spruce and fir in the stand. The maximum age of the spruce is 400 years (the tallest trees are 126 feet, the diameter at breast height is 31 inches). The oldest fir in the stand is 310 years (the maximum height is 71 feet, and the maximum d.b.h. is 10 inches).

The longevity of spruce is ca. 500 to 600 years, that of fir is 350 to 400 years. Ecological studies on the stand structure of these mountain forests have shown that when the trees reach old age they die-out individually, fall over, and the gap in the stand is occupied by the regeneration. There appears to be no evidence in support of the idea that these stands become decadent and die-out in toto, nor that they degenerate into decayed and insect-infested stands. The latter idea has been used as an argument in favour of logging (and/or controlled burning) to "rejuvenate" the forest.

There are problems in managing the forests of national parks, whether the policy is to maintain the forest vegetation as it is, or to preserve the greatest diversity of forest. Both approaches require a great amount of human manipulation, which would seem contrary to the basic concept of national parks. Alternatively, the forest can be left unmanaged, allowing the natural ecological succession and gap-replacement processes to operate.

The results of this last mentioned policy would be that in 300 to 400 years much of the landscape of this Park would be vegetated by
mature climax spruce-fir forest. Most of the successional lodgepole pine and aspen stands would be eliminated; although stands of these species would persist in specialised habitats such as talus slopes and avalanche slopes. Although no species would be totally eliminated from the forest, there would be a marked decrease in the diversity of the forest pattern.

The question of fire control is a related management problem. Fire caused by lightning is a natural ecological factor in this region. The present policy of controlling all fires, whether lightning— or human—caused, is an unnatural management practice. On the other hand, the conditions prior to 1911, when there was no fire control, are obviously incompatible with the national park concept: during this period any forest stand in the East-slope Region, on the average, was burnt every sixty-seven years.* Alternatively, if all fires are suppressed, the long-term results would be as described above: the total forest diversity would decrease and the majority of the vegetation would be spruce-fir forest. Moreover, there would be a decrease in habitats for the large ungulates; the moose, elk, and deer, which are favoured by the second-growth and successional stages associated with burns, would be reduced in number.

It is the writers' opinion that the decisions on forest management policy should be based on detailed ecological knowledge, rather than on an esthetic preference for a variety of forest landscape with an abundance of semi-domesticated elk and moose.

Bow Lake Area. Two glaciers, the Crowfoot and the Bow, are of note here. The Crowfoot has disintegrated rapidly in the last ten years with the result that several of the "toes" have dropped off. The neo-glaciation lateral moraines are well displayed on both glaciers. The

neo-glaciation or "little ice age" advance occurred sometime in the last three centuries. Evidence for the advance in the form of fresh terminal and lateral moraines is widespread throughout the Canadian Rockies.

Located on Bow Lake is Numtijah Lodge which was developed by Jim Simpson and is currently operated by his son. Simpson is one of the legendary figures in the Canadian Rockies having guided and accompanied numerous scientists, mountaineers and travellers in the early part of the century.

Bow Pass (Peyto Glacier Viewpoint). Bow Pass is the divide between the Bow-South Saskatchewan and the North Saskatchewan River systems. At an elevation of 6,784 feet above sea level, the pass is the highest point on the Banff-Jasper Highway.

The view to the north shows ranges of peaks on each side of the Mistaya Valley. The peaks on the east are made up of strata dipping gently to the east while the peaks on the west show westward dipping strata. From this, it has been established that the valley is cut in an anticline of Cambrian quartzites, shales and limestones.

The Mistaya River originates in the Peyto Glacier which is visible to the west. The glacier has receded considerably from the neo-glaciation moraines which are clearly visible.

At the summit of Bow Pass the bus leaves the Banff-Jasper Highway and climbs a side-road to the Peyto Lake Viewpoint where it is possible to obtain a good look at the alpine and timberline vegetation. At the Peyto Lake Viewpoint there are scattered individuals of *Pinus albicaulis*, a tree characteristic of timberline.

The Viewpoint is situated in the timberline zone, which is not a distinct forest-line, but rather a zone in which the forest becomes diffuse, is broken up into "islands" of trees surrounded by alpine vegetation, and ultimately small, dwarfed krummholz colonies of trees.
The tree islands consist of alpine fir and Engelmann spruce. Ages taken from some of these islands indicate the spruce to be ca. 200 years, and the fir 150 years old. The widely-spreading branches bordering the islands are covered by snow, and the spire-like crowns of the trees extend above the snow. On some trees the height of the snow-line is indicated by the part of the trunk which is bare of branches. Between the islands is the characteristic alpine heath, consisting of four heather species: *Phyllodoce empetriformis*, *P. glanduliflora*, *Cassiope mertensiana*, and *C. tetragona*. Other typical alpine plants here are: *Vaccinium scoparium*, *Empetrum nigrum*, *Arnica latifolia*, *Veronica alpina*, *Valeriana sitchensis*, *Castilleja rheifolia*, *C. miniata*, *C. occidentalis*. This heath vegetation is relatively unstable in regard to vehicle and foot traffic. Conspicuous scars have been left in this heath from driving tracked snowmobiles over it during the winter skiing season.

**Bow Pass to Moraine Lake**

The Lake Louise-Moraine Lake area was first included in the Lake Louise Reservation, made in 1892, later to be included in the 1902 expansion of Banff Park. A road of sorts was built from Lower Lake Louise to Moraine Lake between 1902 and 1911 but not until 1921, did the road from Banff link up with the one at Lake Louise.

The Moraine Lake area, more commonly known as the "Valley of the Ten Peaks," is ringed by a series of peaks consisting mostly of grey and brown quartzites and slaty shales of Cambrian age. This Lake, like Lake Louise, has long been one of the major tourist attractions in the Canadian Rockies. Both lakes were greatly publicized by the C.P.R.'s promotional literature, although Lake Louise has probably become better known because of its closer proximity to the main highway and the location of the railway company's Chateau at the lake.
Moraine Lake to Vermillion Pass

The Trans-Canada Highway is followed to Eisenhower Junction, after which the Banff-Radium Hot Springs road is followed to Vermillion Pass (5,416 feet), on the boundary of Banff and Kootenay National Parks.

The Banff-Radium Hot Springs road was built between 1911 and 1923, as part of an ambitious parks road building program which included the construction of the Banff to Yoho National Park road (1911-1926), today's Highway 1A. (Access to Banff National Park from the prairies had been facilitated by the completion of the Calgary-Banff Highway in 1914).

All major highways in the Rocky Mountains National Parks have been greatly improved since 1945, and both the Banff-Radium and Banff-Jasper Highways are contemporary examples of national parks highway construction.

Vermillion Pass. Improved reporting methods and improvements in equipment have been largely responsible for the virtual absence of significant fires in Banff National Park during the past twenty years. In the decade from 1956, for example, the total acreage reportedly burned-over in Banff Park was only about twenty-nine acres (Banff National Park Chief Fire Warden, 1966).

During the spring and early summer of 1968, the fire hazard in the Rocky Mountain Parks was considered to be extremely high and elsewhere in Alberta, particularly the northern parts of the province, firefighters had to contend with "the most serious forest fire problem in the province's history." (The Albertan, May 23rd, 1968).

A fire caused by lightning and originating in the Marble Canyon area of Kootenay National Park about July 9th, quickly spread eastwards across the Continental Divide, having jumped the Banff-Radium road, and was quite out of control. Attempts in the next few days to contain, control and eliminate the fire were complicated by topography, the character of the vegetation—old growth, mature spruce-fir forest—high
winds and the very erratic pattern of the fire itself.

No effort was spared to stop the blaze and at various times a work-force of about 200, including soldiers and experienced fire-fighters, spotter and water-bombing aircraft (which used the Trans-Canada Highway as a runway), a helicopter and heavy earth-moving equipment, were brought into the area. Approximately 7,000 acres were burned.

The cause of this fire and the subsequent methods employed to control it--there was some fear that it might enter the Bow Valley and burn downstream to Banff townsite--provides yet another starting point from which to discuss the role of fires in national parks management policies. (Predictably, the local press viewed the fire as a "Tragedy in the Parks" - Calgary Herald, July 12th, 1968).

At the present time, three months after the fire, there has been almost no revegetation of the burn. There is a very small amount of sprouting of some of the burned shrubs and the grass and herb colonies. It is expected that abundant revegetation will occur during the 1969 growing season.

Vermillion Pass to Banff Townsite

The return to Banff is by way of the Trans-Canada Highway. About seven miles west of Banff, the Sunshine access road joins the Trans-Canada Highway. The road is only open to the public for about half of its twelve mile length. A local bus line holds a concession on the remaining distance to the Sunshine ski area. The ski area which is situated on the Continental Divide between Alberta and British Columbia, is open to both day and overnight visitors. A number of lifts service the ski slopes while the surrounding area, most of which is above timber-line, provides excellent terrain for high country ski touring.
MAJOR TREE SPECIES IN BANFF NATIONAL PARK

*Abies Lasiocarpa* (Hook.) Nutt.—alpine fir. Climax species with *Picea*.

*Betula Papyrifera* Marsh.—white birch. Infrequent; low elevations; successional.

*Larix Lyallii* Parl.—alpine larch. Timberline; most common on northerly aspects.

*Picea engelmannii* Parry—Engelmann spruce. Climax species; most abundant at high elevations; hybridizing extensively with *P. glauca*.

*Picea glauca* (moench) Voss—white spruce; Climax species; most abundant at low elevations; hybridizing extensively with *P. engelmannii*. Hybrid spruces make up most of the spruce stands in Banff Park.

*Picea mariana* (Mill.) BSP.—black spruce. Rare; restricted to a few small stands in the northern part of the park.

*Pinus albicaulis* Engelm.—whitebark pine. Timberline; most common on southerly aspects.

*Pinus contorta* Dougl. var. *latifolia* Engelm.—lodgepole pine. Fire successional; forming extensive stands.

*Pinus flexilis* James—limber pine; Low elevations, exposed slopes and rocky crests; limited to the southern part of Banff Park.

*Populus balsamifera* L.—balsam poplar; successional along streams. Hybridizing with *P. trichocarpa*.

*Populus tremuloides* Michx.—aspen. Fire successional.

*Populus trichocarpa* Torr. & Gray—black cottonwood. Successional along streams; hybridizing with *P. balsamifera*.

*Pseudotsuga menziesii* (Mirb.) Franco var. *glauca* (Beissn.) Franco—Douglas fir. Lower elevations; successional, or climax on south-facing slopes.

MAJOR LARGE MAMMALS IN BANFF NATIONAL PARK

*Aloes alces andersoni* Peterson—moose.

*Bison bison athabascae* Rhoads—bison, buffalo.

*Canis latrans lestes* Merriam—coyote.

*Canis lupus occidentalis* Merriam—wolf

*Castor canadensis canadensis* Kuhl—beaver.
Cervus canadensis nelsoni Bailey—wapiti, elk.
Erethizon dorsatum nigrescens Allen—porcupine.
Felis concolor missourensis Goldman—cougar, mountain lion.
Gulo lusus (Linnaeus)—wolverine.
Lepus americanus columbiensis Rhoads—snowshoe hare.
Lutra canadensis (Schreber)—river otter.
Lynx canadensis Kerr—lynx.
Marmota caligata oxytoma Hollister—hoary marmot.
Martes americana abietinoides Gray—marten.
Martes pennanti Erxleben—fisher.
Mephitis mephitis (Schreber)—striped skunk.
Mustela erminea invicta Hall—ermine.
Mustela frenata longicauda Bonaparte—long-tailed weasel.
Mustela vison Schreber—mink
Odocoileus hemionus hemionus (Rafinesque)—mule deer.
Odocoileus virginianus ochrourus Bailey—white-tailed deer.
Ondatra zibethicus cinnamominus (Hollister)—muskrat.
Oreamnos americanus missoulae J.A. Allen—mountain goat.
Ovis canadensis canadensis Shaw—bighorn sheep.
Rangifer arcticus montanus Seton—mountain caribou.
Taxidea taxus (Schreber)—badger.
Urus americanus cinnamomum Audubon & Bachman—black bear.
Ursus arctos horibilis Ord—grizzly bear.
Vulpes fulva (Desmarest)—red fox.

Nomenclature is based on: Banfield (1958), and Cowan & Guiguet (1960).


APPENDIX B

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