THE CANADIAN NATIONAL PARKS:
today and tomorrow

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

STUDIES IN
LAND USE HISTORY
AND
LANDSCAPE CHANGE
NATIONAL PARK SERIES No. 3
THE CANADIAN NATIONAL PARKS:
today and tomorrow

Proceedings of a Conference Organized by
THE NATIONAL AND PROVINCIAL PARKS ASSOCIATION
OF CANADA

and

THE UNIVERSITY OF CALGARY

Calgary, Alberta
October 9th - 15th, 1968

in two volumes
VOLUME ONE
Introduction - Other Alternatives

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

with errata applied (2015)
The National Park Series of Studies in Land Use History and Landscape Change are directed by Dr. J. G. Nelson, Department of Geography, The University of Calgary, Alberta.

The Grizzly Bear is reproduced on the cover of this volume with the permission of the Canadian Magazine and Glen Loates.

Reproduced for

The National and Provincial Parks Association of Canada

and

The University of Calgary

by

Duplicating Services, The University of Calgary

Copyright © 1968 James Gordon Nelson

All rights reserved and registered with

The Commissioner of Patents, Ottawa.

Published 1969
## Table of Contents

**Volume One**

List of Illustrations  
List of Tables  
Introduction

### OPENING ADDRESS

Our Evolving National Parks System  
*The Honourable Jean Chrétien*  
7

I. SETTING THE STAGE

The Development of the National Park Movement  
*J.-P. Harroy*  
15

The National Parks Movement in Canada  
*J. I. Nicol*  
35

The Development of Recreation in the United States and Canada and its Implications for the National Parks  
*Marion Clawson*  
53

Wilderness and Man in North America  
*Roderick Nash*  
66

The Doctrine of Usefulness: Natural Resource and National Park Policy in Canada, 1887–1914  
*Robert Craig Brown*  
94

Man and Landscape Change in Banff National Park: A National Park Problem in Perspective  
*J. G. Nelson*  
111

Summaries and Discussion  
151
II. USES OF THE NATIONAL PARKS

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. Dasmann

Urbanization and Canada's National Parks
H. Peter Oberlander

Summaries and Discussion

III. MEASURING THE VALUE OF THE NATIONAL PARKS

Providing for National Parks and Related Values
Jack L. Knetsch

The Measurement of the Benefits of Public Investment in National Parks
Lawrence G. Hines

Uses and Abuses of Highway Benefit-Cost Analysis: A Primer on Highway Economics for Park Officials, Conservationists, and Interested Citizens
Dennis Neusil

Summaries and Discussion

IV. OTHER ALTERNATIVES: THE ROLE AND PLANNING OF PROVINCIAL, STATE, AND LOCAL PARKS

The Parks of Ontario
E. G. Pleva

The Parks of Saskatchewan
W. A. Hartwell
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Provincial Parks of Alberta</td>
<td>461</td>
</tr>
<tr>
<td>C. H. Harvie</td>
<td></td>
</tr>
<tr>
<td>Outdoor Recreation in the Calgary Region: Problems and Potentials</td>
<td>473</td>
</tr>
<tr>
<td>Louis Hamill</td>
<td></td>
</tr>
<tr>
<td>The Nature Conservancy of Canada</td>
<td>523</td>
</tr>
<tr>
<td>E. Aird Lewis</td>
<td></td>
</tr>
<tr>
<td>The Nature Conservancy in Various Parts of the World:</td>
<td>534</td>
</tr>
<tr>
<td>Accomplishments and Difficulties</td>
<td></td>
</tr>
<tr>
<td>Maria Buchinger</td>
<td></td>
</tr>
<tr>
<td>Federal Rural Development Programs and Recreation Resources</td>
<td>547</td>
</tr>
<tr>
<td>C. S. Brown</td>
<td></td>
</tr>
<tr>
<td>The Canadian Council of Resource Ministers</td>
<td>563</td>
</tr>
<tr>
<td>Christian de Laet</td>
<td></td>
</tr>
<tr>
<td>Summaries and Discussion</td>
<td>578</td>
</tr>
</tbody>
</table>

Volume Two

V. RECENT DEVELOPMENTS IN THE UNITED STATES AND OTHER PARTS OF THE WORLD 603

Planning of National Parks in the United States                         605
Theodor R. Swem                                                        |      |
The Wilderness Law and the National Park System of the United States    623
Stewart M. Brandborg                                                   |      |
The Planning of National Parks in Europe                                646
Kai Curry-Lindahl                                                      |      |
The Planning of National Parks in Argentina and Other Parts of South America 674
Italo N. Costantino                                                    |      |
Problems in National Parks Management in East Africa                   695
A. de Vos                                                              |      |
The Planning of National Parks in Japan and Other Parts of Asia         706
Tetsumaro Senge                                                        |      |
Summaries and Discussion                                               722

FIELD TRIP TO BANFF NATIONAL PARK                                       742

VI. CONCESSIONS AND SERVICES                                            743

The Management of Concessions and Other Services in National Parks in the United States 745
Thomas F. Flynn, Jr.                                                   |      |
Townsite Administration and Management in Canadian National Parks
W. Makkim

Banff Townsite: An Historical-Geographical View of Urban Development in a Canadian National Park
Robert C. Soace

Concessions and Service Arrangements in Various Parts of the World
Maria Buchinger

Submitted Papers
A Paper Submitted by Banff Advisory Council
G. S. Leroy

The Rocky Mountain National Parks. A Report Submitted by The National Parks Committee, Calgary Chamber of Commerce
Fred Scott

Summaries and Discussion

VII. PLANNING FOR THE FUTURE

Planning a Canadian National Park System—Progress and Problems
Lloyd Brooks

Demand for Recreation—An Essential Tool for Resource Planning
Gordon D. Taylor

The Role of the Public in National Park Planning and Decision Making
Gavin Henderson

Research Needs for National Parks
Robert C. Lucas

The Role of Ecology in the National Parks
Ian McTaggart Cowan

Summaries and Discussion

CONFERENCE SUMMARY AND RESOLUTIONS

APPENDIX A

Guide for Field Trip to Banff National Park, October 12 and 13, 1968

APPENDIX B

Conference Delegates
List of Illustrations

*Volume One*

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Location of Banff National Park</td>
<td>115</td>
</tr>
<tr>
<td>2. Part of Banff National Park</td>
<td>117</td>
</tr>
<tr>
<td>3. Mount Eisenhower (c. 1887, 1964); Anthracite (1885, 1967), Banff National Park</td>
<td>121</td>
</tr>
<tr>
<td>4. Upper Red Deer River valley (early 1880's, 1964, c. 1900, 1967), Banff National Park</td>
<td>125</td>
</tr>
<tr>
<td>5. Waterton Lakes National Park: Archaeological Sites</td>
<td>247</td>
</tr>
<tr>
<td>6. Cultural-Environmental Sequence in Waterton Lakes National Park</td>
<td>251</td>
</tr>
<tr>
<td>7. Plains and Mountain Projectile Point. Types from Waterton Lakes National Park</td>
<td>254</td>
</tr>
<tr>
<td>8. Plains and Mountain Projectile Point. Types from Waterton Lakes National Park</td>
<td>257</td>
</tr>
<tr>
<td>9. Alternative Routes for Interstate 70, Colorado Rockies</td>
<td>379</td>
</tr>
<tr>
<td>10. The Calgary Region: Jurisdiction of the Calgary Regional Planning Commission</td>
<td>477</td>
</tr>
</tbody>
</table>
FIGURE

12. Existing and Possible Recreation Roads in Foothills and Mountains of Calgary Region

Volume Two

13. The Most Important Wetland Areas of Europe and Adjacent Regions Planned to be Set Aside as Reserves

14. Location of the National Parks of Argentina

15. Banff Townsite Area, Banff National Park

16. Changing Boundaries of the Rocky Mountains (Banff) Park

PAGE

501

653

679

771

775
List of Tables

Volume One

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Visits to Certain Western Canadian National Parks</td>
<td>112</td>
</tr>
<tr>
<td>2. Population of Banff, 1901-1961</td>
<td>131</td>
</tr>
<tr>
<td>3. Collection Permits Issued for Banff Park by Discipline</td>
<td>218</td>
</tr>
<tr>
<td>4. Collection Permits Issued for Banff Park According to Agency</td>
<td>218</td>
</tr>
<tr>
<td>5. Design and Cost Characteristics of Alternate Freeway Routes</td>
<td>382</td>
</tr>
<tr>
<td>6. Effect of Interest Rate and Study Life Upon Benefit-Cost Ratio, Red Buffalo vs. Vail Pass Route</td>
<td>384</td>
</tr>
<tr>
<td>7. Annual Road User Savings and Benefit-Cost Ratio for Red Buffalo Alternate for Various Treatments of Traveltime Cost</td>
<td>390</td>
</tr>
</tbody>
</table>
### TABLE

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Distribution of Zones in National and Quasi-National Parks, Japan</td>
<td>710</td>
</tr>
</tbody>
</table>
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
- McLean Foundation
- National and Historic Parks Branch, Department of Indian Affairs and Northern Development
- The University of Calgary
- W. J. Gage and Company

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 is 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
   17

The National Parks Movement in Canada
   J. I. Nicol
   35

The Development of Recreation in the United States and Canada
   and its Implications for the National Parks
   Marion Clawson
   53

Wilderness and Man in North America
   Roderick Nash
   66

The Doctrine of Usefulness: Natural Resource and National
   Park Policy in Canada, 1887-1914
   Robert Craig Brown
   94

Man and Landscape Change in Banff National Park: A National
   Park Problem in Perspective
   J. G. Nelson
   111

Summaries and Discussion
   151
THE DEVELOPMENT OF THE NATIONAL PARK MOVEMENT

J.-P. Harroy*

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 at the end of 1967, of the French version 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, aerodromes, 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, superficies 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 seigniorial 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 Białowieża 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 Heide 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, 2 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 NATIONAL PARKS
MOVEMENT IN CANADA

J. I. Nicol*

"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 con­
cepts, particularly over the past fifteen years, first among those con­
cerned 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.

*J. I. Nicol is Director of the National and Historic Parks Branch
of the Department of Indian Affairs and Northern Development, Ottawa.
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, Northwest 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, eleven years elapsed before the next park, Fundy National Park, was established in New Brunswick. Nine years later in 1957, Terra Nova National Park in Newfoundland came into being. 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. 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.
PRESENT SITUATION AND PROBLEMS

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.
6 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.
8. Dominion Forest Reserves and Parks Act, Chapter 10, 1-2 George V (1911).


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

14. Pursuant 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).

15. National Parks Act (1930), Part II.


17. Transfer 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).


LEGISLATION RELATING TO THE NATIONAL PARKS OF CANADA

1. Dominion Lands Act, 1883—Chapter 17.
   Dominion Lands Act, Revised Statutes of Canada 1886—Chapter 54.
   Dominion Lands Act, Revised Statutes of Canada 1906—Chapter 55.

2. Rocky Mountains Park Act, 1887—Chapter 32.
   Amended by Chapter 31, 1902
   Amended by Chapter 44, 1906.

3. The Dominion Forest Reserves and Parks Act, 1911—Chapter 10.
   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.

4. The National Parks Act, 1930—Chapter 33.
   Nova Scotia and Prince Edward Island National Parks Act, 1936—Chapter 43.
   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 (Boundaries) Amendment Act, 1946—Chapter 9.
   National Parks Amendment Act, 1947—Chapter 66.
   National Parks (Amendment) Act, 1948—Chapter 18.
   National Parks Amendment Act, 1949—Chapter 5.
   National Parks (Amendment) Act, 1950—Chapter 45.
   National Parks Act, Revised Statute of Canada 1952—Chapter 189.
   National Parks (Amendment) Act, 1955—Chapter 37 (amendment and to establish a national park in Newfoundland).
   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

---

*Marion Clawson is Director of the Land Use and Management Program for Resources for the Future, Inc., Washington, D.C. He had formerly been Director of the Bureau of Land Management of the United States Department of the Interior.
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 professionaly 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.
IMPLICATIONS OF MASS OUTDOOR RECREATION FOR THE NATIONAL PARKS

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.

†Roderick Nash is an Assistant Professor of History at the University of California, Santa Barbara.
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 loath 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. 9

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 1930s, "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.

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 outdoors-
man. 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 experi-
ences of a canoe trip." A competing outfitter boasts that you can
erenter 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' head-
quarters 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 concessionnaire 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.

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.

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.

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.  

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

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.  

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.¹⁷

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 deprecate 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."¹⁸ 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."¹⁹ 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.²⁰

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."

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 inau­
gurate 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 origi­
nally 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.

Professor S. P. Hays writes that:
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.


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


8House 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.

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

10Ibid., 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 $100,000 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).

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

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

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

14Ibid., p. 232.

15Ibid.

16Ibid., p. 233.

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

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

19Ibid., p. 246.

20Cited 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 game and 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

---

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>
</thead>
<tbody>
<tr>
<td>1950-51 (Calendar Year)</td>
<td>449,888</td>
<td>85,633</td>
<td>97,195</td>
<td>50,871</td>
</tr>
<tr>
<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>
</tr>
<tr>
<td>1959-60</td>
<td>979,997</td>
<td>339,627</td>
<td>465,128</td>
<td>68,721</td>
</tr>
<tr>
<td>1960-61</td>
<td>1,077,170</td>
<td>370,209</td>
<td>523,719</td>
<td>72,342</td>
</tr>
<tr>
<td>1961-62</td>
<td>1,069,623</td>
<td>372,546</td>
<td>533,163</td>
<td>117,653</td>
</tr>
<tr>
<td>1962-63</td>
<td>1,347,576</td>
<td>413,734</td>
<td>598,487</td>
<td>410,341</td>
</tr>
<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. 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.

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." 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.

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 mountainous upper Red Deer about twenty miles east of the Pipestone.\(^7\) (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."\(^8\) 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.\(^9\)

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.\(^10\) 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..."\(^11\) 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."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."  

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.\textsuperscript{18} (Table 2). 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 towns site 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 towns site, making for low building and population density. No restrictions were placed on the people who could take up residence in the town site, 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 town site 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 town site be enlarged and made the provincial capital.\textsuperscript{19} 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 2

**POPULATION OF BANFF, 1901-1961**

<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>
<td>2,002</td>
</tr>
<tr>
<td>1921</td>
<td>2,062</td>
<td>3,049</td>
</tr>
<tr>
<td>1931</td>
<td>2,519</td>
<td>3,157</td>
</tr>
<tr>
<td>1941</td>
<td>2,187</td>
<td>2,545</td>
</tr>
<tr>
<td>1951</td>
<td>2,357</td>
<td>2,856</td>
</tr>
<tr>
<td>1956</td>
<td>2,518</td>
<td>3,069</td>
</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-does were ever held. But the consequences are clear: a demand for more trails by the rapidly increasing number of ski-dooers; 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 con­
flicts with other users, for example, research equipment and experimen­
tal 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 presen­
ted 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
are subject to change.

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*\textsuperscript{24} will 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 activities such as controlled burning carried on, without disturbance or without serious 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 management 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 Administration or would a series of divisions within one strong overall administration 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 preservation 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, geological, 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
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
158

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?

Do you feel threatened by that?

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 mani-
fest 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; preser-
vation 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 appreci­
te 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 elses­
where. 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 isola­
tion 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 signifi-
cant 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 busi-
ness 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 ideolo-
gical 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 defi-
nitions, 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. Daemm

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

*W. A. Fuller is an Associate Professor of Zoology at the University of Alberta in Edmonton.
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 indispensible, *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 oldest 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." 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 \(ightarrow\) garbage and garbage \(ightarrow\) 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
queathing 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 expressed in the widely quoted description of national parks as "outdoor museums." But a museum implies a rather simple, static view of preservation. 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 present section is to suggest how the system could be improved and to point to danger signals that could threaten even the present accomplishments.

*The System is Incomplete.* Parks should not be chosen to preserve only natural curiosities, but they should be planned to include examples of every landscape zone in the country, each with its geological, biological, historical and scenic resources intact. It is implicit 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 hamp­pered 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.


13 Mumford. op. cit., p. 722.
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

*J. B. Cragg is Director of the Environmental Sciences Centre at The University of Calgary.
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 pleasuring 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 Eichorn (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
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.

REFERENCES


Northern Affairs and National Resources (Canada), Department of National Parks Policy, Ottawa, 1964, 32 pp.

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. G. Nelson kindly read the manuscript and offered suggestions.

†J. Gardner holds a Ph.D. in Geography. In 1967–1968, he was a Killam Post-Doctoral Fellow at The University of Calgary, Alberta.
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. 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. In addition, valuable interpretive studies on the fauna of Banff and other mountain parks have been contributed.

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. Another focus has been the past development of Banff townsite.

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.
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
Archeology 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**

Collection Permits issued for Banff Park by Discipline

<table>
<thead>
<tr>
<th>Year</th>
<th>Biology</th>
<th>Geology</th>
<th>Geomorphology</th>
<th>Glaciology</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>14</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>1962</td>
<td>11</td>
<td>27</td>
<td>3</td>
<td>2</td>
<td>43</td>
</tr>
<tr>
<td>1963</td>
<td>16</td>
<td>27</td>
<td>6</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>1964</td>
<td>16</td>
<td>31</td>
<td>2</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td>1965</td>
<td>26</td>
<td>20</td>
<td>3</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>1966</td>
<td>27</td>
<td>29</td>
<td>4</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>1967</td>
<td>39</td>
<td>30</td>
<td>5</td>
<td>0</td>
<td>74</td>
</tr>
</tbody>
</table>

**TABLE 4**

Collection Permits issued for Banff Park According to Agency

<table>
<thead>
<tr>
<th>Year</th>
<th>Federal Gov't.</th>
<th>Provincial Gov't.</th>
<th>University</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>22</td>
<td>5</td>
<td>4</td>
<td>21</td>
<td>52</td>
</tr>
<tr>
<td>1962</td>
<td>18</td>
<td>4</td>
<td>14</td>
<td>7</td>
<td>43</td>
</tr>
<tr>
<td>1963</td>
<td>22</td>
<td>2</td>
<td>20</td>
<td>8</td>
<td>52</td>
</tr>
<tr>
<td>1964</td>
<td>15</td>
<td>6</td>
<td>16</td>
<td>12</td>
<td>49</td>
</tr>
<tr>
<td>1965</td>
<td>25</td>
<td>3</td>
<td>20</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>1966</td>
<td>29</td>
<td>2</td>
<td>23</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>1967</td>
<td>36</td>
<td>4</td>
<td>26</td>
<td>8</td>
<td>74</td>
</tr>
</tbody>
</table>
Science in Banff National Park—A By-Product?

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
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.


MAINTAINING THE WILDERNESS EXPERIENCE IN CANADA'S NATIONAL PARKS

John S. Marsh*

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

*John S. Marsh is a Ph.D. candidate in the Department of Geography, The University of Calgary
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 jut 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. 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. 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. 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. 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. 10 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. 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.\footnote{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.\footnote{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.\footnote{14} Wilderness areas have a unique and essential role as natural science research areas\footnote{15} 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.\footnote{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, campsites 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. 25

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. 26 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. 27 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
for wilderness recreation.  

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


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

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.


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

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.

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.

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

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

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

For example in New Zealand and Poland.

This technique is employed in Natal and possibly elsewhere.

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.
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

*B. Reeves is a member of the Faculty of the Department of Archaeology at The University of Calgary, Alberta.
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
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 (DgP1-2, 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 (DgP1-7), 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.
REFERENCES


"Prehistoric and Early Historic Transmountain Travel and its Effect on the Landscape." 1965b MS Glenbow Foundation, Calgary.


"Perspectives on Late Middle Prehistoric Culture Change." Paper read at the Annual Meeting of the Montana Archaeological Society, Billings, Montana, May 5, 1968.


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

*Douglas H. Pimlott is an Associate Professor of Zoology at the University of Toronto.
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; Iltis, 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,

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 climax. 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
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


RECREATION AND NATIONAL PARKS
Raymond F. Dasmann*

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.

*Raymond F. Dasmann is the Director of Environmental Studies with the Conservation Foundation, Washington, D.C.
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


5Outdoor Recreation Resources Review Commission, op. cit.

6Darling and Eichhorn, op. cit.
URBANIZATION AND CANADA'S NATIONAL PARKS

H. Peter Oberlander*

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

*H. Peter Oberlander is a Professor of Planning and Director of the School of Community and Regional Planning in the Faculty of Graduate Studies at the University of British Columbia.
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 experinece 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.

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

1 For further Jasper information see: H. Peter Oberlander and R. J. Cave, Urban Development Plan, Jasper, Alberta, prepared for the National Parks Branch of the Department of Northern Affairs and National Resources, Ottawa, 1963; for Banff information see: H. Peter Oberlander, Urban Development Plan, Banff, Alberta, prepared for the National Parks Branch, Department of Northern Affairs and National Resources, Ottawa, 1961.
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 Northwest 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 crises 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 archaeological 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 aboriginal 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.
OBERLANDER: 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 Parke*. 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 paradoxical 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 experience 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 evaluating 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 or 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?
OBERLANDER: 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
caught.

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 donot 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 under­
stand 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 ourselves 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 bioluminescent 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 townsites 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?"

(Appause)

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.
Providing for National Parks and Related Values  
*Jack L. Knetsch*

The Measurement of the Benefits of Public Investment in National Parks  
*Lawrence G. Hines*

Uses and Abuses of Highway Benefit-Cost Analysis: A Primer on Highway Economics for Park Officials, Conservationists, and Interested Citizens  
*Dennis Neuzil*

Summaries and Discussion
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

*Jack L. Knetsch is a Professor of Economics and Acting Director, The Centre for Natural Resources Policy Studies, the George Washington University, Washington, D.C.
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 centreing 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 environmental 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 destroyed 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 public land set aside or acquired during early conservation crusades, growing and conflicting demands, and demands from all parts of the country for the right to develop resources according to local economic objectives, 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 dramatically 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 disagreements 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 conceived 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 acquisition 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 ascendancy. 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,\textsuperscript{1} 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.\textsuperscript{2} Few had seriously considered such problems and most responded in a kind of \textit{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.\textsuperscript{3}

Although the output of articles and studies in this area has been vast since the Park Service’s early attempt, progress in the

\textsuperscript{*}Lawrence G. Hines is a Professor of Economics at Dartmouth College, Hanover, New Hampshire.
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 in 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.
The Clawson "Demand" Curve

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.¹²

**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


2 Professor 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.

3 Most 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. 4

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. 5

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>
</tr>
<tr>
<td>Average Grade</td>
<td>3.1%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Design Speed</td>
<td>50 mph</td>
<td>50 mph</td>
</tr>
<tr>
<td><strong>Initial Cost:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roadway</td>
<td>$17,514,000</td>
<td>$19,079,000</td>
</tr>
<tr>
<td>Pavement</td>
<td>2,650,000</td>
<td>1,652,000</td>
</tr>
<tr>
<td>Twin Tunnel</td>
<td>$41,211,000</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><strong>Total</strong></td>
<td>$22,803,000</td>
<td>$63,095,000</td>
</tr>
<tr>
<td><strong>Initial Cost Converted to Annual Basis, C</strong></td>
<td>$1,112,000</td>
<td>$2,708,000</td>
</tr>
<tr>
<td><strong>Annual Maintenance Cost, M</strong></td>
<td>$102,000</td>
<td>$200,000</td>
</tr>
<tr>
<td><strong>Total Annual Highway Cost, C + M</strong></td>
<td>$1,214,000</td>
<td>$2,908,000</td>
</tr>
<tr>
<td><strong>Annual Road User Cost</strong></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>
</table>
| 1. Highway Department Study Life  
(Pavement, 20 yrs.; roadway, 40 yrs.; tunnel and right of way, 60 yrs.) | 1.94 | 1.28 | 0.99 |
| 2. Author's Recommended Study Life  
(Pavement, 15 yrs.; roadway, tunnel and right of way, 30 yrs.) | 1.46 | 1.10 | 0.91 |

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 per cent 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.22

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></th>
<th>Benefit-Cost Ratio</th>
<th>Annual Road User Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.5%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>(a)</td>
<td>(b)</td>
</tr>
<tr>
<td>1. Allowing Traveltime Cost for all Vehicles:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Highway Department Estimate</td>
<td>$3,293,000</td>
<td>1.94</td>
</tr>
<tr>
<td>B. Author's Estimate</td>
<td>2,683,400</td>
<td>1.59</td>
</tr>
<tr>
<td>2. Allowing Truck Traveltime Cost + ¾ Passenger Car Traveltime Cost</td>
<td>2,481,900</td>
<td>1.47</td>
</tr>
<tr>
<td>3. Allowing Truck Traveltime Cost Only</td>
<td>2,280,400</td>
<td>1.35</td>
</tr>
<tr>
<td>4. No Allowance for Traveltime Cost</td>
<td>2,241,100</td>
<td>1.32</td>
</tr>
</tbody>
</table>

(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 1.43.23

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.

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.

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.

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.


Winfrey, *op.cit.* pp. 22-23.

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.

Road User Benefit Analysis, pp. 144-147.

See Neuzil (1967), *op.cit.*, for summary of recent truck operating cost and upgrade-speed characteristics.


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.

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 a certain 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 don't 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 recrea-
tion 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 donot 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 con-
derable amount of work in terms of measurement of benefits.

On the matter of composing the value of an intangible experien-
ce, 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 townsites 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 cannot conclude
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.
(Applause)

STAHL: Herb?

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 an 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, "Donot 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

The Parks of Ontario
E. G. Pleva

The Parks of Saskatchewan
W. A. Hartwell

The Provincial Parks of Alberta
C. H. Harvie

Outdoor Recreation in the Calgary Region: Problems and Potentials
Louis Hamill

The Nature Conservancy of Canada
F. Aird Lewis

The Nature Conservancy in Various Parts of the World: Accomplishments and Difficulties
Maria Buchinger

Federal Rural Development Programs and Recreation Resources
C. S. Brown

The Canadian Council of Resource Ministers
Christian de Laet

Summaries and Discussion
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

*E. G. Pleva is a Professor of Geography at the University of Western Ontario, London, Ontario.

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-quarters 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
vey 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

*W. A. Hartwell is Director of Park Operations in the Department of Natural Resources, Government of Saskatchewan, Regina.
more knowledgeable in terms of "How to keep them home on the farm."
In other words how to develop an improved understanding, within Sas-
katchewan, 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 with-
in 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 con-
tain 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 pre-
serve 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 recrea-
tional 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 per cent 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?
THE PROVINCIAL PARKS OF ALBERTA

C. H. Harvie*

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.1 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,

*C. H. Harvie is Parks Planning Supervisor in the Department of Lands and Forests, Government of Alberta, Edmonton.
this paper will deal with the 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, 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 distinct 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:

<table>
<thead>
<tr>
<th>Class A1</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Willmore Wilderness</td>
<td>1,135,872</td>
</tr>
<tr>
<td>Ghost River Wilderness</td>
<td>37,850</td>
</tr>
<tr>
<td>The Siffleur Wilderness</td>
<td>101,843</td>
</tr>
<tr>
<td>The White Goat Wilderness</td>
<td>312,781</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class B1</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athabasca Landing</td>
<td>3.02</td>
</tr>
<tr>
<td>Buckingham House</td>
<td>5.79</td>
</tr>
<tr>
<td>Bugnet Plantation</td>
<td>13.00</td>
</tr>
<tr>
<td>Coronation Boundary Marker</td>
<td>0.25</td>
</tr>
<tr>
<td>Early Man Site</td>
<td>1.00</td>
</tr>
<tr>
<td>Fort De L'Isle</td>
<td>107.20</td>
</tr>
<tr>
<td>Fort George</td>
<td>1.00</td>
</tr>
<tr>
<td>Fort McLeod</td>
<td>0.66</td>
</tr>
<tr>
<td>Fort Vermilion</td>
<td>2.00</td>
</tr>
<tr>
<td>Fort Victoria</td>
<td>0.80</td>
</tr>
<tr>
<td>Fort White Earth</td>
<td>5.48</td>
</tr>
<tr>
<td>Place Name</td>
<td>Acres</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Frog Lake Massacre</td>
<td>3.84</td>
</tr>
<tr>
<td>Hay Lakes Telegraph Station</td>
<td>0.89</td>
</tr>
<tr>
<td>Indian Stone File</td>
<td>3.75</td>
</tr>
<tr>
<td>Massacre Butte</td>
<td>1.00</td>
</tr>
<tr>
<td>Rev. George McDougall</td>
<td>0.46</td>
</tr>
<tr>
<td>Ribstones</td>
<td>2.00</td>
</tr>
<tr>
<td>Rocky Mountain House Fort</td>
<td>2.75</td>
</tr>
<tr>
<td>Shaw Woolen Mill</td>
<td>0.25</td>
</tr>
<tr>
<td>Standoff</td>
<td>0.89</td>
</tr>
<tr>
<td>Stephanson</td>
<td>12.00</td>
</tr>
<tr>
<td>St. Joseph Industrial School</td>
<td>0.36</td>
</tr>
<tr>
<td>Twelve Foot Davis</td>
<td>2.10</td>
</tr>
<tr>
<td>Old Women's Buffalo Jump</td>
<td>8.16</td>
</tr>
</tbody>
</table>

### Class C2

<table>
<thead>
<tr>
<th>Place Name</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Hill Springs</td>
<td>62.94</td>
</tr>
<tr>
<td>Bragg Creek</td>
<td>160.00</td>
</tr>
<tr>
<td>Cypress Hills</td>
<td>49,620.00</td>
</tr>
<tr>
<td>Dinosaur</td>
<td>22,072.40</td>
</tr>
<tr>
<td>Kootenay Plains</td>
<td>8,580.00</td>
</tr>
<tr>
<td>Writing-On-Stone</td>
<td>1,055.10</td>
</tr>
</tbody>
</table>

### Class D2

<table>
<thead>
<tr>
<th>Place Name</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauvais Lake</td>
<td>786.19</td>
</tr>
<tr>
<td>Big Knife</td>
<td>731.50</td>
</tr>
<tr>
<td>Bow Valley</td>
<td>2,309.36</td>
</tr>
<tr>
<td>Bragg Creek</td>
<td>302.47</td>
</tr>
<tr>
<td>Crimson Lake</td>
<td>7,878.29</td>
</tr>
<tr>
<td>Cross Lake</td>
<td>4,126.05</td>
</tr>
<tr>
<td>Entrance</td>
<td>6,617.50</td>
</tr>
<tr>
<td>Lesser Slave Lake</td>
<td>17,852.26</td>
</tr>
<tr>
<td>Moose Lake</td>
<td>1,719.00</td>
</tr>
<tr>
<td>Long Lake</td>
<td>1,726.47</td>
</tr>
<tr>
<td>Moonshine Lake</td>
<td>1,922.00</td>
</tr>
<tr>
<td>Pembina River</td>
<td>408.76</td>
</tr>
<tr>
<td>Sir Winston Churchill</td>
<td>591.40</td>
</tr>
<tr>
<td>Thunder Lake</td>
<td>513.67</td>
</tr>
<tr>
<td>The Vermilion</td>
<td>1,929.33</td>
</tr>
<tr>
<td>Winagami Lake</td>
<td>2,952.00</td>
</tr>
</tbody>
</table>

### Class E2

<table>
<thead>
<tr>
<th>Place Name</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspen Beach</td>
<td>232.14</td>
</tr>
<tr>
<td>Dillberry Lake</td>
<td>219.83</td>
</tr>
<tr>
<td>Hommy</td>
<td>16.43</td>
</tr>
<tr>
<td>Jarvis Bay</td>
<td>215.89</td>
</tr>
<tr>
<td>Kinbrook Island</td>
<td>95.00</td>
</tr>
<tr>
<td>Lac Cardinal</td>
<td>320.40</td>
</tr>
<tr>
<td>Little Bow</td>
<td>272.16</td>
</tr>
<tr>
<td>Little Fish Lake</td>
<td>151.21</td>
</tr>
<tr>
<td>Ma-Me-O Beach</td>
<td>4.00</td>
</tr>
<tr>
<td>Miquelon Lake</td>
<td>883.79</td>
</tr>
<tr>
<td>O'Brien</td>
<td>21.80</td>
</tr>
</tbody>
</table>
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.¹⁴

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.¹ 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 recre-
ation 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 concern-
ed 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 gullying 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 unsophisticated 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 "oiliers." 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 underway 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." 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 underway.

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 townhouses, 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 townsite 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 adminis-
tration 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 demon-
strated 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 partici-
pation 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 recre­
tional 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 recre­
ation 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
Recration Study will appear in the 1968 General Plan.

2 Paul C. Rump, "The Recreational Land Use of the Bow, Kananaskis,
and Spray Lakes Valleys" (unpublished Master's thesis, Department of
Geography, The University of Calgary, 1967).

3 General Policy Statement of Eastern Rockies Forest Conservation

of the Stoney Indian Reservation: Livestock and Forest Enterprises"
(unpublished Master's thesis, Department of Geography, The University of
Calgary, 1966).

5 George W. Tough, "A Study of Coal Mining: Cascade Coal Area"
(unpublished Master's thesis, Department of Geography, The University of
Calgary, 1968).

6 Outdoor Recreation Trends (Washington, D.C. : U.S. Department of

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 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

*Maria Buchinger is Head of the Latin American Desk at The Nature Conservancy, Washington, D.C.
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.¹

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.²

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 Darnell³ 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.4

"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.5

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 orchids 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 relicts, 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

1T.C. Byerly and S.A. Cain, Interim Report of the National
Academy of Sciences National Research Council Delegation of the First
General Meeting of the Special Committee for the International Biological
Programme of the International Council of Scientific Unions, Washington,
D.C., 1964.

2I.B.P., "International Council of Scientific Unions Special
Committee for the International Biological Programme," I.B.P. News
No. 2:10-11, 1965.

3R.M. Darnell and R.J. Darnell, "Natural Areas in Regional
Planning." (Presented at the Latin American Conference on the
Conservation of Renewable Natural Resources. Bariloche, Argentina,
1968), distributed.

4Regional Planning Council, Outdoor Recreation in the Baltimore
Region. Baltimore, Maryland, 1967.

5Pan American Union. Resoluciones de los Congresos
Interamericanos de Turismo en que se efectuan recomendaciones sobre
Los Recursos Naturales Renovables y Resoluciones emanadas de los
Congresos Panamericanos de Carreteras relativos a los Recursos

6The Nature Conservancy. The Nature Conservancy, Natural Areas.

7Pan American Union. Convention on Nature Protection and Wild
Life Preservation in the Western Hemisphere, 1940. Washington, D.C.,
1964.

8Jean-Paul Harroy, The United Nations World List of National
Parks. (Liste des Nations Unies des Parcs Nationaux et Reserves
Analogues), (Bruxelles: Hayez, 1967)

9K.S. Norris, "California's Natural Land and Water Reserve

10M. Buchinger, "International Cooperation in Natural Area

11Ibid.
FEDERAL RURAL DEVELOPMENT PROGRAMS AND RECREATION RESOURCES

C. S. Brown*

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

---

* C. S. Brown is Recreation Co-ordinator of the Resource Development Division of the Department of Forestry and Rural Development, Ottawa.
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.
THE FEDERAL–PROVINCIAL A.R.D.A. AGREEMENT

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(a)

<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</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>1,838,000</td>
<td>1,838,000</td>
</tr>
<tr>
<td>Man.</td>
<td>1,067,000</td>
<td>1,770,000</td>
<td>2,837,000</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>TOTALS</td>
<td>6,170,000</td>
<td>17,295,000</td>
<td>23,465,000</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
cost, 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. There­
after, 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 resi­
dents," and classify them "according to their physical capability for
use in agriculture, forestry, recreation and wildlife and their present
use."³

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 prov­
inces, 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. Yet, provin-
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

*Christian de Laet is Secretary-General of the Canadian Council of Resource Ministers.
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, focusing 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 keywords 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,
often 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
maintain 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 inter-governmental 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 agencies administer a system of parks classified by type, purpose, permissible activity, and degree of protection.

The complex administrative problems arise in providing recreational opportunities in areas outside the existing park systems. As a consequence, it is suggested that the administration, for recreational purposes, of multiple-use land be under the authority of separate divisions 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 operational techniques. The agency would be in on the "ground floor" of resource allocation decisions and management plan formulation.

Should a second agency actively enter the field of providing recreational facilities, it is suggested that an integration Board or Committee would be required, along the lines of the Ontario example. Cabinet 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 population. 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 recreation purposes, often involving the repurchasing of Crown lands. Where only this limited supply of public land is available, communities respond 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 situation is further complicated for the administrators and entrepreneurs by the extreme "peaking" characteristics of recreational demand. Considerable research is being devoted to off-peak or off-seasonal developments. Summer-oriented resorts are developing comprehensive winter programs 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 possibilities 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 interdepartmen tally, 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 Saskatchewan.

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 convetous 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
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
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.
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.