The Canadian National Parks: today and tomorrow
Conference II

Studies in Land Use History and Landscape Change No. 7
THE CANADIAN NATIONAL PARKS:
today and tomorrow
CONFERENCE II: TEN YEARS LATER

VOLUME I
STUDIES IN LAND USE HISTORY AND LANDSCAPE CHANGE are directed by Dr. J. G. Nelson, Dean of the Faculty of Environmental Studies, University of Waterloo.

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The Canadian National Parks: today and tomorrow
Conference II: Ten Years Later

Volume I (in two volumes)

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today and tomorrow
CONFERENCE II: TEN YEARS LATER

VOLUME I
ACKNOWLEDGEMENTS

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Many people made important contributions to the local arrangements and to the work of the Conference. We offer our sincere thanks to all of them. Special thanks must be extended to John Amatt, Jackie Cheng, Shelley MacAulay, and Patsy Murphy of the School of the Environment, the Banff Centre; Catherine Hardie, Manager of the Centre's Conference Division, and David Hignell, who supervised all aspects of the audio-visual operations in the Eric Harvie Theatre; Cliff and Patti White, Jon Whyte, Jenny Meikle, Aileen Harmon, Elizabeth Neil, Harvey Buckmaster, Mike and Diane McIvor, and Jim Lotz. We would like to acknowledge the enthusiasm and energy which the late Catherine Whyte brought to the Conference. Terry Green of the National and Provincial Parks Association of Canada assisted in original planning and fund raising. We wish to recognize the efforts of John MacFarlane, who coordinated Parks Canada's input to the Conference from Ottawa. Bob Mitten of Alberta’s Department of Recreation, Parks, and Wildlife organized the field trip to Kananaskis Country. The Conference would not have been possible without the strong support of Steve Kun, Director, National Parks Branch, Parks Canada.

Terry Fenge, Julia Gardner, and Bryan Smale of the University of Waterloo, assisted Roger Needham, the Rapporteur, by providing session outlines for the Rapporteur's summaries. David Bartholomew, Graphic Services, University of Waterloo, produced the cover design for the Proceedings and was a constant source of advice throughout the production process. Michelle Duquette assisted with travel arrangements, budget control, and typing. Donna Needham aided in
the typing of the final manuscript and in the preparation of illustrations. Robert Scace was responsible for local arrangements and helped with programme planning and the organization of these Proceedings. Shirley Nelson helped with the detailed editing. Roger Needham undertook principal responsibility for detailed editing, the production of the Proceedings, and was Rapporteur. Thank you very much.

J.G. Nelson,
Waterloo, Ontario,
September 20, 1979
PREFACE

In 1968 the first national conference on Canadian national parks and related reserves was held at the University of Calgary. The Canadian National Parks: today and tomorrow conference was called to provide an opportunity for the interchange of ideas between administrators, planners, scholars, park residents and businessmen, field staff, conservationists and citizens generally on the establishment, planning, management and use of parks and related reserves. The emphasis was upon the Canadian scene and authors and panelists were drawn from across Canada. Elements of comparative international experience were introduced by speakers from the United States, Japan, Europe and elsewhere. The 1968 Conference itself and the two publications which emanated from it were very well received in Canada and abroad.

The second Canadian conference on national parks and related reserves was held in Banff, Alberta in October, 1978. This conference examined the progress and the problems in the decade 1968-1978, a period during which there have been some dramatic changes in the number and the types of national parks and related reserves; and a time of considerable change in terms of institutional and public attitudes towards and perceptions of the value and the role of parks and other categories of conservation and recreation areas.

Many of those who spoke in 1968 addressed the same topics in an attempt to achieve as much continuity, comparability and evaluation as possible. Canadian and international experience again was presented at the conference so as to emphasize the interchange of ideas.

THE CANADIAN NATIONAL PARKS: today and tomorrow CONFERENCE II was organized by three groups: an educational institution (Faculty of Environmental Studies, University of Waterloo); a national citizens' conservation society (National and Provincial Parks Association of Canada); and a federal government agency (Parks Canada). The participation of Parks Canada in the organization of Conference II affirms the significance which the Government of Canada attaches to this meeting; as a forum for a) the discussion of progress and problems in national parks and related open spaces in the decade 1968-1978, and for b) the identification of desirable strategies and guidelines for future policy and practice.
THE OPENING ADDRESS
Monday, October 9th: Morning
INTRODUCTION

Let me begin by observing that this Conference II is a rare opportunity. We seldom get this kind of chance to survey the record of a decade. We have come together here, with the advantages of hindsight, to assess the stage of Canada's national park's system today, and to examine the challenges and prospects facing those who believe we must be vigilant in protecting our natural heritage. For openers, I will try to explain where I think we stand and what my plans are for the future.

Conservation issues are posing increasingly difficult political choices all over the world. Development imperatives and their immediate contribution to society's perceived needs are gaining appeal for political leaders and the people that they represent in every nation on earth. The intangible and long-range values of nature conservation seem to some to be oddly out of place against this background of pressing economic demands. I believe people like ourselves should be prepared to defend the conservation option, to balance economic development with environmental and social concerns. But more importantly, we must try to enlarge the community of people who understand how critical this balance is to the future of our country. Heritage preservation has a couple of dimensions for Canadians that are not so evident in other countries. We sometimes forget that the opportunity for meaningful conservation in Canada is superior to that of most other nations. In addition, Canadian heritage preservation has a timetable dictated partly by the struggle to keep this country together.

Most important in the national picture is the sense of sharing in the land that is Canada. The more values that are shared by all Canadians, the more difficult it will be to tear this country apart. For this reason, I believe that those of us concerned with national parks have a special obligation to see that they remain in a national system.

Our natural heritage, the North, and the concept of wilderness - all evoke the spirit of the country. The preservation of these
elements gives substantial expression to Canada's identity. Not every Canadian has seen Pacific Rim or Gros Morne. But most of us are at least vaguely aware that they exist as part of a national network, and many share a knowledge that they exist for the enjoyment of every Canadian. I believe we all should keep this in the back of our minds and recognize that we each have the opportunity to reinforce this dimension of Canada's uniqueness. Conservation at its most mundane can be called a long-term investment which can pay dividends for generations to come, dividends for us as individuals, as a nation, and for all mankind. Conservation at its most eloquent can be called an act of faith in the future of Canada and in the future of mankind.

The community of conservation interests is as diverse as the land itself. It includes those native people who wish to defend their traditional lands and way of life. It includes those who seek the adventure and solitude of the wilderness with pack or paddle. It includes those who are worried about pollution of our lakes and streams. It includes those who would improve our physical fitness and our mental health. It includes those who argue for the use of technology on an appropriate scale. And it includes visitors to national parks who want peaceful places where they can experience the majesty of nature.

We at this conference probably represent most segments of that conservationist mosaic. I see this gathering as a means for all of us to re-dedicate ourselves to preserving the natural beauty and diversity which is our legacy as Canadians. But we must remember that those who aim to enlarge the other comforts of our society, for relatively immediate mass enjoyment, are equally as dedicated. Pressure for exploitation is relentless; and it is fuelled by marketing techniques designed to persuade people that yesterday's luxuries are today's necessities. Conservationists have to reckon with the mentality of mass consumerism and self-gratification. This is especially difficult because the impact of unchecked development barely is perceptible to the majority living in the urban South.

Partly for this reason, we must be careful not to allow this essentially political exercise to escalate further into a battle between development and conservation interests. It would be easy to let the rhetoric of confrontation come between ourselves and the best solutions. But I want you to understand that I am not arguing for all development to cease. In fact, development is extremely important to this country. In balance, it can be a progressive force. Let us be clear on two counts: many developers are sensitive to the values of conservation, and in some notable cases they contribute to it; secondly, a battle-ground mentality pitting all forms of development against conservation will not accomplish anything we want. The issue has developed well beyond that level.
I note that ten years ago one of Jean Chrétien's paramount concerns was balancing the legitimate demand for recreation with the need for conservation. I share my predecessor's concern. But now I am able to see that there is a more complex set of interests competing for natural areas. Since 1968 we have recognized the legitimate legal claims of native people, along with their need for access to fish and game in order to pursue traditional vocations. Since then Canadians have also gained a keener awareness of resource development options, particularly to satisfy energy needs.

Like Chrétien, I, too, return to the concept of balance whenever I address what some people consider to be the mutually-exclusive ends of exploitation and conservation. I am not saying that all development must cease.

What I am proposing to developers, as well as to conservationists, is that the issues should be faced squarely, and that protection should be accepted as a valid, perhaps the best, use of special natural areas. I do not see national parks merely as a last chance for lands which are of no commercial value. I do not see them as a trade-off to sanctify exploitation of all other lands. Rather, I see wilderness protection as the best use of some of our natural resources, as a first consideration instead of a rearguard action.

How then do we achieve a balance among these competing interests? My own approach is to seek out the common ground among the varied arguments, to design ways they can be blended, and continually to defuse the notion that they always have to be at odds. For example, it becomes apparent, when you look at the issues, that conservation objectives and native peoples' aspirations are very closely linked. Recreation and conservation are not usually far apart. In the North we can achieve our objectives for resource development and for conservation if each does not exaggerate its claim.

Maybe a specific case will illustrate how I have tried to match the interests of conservation and development in practical ways over the past year. The northern Yukon has been identified since 1970 as a unique natural area worthy of special protection. In July, I withdrew 38,000 square kilometres of the northern Yukon as an initial step towards the creation of Canada's first national wilderness park. This action prevents further alienation of the land while we work out the details. The region includes critical wildlife habitat, internationally significant archaeological sites, and some spectacular landscape. Not incidentally, it also embraces the Porcupine caribou herd's calving grounds.
There also are recognized native interests within that area. You are no doubt familiar with the Committee for Original Peoples' Entitlement (C.O.P.E.) land claim.

Those negotiations aim to safeguard native interests in about a third of the land withdrawn. In addition, there are potential mineral interests in some of the withdrawn area, particularly in the southeast corner. Extensive consultation should enable us to determine what portions of the area actually need to become a wilderness park and what can be released for development. I doubt that the whole area is required for park purposes. All interests will be fully consulted and all reasonable accommodations will be made. My officials actively are engaged right now in discussions with the mining industry on, among other things, a land use rationale for the North that will withstand the tests of time and reason. In this way, I have staked out a strong conservation claim in the Yukon while ensuring that it does not deny other legitimate interests any more than is absolutely necessary.

COURSES OF ACTION

So far, I have mentioned some broad, philosophical premises that underlie our national parks' policies. Now I would like to deal with how I think we can intelligently translate this philosophy into policy directions for Parks Canada.

Since I became Minister of Indian and Northern Affairs a year ago, my travels and my experiences have led me to conclude that we must have wilderness areas where no man-made developments are permitted, where future generations of man may still meet nature on its own terms.

My aim is to protect representative natural areas north of sixty degrees. I stress the word representative, since I do not intend needlessly to tie up large chunks of the North. As you know, there are many people who think the North is too big and too rugged to destroy. They are blithely confident that there is so much land up there that they need not worry. I have as much respect for the vastness of our great wildlands as anyone. But, like anyone who has travelled extensively in the North, I also am aware of its fragility and its vulnerability to the devices of modern man. And so I am convinced of the need to act selectively, but decisively, to save some of it from the risk of destruction. In order to do this, the National Parks Act will have to be amended so areas can be set aside where traditional hunting, trapping, and fishing can continue, but where intensive recreation will not be encouraged, and where resource exploitation will be banned.

Such wilderness areas are not important only for the protection of representative ecosystems; they are also of priceless value to
the human spirit. They are unique places where one can have solitude and simple peace and quiet. They are areas where the craving for adventure and for self-reliance can be satisfied. We often discover a great deal about the natural world and something about ourselves when we confront the wildlands. Our descendants will need this experience no less than we do; no less than our ancestors did before us.

On another front, I am proposing that some of our great rivers, or segments of them, be protected. Rivers have had a profound impact on Canadian history. The St. Lawrence, the Churchill, and the Fraser were arteries to our national identity at the same time they were becoming important transportation corridors. Hugh MacLennan celebrated this vital link with our past when he wrote, in *Seven Rivers of Canada*:

> In a vast country like Canada, space in our daily lives can only be measured by the time and expenditure of effort it takes people to cover it. This modern Canadian life has not grown out of us; it has been imposed on us by technology. That may be why the nation seems almost to have out-travelled its own soul. That may be why, for most of us, Canadian history has not so much become a dead thing as an unknown thing.

> A knowledge of the Canadian rivers will recover this earlier sense of time in Canada. It will bring the old experience of the people of the subconscious regions where it lies buried.

While many of our rivers have been overrun by intensive industrial or recreational uses, there are still some in the North which are not obstructed, polluted, or developed by man. Wild rivers are part of our past, our present, and our future; some outstanding examples deserve to be preserved in a Canadian system. Most of you will be aware by now of the International Seminar on Northern Wild Rivers which I chaired in Jasper a couple of weeks ago. We considered a variety of approaches at that Seminar. The protection of wild rivers is an emerging policy which requires much inter-governmental co-operation and selectivity in choosing what to protect. I hope this conference will build upon the momentum generated at Jasper and help make this effort a reality.

There are other features of Canadian significance that are smaller in scale but no less exceptional than wilderness tracts, rivers, or national parks. These too should be protected, but until now they have not been recognized adequately in the Canadian system. So we are embarking on a programme designed to protect landmarks such as the pingos near Tuktoyaktuk or Canada's largest meteor crater. The Parks Canada policy draft that was released last February implies the need for national landmarks to be owned by the federal government. I am now satisfied that we have to be more flexible if we are to avoid jurisdictional...
roadblocks. I am proposing that we revise the Parks Canada policy draft so that exceptional national landmarks can be preserved whether they are controlled and administered by the federal government, the provinces, the regional and local public authorities, or by private owners. The key to the success of such a programme will be in choosing the landmarks in a way that is agreeable to the provinces and in confirming that commitment with consistent legislation.

A COMPLETED PARKS' SYSTEM

It is an understatement to say that Canada's national parks are a key element in the conservation of our natural heritage. They are its foundation, and our national parks' system is among the best in the world. Great strides have been made over the past decade with the addition of ten new parks. I am convinced that Canada is large enough and rich enough to afford a system of national parks in which each of the country's distinct natural regions is represented. Not only can we afford it, but we have an international obligation to do so, as one of the few countries with large remaining wilderness landscapes.

The goal is attainable. Of the thirty-nine natural land regions, about twenty currently are represented. The main gaps are in the Arctic, and so I will be concentrating my efforts there. It is often forgotten that Canada has one of the world's longest ocean coasts, encompassing nine district marine regions. Although some of these aquatic environments are represented within coastal national parks, many are not. We have only begun the long task of sorting out the jurisdictional tangle for a national marine park.

I have attended recently a federal-provincial park ministers' conference in Victoria, and I am still optimistic that new national parks may be established through agreements whereby the provincial governments transfer the control of resources to the federal government. I am aware that this approach is sometimes difficult for provinces to accept. But, as a Canadian, I believe that the principle of national parks being owned on behalf of all Canadians, in the name of all the people in the country, is an important one. I will continue to work, on behalf of all Canadians, toward a completed system of national parks, representing each of Canada's marine and terrestrial regions and protected by the National Parks Act.

In planning and managing the national parks system, we must remember that the parks are focal points for tourism and outdoor recreation. This is inevitable, particularly in those parks near the populated South. Not only is it inevitable, but it is also desirable that we take these needs into account. National parks should encourage recreational activities which bring visitors into direct contact with nature. National parks should be a good
long-term investment for the tourist industry, at both the national and the local levels.

The basic purpose of national parks is heritage conservation. The essential requirement in the selection of new national parks is that they incorporate natural areas of Canadian significance. Meeting outdoor recreation needs and generating economic development are potential benefits, but new parks cannot be once selected for these reasons alone. However, once a national park is established, Parks Canada is automatically in the business of outdoor recreation and tourism. Here again it is a question of balance, judgment, and caution.

I agree with a delegate to this forum ten years ago who said that preservation and use are not a conflict to be resolved, but a tension to be managed. If we are going to handle it properly, we have to blend a range of professional talents and provide early opportunities for public participation. In certain cases, the National Parks Act requires updating to ensure the balance is struck, as in the case of establishing limits for ski areas and the townsites of Banff and Jasper.

We have learned through experience that regional interests cannot be ignored. Co-operation among all government levels in regional planning is the best way to integrate national parks into neighbouring areas. Unless national parks make a positive contribution to the goals of local communities, and unless basic visitors' needs are met in or near parks, we cannot expect to encourage broad public support for heritage conservation.

POLICY AND LEGISLATION

I view this conference as one of the most important sources of feedback for Parks Canada's policy draft statement, and I hope you will freely make your views known to me. It is my intention to recommend a final version of this policy to Cabinet early in 1979. That policy draft states the objectives and broad principles that underlie all of Parks Canada's activities.

Amendments to the National Parks Act are also in the works. I have mentioned some of them already. I hope that by next spring I will be able to introduce a package of amendments that will incorporate:

1. New parts to the Act for new initiatives such as national landmarks, wilderness parks, and wild rivers.
2. Legislative limits for five ski areas and the Banff and Jasper townsites.
3. Greater local autonomy for the residents of Banff and Jasper.
I would like simply to add that throughout this process I hope we also can awaken a new attitude among Canadians towards their national parks' system. Some visitors have come to expect standards of service, comfort, and safety on a par with what they leave behind in the city. That all costs money, a lot of money, and is not always possible in a park. I would add that it is not always appropriate, either. Some demands imply a kind of blacktop mentality that we have not done enough to discourage in recent years.

In my view, we should redirect more of our efforts to the fundamental task, which is conservation. The best way to experience a national park is through individual contact with nature's wonders, using all the human senses. Our planning and management of national parks should encourage personal voyages of discovery. It should not add physical and mental barriers to this experience. I am concerned about such things as elaborate modern buildings and excessive design standards for roads and parking. Simplicity should be our goal. Self-reliance should be encouraged.

In closing, let me say how much I welcome the chance to speak at the opening of this conference. May I extend congratulations to Gordon Nelson and the others responsible for the planning and organization. I hope it will be fruitful, that you will take advantage of this rare chance to inspire a united, collective will to involve more Canadians in ensuring the protection, understanding, and appreciation of our natural heritage.

Sometimes I worry that we may lose sight of the special challenge we have been assigned. Some of the closing paragraphs of Sigurd Olson in the *Closing Land* remind me of its essence:

> I also knew there were some things that would never be dimmed by distance or time, compounded of values that would not be forgotten; the joy and challenge of the wilderness, the sense of being part of the country and of an era that was gone, the freedom we had known, silence timeliness, beauty, companionship and loyalty, and a feeling of fullness and completeness that was ours at the end.

> I repacked the outfit and placed each item carefully away. It would not rest too long. Sooner or later it would all come out again. The Reindeer Country was waiting; Athabaska, Great Slave, Great Bear, and the vast barren lands beyond them all. Another year perhaps and the lonely land would claims us once again.

I welcome your assessment of our progress and your views on how we should proceed in the future. But most of all, I welcome your commitment to our common cause: the conservation of Canada's great natural heritage for the benefit of present and future generations.
I
SETTING THE STAGE
Monday, October 9th: Afternoon

Paper 1: THE CANADIAN NATIONAL PARKS: TODAY AND TOMORROW, CONFERENCE II AN INTRODUCTION
J.G. Nelson

Paper 2: CANADA'S NATIONAL PARKS: PAST AND FUTURE
A.T. Davidson

Paper 3: NATURE RESERVES IN GLOBAL PERSPECTIVE
R.F. Dasmann

Paper 4: TOURISM IN NATIONAL PARKS
G.B. Clarke

Paper 5: CRITIQUE
V. Geist

DISCUSSION FROM THE FLOOR
Almost exactly ten years ago the first conference on Canadian national parks was held at the nearby University of Calgary. Subsequently a set of Proceedings was published (Nelson and Scace, 1969), as well as a selection of papers in a volume entitled Canadian Parks in Perspective (Nelson, 1970). The primary purpose of this second conference is to identify and reflect upon the major changes since that time, with a view to charting a better course in the next ten or twenty years. In looking back we should be examining what has happened with issues considered to be important in 1968, things about which significant progress was considered to be necessary. We should also be examining what was overlooked, or omitted in 1968, which has become important since that time. And, in considering what was overlooked, we should be thinking very carefully about the topics at risk in that regard today. What is likely to be unforeseen?

In thinking about the structure of this conference the preceding thoughts were kept very much in mind. We wanted to monitor changes since 1968, in part by organizing sessions or papers on some of the same topics, such as Canadian park policy and planning for the future, and, in part, by introducing new topics, overlooked in 1968, which now are known to be issues, or very likely will be in future. Some examples are problems posed by indigenous populations in so-called wilderness areas, or by possible changes in energy, raw material, and other supplies upon which our current recreational paradigm is based. We also attempted to build a sound monitoring conference by calling upon a number of the 1968 participants, as well as others not involved at that time.

In beginning Conference II today, it is instructive to look at the summary of the important issues of 1968, as reported in the Introduction to Canadian Parks in Perspective. Many of these issues remain with us, perhaps in exaggerated form, and will be discussed at length in the next few days.
I am thinking here, for example, of the continuous problem of balancing the so-called recreational and conservational uses of national parks and related reserves. I am also thinking of the by now well developed conflict among various types of recreation, for example, back packing, and other resource oriented activities, and downhill skiing, and other technologically oriented activities. Today we can see that these problems will persist and become more complex in future. Thus, although soft on land and people in the technological sense, cross-country skiing is likely to become associated with more social and environmental conflicts tomorrow because of the rapid increase in the number of participants in this activity, as well in winter sports generally.

One can also see that in the next ten years more conflicts are going to occur amongst the various activities labelled as conservation; for example, more controlled burning will be used to provide habitat for certain types of wildlife, to the detriment of certain types of forest or scenery valued by some park users.

The townsites problem is still very much with us and will be referred to in a number of papers at this conference, notably those by Scace, Becker, and Hunt. In this regard, it is instructive to note the post-1968 comment that townsites continue:

> to cause problems not only with respect to landscape change but also with respect to leasing policy and the rights and expectations of citizens living within the national parks. Under these circumstances it would seem inadvisable to establish more service centres within the national parks. Such centres are required to be located outside the national parks in a number of other countries.

Two other topics that were rather important issues in 1968 do not seem to attract the same level of attention today. One is the minority use problem, that is, how to provide for the 'high quality' experience in a democratic society where decisions tend to be based on weight of numbers. In 1968 the focus of interest in this regard was the back packer or camper in the remote areas of the parks who needed much space to provide the wilderness experience as well as minimize adverse impacts on environment. Perhaps the fact that many more young people are using the backcountry and supporting wilderness has made this a somewhat less contentious issue than it was in 1968. On the other hand, perhaps the minority use problem is there, but in somewhat different form. At any rate the general problem will be addressed in papers such as those by Herrero and Theberge and especially by Marsh.

Another issue that received more attention in 1968 than it probably will here is the difficulty in measuring the value of national parks and other aesthetic resources in economic
terms. Benefit/Cost analysis is not discussed today as much as environmental impact or technology assessment. There has been a shift from attempting to express benefits and costs in dollar terms to identifying the nature and magnitude of wildlife or other changes in biophysical terms. In the next ten years more effort will be made to combine economic, biophysical, social, and technological analyses into comprehensive evaluations incorporating aspects of all these methodologies. Reference is made to this evaluation problem as well as to monitoring and research in several background papers for this conference.

As a result of the 1968 Conference a call was made for more research of all kinds relating to national parks and other public land.

To plan and manage these reserves effectively, we require more ecological, geographical, geological, historical, archaeological, economic, sociological, engineering and use-demand studies. Much progress could be made through institutes or organizations devoted to research on national parks and other public land. A high level of cooperation among administrators, planners, appropriate applied research organizations, and university staff would be beneficial. The involvement of university staff would have the added benefit of training more personnel for work in organizations interested in or responsible for public land.

Great improvements have been made in the research area since 1968. Much more varied research is carried on under Parks Canada and other agency auspices. More faculty, students, government personnel, and consultants are engaged in this research. And many of the benefits foreseen in 1968 have come to pass. Parks Canada has recently published some very interesting applied work, for example East's analysis of erosion control policy at Point Pelee (East, 1976). But much remains to be done if research is to assume the fundamental role that it seems to merit in national parks and related reserves. Cowan's research review for Parks Canada is must reading in this regard (Cowan, 1977). At this conference several papers, notably Gardner's, will address research issues.

In 1968 insufficient land was seen to be available for outdoor recreation and for scientific, conservation, and related purposes in Canada. A need was recognized to improve procedures for acquiring land from the provinces for national parks. In many aspects these procedures have improved and a major surge in the establishment of new national parks has occurred, with eleven reserves being created since 1968. Not to say that the land transfer issue does not remain significant; it, and the extent to which more land should be set aside as national parks as opposed to provincial or other reserves, is addressed by Lee in the paper on British Columbia. Land transfer also is discussed in Burton's paper on coordination. On the other
hand, one not infrequently hears the contention that too much land has been set aside in national and provincial parks, more than they are staffed and funded to plan and manage properly. Rather comprehensive details on such management problems are presented in other papers on provincial parks, for example by Priddle and Lemieux and Dufour. The latter authors present the first studies known to us of the Quebec Parc and reserve system. Priddle stresses people problems in his paper on the Ontario system. Hunt discusses some of the legal and management problems arising as more visitors contact grizzlies or other so-called natural hazards.

The surge of national and provincial parks and other reserves has resulted in displacement of many people and their activities from public reserve areas. This issue simply was not foreseen adequately in 1968 but will be addressed in a number of contexts at this conference. For example, Milton Freeman will present information on Inuit hunting and fishing and other activities in areas many southern Canadians think of as wilderness. The relationships between the activities of indigenous people and the restrictions traditionally associated with national parks and other reserves is a major problem for the next ten years. At this conference this issue also is addressed in the global context by Dasmann.

Once consideration and discussion of the role of indigenous people in parks and public reserves begins, then the basic question of the philosophy underlying such areas arises. Critical evaluation of the ideology and terminology relating to parks and reserves is a most serious problem, but one that is complex, vexing, and discouraging to many observers. Yet it must be addressed. What do we mean by conservation? Obviously it has many meanings and in itself is really no longer specific enough as a goal or fundamental use for parks. We must define it more precisely in terms of wildlife, vegetation, and other objectives; in terms of a management plan. What is wilderness? Is it a useful term? If we permit traditional hunting and fishing and other activities by indigenous people in national parks and other reserves what do we mean? Does the term, traditional, include high powered snowmobiles and other technology? What procedures will be used to answer such questions?

At the 1968 Conference there was concern about the array of uses of national parks and related reserves and the need to develop a more diverse system of wildland areas. Since 1968 the use spectrum has been more fully utilized and has widened. An example is the winter sports' growth referred to earlier. Growth has also occurred in educational use. Largely as a result of the International Biological Program an interest has developed in the establishment of ecological sites where the major uses are research and education. More will be presented on this topic in the papers by Lee and especially by Foster. Most progress in ecological sites has been made in British Columbia.
However, more can still be done with education in national parks and other reserves. Indeed the whole field of interpretation is still considered to be neglected in Canada and will be addressed at Conference II by Foley.

Certainly the spectrum of reserves, or wildlands types, has increased since 1968. At that time the alternatives were mainly national or provincial parks, as well as Ontario Conservation Authority and other provincial or regional lands. As a result of a 1971 Act we now have Canada Wildlife Areas which have developed very slowly for financial and other reasons, even though the Act provides for cooperative arrangements among all levels of government as well as private groups and individuals. Ecological sites, hazard zones, and other new wildland types have developed and are referred to, for example, by Francis. Furthermore, today the need for an array of such reserves in Canada's neglected coastal areas is recognized to a much greater extent than at the 1968 Conference. The coastal situation is a focus of discussion in Dobbin's paper.

Among other approaches to wildland management considered in 1968 was the Wilderness Act of the United States, which was seen as a means of linking wildlands of national significance to national or provincial parks. The real question is whether federal and provincial relations will ever reach the point that the two levels of government can agree to designate lands jointly, regardless of ownership, as worthy of special management because of their unusual qualities. Since 1968 some provinces have pushed forward with wilderness parks, for example, Alberta. Recently, as a result of the situation in the North, Parks Canada has decided to include the concept of wilderness parks in its draft policy document. Whether this will have anything approaching the same effect as the United States Wilderness Act is uncertain.

Just as in 1968 so at this conference we have arranged for presentation of papers from other countries in order to benefit from comparative learning. Rountree discusses developments in the United States' system rather thoroughly and has some valuable points to make about attempts to control erosion and other hazards as well as about research and other topics. At the 1968 Conference we benefited from the Japanese, South American and African experiences but did not focus on the United Kingdom's system in the sense that Butler does at this conference. Different ideas of nature and man-environment relations are presented here as are some attractive management approaches, for example, the Countryside Commission. Lucas and Ovington give us further opportunity for comparative learning by discussing current issues in New Zealand and Australia. Some of the concerns are similar to our own, for example, parks, reserves and indigenous people, and coastal problems. Bennett forcefully draws our attention to the international movement to set aside areas of great natural and cultural significance through programmes such as Man and the Biosphere (M.A.B.) and the World Heritage Trust. Such concepts and programmes were just beginning to be considered in 1968. Carroll points up the opportunity to develop international reserves along the Canadian-United States' border.
Other significant topics which received little or no attention in 1968 but which will be stressed here are: 1. energy and resource shortages and their implications for parks and reserves, in the paper by Buckmaster; 2. parks and reserves in coastal areas, discussed by Dobbin; and 3. the establishment and management of heritage areas. The latter are usually thought of in the architectural or cultural sense. But the heritage idea may provide a philosophical focus for management of valued artifacts, landscapes, and ecosystems that is more comprehensive, intellectually appealing, and useful than notions such as wilderness or wildland. Phillips considers such ideas in his paper on Canadian heritage areas.

The final session of the conference is on the future. Ecological approaches to planning, systems planning, and public participation are discussed comprehensively by Theberge, Carruthers and Green. The growing size and complexity of the system is apparent in Carruthers' paper. The place of the private agency in the system is addressed by Aird Lewis and Fowle.

The need to plan regionally was stressed in 1968, but much remains to be done, as Sadler indicates. Furthermore, as I attempt to show in my own paper, there is a need to employ much more comprehensive land use and resource planning, and develop much more coordination among private and public agencies. Such needs were not adequately recognized in 1968. Nor, indeed, was the strong current interest in northern parks and public reserves, as highlighted by the proposals for five wilderness parks, the most widely known, and perhaps the most controversial, being the Northern Yukon Wilderness Park. Parks Canada officials undoubtedly will present information upon, and elicit our ideas on, these lands during the conference.

Mention of Parks Canada brings to mind that A.T. Davidson will present a paper on the proposed new policy and related matters. Although I have questions about aspects of the draft policy, I was personally very pleased to see reference in it to points of concern at the 1968 Conference, notably the need for more cooperation, more comprehensive and regional planning, and more public participation.

One suggested concept that may provide the basis for much more cooperation among wildlands' agencies is the Co-operative Heritage Idea. Here Parks Canada recognizes that it cannot, and should not, attempt to acquire and manage all wild areas of provincial and national significance, and it calls on other agencies to cooperate. Many papers at this conference address the regional and comprehensive planning issue. I suspect it may be the major issue, the most important for the next ten years.
REFERENCES CITED


CANADA’S NATIONAL PARKS: 
PAST AND FUTURE
A.T. Davidson

THE PAST TEN YEARS: 1968-1978

We have just come through the most turbulent decade in the history of Canada's national parks. They have been years of achievement; they have been years of change. Indeed, they have witnessed a revolution in our approach to establishing and managing national parks; a revolution brought about by a better informed and more active public; by a recognition among national park managers that some long-standing and once-appropriate methods were no longer valid; and by strong advances in provincial park systems. Changes have been demanded. Ten years later we can look back and say we have made many. But we are not satisfied. Looking ahead we recognize more changes will be needed as Canadian expectations evolve.

In 1968, we were about to start the public hearings programme on park master plans. That programme had a profound impact on our planning emphasis and public participation leading to decision making. Look back at some of the provisional master plans, at the emphasis on road building, at the catering to the arm-chair tourists, and compare them with our present emphasis on programmes which will provide park experiences uniquely attuned to the natural environment. Witness the hard lessons learned in the Village Lake Louise and Ship Harbour experiences and compare our record there with the approaches we have adopted in Riding Mountain and Kluane, at Lake Lake Louise, and on the northern park proposals. More thorough public involvement in national parks planning will continue. It will improve our system.

YEARS OF ACHIEVEMENT; YEARS OF CHANGE

Gros Morne, Kejimkujik, Kouchibouguac, Forillon, La Mauricie, Pukaskwa, Pacific Rim, Kluane, Nahanni, and Auyuittuq are the powerful, evocative names for these new national parks. The 1968 conference called for new national parks. There was no apparent optimism among delegates, however, that the two levels of government could agree. Today we look back with pride on this major breakthrough in cooperation, which is a tribute to the support of conservationists across Canada, the flexibility of
the federal system, and the commitment of the provinces to share in protection of our national heritage.

North of 60 degrees, action was taken to reserve lands for four future national parks, and in January of 1978 discussions began on the possibility of protecting six other important natural areas in the north. The area in national park has doubled and now covers more than 50,000 square miles, most of which is wilderness. Each province and territory now has national parks and we have moved significantly closer to our goal of representing each of Canada's natural regions (Figure 2.1).

A significant achievement of the past decade has been the development and implementation of a systematic approach to planning the national parks' system. The systems planning manual, first published in 1971, divided Canada into natural regions and formalized the goal of establishing a system of national parks representing each of these regions. The next step, identifying representative natural areas of Canadian significance within each natural region, has been well started. This system recognizes that national parks are only one means of protecting natural areas of Canadian significance. We believe that a public register of outstanding natural areas will generate public support for their protection and encourage other governments and private agencies to take appropriate action within their mandates.

The establishment of a new national park inevitably has an impact on the social and economic character of the surrounding region. Experience over the past ten years has shown that this impact, seen through the eyes of local residents, often is perceived as negative. The specific issues have changed from place to place but the problem has been the same, that is, how best to create and manage a national park in an area which has been and continues to be used by local people, whether for subsistence activities such as fishing, hunting, trapping, logging and harvesting wild foods, or for private recreation such as cottages, camps, and resorts. The areas may be part of our national heritage, but they are also someone's back-yard. We have adjusted our policies and, together with provincial governments, we now try to ensure that the burdens of establishing new national parks do not fall disproportionately on the shoulders of local residents. In 1968 our policy was to eliminate as quickly as possible all exploitive human activities from a new national park. This policy sometimes proved to be unworkable and undesirable. It is now accepted that certain existing traditional uses may continue for several generations. Relocation and compensation are considerably more generous and recognize that more is involved than merely the market value of land and buildings. In short, we are prepared to take a longer term view of national park establishment and its inevitable social impact.

Another fundamental change has been the acceptance, in certain special cases, that traditional activities are part of the cultural landscape, or of the ecosystem, and therefore part of our national heritage. An example of this approach is at
FIGURE 2.1 National Parks of Canada
Forillon National Park where the traditional lifestyle, including salt water fishing, will be presented as a key part of the park story. It is also proposed that national wilderness parks will provide for the continuation of traditional subsistence activities by local people. This approach, while it is acceptable to most local people, may pose long term questions for the administration of national parks. The experiences of provinces and of other countries facing similar problems may be useful. I hope this 1978 Conference will address this issue.

The evolution of a more equitable approach to the problems of local people has not been easy and has not always been successful. With the wisdom of hindsight, one can criticize the approach taken at Forillon or Kouchibouguac. Perhaps, some say, if government attitudes and policies had been more flexible, there might be a national park today at Ship Harbour in Nova Scotia. I do not wish to guess what might have been, and it is unfortunate that the credibility of the organization seems to lag behind changes in policy and practices. I think that the credibility of joint federal-provincial efforts to find mutually acceptable ways to establish new national parks has improved considerably. This is largely due to the development of open, public dialogue on the national, provincial, and local impacts of new national parks. This process, which now starts at the early stages of federal-provincial discussions, is lengthening the time required for park establishment but seems to promise greater understanding and commitment by all concerned.

National parks are expensive to establish, and those in southern Canada have become more costly in the last ten years, partly as a result of our more flexible negotiating position. There has been recognition of the financial burden to a province of acquiring and transferring land and resources to the federal government for national parks. Starting with Pacific Rim National Park in 1970, agreements for the establishment of new national parks call for the direct transfer of all Crown lands to the federal government, but the acquisition of private property, leaseholds, timber rights, and other private holdings is on a 50-50 federal-provincial cost-sharing basis. Although it has added considerably to the federal cost of establishing national parks, there can be no doubt that this shift in policy has been a major factor in arriving at federal-provincial agreements for new national parks in the provinces.

When transferring administration and control of lands to the federal government, provinces generally seek a clear commitment that benefits will accrue to the provincial and local economy in the short term. This has led to large-scale capital developments in and near many new national parks within the first five years of park establishment. One may question the appropriateness of certain of these developments, such as golf courses or access roads; however, they are part of the price paid to gain the necessary provincial government agreement to create a national park. How far we can or should go in this regard in the future is a fundamental concern.
Expansion of the park system has had other costs. Diversion of funds to new park acquisition has led to the deterioration of some facilities and services in the existing parks. Unfortunately, the growth of the budget has not kept pace with inflation, public use, and programme growth. We have been trying to correct this situation, but it will take longer to achieve our goals in today's climate of fiscal restraint.

NATIONAL PARKS AND THE PUBLIC

Public uses of national parks have changed in a number of ways over the past ten years. Technological change, mass marketing campaigns, and changing public attitudes have led to a wide variety of new activities. Many of these, such as cross-country skiing, cycling, hiking, and canoeing are excellent ways to enjoy the natural environment. They reflect an encouraging trend toward physical fitness, energy conservation, and self-reliance which the national parks can and should encourage. Those people who want a high quality park experience have been prepared to accept fair and reasonable controls to ensure their enjoyment, such as pack-in and pack-out rules for litter, registration for back-country use, and limits on open fires. Some less compatible popular activities, such as snowmobiling, which have presented a real problem, have been carefully controlled. With the advent of the recreational vehicle in its many forms, tent camping is shifting into the back country. This phenomenon is aided by the availability of lightweight gear and freeze-dried food.

The attendance at national parks increased from eleven million in 1967-1968 to eighteen million in 1977-1978. As the accompanying table shows, this growth was not steady (Table 2.1). It is interesting to compare this rate of growth with the expectations of those at the 1968 conference. The high rates of growth predicted have not materialized (Henderson, 1969, p. 894; Nelson, 1969, p. 113). The average annual growth of attendance at national parks over the period 1967-1968 to 1977-1978 was 6.9 percent.

The National Parks Act states that education is one of the objectives of a national park. Since 1968 we have been taking this role more seriously by dedicating more effort to interpretation activities and by focusing on the beneficial relationship between recreation and education. Recreation is seen not only as a means of enjoying the park, but also as a means of gaining a better understanding of its natural values.

The 1978 draft Parks Canada Policy tries to make it clear that it is not the intention of Parks Canada to develop a national policy and plan for the broad field of outdoor recreation. In 1968 there were recommendations at the conference for an integrated national outdoor recreation planning framework. Today such a proposal seems overly demanding and perhaps unworkable in the context of federal and provincial mandates and fiscal
restraint. We believe that the best way to proceed is for each government agency to define clearly its own mandate in consultation with others; to keep the channels of communication open; and to seek avenues of cooperation and joint action in particular places where this is required. I think we have come to realize that the grand or global solution is not likely to work.

A decade ago we marked the start of people-oriented research in the national parks. In 1968 data collection was carried on as part of park planning. Between 1968 and 1974 park use research was undertaken in national parks. Since 1974, we have moved to studies focusing on achieving particular objectives for planning, managing, and policy-making. While this is clearly a better approach, it has not always proven easy to recognize a problem for which such research is appropriate or the level of accuracy which is required.

A major part of Parks Canada's early socio-economic research effort was in directing the Canadian Outdoor Recreation Demand Study (C.O.R.D.). The C.O.R.D. study, started in 1967 as a cooperative venture, was seen not so much as a service to national parks but as a service to Canada. It was believed that the C.O.R.D. study would directly help resource allocation in the field of outdoor recreation nationally in much the same way the Canada Land Inventory was to do in relation to land resources in general. While it did not achieve these ambitious aims, the C.O.R.D. study did raise the level of awareness of recreation research and its potential value, and was a major step forward in the techniques of recreation research.

Public support is essential if the objectives of Canada's national parks are to be achieved. The first Canadian National Parks: today and tomorrow Conference, convened in 1968, concluded that (Nelson and Scace, 1969, p. 984):

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Table 2.1
NATIONAL PARKS ATTENDANCE - 1967-1978

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF VISITS</th>
<th>PERCENTAGE VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967-1968</td>
<td>10,916,312</td>
<td>-3.97</td>
</tr>
<tr>
<td>1968-1969</td>
<td>11,855,579</td>
<td>+8.60</td>
</tr>
<tr>
<td>1970-1971</td>
<td>13,607,611</td>
<td>+7.72</td>
</tr>
<tr>
<td>1971-1972</td>
<td>14,431,597</td>
<td>+6.05</td>
</tr>
<tr>
<td>1972-1973</td>
<td>13,988,686</td>
<td>-3.06</td>
</tr>
<tr>
<td>1973-1974</td>
<td>16,797,121</td>
<td>+20.07</td>
</tr>
<tr>
<td>1974-1975</td>
<td>18,294,563</td>
<td>+8.91</td>
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<tr>
<td>1975-1976</td>
<td>16,360,614</td>
<td>-10.97</td>
</tr>
<tr>
<td>1976-1977</td>
<td>17,012,396</td>
<td>+3.98</td>
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<tr>
<td>1977-1978</td>
<td>18,445,396</td>
<td>+8.42</td>
</tr>
</tbody>
</table>

The securing and managing of these areas for the purposes for which they are established depends ultimately upon enlightened and informed public opinion.

On a national level, national parks seemed to ride the crest of a wave of popular enthusiasm for environmental quality which swept across North America in the late sixties and early seventies. Although this enthusiasm was not always shared by the local residents who were most directly affected by new national parks, it did provide the main political impetus for federal and provincial governments to take cooperative action. National parks were politically saleable. Certainly the National and Provincial Parks Association of Canada, along with other conservation organizations, played a strong role in channelling and expressing this public sentiment. The administration of national parks was, and still is, being watched closely by a small but dedicated and able group of concerned individuals.

The environmentalist wave appears to have waned. Instead, economic matters, that is, inflation, unemployment, and the growth of government, are on people's minds today. Whatever the reasons, national interest and support for national parks seems to have diminished or is less visible. Five years ago new national parks were front-page news, now press coverage is limited and not always positive. Furthermore, there should be neither surprise nor insult in saying that national conservation organizations, while keeping park managers on their toes, command far less attention from the public, and therefore from politicians, than before. At the same time, local groups have sprung up, often in opposition to proposed new national parks or park expansion. The less visible national interest and growing local defensiveness may make the continued improvement of the national parks system more difficult.

There is, however, a positive side to these difficulties. Part of the reason why progress often appears slow and why local opposition is more visible can be traced to a significant shift on the part of Parks Canada toward earlier and more open public involvement in the establishment and planning of national parks. Parks Canada is considerably more open and more responsible to the public than it was ten years ago. In fact, there are few other government agencies which dedicate such a proportion of staff and resources to public consultation. We will, of course, never satisfy everyone, but we are now convinced that we can develop a better park plan or national policy if we solicit and consider the views of the interested public. Our approach has evolved from one of holding formal public hearings to a more flexible approach in which the public is involved in many meetings in developing alternative concepts.

Consider the several major development proposals in the mountain national parks which were issues at the 1968 conference. In 1971, after public hearings, plans were cancelled for three additional visitor service centres and for eighteen proposed new and upgraded roads, including the Cascade-Red Deer road (Parks Canada, 1974,
The most dramatic and emotional parks' debate of the decade concerned the proposal by Village Lake Louise Limited for a major development as part of the visitor service centre. This proposal was not approved after public hearings involving 190 oral and 2,111 written submissions were considered. These examples illustrate that public views have had a considerable impact on national park plans, specifically in areas which were of concern in 1968. We are now applying the lessons learned in the past to the present planning approach at Lake Louise. Environmental and public advisory committees were created at the outset of the planning process.

NATIONAL PARKS' RESOURCES

Ten years ago Park Canada knew comparatively little about the natural resources of the national parks. As a result, our actions were often reactive, with little capability to anticipate problems. We are now taking resource conservation more seriously and dedicating more professional resources, both our own staff and outside experts, to this area. Evidence of the increasing importance of resource management can be seen in the development of resource expertise in the regional offices, the enhancement of the resource management role of the warden service, and in courses offered at our National Training Centre.

We now appreciate more the complexity of the natural environment and the difficulties of environmental decision-making. Whereas in 1968 some were hopeful that carrying capacity, with its physical, biological, and psychological components, could be scientifically calculated, we are finding that controls often are subjective and, to a certain extent, arbitrary. Visitor impact on natural resources has been heavy at certain sites within national parks, but we are learning how to use technology and good planning to manage increasing numbers of visitors. As an example, at Point Pelee National Park the public transit system, cottage acquisition, and the removal of all but group camping have resulted in a significant improvement in the quality of the park environment while serving large numbers of visitors as well.

In the late 1960's, at public hearings on provisional master plans, there was repeated criticism that there was inadequate knowledge of park natural resources, and a lack of homogeneity and thoroughness in the approach to gathering data. As a result, considerable effort was expended in the early 1970's to establish the Natural Resource Studies Program, including a detailed natural resource inventory component. The gathering and presenting of biophysical data on the national parks has been a major achievement of recent years, given the challenge of designing an inventory which is not an academic exercise but a practical means for ensuring informed planning and management.

There has also been a change in attitudes toward resource management resulting in less interference in natural processes, for example, in forest fires and fish stocking.
ORGANIZATIONAL DEVELOPMENT

On looking back over the past ten years, we should remember that the name Parks Canada is of recent origin. But there is more involved than merely a name change. First, there has been a diversification of the responsibilities of the programme. Eight canals were transferred from the Ministry of Transport in 1972. No longer important as commercial trading routes they were recognized as recreational waterways and examples of early engineering technology. Responsibility for these canals, particularly the Rideau, Trent-Severn, and Chambly, gives Parks Canada a higher profile in the heavily-populated central provinces.

At the same time, a new activity within the Parks Canada programme Agreements for Recreation and Conservation (A.R.C.) was launched. Areas significant to our natural and cultural heritage can now be cooperatively planned and made accessible to the public through the joint action of Parks Canada and provincial agencies. After reviewing the proceedings of the 1968 conference, I am struck by the similarity between the ideas expressed by the Minister at that time, and the approach to the cooperative heritage areas which we are now pursuing.

Not only has the programme diversified but our organization has undergone substantial decentralization from Ottawa. There are now five regional offices where all programme activities are integrated, and where responsibility for programme delivery, including planning, now rests. Decentralization has resulted in improved relations with provincial governments and regional organizations. The national parks' system is now more responsible to regional differences and local concerns. There is also a more efficient use of specialists in interpretation, natural and historic resource conservation, and research and planning. Our decentralization thrust has been a success and Parks Canada is now one of the most decentralized of federal agencies.

THE NEXT TEN YEARS - 1978-1988

To encourage public understanding and enjoyment of Canada's natural heritage by protecting for all time representative natural areas of Canadian significance in a system of national parks (Parks Canada, 1978, p. 63).

This quotation presents the objective of and the challenge to Parks Canada. It suggests that Parks Canada is in an opportune position.
PROTECTING CANADA'S NATURAL HERITAGE

Among the nations of the world, Canada has an exceptional opportunity to protect natural heritage areas in advance of industrial development. National parks are one of the key elements in a system of protected natural areas. We must continue to build on the well-defined systems approach so that each of the natural regions of Canada is represented in the national parks' system.

In northern Canada a new approach is evolving which we hope will lead to protection of wilderness areas for the benefit of local people, particularly natives, and of the general Canadian public. It will take time, and flexibility, to define an approach which is compatible with native land claims' objectives and the long-term preservation of representative natural areas of Canadian significance. In this content, certain northern wild rivers also deserve protection and we are taking steps to clarify our policy in this regard.

In southern Canada, it will be difficult to establish new large national parks in the future unless we can find, in cooperation with provinces, new ways to resolve the problems of private land ownership, existing uses, mineral rights, and extra high costs associated with park creation. We may be nearing the limit in terms of the amount we can spend and the extent to which we can compromise national park goals. In the Memorandum of Intention prepared by Parks Canada and the government of Saskatchewan for a Grasslands National Park, for example, the federal government goes as far as may be possible in meeting provincial concerns.

Fortunately, the Canadian family of parks has been strengthened considerably by major advances in provincial park systems. Also, there are other new approaches which may prove useful for the protection of Canada's natural heritage over the next decade. National Landmarks are intended to protect relatively small but exceptional natural sites of Canadian significance.

Natural marine and coastal regions, which are so important to Canada with its three ocean coasts, are not well represented in the national park system. More effort must be dedicated to resolving the complicated jurisdictional problems of marine parks. The Agreements for Recreation and Conservation approach will prove useful in cases where the joint action of different agencies is required.

On the international level, Canada will be an active participant in programmes such as Man and the Biosphere, with regard to biosphere reserves, and the World Heritage Convention, which can offer the added protection of world-wide recognition.

The establishment of park areas managed by Parks Canada is only a first step in protecting examples of our natural heritage. In the next decade there undoubtedly will be outside pressure for
the commercial extraction of resources in national parks, for oil, gas, hydro-electricity, and forest products. Whether the national parks can be defended from these pressures will depend not only upon the urgency of the world resource needs and the economic value attributed to the resources, but also upon the strength of the National Parks Act, knowledge of the natural ecosystem, and, most importantly, the degree of public support for national park objectives.

In the future we must make research results more meaningful to park management, and more cost efficient; by more clearly defining the problems to be addressed, by collecting only essential information, and by carefully analyzing and presenting data. Our resource management expertise can be strengthened through cooperative arrangements with universities. Techniques of resource manipulation need further refinement. Monitoring of natural systems will be necessary to keep up-to-date with natural and man-induced changes.

**POLICY AND LEGISLATION**

The main purpose of the proposed Parks Canada Policy is to provide an integrated and comprehensive statement of broad principles to serve as a guide for future initiatives and undertakings. A draft version of the Parks Canada Policy has been widely distributed for review by many agencies, organizations, and individuals. It is our intention to finalize this new policy by the end of 1978. More detailed policies in certain specific areas will be prepared under this umbrella, and will be discussed with the interested public.

The development, discussion, and formalization of revised policies are important steps in facing the challenge of the next decade. We are also studying possible amendments to the National Parks Act which may be necessary to implement new policy directions. For example, the Minister has stated his intention of legislating the boundaries of downhill ski areas. There may be value in fixing firmly the boundaries of other intensively developed areas within national parks, such as townsites and transportation corridors. Another approach would be to define, in legislation, wilderness areas within each national park. A form of self-government for Banff and Jasper may require authority in the Act. Also, we must find the best way to protect northern national wilderness areas and to guarantee the continuation of traditional subsistence uses.

**PUBLIC UNDERSTANDING AND ENJOYMENT**

The role of the national park system is not only to protect outstanding examples of Canada's natural heritage but also to encourage public understanding and enjoyment of these special places. Perhaps the greatest challenge in the next decade will be to provide the growing number of visitors to national parks
with a high quality experience at a time of fiscal restraint and manpower limitations.

Financial restraint is now more than a buzz-word; it is a fact of life in government and a return to the heady days of the early 1970's is unlikely for some time. We will have to set clear priorities, perhaps deciding that some desirable facilities and services will not be provided so that the most essential things can be well done. Each new capital project will have to be carefully examined against the need to minimize ongoing costs. Standards of service will be closely monitored to squeeze costs wherever possible. We are trying new cooperative approaches, greater use of contract services, and even volunteers. In sum, we will be expected to do more with less.

In the future we will need to have a better understanding of the different kinds of park visitors and their interests. Special visitor interest groups have their own ideas of what constitutes a quality experience in a national park and each will exert different pressures for services, facilities, and opportunities. Package tour groups, senior citizens, local school groups, off-season visitors, the handicapped, and backcountry users are some obvious examples of special interest groups. Imaginative planning and management will be necessary to control and direct uses which may conflict with each other or with protection of the environment.

Visitors to national parks expect and deserve a special experience. National parks can offer a unique and enjoyable window on the natural world with many lessons for modern man. They can offer a truly recreational and uplifting experience, one which is free from the pressures of the modern world. They can set an example in conservation which will be relevant to society. They can set examples in energy conservation, in compatible and functional design, in public transit, in low impact use, and in imaginative interpretation. The matching of appropriate national park opportunities with citizen expectations will be a major challenge for the decade.

NATIONAL PARKS IN THE REGIONAL CONTEXT

The next ten years will probably see an increase in the pressures exerted on national parks by residents and communities in adjacent or surrounding regions. Although many local residents are also park visitors, I am referring here to what must be considered another of our publics, separate from park visitors and national interest groups.

Native people are concerned particularly about the continuation of traditional uses, the question of land claims, treaty rights, and their own possible role in park management. The future of national parks in the north is dependent upon the degree of their compatibility with the aspirations and claims of native people.
who form the majority of the population near and perhaps within proposed park areas.

Those people who live and work near national parks are sensitive to the economic repercussions of all park activities. This is not to say that local interests are consistent across the country. Some communities want help in developing their infrastructures to take advantage of tourism revenues while others are fearful of the social impact of tourists on their established ways of life. Each region is different and the one national formula which may be successful is close and open cooperation with local authorities. We are hopeful that federal legislation will be forthcoming to permit the payment of grants, in lieu of taxes, for certain park lands which fall within the boundaries of neighbouring municipalities. Our policy of limiting the development of commercial visitor facilities within park boundaries will have to be matched by cooperation in regional planning so that the potential services and economic benefits can be realized.

**PUBLIC SUPPORT**

The success of Canada's national park system in the next decade will rely increasingly on public support: the support of the public for the funds needed to operate, to develop, and to maintain the parks for future generations.

We must broaden the constituency of those who benefit from the existence of our national park system. We must take into account that many Canadians are unaware, others are indifferent, some are hostile, and many feel threatened by the parks. This is a challenge for all who value national parks.

Parks Canada must develop new cooperative activities with scientists, with schools, with conservation groups, and with local communities to combine efforts and share goals. We must continue to involve the public openly in our planning and build better understanding and commitment.

Parks Canada cannot succeed in this effort on its own. At the same time, conservation organizations should be concerned that they are considered to represent only a vocal minority. They too must broaden their constituency to include the silent majority of Canadians if they are to make this public support felt at the political level. They must become more active and knowledgeable about how to affect decisions on key issues. Slamming Parks Canada may be easier but less effective, in some cases, than working out solutions or finding the real roadblock.

The time is long past when national parks can be isolated from the surrounding region, from local traditions, from public opinion, and from provincial concerns. We will continue to reach out to involve the many publics which can benefit from and assist the national parks. We will work closely with provincial
agencies, international organizations, and conservation groups toward common goals.

Government restraint may slow down growth in budgets and staff. It may also be a blessing in disguise by forcing us to stick to the fundamentals, to seek the cooperation of others, and to defend the basic principles of national parks.

Knowledge about, and understanding of, national parks on both the national and international scale has increased greatly since 1968. The ever increasing knowledge of both natural values and peoples' expectations will cause us to reassess and redirect some of our earlier objectives and look more critically at our parks as they relate to our criteria. The role of people on the land through history both as a cultural factor and as a theme for national park interpretation is now receiving emphasis. This trend will grow.

The role of parks in society will be increasingly challenged and tested as the population grows, but the amount of land remains the same. Further challenges will come as industry finds less destructive techniques for resource extraction.

The economic advantage of avoiding duplication and gaps in Canada's park family will result in better role definition for park systems, coordinated regional planning, and more sharing of research and talents.

A better informed public has higher expectations from their national parks. Their more perceptive demands and criticisms will require better researched decisions. Better decisions in turn will contribute to the expansion and perpetuation of the national park as a desirable social concept.

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For a number of years I have been concerned with encouraging the establishment of national parks, biosphere reserves, marine parks, and other forms of nature reserves, while working with the Conservation Foundation, the United Nations Educational, Scientific, and Cultural Organization (U.N.E.S.C.O.), and the International Union for Conservation of Nature and Natural Resources (I.U.C.N.). I still am concerned. Now that I once again am living in the United States, I have become more aware of the differences in attitudes towards, and in the problems associated with, nature conservation in various parts of the world. I do not think that those of us on this planet who are concerned with the protection of nature are having much real success in promoting our aims. I believe that part of the reason lies in our attempt to transplant North American ideas to parts of the world where they are not appropriate.

I believe that the United States represents the most extreme example of public concern for the conservation of nature and the protection of natural areas. Nowhere else is there such an array of federal, state, and local government agencies involved directly in natural area conservation. Nowhere else are there so many citizens' organizations acting as watchdogs over government and directly promoting the protection of natural areas. As a result, there are tens of thousands of protected areas ranging from small city or county parks to the enormous parks and wilderness areas of Alaska. The origins of this network, of course, are in a period when land was plentiful and people few; but the network grows even as populations increase and land prices soar. Furthermore, barring some catastrophe or complete breakdown of the economic and political system, it seems inconceivable that these areas would cease to be protected.

A similar and only relatively less benign attitude towards natural area conservation appears here in Canada, in western and northern Europe, and in most of the countries of eastern Europe and the U.S.S.R. Such an attitude is much weaker in Mediterranean Europe where nature conservation receives little official or popular concern. A highly favourable situation exists in Australia, New Zealand, and Japan. In southern and eastern Africa also there has been an excellent record of nature conservation, but this now is encountering serious problems. In most of the rest of the world
attitudes toward nature conservation have not been particularly favourable. Black Africa, in general, has a better record than most other regions of the Third World, certainly better than the Arab lands, most of Asia, or Latin America. Yet, generalizations are misleading. Costa Rica has been a leader in natural area protection, but its neighbour, Nicaragua, lags far behind. Zambia and Botswana have outstanding records, whereas that of neighbouring Angola has been discouraging even before the civil war threw the entire picture into confusion.

One can speculate on the causes for these differences. Some causes are obvious. Poverty and population growth, with their accompanying illiteracy, and a need to wring some sort of a living out of any land or water area always act against nature conservation. But these factors do not really explain the differences between Costa Rica and Nicaragua, or Zambia and Angola. It does appear that those countries with a colonial legacy from France or Great Britain are more favourable toward nature conservation than those whose former colonial mentors were Spain or Portugal. But, having said that, one must explain the exceptions, such as Mozambique and Peru on the bright side, or the failure to do much about nature conservation in French or British ex-colonies in the Arab world. Is Islam unfavourable to nature conservation. Then why is Iran one of the world leaders?

During my years of working with the I.U.C.N. secretariat, I had some responsibility for maintaining the United Nations' list of national parks and equivalent reserves. During this period, considerable publicity was given to each new national park that was established, and there were many. We talked less about those areas that each year were deleted from the list, areas that had effectively lost their protected status. But, in truth, if the criteria we had established were to be rigorously applied, the deletions in recent years would have exceeded the additions. I came to the conclusion that, world-wide, we were losing ground and losing it faster than most of us can keep score. I believe that one reason for this is the failure to take into account the need for real public support for nature conservation, as contrasted with support by the government. This in turn results from the origin of the national park movement and its relationship to government action.

The natural area conservation movement in both the United States and Canada had its greatest advances as a result of government action. Large areas were set aside and protected by administrative or legislative action of federal, state, or provincial governments. It was relatively easy to do so. Pressure on lands was limited. The rights of Native Americans to the land were being ignored. There were relatively few people with a direct personal interest in the resources of the areas that were set aside. Governments were more-or-less representative of the people and had their support. Later, by the time that populations had increased and demand for resources and land had grown, conservation education had spread through the highly literate citizenry, leading to the acceptance of the need for nature protection. I refer to formal conservation education, than to the influence of nature writers, people like Seton, Muir, Burroughs, Jack London, and Robert Service.
Thus, by the time when it would have seemed imminently practical to exploit the resources of national parks, such exploitation had become unthinkable. Still later, conservation of wildlife in particular commanded widespread popular support; Bambi and Smokey the Bear had triumphed over corporate greed, and the little snail darter could hold up the construction of a massive dam and water project.

In our haste to spread the conservation doctrine, we North Americans have sought, in other countries, situations equivalent to our own. Governments have appealed to governments through international conventions, bilateral treaties, or other less formal means. In western and northern Europe, the North American concepts had an early appeal, building as they did on a long and popular tradition of concern for nature, particularly among the middle and upper classes of the population. It was relatively easy to establish formal legal protection over wild areas that long had enjoyed de facto protection. The meaning of the term national park may have been twisted in translation, but natural areas were officially and effectively safeguarded.

The same approach to governments initially had some great apparent success in Third World countries. New national parks were created by decree or by legislation and new boundaries appeared on maps. But, in the same countries, national parks, old or new, have vanished just as quickly from the maps, or have failed to achieve any real existence on the ground.

If we examine the situation in many of those countries we find that, in some, national parks have been a part of the colonial heritage, created through prompting by metropolitan governments, often with little concern for the relationship of their boundaries to traditional land ownership or rights of the people who had previously occupied the land. Following independence these inherited parks were protected by the new national governments, in part because they were economically profitable, through tourism, or because they provided some degree of international prestige for the countries possessing them. Almost everywhere, however, those parks and reserves existed in isolation from popular support and often in opposition to the feelings and traditions of the people most directly affected, those whose lands or rights had been taken away.

Even in those countries that have no colonial heritage of national parks, international pressure for nature conservation has produced effects at the governmental level. Usually governmental officials have more in common with their counterparts in the industrialized countries than they have with their own people. Nature conservation is one of those things that enlightened governments do. It achieves some degree of recognition and prestige. That it often takes place at the expense of illiterate peasants may seem a small cost.
But, the absence of local support and the existence of local opposition do make themselves felt. When they are felt, it is obvious how governments will react. They will not be willing, in most cases, to call out the army to prevent settlement within a so-called national park. Instead the proclaimed areas vanish from the books, or encroachment continues to the point where even the most sanguine international agency has to acknowledge the non-existence of the supposed reserve.

Is there a way out of this situation? There seems to be two alternatives. One involves the establishment of a total dictatorship with absolute power. Such a dictatorship must be controlled of course by someone who puts the long term interests of nature and humanity over any temptation toward short term enrichment. This seems an unlikely combination. The other alternative requires popular support for nature conservation.

How is such popular support to be enlisted? To begin with we must stop thinking of nature protection as something apart from other aspects of economic life. Nature conservation must be regarded as an integral part of all efforts to improve the economic well being of humanity. An ecological concern as well as an economic concern must accompany all development efforts. Planning for use and development of any area must take place with the realization that individual well being and the health of the ecosystem, in the long run, are inseparable. National parks must cease to be regarded as areas taken away from people. They must be placed in perspective as essential to any proper scheme for the use of the countryside. This information must be brought to all of the people to be affected by any development scheme or conservation programme. How this is to be accomplished is a more difficult question. I have said these things repeatedly and others have said them more eloquently and emphatically. But little happens. The relatively new concept of ecodesvelopment, being advanced by the United Nations Environment Programme, may provide a useful new name and rationale to help advance this cause. But how do we sell ecodesvelopment? I find it discouraging, in a way, that I should end up talking about conservation education.

The conservation education that is needed is a new kind of conservation education, for which we probably should find a new name. It must start with the concept of respect for the ethnically and culturally different groups of human beings that inhabit this planet, and it must contain an equal degree of concern for their survival and well being, just as we exercise concern toward any endangered species. It must start with a recognition that all people, everywhere, come from a background of acceptance of their dependence on and relationship to the natural world. Only those displaced persons whose cultures have been destroyed by the encroachment of industrial civilization have lost this acceptance. This new kind of conservation education must build on those elements that still survive in each region and culture, those elements which relate those people to their natural environment, and it must strengthen and develop those elements. It must speak the language of the people to whom
it is addressed, and in particular it must be willing to forsake
the science-oriented world view of the industrialised world in
favour of whatever world view is accepted by the people being
addressed.

I believe that this new variety of conservation education must be
developed by the people concerned, with help and financial assis­
tance from the rich countries of the world. It must use the
technical skills that we have available in, for example, the pro­
duction of cinema, which can reach far more people than any written
or spoken word. But I believe it must also take advantage of the
abilities of poets and mystics, of dramatic performers, dancers,
and musicians. It will be expensive, in the short run, and this
has held it back thus far. In the long run, it will be cheaper
than the efforts on which we now are expending large amounts of
money, because it can be effective, and they have not been.

The goal of this new variety of conservation education must not
be, can not be, a national park in the traditional North American
sense. Rather, this goal must be directed toward the establishment
of countrysides within which nature is protected but in which people
are also integral. It will have its areas-not-to-be-disturbed,
its sacred groves. Call them strict nature reserves if you will.
But it also will have its areas for traditional hunting and fishing,
for ceremonial dances and religious festivities, and places where
people can live in harmony with their surroundings. I can not draw
up a blue print or management plan for such areas. That would be
the worst thing any of us from our technocratic cultures could do.
Leave us play around with our own national parks. Let the new
concept of conservation areas take shape with each people and
culture according to their own dreams, in accordance with their own
visions of how the world once was and could be again.

If this seems hopelessly idealistic, I apologise. But the prac­
tical point of view has been tried out for many decades, and I am
afraid it is failing. People, after all, are willing to direct
their life activities toward practical economic goals. But they
are willing to die for their sacred places. The national parks
of tomorrow must be such sacred places.
TOURISM IN NATIONAL PARKS
G.B. Clarke

As Chairman of the Tourism Industry Association of Canada (T.I.A.C.), I represent here today the private sector of the Canadian Tourist Industry.

Tourism is the largest industry in Canada: in terms of employment, a ten billion dollar industry, and accounting for five percent of our Gross National Product. Tourism is our sixth largest generator of foreign exchange, and generates five billion dollars in tax revenues for all levels of government.

In spite of its size the tourist industry is in trouble. In 1977 Canada's deficit in the International Travel Account was 1.7 billion dollars, accounting for one quarter of our overall foreign exchange deficit. Our share of the international travel market has been slipping steadily. For example, in 1977 we shared twenty percent of the United States' foreign travel expenditures, where in 1967 the figure was thirty-one percent. In 1976, for the first time, more Canadians visited the United States than United States' residents visited Canada. This was repeated in 1977, and may be the case in 1978.

It is clear then that since the 1968 Conference, growing numbers of people are dissatisfied with the offerings of the Canadian Tourist Industry. Parks, by the way, represent a part of that offering.

The report of the recent Task Force on Tourism suggests that the facilities and services being offered to tourists, whether Canadian or foreign, are in many cases outdated and uncompetitive within the international travel marketplace. The report also suggests that our attitude to our touring guests often is not welcoming. Are we in fact a hospitable place to visit?

Certainly it can be said that facilities in our major urban areas are more than adequate. About ninety percent of the investment in tourist facilities over the last ten years has taken place in urban areas. But non-urban development, particularly of destination resorts of an international calibre, has been severely lacking.
The Task Force on Tourism report suggests that for Canada to maintain its present share of the international travel market, which is expected to double between now and 1985, approximately three billion dollars of new investment in new facilities will have to take place, annually, to attract and accommodate the incoming tourists.

With the evolving tastes of tourists, a substantial proportion of this development will have to take place in non-urban destination resorts. These will depend substantially upon what Davidson has referred to earlier in this conference as the natural wonders that have been shaped by the hand of God and which the Parliament of Canada has set aside to be protected for generations of Canadians.

My Association recognizes and fully agrees that conservation of these natural resources is in the best interest of the tourist industry. They are indeed important assets that people come to enjoy. Canadian tourism is based substantially upon our natural beauty.

There can be no doubt that over the next few years tourism will create tremendous pressures on our natural resources. It is essential that we begin now to anticipate these pressures, and plan together to meet them.

Dr. Gerardo Budowski wrote the following statement in the Parks magazine article entitled Tourism and Conservation: Conflict, Coexistence of Symbiosis? He stated:

A new and promising field has appeared as a result of the increased tourist industry based on natural resources, though too often such expansion has been achieved without due planning and has taken many people by surprise. Conservationists and their organisations have often reacted adversely to this invasion, but this need not be so. There are many reasons and examples which prove that a change of attitude, leading to a symbiotic relationship between tourism and conservation in the wide sense, can offer a very large variety of advantages and benefits - physical, cultural, ethical, and economic - to a country.

A tourist industry can expect a brilliant future, based on natural assets of the environment, provided due consideration is given to the ecological principles which must guide resource-use. The alliance of those responsible for tourism with ecologists and conservationists is a natural one, that should contribute greatly to development - the right kind of development involving the right kind of change - leading to a better quality of life for all concerned.
The alliance called for in this article, between the Tourist Industry and conservationists and ecologists, must begin now in Canada.

The Tourism Industry Association of Canada has always dedicated itself to the sound principles of conservation. For example, we annually present the Julian Crandall Award to a Canadian who, through word, thought, effort, or deed is considered to have contributed most to the conservation of renewable resources of forest, field, and stream in Canada. The Silver Anniversary of the Award was in 1978, and, to honour the winners since 1953, we have published a book entitled The Canadian Disciples of Nature.

It is my conviction, however, that a far greater effort must be made. Let us build upon the experience gained in our period of confrontation, with projects such as Village Lake Louise, to develop now a truly symbiotic type of interaction that will lead to a better quality of life for all Canadians.

The Tourism Industry Association of Canada is ready now to work with you to examine what mechanisms and procedures can be put in place to ensure the development of a symbiotic relationship.

The process will not be easy. Feelings still run high. The recent Task Force on Tourism recommends that the administration of the National Parks be removed from the jurisdiction of the Department of Indian and Northern Affairs and given to the Ministry of Industry, Trade and Commerce. Please recognize the sense of frustration that exists today within the Tourism Industry and that would lead to this kind of recommendation. I am sure that you, in turn, feel threatened by Tourism.

Our goals are not in conflict, however, and we can work together. But we have a substantial task to be performed in educating the members of our respective organizations about the commonality of our goals.

I am greatly encouraged to note that the International Union for Conservation of Nature and Natural Resources defined conservation as:

management of the resources of the environment-air, water, soil, minerals, and living species including man - so as to achieve the highest sustainable quality of human life.

This is a tremendous advance from the traditional view of conservation as an approach based strictly on preservation. I am afraid that this traditional view is the one currently held by the tourism industry. You can cooperate with us to help to change this image. More important, as I have already stated, we can and must work together to ensure a better quality of life for Canadians, now, and in the future.
My Association is prepared to examine the feasibility of establishing a Conservation and Tourism Council to examine problems of mutual concern and actively explore solutions to these problems. Tourism and conservation can move forward hand in hand.

As a symbol of the tourism industry's dedication to conservation, I now would like to present this copy of our book, *The Canadian Disciples of Nature*, to Robin Fraser, President of the National and Provincial Parks Association of Canada, in anticipation of a new spirit of cooperation to achieve a balance between conservation and recreation.
We have before us the proclamations of three sages: Professor R.F. Dasmann, wise in affairs on the international scene; Professor J.G. Nelson, deeply knowledgeable of national matters; and Assistant Deputy Minister A.T. Davidson, steeped in the mysteries of management of national parks. The proclamations are instructive and thought-provoking. They raise the yearning to look beyond, as well as for, some tangible things to do so that the conservation movement does not continue sliding back internationally and can boast a better record nationally. Yes, I am a missionary for conservation and national parks quite clearly conscious of the fact that national parks are a cultural institution of largely American origin, supported mainly by what we call the middle class, and therefore a cultural transplant in nations other than the modern occident.

I found it timely that Raymond F. Dasmann chose to dwell on this fact. National parks, as we know them, are an offshoot of American culture, but one that has been successfully transplanted and adjusted to local needs by people in different nations. In a shrinking world it would be surprising if so good an idea as national parks would be left unnoticed, despite its American roots. Even Europeans are imitating us with regard to national parks. One can see that national parks, in part, are the results of struggles by the middle class of an industrial market society to live the same good life that affluent individuals can create through the purchase and control of private lands. This is a horrible thought to some, but one to be faced squarely. National parks, however, need no apologist, for they have validity beyond the historic dimension alluded to above.

For the immediate future we must continue to expand the areas under park protection nationally, as well as foster the evolution of the idea of national parks internationally. Clearly, on the international scene national parks will vary in concept from our own, and we must learn to accept that. Our function must be to secure our old allies, find new ones, and broaden the conservation movements. To do this requires both the appeal to utility as well as to cultural values. Let me explain.

On our own continent today national parks are tied to recreation more than to any other idea. Success is seen in numbers of
visitors as well as economic spin-off. Recreation still carries
the aura of frivolity, something not quite essential, but nice to
have if one can afford it. Here lies the danger: the frivolous
can be dispensed with in times of national need; therefore,
national parks can go. We have to emphasize the health benefits
of recreation, for this is what our knowledge of recreation
clearly points out. In essence, and space does not permit me to
explore it here in depth, we become less human if deprived of
recreation. We suffer a loss of humanity with a loss of
recreation. We must develop lifestyles in which activities in
natural settings are a very large part, because this process
produces sound bodies and minds required for our national security
and aspirations.

In our international quests we have not made allies of religious
organizations that control large areas of land. Here we are
dealing with a neglect that almost certainly has set back
conservation internationally. I cannot see that a healthy middle
ground between our perceptions of nature reserves and the
aspirations of religious philosophies cannot be found. To
preserve nature for the sake of ideals higher than daily economic
activities is a function religious movements are eminently
capable of performing. Moreover, the economic exploitation of
land held by religious orders is more likely to be subject to
sensible regulation than land exploited by companies for short-
term profit. We have been challenged by R.F. Dasmann to accept
the evolution of the conservation movements nationally. Why do
we not do a little to encourage that process by making a
determined effort to make religious organizations our missionary
partners?

We have failed to go after other allies. The agricultural and
forestry scientists have deep concerns for wild lands, albeit
from a utilitarian perspective. To keep the breeding programmes
of domestic crop plants and forestry tree species going at the
present rate, they require access to genetic material from wild
plants. In essence they require many diverse ecological
reserves dispersed over the globe. We do know how concerned they
are. We must help them meet their research aspirations and tie
national parks into a system of ecological reserves. If we do
so, we shall have the mighty agricultural and forestry industries
as our solid supporters.

Enlightened industry today is making a reasonable effort at
assessing environmental impact prior to and during project
planning and operation. Here is another potential ally.
Ecological reserves and national parks are required for research
into ecology to ultimately reduce the time delays and expenses in
decision-making, and above all clarify the rules for industry to
follow. To private enterprise knowledge derived from natural
communities is a matter of cost and efficiency. We have some way
to go to make even industry a strong patron in conservation, but
we must try, and try again.
Although it does go against the grain of very large corporations to suffer inefficiency, such as letting land lie idle, they will do it for the sake of recognition. Here our targets must be the large multinational corporations with large land holdings. Vast areas of the Third World are held under their control for commercial exploitation. Are these giants also good corporate citizens with a conscience for the environmental concerns over our planet? They are certainly in a position to demonstrate very tangibly that they have such concerns. Moreover, keeping wild lands as reserves for genetic material or environmental research areas can be of direct benefit to companies. Furthermore, large corporations do acquire land for retreats. Is it inconceivable that the idea of retreats from industrial life can be molded with the idea of a nature reserve?

Although our eyes are on national parks and their uses, our concerns must go beyond. We have a real overlap of concerns with organizations like the Nature Conservancy or Ducks Unlimited. We also share an interest with organized sportsmen. We have to know how we can support each other, since individually we carry too small a political voice. Above the work of collating interests and striking compromises with the groups mentioned, we do have a role in developing policies that not only directly, but also indirectly, support the conservation movement. If we work so as to bring more nature into the cities, we may not only make life more livable in cities, but also reduce pressure on parks. What kind of housing policy would encourage gardening, so as to produce a citizenry highly conscious of the value of soils, with an eye for plants and landscaping? Surely the trend to space saving mini-lots is most counterproductive to that goal. What can we do to open up private lands to greater recreational activity by the public? Do we have a stand on agrobusiness? The idea of weekend cottages has been condemned so often. Maybe a re-examination is in order because it will relieve the pressure on parks, remove trailers and campers from busy highways, and generate a public appreciation of land, nature, and the aesthetic qualities of landscapes. We do have plenty of opportunity to shape policies on lifestyle. A new concern for lifestyles is being felt in government and we can do our part in shaping those. In short, opportunity beckons everywhere to ingrain more deeply the role of reason in the management of our planet for our own good.
Discussion from the Floor

SESSION: 
SETTING THE STAGE
Monday, October 9, 1978 (Afternoon)

CHAIRMAN: 
R. Fraser

PANELISTS: 
J.G. Nelson, A.T. Davidson, T.L. Green for
R.F. Dasmann, G.B. Clarke.

CRITIC: 
V. Geist

RAPPORTEUR: 
R.D. Needham

EDITORS' NOTE: Each of the panelists presented his or her paper, except R.F. Dasmann. His paper was summarized by T.L. Green. A.T. Davidson made the following supplementary remarks.

DAVIDSON'S COMMENTS:

First, I propose to review only briefly what I said in the longer paper.

Second, I would like to make some off-the-cuff additional remarks on our track record on preservation and use over the past ten years.

Our primary mandate is conservation of natural areas, passing them on unimpaired to future generations. But let me also emphasize that we have a responsibility to the Canadian people to promote opportunities for them to experience and enjoy the parks and sites, which are the means of protecting the natural heritage.

Some say that we have eroded, undermined, and failed to live up to our conservation mandate by allowing too much development within the parks. Others contend that we are not fulfilling our obligations in attracting and accommodating visitors.

The past ten years have been good for national parks. Seven new parks in Southern Canada, three national park reserves in the North, and action by our Minister to start public discussion on a northern conservation strategy which could result in the establishment of national wilderness parks. This is a concept particularly well attuned to the northern landscape and the activities of the native people.

A number of other significant developments have occurred:

1. a systematic approach to planning the national park system;
2. a more equitable policy towards people affected by new park establishment;
3. more open public dialogue on the establishment and planning of national parks;
4. more flexible negotiating position with provincial governments,
5. the completion of a draft Parks Canada Policy;
6. advances in our natural resources inventory and studies programme; and
7. decentralization.

To review a few statistics, in the past decade the number of national parks has increased from eighteen to twenty-eight and the area in national parks from 20,068 square miles to 50,060 square miles. This is a 150 percent increase.

The public proposals made in the last year or two would in future years increase the size of the system even further. Some of these proposals are likely to come off.

In all this growth we have tried to maintain a balance between heritage conservation and preservation, our primary role, and visitor use and recreation. Visitors to national parks have increased about fifty-six percent or 6.5 million over the past ten years. They continue to increase, and over the next five years we project at least a ten percent increase in visits.

We believe we have managed this much increased visitor use without, overall, undermining or adversely affecting our central mandate.

Visitor facilities for the new parks are located mainly outside the park boundaries. Pacific Rim is a case in point, La Mauricie and Gros Morne, others.

No new visitor centres have been developed within the national parks, and the area now devoted to visitor centres is about 3,400 acres. It is true accommodation within the parks, primarily the Mountain parks, has increased; for example, the number of rooms in Banff, motels and hotels, have increased from 6,200 in 1968 to 9,000 in 1978, but not the area devoted to visitor centres.

The area of wilderness is the national parks' system has increased on a far greater scale than has development of all kinds, even the most primitive.

No new ski areas have been granted or are planned and boundaries for those now existing will be surveyed and legislated.

Only about seventy miles of new roads have been built in the national parks' system in the past ten years, and some considerable miles of roads have been closed.

This is not to say we do not have problems balancing preservation and use and managing use in the face of our preservation mandate. But these management issues should be looked at in perspective and with some sense of balance. We will yet lose some natural values and land dedicated for park purposes in the major transportation corridors across our parks. We will manage these developments as carefully as we can in an attempt to minimize the natural values lost.
In looking ahead, I would like to see a more positive approach to public use of our national parks. Increased public use is not a threat, it is rather a measure of achievement of park management. In a paper prepared for this conference, Professor Buckmaster argues that it is the responsibility of those concerned with the development of policies for the management of national parks and related reserves, to demonstrate that appropriate regulations and controls can be developed which are neither excessively permissive nor restrictive to park visitors, and place the onus for responsible use and impact on the individual. Park experiences must emphasize the non-commercial, non-consumptive and non-wasteful aspects of another life style, the conserver. I agree. A management approach that is founded on the premise that the public are intruders would be irresponsible and myopic. Parks Canada will encourage public use of national parks, dedicating its management energies to ensure that the public uses are nature oriented rather than technology dependent.

People are attracted to designated heritage areas. Tourism and recreation are inevitable companions to national parks. It is therefore important that we bring the three elements of heritage conservation, tourism, and outdoor recreation together through planning which recognizes the relations between these activities, while recreation is only a by-product of our mandate. We need to define more clearly how national parks are major tourist attractions, ensure that our conservation mandate is not subverted by the demands of tourism and outdoor recreation. We can do this by resources. An important objective of the Parks Canada Policy was to present a clear view of what Parks Canada is about. I believe it is important that the tourism and outdoor recreation industries should be given similarly clear directions on how we relate to their activities.

The national parks of Canada are approaching a difficult time. We are being challenged increasingly by those who do not recognize that national parks, set aside primarily to conserve the natural heritage, are a legitimate first-choice land use. Mr. Lucas, in his paper on *National Parks in the Southwest Pacific* points out that in New Zealand the combination of what some people see as over-protectionist policies, over-zealous conservation groups, and an economic downturn has caused a public backlash against national parks. We ignore at our peril the possibility of a similar backlash in Canada. Inflation, unemployment, and growth of government have replaced environmentalism as the principal issues on the public's mind today. In the next decade, we can expect increasing resistance to funding new national parks and increasing pressure for commercial extraction of energy resources. Parks Canada's commitment to conservation takes a back seat to one and we will do all in our power to ensure that mandate is fulfilled. The strength of the National Parks Act, improved knowledge of the natural ecosystem, and, most importantly, the degree of public support for national parks' objectives are crucial. We also intend to expand our educational activities through cooperating associations, more extension work, and by positive promotion of public activities in national parks which increase use opportunities but which are also non-destructive of the natural heritage.
Discussion

THE FLOOR: I must disagree with a point Dasmann has made. There has been a net increase in acreage of national parks in the developed and developing world. We obviously need to improve our data base and define the concepts in the same terms. Dasmann points out that the park concept is very North American. Yet, this concept has been transported and modified elsewhere. We in North America seem to have an island mentality and are not appreciating ideas originating elsewhere in the world. The Swedish example is worth noting. In this country, ninety percent of the land is set aside for outside recreation and ten percent for conservation.

THE FLOOR: In his paper Dasmann has said there is a need for new conservation education institutions for the developing world. Yet, I believe we really need these new institutions here in North America, especially those that can help with interpretation. I can see the value of such centres in the city of Toronto. Let us hit the visitor or the tourist before he leaves the city. These centres would do more to answering urban people's needs, and this is significant when it is considered that they represent the largest proportion of the tourist and wilderness class.

DAVIDSON: This proposal of Mr. Henderson's is not a new one, but it is not yet progressing because of a lack of funds.

THE FLOOR: I would like to comment on the educational value of national parks. A general education programme must be part of all co-signers outlook, according to Article 27 of the U.N.E.S.C.O. World Heritage Convention. An education kit has been prepared by U.N.E.S.C.O. for education systems.

FRASER TO CLARKE: Do you see the recreational potential of parks being developed purely on the basis of tourism demand, or on a long-term structuring of tourist industry demands?

CLARKE: I would like to refer to the Task Force on Tourism; this body was composed of representatives from industry and government on a nationwide basis. It recommended a tourism strategy for this country. There is a need to promote strong regional and provincial inputs in the form of destination or resort centres. I believe every province has plans for such centres at the present time. Because we do not have a national plan for recreation, it would seem necessary to promote a coordinated national parks
policy and a national recreation plan. In conclusion, for the sake of discussion, Banff is perhaps a recreation area and not a national park. Perhaps national parks should be perceived as national recreation areas.

NELSON: It is important to define what we mean by the term park, and what type of demand is being expressed. This definition problem is extremely significant because it can ultimately determine the facilities, services, and other activities we promote in parks. In addition, the socio-economic context and setting are important. The Inuit-Tapirisat - Tourism example can be enlightening. In this case there is a problem of local people being under the control of external groups. If local control and management are sought, a staff of twelve to fourteen seems ideal. Beyond that size, the local people have difficulty coping with management complexities, social and cultural imports increase, and there is more leakage of earnings to outside managers and companies.

DAVIDSON: The relationship between national parks and tourism should be looked at in more detail. Parks Canada is in the recreation and tourism business, but we maintain that there is a need to have planning done by Parks Canada people, not tourism leaders and planners. I cannot see us letting someone else deciding national park direction through trends and demands in the tourism industry.

THE FLOOR: In the foyer at our coffee break, several of us were discussing this session's papers and a significant point was raised. The concept of play is almost forgotten in the work versus play equation. It appears to me that in federal park planning we always address ourselves to the landscape that we know. But we have forgotten to probe into the psychological rewards of play and parks. What I am suggesting is that more consideration should be given to leisure or recreation management. However, I am not sure of the strategy to be used by Parks Canada or the federal government. Perhaps a better recreational focus can be achieved if we investigate the possibility of positioning Parks Canada within the realm of Health and Amateur Sport. This body may do a good job at coordinating federal activities. In summation, let me say that on one side we have human needs and on the other side we have the needs of other creatures. Our perception of these needs is not in balance.

DAVIDSON: Do we really know what a national recreation plan or policy is? I do not think that we have the definition needed for this country yet.
THE FLOOR: Past experience indicates that the tourism industry has constantly been grabbing-off land from Parks Canada and national parks. More effective recreational planning in city park systems may take the pressure off our national parks.

THE FLOOR: I would like to comment on a point made by Mr. Davidson on demand for our national parks. A first impression is that Parks Canada’s demand equation is a gross statement, and is not detailed enough. How can you evaluate demand if you do not or can not go back to the source - the park user. I think we need information on both potential and developed demand. In this context, the quality of past demand studies has been poor, and definitions have been weak. The establishment of policy on these roots is suspect. The draft policy of Parks Canada presents a good example.

DAVIDSON: These comments are a bit unfair. Much data are accumulated in on-going studies. Policy is not often based on it because data quality is sometimes questionable. I do not think the situation is as bad as you say it is.

FRASER: Assuming any projections were accurate, what are the implications for national parks' management? I do not believe the obtainable demand figures would prompt us to promote a national recreational plan or policy. We are not in this business.

CLARKE: It has been stated by the Minister of Fitness and Amateur Sport that private enterprise can best answer the recreation demand question.

NELSON: There have been a number of changes or suggested changes in the types of parks and other reserves available for recreation, tourism, and other uses. The Parks Canada draft policy suggests some of these. Citizens must demand that governments jointly manage these different areas in a coordinated way. Yet, the array of wildland types makes it difficult for the citizen or even the so-called expert to understand the situation let alone propose new arrangements at this time. We really need to force government groups to look at comprehensive and integrated management.

DAVIDSON: I do not have much faith in unilateral national plans. We need to have the federal government present its position, then have the provinces present their schema. We then must look at the differences and directions supported at these levels.
THE FLOOR: This all sounds fine, but in reality are there not already too many different sizes and slices of pie?

THE FLOOR: It is surprising to me that in the agenda for Tuesday's session on Alternatives, that there is no paper against the national park concept. In Scotland national park experiences caused more problems than solutions. There were too many conflicting uses and activities. I believe that better development control policy would eliminate the need for most if not all national parks.

NELSON: Land use policies in the United Kingdom have developed on a landscape that has been modified much more by human action than the North American. Institutional arrangements in the United Kingdom are more comprehensive in their management and planning practices, but not always helpful in the context of North American wildlands. This theme will reappear later in this conference and various arguments will arise.

THE FLOOR: I have a comment after listening to the Minister and Al Davidson. It is hard for me to understand how you can segregate ecosystem preservation from recreation demand and its impact. In addition, in reality nothing much happens at federal-provincial conferences. Decisions are made with little or no citizen input. I really would like to know why. Perhaps we need alliances, such as the Tourist Industry and Parks Canada.

THE FLOOR: The I.U.C.N. solution is to develop different tools. It is important to look at conservation objectives; look at the types of reserves desired, and then at their criteria. Different planning mechanisms are needed for national parks, national monuments, nature reserves, and scientific reserves.

THE FLOOR: In Canada only about two or three national parks have comprehensive master plans. In the United States most parks have a master plan. In addition, in the United States, some park zoning has legal status or protection under the Wilderness Act. The revision process is standardized and so is the procedure for notices and appeals. Is Parks Canada considering the status of zoning in Canadian national parks? Are you considering a standardized procedure for rezoning? And finally, what formal procedure has been formulated to identify the appropriate uses of each zone contained in a master plan?
DAVIDSON: Zones are not planned for in all national parks. If we determine through public participation that zones need to be changed, change proposals go to the government. Our whole system is, therefore, open to debate.

THE FLOOR: I believe it is necessary to have an appeal board established. The authority of this board must be made supreme.

DAVIDSON: It is extremely difficult to define and promote in the planning process, the demands of users and the demands of management.

THE FLOOR: The zoning system has caused problems in the past because it is still evolutionary. In addition, the diversity and complexity of the national park system have reduced the success rate. A draft on zoning, a paper of eight pages, is now being circulated in our regions. Public debate is a difficult thought; it has taken five years just to get this draft through Parks Canada. The content of this paper includes guidelines for boundary definition and management. It is made clear in this draft paper that zoning is set only at the conclusion of the public participation process. The Minister must accept the management plan. If any additional zoning changes result it is returned to the Minister.
II
PARKS CANADA EVENING
Monday, October 9th: Evening

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DISCUSSION FROM THE FLOOR 91
L'EVOLUTION DE CONCEPT DE PARC
P. Dionne

Le sous-ministre adjoint de Parcs Canada, monsieur A.T. Davidson, parlant des récents changements dans le domaine des parcs, attirait notre attention ce matin sur une nouvelle contrainte qui pèse sur nos parcs et en particulier sur les parcs en négociation: celle de respecter l'équilibre qui s'est établie au cours des ans entre les écosystèmes naturels et les activités traditionnelles de subsistance de l'Homme.

Cette contrainte, qui peut en fait être considérée comme devant faire partie des objectifs de certains de ces parcs, mérite d'être examinée au cours de cette conférence ainsi que monsieur Davidson nous l'y invitait. Permette-moi d'aborder cette question par le biais d'une réflexion sur les différents objectifs qu'on a assignés aux parc nationaux depuis leur création.

PREMIER OBJECTIF: LA RECREATION - DETENTE

Il y a quelques siècles, en Europe, plusieurs grandes villes se portaient acquéreur de vastes espaces verts en périphérie des villes afin de contrebalancer certains défauts urbains typiques que l'on pouvait déjà déceler: apparition de banlieux-dortoirs ennuyantes, trop haute densité d'occupation, pollution sonore, visuelle et atmosphérique, etc.

Les grandes villes en Amérique connurent rapidement les mêmes problèmes et réagirent avec les mêmes solutions: les parcs urbains intégrés à la planification physique de l'expansion des villes. Le principal rôle dévolu alors à des parcs comme Central Park à New York, le Mont Royal à Montréal, et bien d'autres, était de fournir aux résidents des villes l'occasion de se récréer, de contrebalancer le stress généré par la vie urbaine.

Cette fonction de récréation des parcs est encore très évidente aujourd'hui et il n'est pas un de nous qui ne connaisse les effets bénéfiques sur les nerfs d'un séjour, même bref, dans un parc naturel.
DEUXIÈME OBJECTIF: LA CONSERVATION

Mais dès le milieu du siècle dernier quelques individus clairvoyants demandèrent au concept de parc d'inclure un mandat de conservation. C'est à ce moment que l'on prit conscience d'une sorte de devoir moral que nous avons de transmettre aux générations futures de vastes ensembles naturels demeurés intacts.

Cet objectif de conservation est naturellement encore très fort aujourd'hui, mais nul n'a besoin d'une boule de cristal pour savoir que nos parcs seront, dans un avenir peut-être pas très éloigné, soumis à de fortes pressions des milieux économiques qui voudront en exploiter les richesses naturelles. L'exemple de la Province de Québec sera sous cet aspect fort instructif. Grâce à une nouvelle loi, l'administration provinciale est à redéfinir les limites de ses parcs actuels afin de consacrer une vocation de conservation pour certains secteurs et une vocation d'exploitation contrôlée pour d'autres secteurs qui seront désormais exclus des parcs.

TROISIÈME OBJECTIF: LA RECHERCHE SCIENTIFIQUE

Servir de vastes champs d'étude à la communauté scientifique est une autre fonction qui est demandée à nos parcs. L'étude d'écosystèmes demeurés imperturbés par l'homme dans les parcs de conservation est même devenue un objectif reconnu par l'U.N.E.S.C.O. Son programme L'Homme et la Biosphère trouvera probablement la majeure partie de ses champs d'étude dans nos réseaux de parcs.

QUATRIÈME OBJECTIF: L'INTERPRETATION

Enfin, sorte de conséquence logique à la poursuite de ces trois premiers objectifs, l'interprétation des phénomènes naturels nous est apparue comme devant absolument faire partie des objectifs de nos parcs. En effet la curiosité naturelle des visiteurs nous permet d'une part de promouvoir une meilleure compréhension de nos objectifs de conservation et d'autres part de remettre à la population une partie des résultats de nos recherches scientifiques.

CINQUIÈME OBJECTIF:

Ce cinquième objectif est celui auquel je faisais allusion en commençant cet exposé. Il nous est apparu dernièrement qu'il était impossible de faire complètement abstraction de l'influence de l'homme sur son milieu, comme nous avions eu tendance à le faire jusqu'à maintenant.

Dans la majorité des cas de nouveaux parcs à l'étude ces temps-ci il appert qu l'Homme a, au cours des années, atteint avec la
Nature une sorte d'équilibre qui soit à la fois stable et dynamique, qui satisfasse certains besoins humains de subsistance et qui respecte aussi les fragiles écosystèmes naturels.

Le programme l'Homme et la Biosphère reconnaît d'ailleurs cet état de fait et se propose de l'étudier.

Il nous reste donc à inclure, et je crois que nous n'avons pas le choix, dans les objectifs de certains de nos parcs la préservation et l'interprétation de certains styles traditionnels de vie. C'est le cas entre autres dans nos parcs du Nord.

CONCLUSION

La question que je me pose en terminant est la suivante: pouvons-nous atteindre tous ces objectifs avec un seul outil, le parc national? Nous avons longtemps cru que c'était possible grâce à une planification sérieuse, grâce au zonage adéquat, grâce à divers règlements d'utilisation, etc.

Mais force nous est de constater aujourd'hui que ces objectifs viennent souvent en contradiction: la recherche est limitée par des règlements de conservation (par exemple en matière de cueillette de spécimens, ou dans le domaine des expériences), certaines zones de nos parcs doivent être sacrifiées au profit d'installations pour visiteurs, la qualité de l'expérience vécue dans un parc dépend trop souvent du nombre de visiteurs présents en même temps dans un secteur, certains lacs complètement vidés de leurs poissons doivent être réensemencés régulièrement, etc.

Remarquez que Parcs Canada a déjà, intuitivement peut-être, trouvé une certaine réponse à cette opposition des objectifs entre eux: c'est la spécialisation des parcs. Nul en effet ne peut nier qu'en pratique le parc de l'Île du Prince Edouard poursuit plutôt des objectifs de récréation, Wood Buffalo plutôt des objectifs de conservation, et que nos prochains parcs dans le Grand Nord accorderont une grande importance à la préservation de la vie traditionnelle des autochtones. C'est donc l'ensemble du réseau et non pas chacun des parcs individuels qui poursuit globalement les cinq objectifs dont j'ai parlé plus tôt.

La Province de Québec, pour sa part, toujours grâce à sa récente législation, a reconnu officiellement cette façon de procéder et organise systématiquement son réseau de parcs en créant un outil spécial pour chaque objectif majeur: réserves écologiques, parc de récréation, parc de conservation, réserve de chasse et pêche, zones d'exploitation contrôlée, arrondissement naturel, etc.

C'est peut-être une indication que les parc nationaux, avec leurs normes qualitatives et la reconnaissance dont ils jouissent au niveau international, devraient se développer en complément aux parcs provinciaux et municipaux, de façon à former un vaste ensemble intégré de parcs à l'échelle du pays. C'est là un défi que ceux qui surveillent la scène politique actuelle sauront apprécier à sa juste valeur.
The general area of federal-provincial relations is one which has expanded greatly over the past decade. No doubt part of this is due to the renewing rounds of discussion on general constitutional reform, provincial awareness and interest in specific powers, and the economic realities of the times. More specifically, provincial concerns with the protection of their resource base, and their tax base, have taken on new importance since 1968. Certainly the rise in the political and ecological consciousness of the population has sensitized municipal, provincial, and federal levels of government to the needs and desires of the population, needs and desires to which they must respond in order to stay in power. Clear evidence of interest in this general area can be shown in the formation on the federal side, of a federal-provincial relations office, and more recently the appointment of a minister responsible for federal-provincial relations. Provincial governments, in many cases also have assigned cabinet responsibility for intergovernmental affairs.

In the case of national parks, the necessity of good federal-provincial relations is critical. The federal-provincial agreement to create a new national park, or expand an existing one, is one of the most significant steps in the process of national park establishment. It is a joint agreement, and as such, commits two levels of government to a common objective: to protect the park area and encourage public understanding and enjoyment of the area both at the time the park is established and in the future. Without the support of the provinces the federal government cannot meet its responsibility to protect the natural heritage of all Canadians.

Federal-provincial negotiations on national parks at both the political and bureaucratic levels generally have been lengthy and complex affairs varying with the particular parks in question. Two general mechanisms which have assisted in the process of federal-provincial relations and, in turn, national park negotiations, have been the Federal-Provincial Parks Conference and the establishment in some provinces of a consultative committee composed of federal-provincial representatives. The Federal-Provincial Parks Conference now has been in existence for some seventeen years. It is considered by many to be an institution and serves the basic purposes of acting as a catalyst and providing avenues for on-going dialogue. On the other hand, the federal-provincial
consultative committee is a more recent phenomenon. Specifically it becomes involved in discussions and negotiations of Parks Canada's role in the province where a federal-provincial consultative committee is struck.

The Ontario Region of Parks Canada has been in a fortunate position, since the 1973 split of the Central Region, which was composed of both Ontario and Quebec. All of our responsibilities now are located in the single province of Ontario allowing us to focus clearly on issues and problems common to the province and to ourselves. At the time that this split was occurring, Ontario clarified the role and direction of its own provincial park system. Implicit in this has been a clearer realization by Ontario of the role of national parks in the province. For example, those parks presently assist the province in meeting some of its wilderness objectives. The end result has been an understanding of each others' objectives and priorities along with a joint identification of projects of common benefits.

If one desires to generalize, it would appear that part of the reality of good federal-provincial relations in the potential establishment of national parks is due to clear understanding, by both sides, of where both jurisdictions are heading, or wish to head, in the provision of park resources for the public.

Recently, Ontario Region has seen the successful completion of negotiations for a new national park, Pukaskwa. An agreement was signed in February of this year, some six years after the exchange of the original memorandum of intent, a document which hardly reflected the agreement which was eventually hammered out through face-to-face discussion and exchange of letters between public servants and ministers. It is a tribute to the motivation of all parties that a deal was made, a deal which satisfies the needs of both governments and one which entails continuing cooperation in development and management of the park.

It should be noted that the Ontario/Canada Consultative Committee struck in 1976, served in part as the forum in which many of the details of the Pukaskwa Agreement were worked out. In addition, the Committee has discussed a Parks Canada submission, entitled National Parks in Ontario, which outlines the objectives Parks Canada wishes to achieve in its national parks in Ontario. In the future the Consultative Committee could very well be the forum in which Parks Canada's response to the recently submitted St. Lawrence Islands National Park's proposal is discussed. The important point in this latter case is that the minister responsible for national parks has assured the Ontario Minister of Natural Resources that, and I quote, Upon receipt of the recommendations of the advisory committee we will consult with and secure the agreement of Ontario before proceeding with consideration of any expansion plans for the Park. This in itself is a major precedent in federal-provincial relations on the expansion of a national park.
In Ontario there have been other areas of federal-provincial relations which involve environmental conservation. The most notable of these is the Canada Ontario Rideau, Trent-Severn (C.O.R.T.S.) Corridor Agreement. The Agreement, signed in February, 1975, provides for coordinated execution of federal, provincial and municipal responsibilities within a corridor defined by the Rideau Canal and Trent-Severn Waterways. The mechanism is an Agreement Board, comprised of senior bureaucrats from the federal and provincial agencies with major responsibility in the corridor. The idea is to coordinate work amongst all of the participating agencies. There is a Secretariat to maintain communications and a planning group whose major task is to prepare a Framework Plan which will define the policy and priorities required to achieve the primary goals of the Agreement. Parallel to the Agreement Board is an Advisory Committee which has primary responsibility for the Agreement. Members of this Committee are appointed by the ministers of Parks Canada and the Ontario Ministry of Natural Resources. The function of the Committee is to discuss government proposals in a public forum, and to advise the ministers. This provides balance, and an opportunity for interested citizens to participate in the future of the corridor.

The past ten years have seen considerable improvement in federal-provincial relations on matters pertaining to national parks, not only in Ontario Region but generally across Canada. Continued interest by the provinces will make the next ten years even more important. It is with this in mind that we have developed a Parks Canada Policy draft document and made it widely available for discussion and comment. From Parks Canada's viewpoint the basis with which federal-provincial relations in Ontario and all other provinces might take place is outlined under the specific policy statement on page 24 of the document, and I quote (Parks Canada, 1978):

**Federal-Provincial Relations**

Parks Canada will concentrate its efforts on heritage resources of national significance and will carry out its mandate in cooperation with provincial governments so as to complement the efforts of provincial governments in related fields.

The natural and cultural heritage of Canada includes places of local, regional, provincial and national significance. Therefore, Provinces and local governments have major roles to play in preserving Canada's heritage. Complementary and cooperative efforts will result in more successful programs than any one agency or government could sponsor alone. Parks Canada recognizes that in order to achieve its objectives, the support and cooperation of other levels of government is often essential. For this reason, particular emphasis will be placed by Parks Canada on
encouraging intergovernmental coordination and cooperation in the protection and presentation of heritage resources of national significance.

The policy and the systems plan for national parks, by which Parks Canada hopes to achieve its national park objectives in Ontario and all of the provinces along with the Territories, are quite clear. For some provinces, including Ontario, the development of policy and related park establishment objectives have been accomplished. In these cases federal-provincial relations should continue to improve. For other provinces the fact alone that Parks Canada has clarified its role, objectives, and policies should assist federal-provincial relations in terms of national park establishment.

The question I leave with you at this Conference II is, Is this enough? Will on-going mechanisms such as the Federal-Provincial Parks Conference, consultative committees, and the development of roles, objectives, and policies on the part of Parks Canada and some provinces be sufficient in the future to assist in the establishment of new national parks?

REFERENCES CITED

PERCEPTION AS A FACTOR
IN THE ESTABLISHMENT OF NATIONAL PARKS
IN ATLANTIC CANADA

D. Harper

INTRODUCTION

If I was asked to identify the one particular part of our programme in the Atlantic Region over the past ten years that received the greatest public attention, caused the greatest concern, and occupied the most time of senior managers, it would have to be national park creation and expansion.

In an era when the conservation movement was supposedly at its peak, the achievements in this field in the Atlantic Region have been very modest. During this period Gros Morne National Park in Newfoundland and Kouchibouguac National Park in New Brunswick were created, but not without considerable controversy. Several other proposals were lost or, at least, deferred indefinitely, proposals such as Ship Harbour and Cape LaHave in Nova Scotia, East Point in Prince Edward Island, as well as a major expansion of Fundy National Park.

What has been the problem? While not wishing to oversimplify a very complex situation, certainly one of the factors has been the differences in perception of what national parks are all about.

The following quotations serve to illustrate this point.

From a government official with respect to a park at East Point: The premier said he agreed with the necessity of conserving land, but he said we must also use land to its maximum benefit. That meant people should be able to continue to live on it, and he added 'we must continue to support our forest industry'.

From a conservationist: The wilderness that remains is all there ever will be and our national parks are the only viable means of ensuring that wilderness.

From a Board of Trade: We need something. Anything in the way of increased opportunity for all of us, but more particularly our youth. It is in the best interest of most, if not all, to support any such proposal. And, we are not advocating areas which would necessitate moving inhabitants, indeed, we contend that neighbouring fishing villages, fishermen’s homes, wharves and fish stores, provide much of the attractiveness of the region.
From local residents: We have been told that a park will bring more tourists, more money, make more work - I fail to see how it will bring in more money or make more work. There will only be a very few employed in the park and not that many motels, etc. Also, the people who are displaced from their jobs will have to be fed, moved to new homes, more welfare, and what is to compensate for the loss of taxes which are being paid on these properties? Perhaps my views don't mean much but it is as I see it. And, We do not oppose a National Park providing it will not affect people's homes, fishing rights, lumbering, or any other activity.

There are differences obviously in how national parks are perceived and these have to be understood and weighed in arriving at an acceptable decision, not only by Parks Canada, but also by the perceivers themselves.

Now, before looking a little closer at who these perceivers are and what views they hold, I would like briefly to point out the importance of the regional context in shaping these perceptions.

In Atlantic Canada people traditionally have looked to the land and sea for their livelihoods. As a result, the coastal regions of all these provinces are highly populated. Some of the oldest settled land in Canada is found in the Maritimes, and land tenancy patterns are long established. Ties to the land are strong, generations old in many instances. Ownership of land is a valued privilege and any interferences with the right to use property in any particular way are resented. One of the earlier quotes is proof of this.

Man's impact is widespread throughout Nova Scotia, New Brunswick, and Prince Edward Island. Few pristine wilderness areas can be found in these provinces. However, in Newfoundland, especially in Labrador, there are large tracts of land that have not been extensively modified by man.

The percentage of provincial Crown owned land in the mainland provinces is low in relation to our sister provinces to the west. For example, in Nova Scotia about twenty-five percent of the land area is owned by the Crown, and only twelve percent of this is not leased for timber cutting purposes. In terms of acres of parkland per thousand of population, Nova Scotia, New Brunswick, and Prince Edward Island rank lowest in the country. Newfoundland is third in rank.

Employment very much is based on resource extraction from both the land and the sea. Pulp and paper, fishing, and agriculture are all quite important. The tourism industry is also important and is becoming increasingly more so. Steps are being taken by all governments to ensure that this industry continues to grow. In comparison to the rest of the country, though, the employment situation is not good. Some of the highest unemployment rates in Canada are found in the Maritimes. Understandably then, Maritimers are very concerned with government programmes linked to job creation. The environmentalist wave which Davidson noted earlier in this conference has never been as strong in the Atlantic Region as in other parts of the country.
It is apparent, therefore, that the relative success of attempts to establish new parks or expand existing ones is geared closely to our understanding of the interests and concerns of all parties; concerns that in Atlantic Canada very much are moulded by the context described above. It is in this context as well that we can appreciate the difficulty which people have in grasping the concept of a system of national parks, which Carruthers spoke of earlier, and which makes it difficult to develop a set of national policies that can be applied in a similar manner across the country.

Looking a little closer at some of the players in this perception game, I wish to discuss briefly some of the most important ones, and the views they hold based on experiences in Atlantic Canada.

PROVINCIAL GOVERNMENTS

As Davidson noted earlier in his presentation, in any of the ten provinces, the provincial governments must be directly involved in any park proposal, and eventually must give up land and incur costs for the privilege of having a park. In return they expect protection of heritage resources and provision of recreational opportunities. But most importantly, they expect that employment opportunities will be provided and more tourists attracted to an area. National parks often are viewed as tourism magnets. And, as well as spending money on a tourist facility, the federal government is expected to assist in the improvement of local services and infrastructures such as roads and sewers. The primary interest is not on rounding out a national system of representative landscapes, but on economic development and other benefits related to tourism development. Provincial perceptions of the value of national parks is linked strongly to one of growth of the provincial economy.

SPECIAL INTEREST GROUPS

National conservation organizations, such as the National and Provincial Parks Association of Canada, and the Canadian Nature Federation, have shown limited interest in recent Atlantic Region park proposals. This is perhaps one reason the national system perspective commonly is not recognized or identified as important by other interested, regionally oriented groups.

In each of the provinces there are a variety of organizations having an interest in national parks. Their perceptions are determined by their mandate. For example, organizations in Nova Scotia range from the Halifax Field Naturalists, interested in preservation and conservation, to the Nova Scotia Forest Products Association, interested in forestry operations. Then there are organizations which are interested in the concerns of small geographic areas. These
include Boards of Trade, Chambers of Commerce, and fishing associations.

These special interest groups are secondary to local residents in reacting to park proposals and they play an influential role.

LOCAL RESIDENTS

As with provincial governments, local residents usually can be divided into different factions having various interests with respect to the establishment of a park. For example, while the majority of local residents were opposed to the Ship Harbour proposal, they could be divided into groups concerned about losing their lands, those interested in effects on their way of life, and others. There were some local residents who supported the proposals. Local residents generally do not relate to a concept of a national system of parks or to the concept of preserving representative landscapes. Understandably, they are most concerned with the direct consequences of any park proposals on their own well being. Local residents generally have been leery and mistrustful of government at best and, at worst, violently opposed to any changes in their life style. The major perceptions of residents opposed to both the Ship Harbour and Cape LaHave proposals were:

1. The fact that homes, permanent and summer, would have to be given up and that traditional uses of lands would change;
2. The fact that there was no guarantee that the proposed park would not expand to take in more land;
3. The feeling that fishing rights and the fishing industry would be affected adversely;
4. The general feeling that, if expropriation did take place, land and homeowners would receive only assessed value rather than replacement value, or even market value;
5. The proposed park would attract numerous tourists into the park area, disrupting the way of life of residents.

These concerns were more important to the residents opposed to the park proposals than any potential economic spin-offs of a park, the main argument touted by those in support of the proposals.

LOCAL GOVERNMENTS AND PARK VISITORS

Local governments and potential park visitors also are players in this game. The former generally reflect the perceptions of the local residents, while the latter seldom are approached in a direct
way but interpretations of their views are made from comments that originate from their use of existing parks, and to some extent through visitor surveys and public involvement in park management planning. Generally, park visitors present the most balanced views, appreciating both the values being protected and the recreation opportunities offered.

A modifying factor in this game is the media; you are well aware of their influences. While the views of these players often are straightforward, they frequently are presented to the public in a biased or slanted way, based on their newsworthiness, so that it is difficult for the public to weigh the merits of the various proposals. It is recognized, however, that we in government often deal with the media at arm's length through news releases. We have demonstrated a reluctance to take off our rose coloured glasses and face the issues head-on.

CONCLUSION

What about the next ten years? Will the views I have summarized continue to influence new park proposals? We will have a chance to find out, for the stage is set to examine the potential in Labrador for national park establishment.

If we have learned something, then it probably can be spelled out in the following principles:

1. Recognize that a national park is only one form of land use; its value must be spelled out relative to competing land uses and people's expectations of it;

2. Treat the public as an important resource in proposal formulation;

3. Ensure that those who are interested in, concerned about, or affected by a proposal are identified at an early date and that a direct line of communication is established to avoid misunderstandings;

4. Make sure there is sufficient information and time available so that a proposal and the issues it may generate can be discussed thoroughly;

5. Do not overestimate the economic importance of a national park or give others the licence to do so;

6. The provincial government must be an active and responsible partner in proposed endeavours and their public views must reflect this;

7. National conservation organizations must reassess their regional preoccupation;
Finally, the media must be involved more directly; they must be given the facts for both sides; and they must act more responsibly in presenting a balanced viewpoint to the public at large.

Perhaps at your next meeting in ten years' time we can examine how successful we have been in following these principles.
Substantial changes in visitation and recreational activities have occurred in the national parks of the Western Region in the decade preceding 1978. Growing population, increased interest in environmental conservation, technology, and the attractive national park landscapes are some of the factors influencing the patterns of use and the objectives of visitors to the national parks.

Overcrowding as a result of peaking has intensified. Many residents of Calgary, Edmonton, and Vancouver travel to the national parks on weekends, particularly during the traditional holiday months of June, July, and August. During these times, popular facilities, such as campsites, picnic sites, visitor service centres, and some front country trails, are crowded and overused. A similar pattern is developing at the four ski areas and along access roads during the peak of the winter ski season. Proposals to expand visitor service facilities at Lake Louise and the Sunshine Ski Area precipitated unprecedented public debate and controversy regarding the purposes of national parks and the appropriateness of certain facilities. In response Parks Canada has engaged in extensive public consultation programmes when developing major land use plans.

The development of cross-country skiing activities in the past decade has been remarkable. In 1968, it would have been difficult to purchase cross-country skis in Calgary; but, by 1978, thousands of Calgarians were travelling to Banff in search of this winter adventure. Parks Canada has responded by designating specific ski trails, preparing trail information documents, and maintaining parking areas at popular winter trailheads. Recent interest in canoeing and kayaking implies a similar trend, although the total number of participants is likely to be less. A detailed assessment of the mountain rivers has provided Parks Canada with the somewhat unique opportunity to plan for the accommodation of an environmentally compatible recreational activity well before resource impairment concerns develop.

Increasing concern for environmental integrity and interest in recreating in undisturbed natural settings encouraged a great number of park visitors to hike and camp in the backcountry areas.
of Canada's national parks. The availability of efficient lightweight equipment placed all areas of the mountain parks within reach of determined pedestrians. Conflicts developed between the new users and traditional visitors, who used horses and camped at large, permanent campsites. Complaints about trail and backcountry campsite conditions intensified. Parks Canada has undertaken research to guide it in better trail location and construction techniques. Special criteria are being developed to reduce user conflicts, and changes are being implemented to reduce avoidable environmental impact.

The incidence of personal accidents and the impairment of natural resources have increased as a result of an enlarging visitor population. Adventure seekers who climb mountains, navigate white water, ski and hike in perilous situations, or exert themselves beyond their physical capabilities traditionally have received rescue assistance from the warden service when they became overwhelmed by hazard. This has caused the warden service to develop the most diverse and effective mountain rescue capability in the world. Protection of the parks' natural resources has required imaginative and detailed environmental research in order to manage visitors and services in ways which least disturb complex ecological processes. Knowledge about the process of impact and the response of soils, plants, and animals will be utilized in the location and construction of future facilities. Similarly, rehabilitation of disturbed sites will be made possible by research of native plants and restoration techniques. Biological and habitat studies of special wildlife species, such as bears and goats, hopefully will reduce the very negative effects which human contact has on these sensitive animals.

While research has and will produce innovative guidelines for dealing with both old and new problems resulting from changes in patterns of park visitation and use, there is no panacea to cope with unlimited pursuit of outdoor experiences in Canada's national parks. Adventure is attained at the price of some personal exposure to risk and hazard. It will not be possible, nor is it desirable, to make the national parks danger proof. Environmental integrity and undisturbed natural landscapes will be preserved only by the practice of responsible personal conduct and the thoughtful appreciation of unique natural heritage resources by all concerned.

EDITORS' NOTE: Dr. Leeson's presentation was based on an audio/visual programme; the foregoing represents an outline of the commentary.
INTRODUCTION

Historically the immense frontier of the North has presented a challenge to mankind. To the European explorer, it meant surviving the search for a Northwest Passage. To the northern native, it was the struggle to keep an entire people and culture alive in a harsh and unforgiving homeland. Today the challenge of the North has moved beyond that of basic survival.

It has been suggested that mankind's traditional relationship with the environment has been dominated by the Christian ethic of man's dominion over the earth. Certainly that ethic has been reflected in the southerner's recent relationship with Canada's North. With little regard for the environment, single-resource-based companies have extracted the northern non-renewable resources in commercially marketable quantities and exited south. This exercising of dominion has been accepted by Canadians, there being few, if any, regulations for the protection of the northern environment.

More recently, the equally pervasive Christian ethic of wise husbandry of our resources has come forward. The seeming paradox of man's being separate from, yet a part of, nature has emerged in the ethos that man's activities must be limited, for impairment to nature is impairment to man.

Unlimited activity, performed on the grand scale geared to the potential of Canada's North proportionately would result in impairment of immense consequence.

In 1968, we convened to evaluate our efforts to fulfill Parks Canada's mandate and to determine the position of society in relation to our past and future efforts. With that established, we then proceeded to deliberate our direction in the coming decade. As Assistant Deputy Minister, Al Davidson, stated earlier, one of the great concerns expressed was the establishment of new national parks, while opportunities were available.

Only in our national parks have we the legislated power to limit the activity of man and to maintain a relatively small portion of our wilderness-intact-for-future-generations. We saw the
conflict between dominion and husbandry about to be staged in the vast theatre of the North -- and moved with some urgency to extend the protection of our mandate.

In 1972, three national parks were proclaimed: Kluane, Nahanni, and Auyuittuq, all lying north of the sixtieth parallel. With this, our formal entrance into the Arctic, Parks Canada accepted the multi-faceted challenge inherent in that paradoxical land. In so doing, we made Canada's North OUR new frontier.

FACETS OF THE CHALLENGE

Kluane, Nahanni and Auyuittuq cover 18,000 square miles of Canada's North: that vast area that Winston Churchill termed a sub-continent. It comprises one-and-a-half million square miles yet is inhabited by only 52,000 people, less than the population of Dartmouth, Nova Scotia; or Niagara Falls, Ontario; or Kamloops, British Columbia. That immense land is equivalent in size to India, Pakistan, and Bangladesh combined.

In Kluane, the moist Pacific air colliding with the mountain ranges, dumps almost 300 inches of snow per year; there are snowfields more than a mile deep. Yet, much of the North has less precipitation than the Sahara Desert. Consider the high costs and logistics of standardizing operations in so vast and diverse a land.

The fragility of the Arctic ecosystems should be of utmost importance to all agencies operating in the North. Environmental damage cannot be repaired by the lush growth of warmer climates. If we were all to proceed cautiously with our various activities in the North, the environmental impact of our collective presence could be greatly minimized.

This brings me to what is perhaps Parks Canada's most sensitive and pivotal concern within its New Frontier. That is, to establish a mutual understanding between Parks Canada and the native people of the North. I cannot over-stress how vital this is for the success of Parks Canada's efforts in the Arctic.

While an increasing number of native people are finding it possible to supplement their traditional pursuits by seasonal or rotational employment, the majority are dependent on the land and its resources for their livelihood. They feel threatened by outsiders who seek jurisdiction over land traditionally regarded as their own.

Of particular influence, in both Northern Economic Development and the establishment of additional parks north of 60 degrees, are native land claims. These claims arise from the legitimate and powerful desire of northern native people to gain a greater measure of control over the economic, cultural, and social forces
that affect them. They seek the means to protect those aspects of their culture and lifestyle that are essential to their survival and to participate more equitably in the decisions that will bring the inevitable change.

Their participation in determining the future of this northern wilderness is precisely what Parks Canada is seeking at this time. In January of this year, Minister II. Faulkner identified six reserve areas of Canadian significance: Banks Island, Bathhurst Inlet, Wager Bay, Ellesmere Island, the pingoes of Tuktoyaktuk and the Northern Yukon. Mr. Faulkner indicated that Parks Canada would pursue the possibility of establishing parks within these areas through Public Consultation Programs centered in the North. We already have embarked on this programme and just recently opened a Parks Canada office in Yellowknife.

The Prairie Region, which will administer this programme, has considerable experience in public participation. Management plans were developed for Riding Mountain and Waskesiu national parks, with considerable public input. More specifically, we have learned in seeking public approval for the proposed Grasslands Park in Saskatchewan, the close ties that develop between man and land, in a relatively short period of time. In Kluane we face the continued difficulties of capturing the interest of southerners in planning this remote northern park. While we have learned some of the answers through these projects, we also recognize, through some of our errors, that past experience in a given situation does not necessarily always apply in another.

Prairie Region also has experience in managing parks in which natives exercise their right to pursue their traditional subsistence activities. Severe policing in the earlier days was ineffectual and created polarization. In co-operation with the natives of Wood Buffalo National Park a revised set of hunting and trapping regulations has been developed. These will not only result in better resource protection, but are imminently more practical insofar as the natives are concerned. In Kluane and Auyuittuq the natives are co-operating with proposals we have made for restraint in hunting, not by formal agreement, but in consultation and mutual trust.

To encourage a sense of belonging among the local populations most directly affected by these parks, we have developed an active and successful native employment programme. Seven natives occupy permanent positions at Kluane, thirty percent of the permanent staff. At Auyuittuq, the permanent and part-time staff totals eight, of which six are natives. At Wood Buffalo, sixty-five percent of the staff is native. Through progressive training we hope to promote these individuals to the highest positions to which they aspire, but hopefully at least to the Park Superintendent level. Had we been more visionary even a decade ago, we probably would have achieved that goal by now.
MEETING THE CHALLENGE

Our new policy of Management Consultation reflects but one aspect of the evolution occurring within Parks Canada over the past decade. In 1968, as Al Davidson stated, our policy was to eliminate exploitive human activities from our new national parks as quickly as possible. You have heard of instances where this did not work, particularly when it conflicted with the interests of the local people. We no longer regard native subsistence activities as exploitive, if proper management formulae can be developed.

To preserve significant areas of the Arctic may prove a difficult task in the face of exploitation from outside the North. We clearly need the support of natives and conservationists across the country, in fact, any group, agency, government, or individual who favours husbandry over dominion can help us in our task.

We do not feel that the national park concept, as it now stands and is understood, will always prove sufficient to withstand the pressures of development lobbies. A new concept, that of the national wilderness park is proposed. This concept is an adaptation that appears well suited to the objectives of Parks Canada, the native people, and, hopefully, other Canadians. This concept, re-enforced through public support and suggestions for improvement, will ensure minimal change to the present environment when these areas are dedicated as national parks.

WHERE ARE WE GOING?

Through this evolution of policy, we soon shall have a strong new concept of parks that not only protects wilderness, but also recognizes that man is considered an essential part of the ecosystem. Incorporating this social concept into our policy is obviously one of the necessary compromises that must be made, if we are ever to bridge the cultural chasm between Parks Canada and the northern native. But will the compromises achieve the purposes and satisfy our fundamental objectives? Clearly, we will have to make difficult but firm policy choices about the many facets of traditional use.

I believe we are standing on the threshold of historic achievement. We hope to establish six national wilderness parks, with the BLESSING of the northern people. We then hope to place the management of these parks in the hands of Parks Canada personnel who are northern people. TOGETHER we must ensure that a sizeable portion of Canada’s northern wonderland will be maintained and made use of, so as to leave it unimpaired for all future generations.
Discussion from the Floor

SESSION: PARKS CANADA EVENING
Monday, October 9, 1978 (Evening)

CHAIRMAN: S. Kun


RAPPORTEUR: R.D. Needham

EDITORS' NOTE: Each of the panelists presented his or her paper.

THE FLOOR: I have one comment and one question and they both relate to northern parks. I do not know whether Mr. Kun or Mr. Malis would like to deal with them. First, the comment I wanted to make was in connection with the notion of traditional rights. As most people know, when the northern parks were established in 1974 there was built into the amendments a protection of traditional rights. I am curious about something in the exercise of traditional rights in relationship to Kluane National Park. Mr. Malis has indicated that the native people there have shown restraint in not utilizing these rights. I have been concerned for sometime that the definition of traditional rights in the 1974 amendments are far too general. I realize that a problem like this has to be worked out in the course of time. But I have two reasons why I view this as a problem. One reason relates to my earlier reference to Kluane, and native people exercising restraint. Over this past summer I was involved in some research there and I had to communicate directly with the superintendent's office. The office stated quite emphatically that native people in Kluane did not have any traditional rights. This position was based on the theory that the native people had not hunted there since 1942, when the area was withdrawn as a reserve. I think that this demonstrates that there is a the present time a good opportunity for there to be a very broad interpretation of what traditional rights means. Does the term refer to traditional rights at the time the park was established? Does it mean traditional rights that may not have been exercised for a period of time because of some external force, such as the designation of an area as a reserve? This is one problem. Second, given that the designation is so general at the present time, there is the very real possibility in the future that there may be litigation launched by the native people to get a further definition if this concept is not defined in legislation. The southern Canada experience suggests that extent to which the courts have been prepared to protect very generally stated treaty rights. I think that there
is a real danger if indeed the native peoples have to rely on a judicial interpretation. They may find out that they did not get the protection they thought they got in the 1974 amendments. Perhaps you could comment on this subject? The question I would like to ask, however, relates to Nahanni National Park. I have seen recently newspaper references which state that it was to be designated under the World Heritage Convention. I am wondering what the status of that designation is precisely. If this is a final kind of designation, what implications does this have when Nahanni and the other two northern parks are only in the reserve category? Are their boundaries to be subject to the final settlement of land claims? What impact does this new development in the international sphere have on what kind of undertaking at the time the park was established?

KUN: Thank you for not asking the question about traditional rights. The idea of designating Nahanni National Park as one of the World Heritage Sites does not in my view have any implication or threat for the native people. What it does is to simply identify a fact of nature, that this area is a very significant geographical feature in the world. To be a candidate for a World Heritage Site, the region must have in place adequate protection to sustain it as such. If for some reason, there is a change in its status to the extent that there is not adequate protection or control on the site under the criteria that have been set out, it is simply delisted. That is the end of my answer.

THE FLOOR: Steve, I guess I can ask you to field this question. We have heard a lot about all the new national parks and the very commendable effort of your department in the last ten years. What concerns me are the impacts of these new national parks on our older, existing national parks. Several years ago we looked at the Parks Canada budget and noticed fairly massive shifts in the amount of money that was being spent in Quebec and on Pacific Rim. There seems to be a corresponding decrease in the amount of monies available for maintenance and capital development in existing parks. There is probably one of three possible things happening. First, that maintenance is declining. Second, that if this is not happening Parks Canada is getting increases in monies available from the Treasury Board to manage these new areas without the existing parks suffering. Third, that you are all just working harder individually, regionally, and collectively. I would like you to comment on just how these new parks are impacting on the rest of the system. Are you keeping up with the
rest of the government expenditures with the new expansions?

KUN: I was almost going to leave the microphone off for my response. The rapid expansion that Parks Canada has had to go through in the realm of national parks in the last ten years has unquestionably taken its toll. It has left the organization walking on a tight rope, a financial tight rope. I think you can find evidence of your concerns in the Tunnel Mountain campground. There is no question that something had to suffer. It is a question of trade-offs. It leaves the Parks Canada staff, and the public quite distraught about what is happening to our national parks. The run-down condition of some of our facilities is the price we had to pay if we wanted to capture some of the areas you saw on the films a few moments ago. It is difficult to explain this theory to the average Canadian who wants to go on an average vacation of two weeks in the national parks of Canada. I think that in the long-run the people in this room and the average Canadian will agree that the trade-off and the choice of timing was well worth it. At the present time, Parks Canada is mounting a five year programme to refurbish the facilities that have become run-down in the last ten years. Hopefully, you will see evidence of this program in the next two or three years.

THE FLOOR: I have a question for John Lewis. In reference to the Federal-Provincial Consultative Committee, you described it as if it were used primarily as a mechanism to promote or further the creation or establishment of national parks. I wonder if the mechanism has been used to develop regional or comprehensive planning procedures, or if it has not, if you see the possibility of using this mechanism to that?

LEWIS: It is a relatively new mechanism. One was set-up in Ontario in 1976. There is one in Alberta. There is the possibility of one for British Columbia. It really is still in the formulative stages and I do not think that I can see it going in that direction in the near future. Its main objective is to keep up the lines of communication between the province in question and ourselves. It not only deals with new park establishment, but also deals with existing national parks in the provinces concerned and with some of the problems associated with those parks. One might consider the areas around existing parks and some of the planning problems associated with these areas. These problems could come before the Consultative Committee. In the case of British Columbia, there is a possibility at Pacific Rim.
I have three questions. Perhaps the first one John Lewis could respond to. In the context of Pukaskwa, the federal and the provincial government of Ontario hammered out an agreement after a long period of time that was the best deal for both of them. The underlying agreement for any new national park seems so essential for the understanding of the preliminary master plan. It, therefore, should be part of the literature handed out to the public for comment. The Pukaskwa agreement was the best deal between two governments perhaps. But, it was not the best deal for the public interested in national parks. You can not understand the drawing of the boundaries of Pukaskwa without knowing the details of the agreement. Do you think that all the details of the agreements made for the establishment of national parks should be set-out in the literature which people are given to review for the preliminary proposal? The next question is for Ron Malis. I believe I heard you say that with the establishment of northern parks, it was very important to have public input and on-going public participation. I do not think that Parks Canada asked for any public comment on the establishment of Auyuittuq. It was certainly a complete surprise to me. I do not know how southerners are going to comment on northern parks if they have never been to the north. If a national park was finally established in the Artillary Lake area, you would have to be an elietist canoeist to get in there. In my opinion the public participation process completely breaks down when parks of this character are established. I would like you to comment on this point. This question is also for you, Ron. It has to do with northern parks and native rights. We in the south are damned if we do and damned if we don't. If we keep quiet on issues originating in the north, we are said to not care. If we say something, then we are treading on rights and are in an area in which we have very little knowledge. There are two aspects of the native rights issue which bother southerners. First, the definition of what those rights are is confusing. Second, what happens when these rights are firmly established? Can they then be dealt with like any other rights of the private individual? For example, in the establishment of Ship Harbour, if the locals do not like the proposal they can have their land expropriated and be forced to move. That is legally possible. Politically it may not be possible. Once native rights are agreed to, are they then guaranteed and that is the end of the problem? If this is the case, the southerner may want the same deal. He would not give up his rights and that would be the end of it.
MALIS: In the context of park agreements, blueprint literature is distributed indirectly. In the case of Pukaskwa, there was a six year lag-time between the 1972 preliminary master plan and the 1978 beginning to public consultation. At the present time, the Ontario regional office is devoting considerable time responding to questions from the public and the Ministry. It is trying to clarify some of the points on the establishment of the park, its boundaries, and the agreement. I think your observation is probably a good one. In the case of some of the potential park sites being investigated by Parks Canada, the type of information you want is probably more readily available.

THE FLOOR: In 1972 when Kluane, Nahanni, and Auyuittuq were set aside, there was no public consultation even though the governments involved can do that unilaterally. I guess the experience with southern parks, the local hostility, and the failures, influenced these other situations. In the case of the grasslands, we tried to gain public acceptance for a new park among the locals through public consultation. Since 1972 and the Indian land claims question in the north, we have come to realize that we simply had to develop these park agreements in the public forum. I suppose one of the things that comes to mind is that the support from the south can help offset the biases of northern communities and the ambitions of resource developers. Our strategy right now in terms of public consultation for the proposed northern areas has not been based on trying to tap the south for support. It probably will, but it will have to be in terms of conservation rather than in terms of knowledge of the specifics of the particular parks. The specifics are more significant in a case like Kluane. Here we have attempted to pass along as much information as we can in the form of literature, slides, talks, and so on. We tried to place before the southern public the issues underlying the development of a management plan for that particular park. Our argument was preservation versus use. In the case of Wood Buffalo, traditional rights were handled through regulation. In the case of the northern parks, I would suspect that traditional rights will remain a long time. They are such a fundamental part of the lifestyle of the people. There are no easy or magic formulae that emerge to allow us to exercise the safety of traditional rights and to insure that the fundamental mandate of our Act is not compromised. I think the big thing to overcome is the creditability gap that exists between the various native communities and white man so that we can work problems out in a climate of mutual trust. This process may have to be done on a park by park basis.
KUN: You asked, what are native rights? I think that Connie Hunt is perhaps the expert in this room on that question. Our perception of native rights probably falls into two areas. First, the land. Second, those resources the native people have used on the land. The question of those resources people have used on the land under treaty rights in southern parts of Canada are things that we have precedents for. In Pukaskwa National Park, the rights of the Robinson's Superior Treaty People involves the harvesting of animals and the catching of fish, for their domestic or subsistence purposes. The definition of the term *subsistence* is one which we and other countries are wrestling with; just what does this term mean? The cultural thinking behind this concept may not be clear to many of us. I do think we have to work hard to try to understand it and to figure out just how it is being viewed or used by our native peoples. The land claim debate put the lands into something equivalent to the Indian reserve status, which now exists in other parts of the country, I think. From what I have heard about the land claim question, it is an absolute free-hold ownership of the land by the native folks. I am not too sure how the Expropriations Act of Canada would apply. My suspicion is that it would bounce off and it would not penetrate. This whole area is right now a very contentious one. Our legal people and our Indian Affairs people do not yet have a clear handle on it. I think that after the work of such people as Connie Hunt is completed there will be a better appreciation of this issue. I think that most of it will get sorted-out in the courts unfortunately, because we can not think it through otherwise. In terms of what will be the final results, or what will it mean, or will it set any precedents for peoples in other areas, I do not know. I think that it will again have to be decided by the courts.

THE FLOOR: Though the following comments are somewhat tangential to the earlier discussions, I really feel I can not wait any longer. It really disturbs me that so often the mass media and particularly newspapers are described and presented as biased or uninformed actors in the process of public environmental education. If the media are continually painted with a muckraking-brush, then they will almost automatically assume an adversary role and respond in the fashion displayed in Doug Harper's slide presentation. May I ask if Parks Canada is indeed concerned about media involvement in environmental education related to national parks and, if it is, is it undertaking any sustained programme to a) measure past and present media perceptions and responses to national park issues, b) identify the different media types that
do exist and that can provide a different perspective on park issues to the public and c) formulate message strategies for the media types that can best convey the information you want to the public? May I leave this question open to all Parks Canada speakers?

HARPER: Well, I did make that reference and I also said that we have been negligent ourselves in the methods we chose to deal with the media. It is recognized to be a two-way street, it is not a one-way street. What you saw is what actually happened and I am concerned about that. I think we have to get our methods across much more clearly and certainly the media must be involved in education about the Parks Canada programme. In my concluding remark I said that one of the things that has to happen in order for divergent views, and those that are presented in the media, to be clearer is to involve all those groups with different views. I can only accept what you say as being true, and we should make a greater effort to deal effectively with the media. In terms of the broader question of environmental education, we have information services attached to most of our regional offices. It is their job to deal with the media and provide them with releases. We have had articles written for us by professional journalists. We have dealt with the media in a more positive way. I think we have been making progress. Unfortunately, what the public saw when the media dealt with these issues was a false picture.

THE FLOOR: I have a question for Mr. Harper. I think that you did not give us the full benefit of your experience in the Maritimes. You outlined the fairly unique problems in establishing parks in the Maritimes. These are related to the traditional identity with the land and the resource-based employment. You listed six groups that you saw as major actors with perceptions of national parks. I think you left out a seventh group, the park people themselves. In recognizing the unique issues in the Maritimes, Parks Canada can not use a traditional method of establishing a national park in this area. Something with a little more imagination for the Maritimes would have been appreciated. We worked together on this and others in Prince Edward Island talked about different kinds of approaches. I wonder if you can reflect on any progress that has been made in the last couple of years in this area of Maritime parks.

HARPER: There is no approach that is going to be applicable across the country. I think we probably made mistakes and I made this comment earlier. Parks Canada did not fully realize the implications of the
approach used and the subtleties of the situation. At times we were not given the opportunity to understand the subtleties. We have a partner in this experience and that is the provinces. In the case of P.E.I., we established a federal-provincial planning study and within it a national park was placed. We attempted to examine the region and the park together. But we started this process in an atmosphere of hostility. Entrance fees for national parks were raised in the east for the first time. I think the approach of using jointly interested federal and provincial departments and the public in various forums produced guidelines, a management plan, and some direction for what was to be expected outside of the park. As a result of this effort, the relations with the local people improved. I think this is an example of a positive approach.

**THE FLOOR:** We have been told tonight and also by the Minister this morning that national wilderness parks will be the designation of the new national parks in the north. It is my understanding that this will require an addition to the National Parks Act. I gather from the Minister's comments that the intention of establishing the new national wilderness park designation was to offer even greater protection than national parks presently get, and also to accommodate traditional native rights. The Minister also mentioned that resource exploitation would not be allowed. How will these national wilderness parks conform to or differ from the way our traditional national parks adhere to parks policy and the other conditions of the Act? The second part of my question relates to the Act itself. The Minister implied that there would be a whole number of additions and not only the national wilderness park designation, but also for wild rivers, national landmarks, and other things. This process would require him to bring the Act before Parliament for revision. This does not happen very often. There have been many comments over the years about the strengths and weaknesses of the Act. I wonder if the draft policy statement does not have implications for the things which could be put in the Act to strengthen it. Does the public participation you are now seeking on the draft policy statement not also suggest you are seeking public comment on the National Parks Act and ways of improving it? Since it is not common to bring it forward for revision.

**KUN:** A national wilderness park would be the same as a national park except it would have removed from it a number of the enabling clauses which allow certain kinds of development to take place. In other words, it is a tightened-up version of a national park. At
the present time the National Parks Act accommodates many activities, such as railways, highways, and so forth because it came into being after these features were already on the ground. In the case of the North, the national wilderness park act or that portion of it that deals with such activities will not be tested very often because these things are not on the landscape now. Therefore, it can be much more confined. The complex question of the National Parks Act, national park policy, consultation, and so on is difficult. Consultation about the draft policy statement is intended to give us sufficient material from which to draft an act. In some cases provisions or ingredients of an act are discussed prior to it being placed on the order paper for first, second, or third reading, and particularly second reading before it comes to committee. The last time a bill came forward with respect to national parks it was drawn-up and entered in the House and was debated in Senate committee first, and House committee second. I guess we could have a travelling circus about this whole thing, to keep it going forever. If you wanted to get the act into the House, you would probably want to keep any consultation about the act itself at a minimum, assuming you have done a good review of policy. However, that decision would be a ministerial one.

THE FLOOR: I was not implying a travelling circus. You will understand what my feelings are when you hear my paper. You will know why the policy should be circulated and comment gathered on it. The National Parks Act is not something you are going to get a lot of comment on from the average citizen. What I was trying to say was that a number of us here have the draft policy in hand and we are trying very hard to produce comments that will be valuable and constructive. It really had not occurred to me to comment on both the draft policy and the Park Act in the same breath. It might be appropriate at this time however. In terms of the national wilderness park, I was wondering about the legislative protection of the area and its boundaries. This is something I always felt was a strong point about national parks. I gather from your comments that that will be the thing.

KUN: Yes it would. The way we perceive the National Parks Act at the present time would be that there would be a core act providing for the different categories.

THE FLOOR: My question relates to new national parks in the North. I would like to address the question to Ron Malis. I have some concerns about boundaries in the
northern national parks. You have mentioned only reserves which do not have formal national park status. I would like to know if the present boundaries are etched in stone or if they can be changed. I am particularly concerned about Nahanni and Kluane. Nahanni in particular if it is to become an international World Heritage Park. I think we should make it the very best that we can. There are three areas in Nahanni that require some additional consideration. The first area is the rather magnificent karst topography in the very eastern end of the park. It has international significance and certainly is unique in Canada. The second area is the glacial plateau in the southern portion of the region where the present suggested boundaries take in just the fringe of the dall sheep range. I am afraid that we may make the same mistake that we made with the elk range in Yellowstone, in Banff. In Banff, we have summer range within the park but not the range needed to protect the sheep during their year long life requirements. The third area in Nahanni is the Glacier Lake-Ragged Range area. I can see by adding a few square miles we can include three rather significant additions to Nahanni. I am much less familiar with Kluane, but I have visited the Burwash Uplands. I would suggest that if these boundaries are not etched in stone that we could still do some imaginative things with the boundaries of these two reserves.

MALIS: In the case of the boundaries for Nahanni, Kluane and Auyuittuq, they are described in the Act. The only qualifications being the possible adjustment as a result of the land claim settlements. The whole question of land claims in the north, and in the south, is a highly emotional one. The Minister and Parks Canada have advised a variety of people of the urgency in dealing with some of these additional ideas, much input, on Kluane additions through our programme. In any case, these are not the issues that we would like to face right now. Having identified them, and having established the close working relationship with the territorial governments and our sister programme in the Department, these areas will be protected as much as possible. In the case of the proposed new wilderness parks, the boundaries are certainly far from being defined. What we identified were areas of interest. The consultative programme also helped us to make appropriate changes and accommodations and a further refinement of those particular boundaries.
III
USES OF NATIONAL PARKS
AND RELATED RESERVES
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INTRODUCTION

In the foreword of his fascinating book, *One Cosmic Instant*, John Livingston identified three inseparable companions of the wildlife conservationist, frustration, dismay, and varying degrees of anger (Livingston, 1973). During the last decade we have seen an unparalleled surge of public interest in both the quality of our environment and the future of our wildlife. But has this interest relieved the frustration of those seeking the preservation of wild nature? An examination of our progress in preserving nature in Canada's parks suggests that it has not, for the decline in traditional frustrations has been matched by the rise in new, even more perplexing ones.

In reviewing the evolving role of national parks in nature preservation, I particularly will be using Dr. Fuller's paper of the 1968 Conference as a benchmark (Fuller, 1968, pp. 185-198). In his thought provoking remarks, Dr. Fuller examined the rationale for concern about nature preservation. He then identified several problem areas to be overcome if national parks were to serve the role of nature preservation effectively. I will look at how well we have met those challenges and suggest some future directions for consideration.

While this 1978 Conference deals primarily with national parks, it also touches on equivalent reserves, areas such as major provincial parks and national wildlife areas. During the course of this discussion, from time to time I will draw on such equivalent reserves for examples, for two reasons. First, the province with which the Federation of Ontario Naturalists is most familiar, Ontario, has few national parks, and only one of large size. Second, the management problems associated with large, primarily natural, provincial parks are very similar to those of national parks, with many of the same pressures being brought to bear on both.

In reviewing the progress of the last decade, I will try to look not at rhetoric, but at results. What matters to the 12,000 members of the Federation of Ontario Naturalists is not the thoughtful papers read or the fancy systems devised at
conferences such as this, as necessary as those may be. What matters is the eventual results, the decisions made by ministers, the parks created or destroyed. It is against this foil that we must reflect on nature preservation in national parks.

THE CONCEPT OF NATURE PRESERVATION

Before we look at the role of national parks in nature preservation, we must attempt once again to define nature preservation, a term sufficiently nebulous that it seems to mean all things to all people. In our experience, nature preservation can be defined by one, or both, of two distinct concepts. The first concept refers to the preservation of the natural ecological process of some defined area, that is, permitting the vegetation, soils, wildlife, and so on, of the area to proceed freely along their natural ecological courses without the deliberate intervention of man. Since man is part of the global ecosystem, he could in some cases be a natural part of those preserved ecosystems, especially in an aboriginal way. However, he would not be the dominant force. This first form of nature preservation is especially desirable for the provision of scientific benchmarks, and for the protection of the diversity of natural gene pools. It could perhaps be termed the wilderness concept.

The second concept of nature preservation is a more populist approach, in which some particular segment of an ecosystem, or some particular seral stage, is preserved because of its immediate social desirability. Thus we have concern for endangered species, or for particularly mature forests, or for critical wildlife habitat. This component of the preservation urge tends to be more closely allied with educational and recreational interests and often imploes that an active management role is necessary to sustain the desired effect. Fire suppression or even fire setting may be needed to maintain certain vegetation characteristics. Other examples of the deliberate intervention of man are the artificial incubation of the eggs of the Whooping Crane, and the re-introduction of the Peregrine Falcon to previous habitat. This approach could be called the natural features concept of nature preservation.

I must emphasize that both these concepts have validity, and in many cases are completely compatible with one another. However, in some cases they conflict, and trade-offs or compromises have to be reached to resolve which concept should take precedence. For example, wildfire is a natural event in the boreal forest, and, under the first concept, should be allowed to burn in the Pukaskwa wilderness. The woodland caribou herd, however, which is one of the natural attractions of that national park, depends on mature, lichen-bearing trees for its survival. Under these circumstances, fire suppression as a management tool in at least part of the wilderness zone seems warranted.
Management activities may not be excluded totally from the wilderness concept for other reasons as well. Relatively few Canadian ecosystems have not been man-modified, and deliberate manipulation may be required to recreate the natural sequence. Spillover effects from adjacent land uses could also necessitate remedial actions. For example, if the naturally occurring fire rate is doubled by the spread of man-induced wildfires from neighbouring areas, is fire suppression to the normal rate justified?

An understanding of these two concepts is essential because the role of national parks in the last decade has varied for each. As well, park planners and managers may understand more clearly the intent of naturalists when they demand more stringent protection measures in parks. Naturalists ask for understanding and patience, for they too often are grappling with conflicting priorities, all too often without realizing that fact themselves.

In his 1968 paper, Dr. Fuller discussed a series of reasons why nature should be protected. Those reasons remain as valid as ever, and in my opinion considerable progress has been made in spreading the gospel for nature preservation. I do not intend to review his rationale here, except for one significant aspect which deserves comment. Dr. Fuller placed special emphasis on one reason: *It is time for mankind to recognize that plants and animals have an intrinsic right to exist* (Fuller, 1968, p. 187). That basic sentiment caused a great deal of discussion during the past decade, and indeed it still provides motivation for many naturalists and conservationists. Yet we see little evidence that Parks Canada has accepted, even in part, this philosophical stance. In their recent draft policy, nature preservation is included under Resource Protection policies, a term which implies a man's-use orientation. This impression is further strengthened by Program Policy 2.1: *Protection of heritage resources is fundamental to their use and enjoyment by future generations* (Parks Canada, 1978, p. 22). The rationale for protection of natural areas appears totally anthropocentric. In other words, since natural features attract people to national parks, we must retain that naturalness.

Unfortunately, this attitude of resource protection does not provide a strong rationale for the long-term protection of undisturbed ecosystems. The park ecosystem becomes merely the stage upon which the recreational play is enacted, and as such is dispensable. Almost thirty years ago Aldo Leopold wrote: *That land is a community is the basic concept of ecology, but that land is to be loved and respected is an extension of ethics* (Leopold, 1949, p. viii). Parks Canada, to its credit, appears to have accepted the technical aspects of ecology, but it has not yet grasped the ethical.
At the 1968 Conference on Canadian national parks, Professor Fuller identified five problem areas which were hampering the role of national parks in nature preservation. This section is intended to review the progress in the last decade in solving or ameliorating those problems.

**THE SYSTEM IS INCOMPLETE**

By 1968, it was recognized that national parks should be chosen as part of a system to include examples of every landscape zone in the country, each with its geological, biological, historical and scenic resources intact (Fuller, 1968, p. 192). On the national scene this concept seems to have been fully adopted. The revised park policy draft outlines thirty-nine terrestrial and nine marine natural regions, each of which are to be represented in the national parks system (Parks Canada, 1978, pp. 66-68). The present Minister of Indian and Northern Affairs, Hugh Faulkner, has promised a slow, yet continuing expansion of the national parks system over the next few years. We are encouraged that this system is based solidly on ecological criteria, and that the quality of natural representation is being considered a primary factor in selecting new parks. Parks Canada also has been documenting natural areas of national significance, a step which will provide useful background for the system’s expansion (Parks Canada, 1977).

Yet we cannot forget that the national park system still is represented only in approximately half of the natural regions of Canada. A number of notable gaps still exist in the Prairie Provinces, in the Arctic, and in the Gulf of St. Lawrence (Nelson and others, 1978, p.55). Conflicts with agricultural, mining, forestry, and fishing interests seem to plague proposed new parks. Continued public support is crucial, but we are convinced that the establishment of a well-defined park system will make the task easier.

**PRESENT PARKS ARE NOT NATURAL UNITS**

Few national parks are designed to include relatively discrete ecosystems that could self-perpetuate as an island of habitat. As well, several of the highly desirable species of wildlife, such as grizzly bears and timber wolves, may not be protected adequately, if a park does not cover their entire range. While this boundary problem has become better recognized in the last decade, I can see little evidence that any significant progress has been made in existing parks.

In proposals for new parks, progress has been wildly mixed. Establishing boundaries around natural units has been a serious
failure in some, such as Kluane. In others, such as the recently proposed park in the Northern Yukon, a great deal of consideration seems to have been given to determining natural boundaries. Obviously this principle needs constant reinforcement to be effective.

**NATURAL CATASTROPHE**

If we accept, under the *wilderness* concept of nature preservation, that representative ecosystems should be permitted to react freely to natural forces, then natural catastrophes become merely part of the capriciousness of nature, and are of no great concern. Concern does arise, however, if there is only one preserved example of a *wilderness* ecosystem, and that entire unit is exposed to catastrophic influences. In this instance, the diversity of that ecosystem is threatened since no similar area exists.

Concern for the effects of natural catastrophes on discrete natural features such as endangered biotic species is more acute. Fuller suggested a fail-safe system, that is, having every ecosystem represented in more than one national park. While this goal is commendable, it would seem to be secondary to achieving full representation of all biotic regions in our national parks. In any case, there appears to be no serious movement in sight to provide replication of representation.

**LACK OF PLANNING AND RESEARCH**

Ten years ago, Dr. Fuller bemoaned the neglect of natural features in park planning, and the lack of an ecological voice in the planning process (Fuller, 1968, p. 195). Today, the planning of a major park without the active involvement of ecologists seems almost incomprehensible. Master plans which guide park development and management are mandatory both in national and provincial parks, at least in Ontario. Great strides have been made in the use of an ecological basis for planning park development, with a number of outstanding examples including Ontario's Polar Bear Park. Use of zoning within parks to control the spread of development and to protect natural features is commonplace. Public consultation to help formulate objectives and permit intelligent discussion of alternatives is accepted as a matter of course. While many of these developments have paralleled similar changes throughout the government, the improvement is nonetheless remarkable, and should be a source of pride to all those associated with Canadian parks.

Inevitably, some problems remain. Ecological knowledge of existing and potential parks is still inadequate (Nelson and others, 1978, pp. 56-60). The traditional reluctance of wildlife researchers to examine non-game species is being overcome, and much more is being learned about topics such as the relationship of habitat size to wildlife diversity (Thomas, Maser, and Rodick,
1978, pp. 91-100). However, there is still some question in my mind of how well this research is being applied in a practical sense. Certainly there are examples of ecological research being ignored in national park development. The proposed master plan for Pukaskwa specifically ignores the advice of Parks Canada's own consultant on a conflict between a hiking trail and critical caribou habitat (Bergerud, 1976, pp. 29-30).

As well, there continue to be problems in implementing approved master plans for a number of parks. The hesitancy of the Ontario government to ban powerboats in Algonquin, and the proposed expansion of downhill ski facilities at Riding Mountain National Park, both threaten to make a mockery of the master plan process.

**MANAGEMENT OF MAN**

As the race for resources and the pressures of park visitations have increased in the last decade, so have the problems associated with the management of man in national parks. These problems can be divided into two categories; threats of exploitation and recreational demands.

The destruction of parks by exploitive industries reduces their value and perhaps remains still the most visible threat to both new and existing parks. A frighteningly large proportion of government decision-makers appears to favour exploitive activities within parks, in response largely to alleged economic benefits. In Ontario, forest industries have lobbied strenuously against the commitment of any further land area to parks (Priddle, 1977). Despite the long-standing efforts of conservationists, fifteen percent of Ontario's provincial park system still is being logged. A much larger percentage of the park area has been logged at some point in the past. Incredibly, one of Ontario's popular provincial parks effectively was lost in 1973 because of the expansion of a neighbouring nuclear power station.

National parks, while seemingly less vulnerable to such pressures, certainly are not immune. Haying in Prince Albert, duck hunting in Point Pelee, ski slopes in Banff, and hydro development in Cape Breton Highlands are all problems associated with the management of man which are too familiar to those concerned about nature preservation in national parks.

The only solution to threats of exploitation seems to lie in continued vigilance. The development of firm policies and specific master plans will help, as will the adoption of environmental assessment processes to provide a forum for evaluation and discussion.

The second aspect of the management of man, that of recreational demand, is a far more insidious and difficult problem to deal with. While the recreation-preservation dichotomy has been with
since national parks first were created, it has intensified and gained more recognition in the past decade.

In its revised policies, Parks Canada appears to accept the premise that recreational development within national parks should relate only to the enjoyment and appreciation of natural features. The problems, however, arise in the provision of facilities to permit that enjoyment. Two main difficulties seem to arise: 1) the level of facilities necessary to permit public enjoyment; and 2) the degree of consistency of services provided by various parks.

To use a current example of the first difficulty, the theme for Pukaskwa National Park is *Wild Shore of an Inland Sea*. Although the park is presently one of Ontario's most accessible wildernesses, the Provisional Master Plan includes interior roads, a marina, a gas station, a store, and a motel. This level of facilities is considered necessary to permit visitors to appreciate the *wild shore* theme. Since we value Pukaskwa's wilderness qualities, which at least partially would be lost through such development, and since we also appreciate the sensitivity of the park ecosystem to disturbance, we find these kinds of facilities inappropriate.

The second difficulty, the degree of consistency of services provided by various parks, could perhaps be summarized as the *all parks for all people* syndrome. The revised policies especially, with their minimum standards of one visitor centre and one protection zone for each national park, exude this philosophy. This approach contrasts with the Ontario provincial parks' system, which classifies each park, as a whole, to determine its primary orientation. Attempting to meet all kinds of recreational demands in each park works actively against the preservation mandate, and is dangerously one-sided. Under this philosophy, roads must go to the interior of Pukaskwa because otherwise how could the little old ladies get there? Unless this policy can be countered, we run the risk of access in all parks being reduced to the lowest common denominator, the automobile, so that everyone can enjoy the view.

The reasons for these difficulties are partly traditional. Public pressure for recreational facilities, the success of a park judged by visitation figures alone, the attractiveness of ribbon-cutting ceremonies for fancy new developments, and the difficulty of handling vested interests are examples of traditional reasons (Singleton, 1974).

But the manner in which public participation is handled during the planning process also contributes. As Parks Canada moves from the consultation model to the partnership model of participation (Eidsvik, 1978, pp. 3-5), it must be cautious of over-emphasizing local viewpoints. Local residents naturally tend to regard any nearby park as *our park*, and usually demand a high degree of recreational servicing. It is essential that public participation programmes emphasize the national interest.
of the park, and seek a wide range of opinion from across the country.

We do see some optimistic signs on the horizon. The announcement of proposed national wilderness parks in the Arctic is encouraging. However, if one were cynical, one could ask why only in the Arctic? Does this mean a change in attitude towards the wilderness aspects of the rest of our national parks?

A second encouraging sign is the provision for cooperative heritage areas, so that joint efforts can provide more flexible, and hopefully more publicly acceptable, means of protection. We welcome these initiatives.

Before the new policy is cast in stone, however, we need to look again at ways of relieving the recreation-preservation conflict. One suggestion has been the establishment of facilities-oriented, mass recreation areas outside national parks (Fuller, 1977, p.12). Perhaps we also need to look towards much greater emphasis on national wildlife areas where recreational uses could be strictly controlled. These suggestions and others deserve full attention before we decide the fate of Canada's national parks.

**CONCLUSIONS**

In summary then, we have seen a decade of shifting frustrations for those individuals concerned with preservation of nature in national parks. Parks and equivalent reserves remain the only secure form of land tenure which can protect representative natural ecosystems and significant natural features over the long term. But more than ever, the threats to nature preservation come from within the system.

We must continue to move forward in three areas:

1. The momentum must be sustained towards ecological planning in parks, and towards better research and management studies.

2. A concerted effort must be directed towards orienting the decision-makers, that is the senior civil servants and cabinet ministers, towards the need for and advantages of nature preservation in national parks. This effort can come from within, upwards through the civil service, and also from without, if public participation programmes, are structured to encourage a broad viewpoint.

3. Alternate forms of nature preservation must be examined continually, as well as any means which might relieve the recreational conflicts in national parks.
REFERENCES CITED


CANADIAN NATIONAL PARKS AND RESEARCH: 
A RESEARCH RESOURCE AND RESEARCH AS A RESOURCE 

J.S. Gardner

INTRODUCTION

National parks and research are both important institutions in Canada, and their juxtaposition is the topic of this paper. Canadian national parks are a resource for research. In a variety of settings, the parks provide relatively undisturbed biphysical forms and processes which are the subject matter for a number of research interests. On the other hand, research can serve as a resource in the designation, planning and management of national parks. Thus we have national parks for research and research for national parks. This paper is about both.

Ten years ago, the first Canadian National Parks: today and tomorrow Conference, I wrote a paper on Banff National Park as a museum and laboratory (Gardner, 1969). At the same conference, several other papers were presented on topics related to research (Cowan, 1969; Cragg, 1969; Lucas, 1969). At that time it was not difficult to be creative in addressing the topic of national parks and research. Each of these papers was unique in content. Today, it is more difficult to be creative in writing on the subject. Some remarkable changes have occurred in the last ten years, particularly in the area of national parks' use of research. Most of these changes are noted by Cowan in a recent report for Parks Canada in which he makes a number of recommendations regarding research in national parks (Cowan, 1977).

The general thesis of this paper relates more to our perception of research than to our perception of national parks. In relation to virtually everything in the society, including national parks, we view research as a specific and sophisticated institution and activity. In some cases this is a correct view but, in general, it may be misleading. Research is a process that lies at the very roots of what is human. It relates to experiencing, observing, learning, and problem-solving. There is a juxtaposition between the preservation and future of this process and some of the stated purposes of national parks.

At a practical level there are specific relationships between national parks and research which require discussion. Several of these relationships are: the role of a broad spectrum of bio-
physical and social research in park planning and management; the role of parks in providing a site for basic research, particularly in the life and earth sciences; the role of environmental impact assessment in park planning and management; and the conflicts between research and other park functions and uses, such as recreation, education or interpretation, and preservation.

Several biases underlie the commentary in this paper. First, knowledge is essential for the mandate and purpose of Parks Canada to be achieved. Knowledge, or information, is a product of research created through the interpretation of data gathered in the research process. Second, knowledge is dynamic, changing not only as the biophysical character of the parks changes, but even more so as the societal and scientific context of research changes. Third, some of the characteristics of areas which make them attractive candidates for national parks also make them attractive to researchers. There are many examples which scientific uses of the land pre-date national park status. Subsequent regulation of this research, which may not be park-related, can be a sensitive issue. Fourth, as a protector of a national heritage for the benefit, education and enjoyment of the people of Canada, Parks Canada should be obligated to protect and nurture the knowledge which describes the heritage.

Attitudes are a key factor in assessing relationships between national parks and research. Recognizing that written policy is an expression of official attitude, it is instructive to review Parks Canada research policy.

NATIONAL PARKS POLICY ON RESEARCH, 1968-1978

Parks Canada policy on research has changed through time. Regulation of research activities became more stringent in the 1960's than it had been previously. A pre-1961 laissez-faire approach led to the collection and removal of considerable numbers of plants, animals, and rocks as part of legitimate scientific studies. A collection permit system was designed to help control this practice, however it did little to control the activities of the avid rockhound and flower picker. Research which did not involve collection of specimens did not require a permit. The system meant that Parks Canada had no permanent record of this type of research, although the material appeared in the public domain through normal scientific publication. Unless the researcher voluntarily filed a report, or the work was done specifically for Parks Canada or related agencies, the data and information were lost. Research done under permit required a report, but, in many cases, researchers failed to submit these.

An official attitude to research appears in the 1969 National Parks Policy (Table 12.1). While the Policy leaves much open to interpretation it represents a restrictive attitude to research.
Table 12.1

National Parks Policy on Research, 1969

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 outweights the reduction in park values. In any case the impairment and effect on the park is to be kept at an absolute minimum.

Source: National and Historic Parks Branch, 1969, p. 11

Indeed, there are several unfortunate examples of an even more negative attitude being applied in practice and research permits being refused (Fuller, 1977). The policy statement makes it clear that research is to be for park management and interpretive purposes. Research which is not for these purposes, and which can be conducted elsewhere, is not to be permitted. But who can judge the ultimate value and purpose of research which, by definition, seeks to comment on general truths and universals? Moreover, the principle of exclusion has not been applied to other park uses that could be carried on elsewhere, such as those of a commercial or recreational nature.

In 1978, it would appear that Parks Canada's research policy has changed. Table 12.2 outlines its latest draft policy statement on research. While the policy remains open to a variety of interpretations, the flavour of the statement is more positive. In addition to noting the essential nature of research at all stages in the establishment and operation of national parks, some areas of needed research are pointed out. These areas are the assessment of public needs and the impact of visitor uses and facilities, in other words social research. Research clearly is recognized as a resource. An exciting part of the policy statement is the explicit recognition that national parks are an important resource for basic research in natural environments. This was a point stressed repeatedly at the first Canadian National Parks Conference in 1968. In the intervening years the idea has found its way into policy. Although some would argue that policy reflects practice, there is little evidence that the attitudes expressed in the draft policy are as yet in practice, at least with respect to basic research.
Research is essential at all stages in the establishment, development and management of the national parks system. Parks Canada strives to learn about the natural environment so that national parks can be identified, protected and accurately interpreted to the public. In addition, research is important to assess public needs and the impact of visitor uses and facilities.

National Parks also offer opportunities for basic research into natural environments which have not been substantially altered by human activity. As such they serve as benchmarks for ecological research and for studies of the effects of modern technology on lands outside park boundaries.

4.1 Parks Canada will encourage and conduct research into natural phenomena, public needs, visitor use and impacts so as to contribute directly to the identification, selection, establishment, protection, development, interpretation, planning and managing of national parks.

4.2 Other research in national parks which will enhance understanding of natural processes and enjoyment of natural areas will be authorized:

i) when use of a national park environment is essential; and

ii) when research is undertaken or sponsored by a qualified individual or organization.

4.3 Development of permanent facilities in national parks will not normally take place until adequate research and planning has been completed.

4.4 Research activities and facilities within national parks will be controlled by Parks Canada to protect natural resources and to ensure that such activities do not detract from visitor enjoyment.

4.5 Research facilities may be located within national parks for the use of Parks Canada and to encourage compatible research by other agencies.

4.6 Research information will be made available to the public and where appropriate, research activities will be demonstrated and interpreted to enhance public understanding of the natural environment.

In summary, Parks Canada's policy on research has evolved to the point where research in a broad spectrum of subject matter, from biophysical to social sciences, is seen as an essential tool or resource; and, the national park environment is seen as an important research resource, particularly in providing *benchmark conditions* for ecological research. Parks Canada's policy has always implied, if not explicitly recognized, that research is a multi-dimensional phenomenon, addressing various subjects and being done for various purposes. As research is part of the general thesis of this paper, it is essential that this complex process and exceedingly important institution be understood by researchers, planners, managers, and administrators.

**THE MULTIDIMENSIONS OF RESEARCH**

In our society, research usually is associated with science, scientists, technology, and engineers. It is related to experimentation, invention, and complex instrumentation. Increasingly the uniform is seen as a white coat, the arena as a sterile laboratory, and the subject matter as ever more minute. The language is mathematics, and computers add immeasurable glamour to the endeavour. The secret societies of yore have been replaced by select societies of research practitioners, with new sets of icons, and social structures which rival any in the animal world for their complexity, and rely just as heavily on status as on organizing medium. Cures, preventatives, labour-saving devices, and many other means to a better life are seen as the products of research, thus ensuring it a special status and a high level of public tolerance and acceptance. Research, as an institution, is perceived by the public as mysterious, sophisticated, specialized, aloof, and highly successful.

Despite all the trappings, research is a very basic mind process involving curiosity, intuition, imagination, observation, learning, and often very great satisfaction. The rewards are inherent and are experienced by every child who has pottered in a sand box, explored a pond, or doodled on a scrap of paper. The value and entertainment lies in the learning. In extreme cases, the value is measured by survival. In a learning society, the key objective is to engender this spirit of exploration and inquiry, that is, research, throughout the populace and through all age groups. National parks, as social institutions and research resources, have a key role to play in achieving this objective.

As practiced in science, research is a formalized and systematic process. The ultimate objective of scientific research is to arrive at truths, universals, laws, and/or general explanations which make reality intelligible and, to some degree, predictable. In so doing, scientific research is able to solve problems and produce solutions. Although the recent history of science and technology has seen an artificial division between basic and applied research, Parks Canada, in its latest policy, recognizes
the dichotomy but bows to the wisdom of not attempting to pre-judge the value of basic research.

Within scientific research, there are various degrees of formality, levels of precision, amounts of experimentation, and limits of explanation. However, one attribute which all scientific research shares is that the method must be clearly exposed, systematic, and reproducible. Without this attribute, the results can not be evaluated by peers, another essential element of scientific research. Some of the in-house and contract research endeavours of Parks Canada may be criticized because they have not been exposed to this built-in quality control, although Cowan makes a number of recommendations to remedy this (Cowan, 1977). The research may be of a high quality, but the lack of normal scientific evaluation and publication means that the results, some of which could be of great theoretical and practical importance, may not be shared with the scientific research community as a whole.

Before leaving the discussion of research in general, I can not resist the temptation to comment on another closely related version of the learning process, art. Like science, art seeks to make reality intelligible. Their overall objectives are the same, the processes are often quite similar, but the methods generally differ. Where science seeks to understand particulars in terms of general principles, art attempts to make general statements using particular themes. Just as particular Canadian environments have attracted both scientific research and national parks, they also have attracted art. This conference is set in the Banff Centre, which began some years ago as the Banff School of Fine Arts, in this magnificent physical setting with its inspirational qualities. The Canadian landscape and its life forms are preserved and displayed not only in national parks, but in the lines, shapes, colours, and sounds of art. Just as parks serve as scientific research resources they also serve as resources for artistic expression. The process of research can serve to make parks better planned, managed, and understood. But, art can make parks better appreciated and more treasured places.

In dealing with research, Parks Canada is trying to manage a deep-seated human process and an institution. The process needs to be protected and encouraged as a basic human right. Parks Canada has a role to play here. Moreover, science's sister process, art, has much to offer national parks, and parks have much to offer it. Both scientific research and art can enhance rather than impair the values for which national parks stand. But Parks Canada can impair the values for which science and art stand with a lack of sensitivity in selected parts of our country.

RESEARCH IN PARKS

The accumulated information about Canada's national parks is vast and is stored in books, scientific and special interest journals
and field books, newspapers, graduate student theses, reports, diaries and field books, and photographs. It indicates a long history of research interest in park areas. There is no quick and easy access to this information although the production of comprehensive bibliographies aids immeasurably in the process (Scace, 1973). Moreover, it is often difficult to trace the research project and process which generated the information. In some cases, the information was generated through no one formal project but accumulated over the years in an individual's mind to appear eventually in book or article form.

A large amount of this information may be of little value to planners, administrators, and managers. The information may be at the wrong scale, may not be up-to-date, and may not be site specific. While the accumulated information attests to the richness of parks as research resources, it may have limited value as a resource in the solution of park problems.

Given the complexity and magnitude of attempting to describe research in national parks, I will focus on two specific points in this section. First, the correlation between some park areas and areas of scientific interest is explored. As noted earlier, some of the reasons for national park designation are also reasons for their being of interest to the biological and earth sciences. Second, I will focus specifically on research in Banff National Park and describe some of the trends of the last ten years. This provides continuity with a paper prepared for the first Canadian National Parks Conference. The trends and issues in Banff are, to some degree illustrative of parks in general, as indicated by some supplementary data from Parks Canada's Ontario Region.

National parks cover a small proportion of the total area of Canada. However, these parks are located in what are regarded as highly interesting, diverse, and/or unique natural areas. Parks Canada has divided the country into forty-eight natural land and water regions. Within each region, certain natural areas have been identified on the basis of their diversity, representations, and natural state as representative natural areas of Canadian significance (Government of Canada, 1972). It is noteworthy that a fairly high level of understanding and research of Canada's physical geography is required for the identification of such areas. While it would be ideal to have parks that are representative of all of Canada's natural region, the practicalities of land acquisition, administration, and so on, make it impossible at the present time. Many of the themes and criteria of a biologic, geologic, physiographic, or oceanographic nature that are used by Parks Canada to identify areas also are used by the population as a whole and, more specifically, by researchers. Parks Canada's objectives of maintenance of the areas in a natural state coincide with the values, wishes, and needs of many biological and earth scientists. A correlation of interest and objectives should make cooperation between Parks Canada and the scientific and research community logical and obvious.
Within Canada there are many examples of this coincidence of interest. Banff and Jasper National Parks, two of the oldest in the system, are located in the Canadian Rockies on the east side of the continental divide. With Kootenay and Yoho National Parks to the west of the divide, Parks Canada administers a significant proportion of the land area of the Canadian Rocky Mountains. This relatively young mountain range has been a great geological interest since the 1850's when the Palliser expedition began to describe systematically the geology there. The geology has attracted commercial research interest, lying as it does on the western margin of the great sedimentary geosyncline which is the basis for an active energy extraction industry in western Canada. Within the parks are the headwaters of such rivers as the Bow, Red Deer, North Saskatchewan, South Saskatchewan, Athabasca, Fraser and Columbia. All are of great economic significance to western Canada. This significance has been reflected in considerable glaciological, climatological, and hydrological data gathering and research for reasons that far transcend the presence of parks. The flora and fauna, occupying habitats ranging from montane to alpine tundra, long have attracted the attention of researchers. Indeed, the mountain national parks represent the only places where examples of some of the larger mammals can be observed readily today. Alternatives to do similar research outside the parks in this region are limited by the human alteration of surrounding areas and by the fact that the same geological, glaciological, and biological conditions simply are not always found outside the parks. The mountain parks present some unique and significant problems from the social, cultural, and historical perspective. Banff, in attracting large numbers of visitors, provides a superb laboratory for examining the social and behavioural characteristics of recreationists. Both Banff and Jasper present interesting research problems related to the presence of urban areas and major transportation corridors in national parks. Just as the mountain parks lie athwart the flow of people and goods between the interior and the west coast today, so they did in the pre-European past. A number of valleys and passes in the parks contain rich archeological records which are of intrinsic research interest.

Though less strategic from a national economic and research perspective, some of the small and more recent parks provide other examples. Pacific Rim National Park contains some of the largest and most dynamic marine surf beaches on the west coast of Canada. While the area has not been a focal point for the same volume of basic research that has occurred in parks like Banff, the potential for coastal zone studies of biological and geomorphological content is great. The presence of the well-developed beach system attracts people as well. A diversity of environmental and people management problems come with people, and these problems are of interest to not only the park managers but environmental and behavioural scientists as well.

In southern Ontario, Point Pelee is the most prominent of three peninsulas which protrude into Lake Erie. It contains a national park. Being largely depositional, Point Pelee is and has been of
interest to scientists concerned with coastal transport of sediment and coastal erosion. The coastline of Lake Erie is highly dynamic, partly as a result of fluctuating water levels. In the context of national park management objectives, an unstable shoreline presents many practical problems and a need for management related research. Because Point Pelee is bordered by land that has been in agricultural use for some time, its flora and fauna are to some degree unique in the region and therefore of great value to professional researchers and a variety of nature and outdoor enthusiasts.

Riding Mountain National Park contains one of several prominent and isolated uplands on the prairies of Canada. Other upland areas include Duck Mountain, Porcupine Hills, Turtle Mountain, Moose Mountain, and Cypress Hills. These areas are ecologically distinct from the surrounding grasslands and plains, much of which have been altered by agricultural land uses. Like Point Pelee, these areas are not unlike islands, serving as biological as well as cultural refuges (Nelson, 1973). Being ecological and geological exceptions, areas like Riding Mountain serve as important research resources.

Until recently, the vast northern areas of Canada were not represented in the national parks' system. Yet the north has been the setting for the basic and applied ecological, geological, climatological, anthropological, and archeological research for years. Indeed, some of this research has brought attention to particular areas and may have hastened their designation as national parks. Kluane National Park is situated on the east side of the St. Elias Mountains in the southwestern Yukon. The area is a focus for glaciological, climatological, and biological research. It contains the highest mountains in Canada and the greatest concentration of large glaciers. Some of the lower valleys provide habitat for wolves, moose, and bear in a region where suitable habitat is limited. Unglaciated uplands provide habitat for sheep and caribou in particular. Such characteristics make the area an extremely important research resource, a role it has served for some time. The same characteristics make the area extremely attractive for a national park.

Prior to the late 1960's the Nahanni River valley in the Northwest Territories was little known to people other than a few adventurers trappers, and oil company exploration crews. Although the region was described in R. M. Patterson's *The Dangerous River* and immortalized through legends about the *Headless Valley* and *Gardens of Eden*, little else was known about the area by anyone. The basic geology had been mapped; and the presence of spectacular Virginia Falls, deep canyons, and a rich fauna in the valleys and surrounding uplands was known. Nahanni probably provides a good example of a situation where basic research interest and the creation of a national park have grown together. For example, it is only recently that the remarkable karstic or limestone physiography of the area has been described and explained in the literature (Ford, 1977).
Aayuittuq National Park on eastern Baffin Island is the only national park in Canada's arctic archipelago. As such it hardly represents the landscape diversity of Canada's north. The park area occupies some of the most spectacular glaciated mountains on the continent and a region that has been of scientific interest for several decades. Indeed, the popularization of the area is related to geological, glaciological, anthropological, and archaeological research activities in the area. Eastern Baffin Island is thought to have been a major centre of glacial build-up during parts of the Pleistocene. The Penny and Barnes icecaps have served basic research interests as models of the larger continental ice sheets of the past. Viable Inuit communities have existed in the region for centuries, and their precursors for several millenia, providing a rich resource for anthropological and archeological studies. Thus, in eastern Baffin Island we have an example of intensive research use of an area predating the presence of a national park.

Within Canada's system of national parks there are examples of research land use and park use of areas occurring simultaneously over long periods of time. Banff and Jasper serve as good examples. In some instances research has served the ends of park use, and in other instances, the presence of the park has served the ends of research. There are examples of research interests becoming involved directly and indirectly in the creation of national parks. Research knowledge, appreciation, and concern for areas like Pacific Rim, Kluane, and Pakaskwa have led researchers to involvement with the creation of parks in these areas. Indeed, it is probably a valid generalization to say that scientists, many of whom have conducted basic research in park areas, or what were to become park areas, always have been among the most consistent contributors to, and critics and supporters of, the national park concept in Canada. A partial list would include: Cowan, Fuller, Geist, Herrero, Nelson, Pimlott, Theberge, and others. Although it would be difficult to demonstrate in a quantitative way, it is probably valid to conclude that, as a park user group, researchers have been the most enduring in their concern for parks. This suggests a very special relationship between the research community and national parks.

RESEARCH IN BANFF NATIONAL PARK

The history of research in Banff National Park illustrates the nature of this relationship as well as any other example. The Banff Hot Springs Reserve was established in 1885. Prior to this, the region had been of some scientific interest but much of the research was of a broad exploratory, descriptive, and inventory type (Dawson, 1885; Dawson, 1890; Douglas, 1914; Hector, 1861; Spry, 1963).

The accessibility afforded by the Canadian Pacific Railroad, the creation of national parks at Banff, Jasper, Yoho, and Glacier,
and the popularization of the mountain region through promotional literature in eastern North America and Europe attracted tourists to the region. Many of the tourists were well-educated and curious or were professional teachers and researchers in schools and universities. From these people came a rich literature on the geography, glaciology, geology, botany, and zoology of the area (Allen, 1896-1897; Brown and Schaffer, 1907; Vaux, 1909; Wilcox, 1909). Others, like Sherzer and Walcott, produced research papers which stand today as classics in their fields of study (Sherzer, 1907; Walcott, 1908). Many of these individuals carried out exploration and research in its purest form, returning year after year, often at their own expense and initiative, to pursue a question. The Lake Louise Club epitomized this spirit (Gardner, 1970). This great tradition of life-long learning and learning for its own sake often is submerged today by other social priorities, a lack of money, and the growth of institutionalized research, although a few examples still appear from time to time (Gest, 1961; Gest, 1970; Kucera, 1972; Kucera, 1975). There is little doubt that the early researchers were attracted to the area by many of the same environmental qualities that led to the area becoming a national park.

The growing tourist industry in Banff National Park and vicinity generated another type of information source, a type of a more casual sort. Guides, packers, and wardens accumulated vast stores of knowledge about the environment through working in the area. Wardens were somewhat more systematic than others since they kept diaries. Diaries, writings, reminiscences, and collections of people like Tom Wilson, Bill Peyto, and Jim Simpson are valuable sources of information on wildlife, native people, and park history. Some information of this type is accumulating in the Archives of the Canadian Rockies in Banff and in park offices.

Between the early 1900's and the 1950's, Banff and other mountain parks were visited by many scientists primarily interested in basic research questions. Plant life received detailed attention (Griggs, 1938; Harshberger, 1929; Lewis, 1917). Heusser's work on the paleoenvironments of the region was widely recognized (Heusser, 1956). Detailed studies of the animal life were conducted (Cowan and MacKay, 1950), a variety of glaciological studies were completed (Field, 1949; Wheeler, 1920), and some aspects of the meteorology and climatology were described (Sanson, 1919; Sanson, 1920).

Toward the end of this period, 1900 to 1950, several studies of a more applied and descriptive type can be identified. The results of some of this work were presented to the parks' administration, in research report format (Cowan, 1943; Cowan, 1944; Cowan, 1945; Green, n.d.), and some were presented in scientific journals and theses (Clarke and Cowan, 1945; Mair, 1952). In addition, several interpretive documents were published to disseminate information to park visitors (MacKay, 1952).

The 1960's brought an intensification of research in national parks and about national parks. Banff National Park illustrates this trend well. The intensification came about for several reasons.
including the continuing growth and success of scientific research as an institution of the society and the growth of higher education in terms of students, faculty, and facilities. The creation of the University of Calgary had considerable impact on Banff National Park. Other reasons were: a continuation of the post war exploration in the petroleum and mining industries; increased societal interest in and visitation to parks; the increasing visibility of problems created by a growth in visitation; a recognition that scientific research can contribute to the prevention and solution of management problems; and a growing realization that parks such as Banff may be the only remaining places in which some subjects, such as the behaviour of large mammals, could be studied. At the same time, the parks' administration began to exert greater control over formal research through the permit system and to take a more active role in management and interpretation related research.

In 1969, I reported on the nature of research activities in Banff using the research and collection permit record as data Gardner, 1969). The same approach is taken here using research and collection permit data for the period 1971 to 1977. The 1961 to 1967 and 1971 to 1977 data sets are summarized in Figures 12.1 to 12.4. Several problems are inherent with these types of data. For example, they are often a scattered and variable record of permits as a result of administrative changes over the years. In addition, not all types of research require permits and not all researchers have sought permits even when they are required, and some permits are blanket permits for several parks and researchers, while several permits may be issued for several researchers working on the same project. Within these limitations, the data do allow some generalizations regarding trends in research in Banff National Park over the past dozen or so years.

Figure 12.1 shows the trends in number of research and collection permits issued for Banff in the 1961-1967 and 1971-1977 study periods. It also shows the permits issued in the Western Region and the number of studies sponsored wholly or in part by Parks Canada in the 1971-1977 period. While the annual number of permits issued from 1961 to 1967 showed an increase, the annual number between 1971 and 1977 was variable but, on the average, was no greater than in the previous decade. The number of permits issued reached a maximum in both Banff and the Western Region parks in 1974. This reflects, in part, the great amount of resource inventory work begun at that time for Parks Canada. In 1974, 88 percent of the studies conducted under permits in Banff National Park were sponsored at least in part by Parks Canada (Table 12.3). The proportion for the Western Region in 1974 was 72 percent. While still significant, the relative proportion of permit research with Parks Canada sponsorship has declined since 1974.

Over the past decade, there have been some changes in the origin or affiliation of researchers working under permit in the parks. In this regard, the greater financial involvement of Parks Canada in research is reflected by an increasing role played by private consulting firms and Parks Canada employees, Figure 12.2 and Table 12.2 show the affiliations of researchers working under permit
FIGURE 12.1 Collection Permits for Banff National Park and Western Region, including those with Parks Canada sponsorship.
Table 12.3

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<td>88 (39%)</td>
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<tr>
<td>Permits with</td>
<td>26</td>
<td>78</td>
<td>37</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Parks Canada</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsorship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

in Banff National Park for the 1961-1967 and 1971-1977 study periods. Figure 12.3 shows the affiliations for research in the Western Region in the 1971-1977 period (Table 12.4). In the 1961-1967 period, the role of federal government and university based researchers was relatively constant, as was that of provincial government employees, reflecting the concern of Alberta for various problems along the eastern margin of Banff National Park. Other affiliations, including consulting firms, were active in the 1960's. At that time a number of permits were issued to oil companies for exploration activities along the eastern margin of the park, which represents the western margin of the petroleum and gas bearing sedimentary basin. In addition, the Royal Ontario Museum maintained an active interest in Banff National Park geology in the 1960's.

In the 1971-1977 period the role of federal government researchers was more variable. It peaked in 1974 with the resources inventory and several social/behavioural studies (Table 12.5). The greatest federal government representation was in the Canadian Wildlife Service, Parks Research Group. Unfortunately, there is no permit record of the activities of researchers from the Glaciology Branch of the Inland Waters Directorate whose activities were continuous through the period. The role of university affiliated researchers appears to have increased in the decade. However, this generalization must be qualified. University researchers are perceived often to work primarily in the basic science area. In the 1970's, many of the university researchers became involved in research related to management and inventory questions, often on a contract or consulting basis (Figures 12.2 and 12.3). The other category in the 1970's is represented almost entirely by consulting firms although representatives of the Royal Ontario Museum continued to appear from time to time in the permit record.
FIGURE 12.2 Collection Permits classified by affiliation of Researcher, Banff National Park.
FIGURE 12.3 Collection Permits for Western Region classified by subject, and Collection Permits for Western Region classified by affiliation of researcher.
Table 12.4
Collection Permits Classified by Affiliation of Researchers, 1971-1977
Banff National Park Bracketed

<table>
<thead>
<tr>
<th>Year</th>
<th>Federal Government</th>
<th>Provincial Government</th>
<th>University</th>
<th>Consulting Firm</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>36 (16)</td>
<td>2 (1)</td>
<td>82 (55)</td>
<td>0 (0)</td>
<td>10 (4)</td>
<td>130 (76)</td>
</tr>
<tr>
<td></td>
<td>28% (21%)</td>
<td>2% (1%)</td>
<td>63% (72%)</td>
<td>0% (0%)</td>
<td>7% (6%)</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>36 (16)</td>
<td>1 (1)</td>
<td>47 (23)</td>
<td>0 (0)</td>
<td>3 (0)</td>
<td>87 (40)</td>
</tr>
<tr>
<td></td>
<td>41% (40%)</td>
<td>1% (2%)</td>
<td>54% (58%)</td>
<td>0% (0%)</td>
<td>4% (0%)</td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>31 (18)</td>
<td>4 (1)</td>
<td>58 (34)</td>
<td>4 (0)</td>
<td>2 (1)</td>
<td>99 (54)</td>
</tr>
<tr>
<td></td>
<td>31% (33%)</td>
<td>4% (2%)</td>
<td>59% (63%)</td>
<td>4% (0%)</td>
<td>2% (2%)</td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>66 (59)</td>
<td>3 (0)</td>
<td>54 (25)</td>
<td>18 (4)</td>
<td>9 (1)</td>
<td>150 (89)</td>
</tr>
<tr>
<td></td>
<td>44% (66%)</td>
<td>2% (0%)</td>
<td>36% (28%)</td>
<td>12% (4%)</td>
<td>6% (1%)</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>34 (23)</td>
<td>3 (1)</td>
<td>44 (28)</td>
<td>5 (2)</td>
<td>12 (1)</td>
<td>98 (55)</td>
</tr>
<tr>
<td></td>
<td>35% (42%)</td>
<td>3% (2%)</td>
<td>45% (51%)</td>
<td>5% (4%)</td>
<td>12% (2%)</td>
<td></td>
</tr>
<tr>
<td>1976</td>
<td>30 (19)</td>
<td>7 (3)</td>
<td>40 (23)</td>
<td>8 (3)</td>
<td>3 (2)</td>
<td>88 (50)</td>
</tr>
<tr>
<td></td>
<td>34% (38%)</td>
<td>8% (6%)</td>
<td>45% (46%)</td>
<td>9% (6%)</td>
<td>4% (4%)</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>20 (11)</td>
<td>5 (0)</td>
<td>45 (21)</td>
<td>10 (1)</td>
<td>3 (1)</td>
<td>83 (34)</td>
</tr>
<tr>
<td></td>
<td>24% (32%)</td>
<td>6% (0%)</td>
<td>54% (62%)</td>
<td>12% (3%)</td>
<td>4% (3%)</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Biological Sciences</td>
<td>Earth Sciences</td>
<td>Resources Inventory</td>
<td>Social</td>
<td>Management Related</td>
<td>Total</td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
<td>----------------</td>
<td>---------------------</td>
<td>--------</td>
<td>--------------------</td>
<td>-------</td>
</tr>
<tr>
<td>1971</td>
<td>82 (50) 63%(66%)</td>
<td>45 (26) 35%(34%)</td>
<td>n.d.</td>
<td>3 (0) 2%(0%)</td>
<td>n.d.</td>
<td>130 (76)</td>
</tr>
<tr>
<td>1972</td>
<td>60 (28) 69%(70%)</td>
<td>27 (12) 31%(30%)</td>
<td>n.d.</td>
<td>0 (0) 0%(0%)</td>
<td>n.d.</td>
<td>87 (40)</td>
</tr>
<tr>
<td>1973</td>
<td>42 (21) 42%(39%)</td>
<td>25 (14) 25%(26%)</td>
<td>13 (8) 13%(15%)</td>
<td>1 (0) 1%(0%)</td>
<td>18 (11) 19%(20%)</td>
<td>99 (54)</td>
</tr>
<tr>
<td>1974</td>
<td>55 (33) 37%(37%)</td>
<td>24 (8) 16%(9%)</td>
<td>36 (17) 24%(19%)</td>
<td>18 (18) 12%(20%)</td>
<td>17 (13) 11%(15%)</td>
<td>150 (89)</td>
</tr>
<tr>
<td>1975</td>
<td>42 (26) 43%(47%)</td>
<td>22 (7) 22%(13%)</td>
<td>23 (16) 24%(29%)</td>
<td>2 (1) 2%(2%)</td>
<td>9 (5) 9%(9%)</td>
<td>48 (55)</td>
</tr>
<tr>
<td>1976</td>
<td>35 (16) 40%(32%)</td>
<td>28 (15) 32%(30%)</td>
<td>9 (8) 10%(16%)</td>
<td>3 (2) 3%(4%)</td>
<td>13 (8) 15%(18%)</td>
<td>88 (50)</td>
</tr>
<tr>
<td>1977</td>
<td>42 (17) 51%(50%)</td>
<td>24 (13) 29%(38%)</td>
<td>9 (1) 10%(3%)</td>
<td>3 (1) 4%(3%)</td>
<td>6 (2) 6%(6%)</td>
<td>83 (34)</td>
</tr>
</tbody>
</table>
On the whole, the role of provincial government based researchers declined in Banff National Park but remained in the Western Region largely as a result of the activities of the British Columbia Environment and Land Use Commission Secretariat. The exploration activities of oil companies disappeared from the permit record in the 1970's. Further evidence on the roles of various agencies in national parks' research in the Western Region is given by Cowan (1977) as 29 percent universities, 21 percent consulting firms, and 51 percent other government departments. The sources of these figures are not given and they differ somewhat from those extracted from the permit record.

The literature has much to say on the type of research that should be going on in national parks. In the 1961-1967 period, most of the research conducted in Banff National Park was basic and exploratory geology and biology (Figure 12.4). Other earth sciences, such as geomorphology, glaciology, hydrology, and climatology, had limited representation. There was very little cultural, social, archaeological, and behavioural research, although the need was recognized (Gardner, 1969). Little of the research, apart from that in glaciology, involved long-term monitoring for change.

During the 1971-1977 period, the research subject matter became more multidimensional (Figure 12.4). This is a true reflection as well as being a reflection of the fact that Parks Canada's records on permits became more detailed, allowing a more precise categorization of the research. Biological studies increased and earth sciences declined in the permit record. Resource inventory research, which involves biological and earth science components, increased while that in the social, cultural, and archaeological sphere increased slightly but was extremely variable from year to year. Research directed at management issues and environmental impact assessment of various types increased. Much of this is directed at biological and earth science aspects of the environment and is therefore difficult to separate from some other types of research, apart from being more problem specific and solution oriented.

Although not research in a strict sense, several types of monitoring activities have been conducted in and around national parks. The data from monitoring can serve as a basis for formal research projects and interpretations. The most lengthy monitoring record in Banff National Park is in the area of weather observations for which the Atmospheric Environment Service of Environment Canada is presently responsible. The Water Survey of Canada has recorded streamflow at a variety of locations and times, and has surveyed glacier positions from time to time over the past 30 years. Also censuses of large mammals have been carried out occasionally by Parks Canada over the last several decades.

It is extremely difficult to gain a perspective on social science and humanities' research in national parks primarily because collection permits may not be required and the only record of the research may be publications. On occasion the only record is in the form of a graduate thesis or research paper. Increasingly the
FIGURE 12.4 Collection Permits classified by subject, Banff National Park.
FIGURE 12.5  Number of research requests made at the Archives of the Canadian Rockies, Banff, 1968 - 1977.

FIGURE 12.7 Collection Permits for Ontario Region classified by affiliation of researcher.

FIGURE 12.8 Collection Permits for Ontario Region classified by subject.
Archives of the Canadian Rockies, operated by the Peter Whyte Foundation in Banff, is serving as a regional information source and repository. The Archives has been particularly useful for researchers interested in the region's social and cultural history. People using the Archives for legitimate research are registered and the frequency of registrations is shown in Figure 12.5. The upward trend from 1968 to the present is indicative of at least two things pertinent to this paper: one, the growth and recognition of the Archives as a research resource and, the other, the growing social science and humanities research interest in the region.

In sum, the major changes in research in Banff National Park over the last two decades have been the greater direct involvement by Parks Canada and more emphasis on research directed at management problems and inventories. These are reflected in the permit data for Banff National Park and are further substantiated by a profusion of unpublished reports prepared for Parks Canada (Anderson, 1970; Leeson, 1975; Ommanny, 1976; Scotter, 1971; Taylor, 1977). Some of the results of this work, particularly that of the Canadian Wildlife Service, appear in the usual scientific literature (Knapik, Scotter, and Pettapiece, 1972). Although the permit data suggests that the amount of basic scientific research in Banff National Park has declined somewhat in the last decade, a significant volume and variety of published material continues to appear through the normal scientific media (Bird and Marsh, 1972; Ford, 1971; Scotter, 1975; Smith, 1975). The last decade also has been marked by the publication of several significant interpretive or public information documents, some of them privately printed and distributed (Baird, 1967; Kucera, 1972; Kucera, 1975; Porsild, 1974; Sedgewick and Henoch, 1975).

How representative are Banff National Park studies and Western Region studies? They are probably representative of recent trends toward greater direct involvement of Parks Canada in research through their own staff and contracts. The increased use of the results of the research in park planning and management is also a general trend. For comparative purposes, some data summarizing collection permits issued for research in Ontario Region national parks are shown in Figures 12.6, 12.7, and 12.8. Figure 12.6 shows the same year to year variability in numbers of permits that is evident in the Western Region and Banff data. Clearly, the number of permits issued for Ontario was much less given the relatively smaller land area and number of parks involved. Figure 12.6 shows the affiliations of researchers working under permits. The significant contribution of university affiliated researchers is apparent. From the data it would appear that activities by private individuals under permit was more frequent in the Ontario Region, particularly in the area of bird watching and collecting at Point Pelee. A strong emphasis on the biological sciences is evident in Figure 12.8. Earth sciences, social sciences, and management and resource inventory research received less emphasis than in the Western Region. Of the permits issued in the past ten years, 50 percent were issued for Point Pelee National Park which seems to have a research attraction much like Banff National Park.
SOME MAJOR THEMES RELATED TO RESEARCH AND NATIONAL PARKS

The overall role of research in national parks, and vice versa, is debated from time to time (Buchinger, 1962; Cowan, 1969; Cragg, 1969; Curry-Lindahl, 1968; Eichorn, 1966; Knobel, 1962; Kuenen, 1974; Lucas, 1969; Miller, 1955; Nicholson, 1962; Ovington, 1956; Verschuren, 1962). In reviewing the general literature and studying research in Canadian national parks, particularly Banff, three major themes arise consistently. They are: types of research and their regulation; research as a land use and its conflicts with other land uses; and the necessity of research in park designation, definition, management, and interpretation.

Types of research can be differentiated by many different criteria, including: whether or not the research relates directly to park needs and purposes, subject matter, methods and apparatus used, affiliation of research, and so on. In the recent past, the degree to which research related to park needs and the unavailability of similar research opportunities elsewhere were important criteria in the issuance of collection permits. It is now recognized that national park areas, particularly in western Canada, provide one of the few settings in which some phenomena, such as large mammals and glaciers, reasonably can be studied. Therefore, in regulating research the relative uniqueness of the land areas and ecosystems under parks' jurisdiction should be an important consideration.

It is extremely difficult to judge the value of any research to parks' needs in the future. By restricting research to that which serves parks' needs directly, the danger of responding to, rather than anticipating, problems and needs arises. This has been a recurring problem in the applied and management sciences generally. The development of a large body of knowledge, however esoteric, provides an information base from which management problems of the future can be anticipated. The research attractiveness of Banff and some of the other mountain parks has resulted in the accumulation of a huge knowledge base for the region. The best evidence for this is Scace's massive regional bibliography (Scace, 1973). Such a knowledge base would not accumulate if regulations strictly prohibited research unrelated to parks' needs, and it would not accumulate in perpetuity if it were not the practice of the researchers to report their findings in the public domain. A closed shop on research in national parks is not a forward looking enterprise and deludes managers into thinking that they can respond to problems as they arise. The history of science has demonstrated time and again the long-term value of encouraging any search for knowledge. Perhaps the only valid criterion for prohibiting research in national parks should be whether or not it does permanent damage to the ecosystems and landscape. There even may be some long-term justification for certain types of research, such as ecosystem modelling and animal behaviour studies, precluding all other land uses.

Differentiating research on the basis of subject matter or discipline shows that a disproportionate amount has been in the
biological and earth sciences in Banff National Park. A similar situation exists for other Canadian national parks. This kind of emphasis is to be expected given the fact that national parks are notable for their geological and/or ecological conditions. Although management-related research has increased in Banff National Park, the biological and earth science emphasis continues. In a way this is paradoxical because many of the most immediate needs in park's management relate more to people than nature. The need for research in the area of behavioural and social characteristics of parks' users has been discussed at length and its value demonstrated (Lucas, 1969). Fuller has further emphasized the necessity of this type of research to avoid tragedy in national parks (Fuller, 1977). Although they have received some attention, the long-term effects on park management practices on natural forms and processes require investigation as well (Nelson and Byrne, 1966). Evaluation research into management, planning, and interpretive programmes is essential for the improvement of programmes and the maintenance of park ecosystems. As a formal research endeavour, evaluation research should include monitoring of key elements in the park environment including people, indicator species, sensitive areas, and so on. It is probably a fair generalization that our level of understanding of human behaviour, attitudes, and perceptions in the context of national parks is somewhat inferior to our understanding of natural systems in the parks. This in itself may be justification for further emphasis on cultural, social, and behavioural research in national parks.

One reason for regulation of research in national parks is that as an activity and land use it can conflict with other land uses and park objectives. This is a second major theme that arises in discussing research in national parks. Some scientists have argued that for some types of research, such as ecosystem and animal behaviour studies, controlled, undisturbed, and regulated conditions are required (Buchinger, 1962; Cragg, 1969; Knobel, 1962). Completely undisturbed national conditions may be necessary to understand ecosystem functioning and provide a control setting with which to contrast and compare disturbed ecosystems. The maintenance of undisturbed conditions for research purposes would preclude other land uses and perhaps enjoyment of the area. Similarly, experimental manipulation of land areas and biota may be required for experimental studies. Examples would include forest cover clearing for successional, forest microclimate, and forest hydrology studies. This type of activity may offend other types of land users and may not be in keeping with the objectives of parks. Other research requires instrumentation of the ground surface, vegetation, atmosphere, streams, glaciers, and wildlife. The instrumentation may detract from the natural quality of the environment and be offensive to other park users. However, in a survey of preferences and attitudes of 239 park users from the Calgary area, seventy percent indicated positive attitudes about scientific research in Banff National Park. The survey was conducted by J. G. Nelson and J. S. Gardner, and the results are as yet unpublished. Neutral attitudes accounted for another twenty percent and only ten percent indicated negative attitudes toward scientific research in parks. These results suggest that
some conflicts may not be as great as they are perceived to be.

One can argue that, in comparison to other land uses, research has fared rather poorly. In this regard, provision of recreation facilities, such as accommodations, roads, ski areas, trails, and so on, has proceeded, until recently, with less difficulty than has research. Yet, many of the same conflicts with other land uses arise in recreation development. Cowan notes this discrepancy and the relatively unfavourable position of research land uses (Cowan, 1977).

In draft policy, at least, the value of research to park's designation, planning, management, and administration is recognized. In practice, non-encouragement of research, for example, basic avalanche research and ignorance of and non-attention to prior research results, suggests that policy does not quite reflect practice. Nonetheless, the increasing involvement of Parks Canada in research over the last decade indicates a growing appreciation for the value of objective study. Knowledge, an end-product of research, is essential for a rational approach to everything from deciding what areas qualify as potential national parks, to drawing boundaries and siting campgrounds, to scheduling garbage pick-ups. An accumulation of knowledge about Canada's basic biophysical geography has permitted Parks Canada to define the natural regions and locate unique or representative sites (Government of Canada, 1972). Ideally, it would be good if all park boundaries could coincide with natural boundaries such as drainage divides and ecosystem or range boundaries. While drainage divides easily are determined through routine topographic analysis much more field-work and long-term observations are required to determine ecological boundaries, particularly where the ranges of large mammals are involved. The determination of boundaries in the Kluane National Park area shows examples of the importance of knowing the location, distribution, and range of some species (Theberge, n.d.). In the Kluane example are cases where the territories of some species have been bisected or excluded from the park area.

The importance of knowing the biophysical, economic, social, and other consequences of management decisions is increasingly evident. Knowledge of the consequences of decisions must be based on careful research, information from other places, and informed speculation. Most major projects are now subject to some kind of environmental impact assessment and public hearing, for example, Village Lake Louise, Sunshine Village, twinning of Trans-Canada Highway in Banff Park, and the widening of Canadian Pacific Railway right-of-way. Often, however, the accumulated knowledge with respect to a given project is not sufficient to provide a sound basis for rational decisions. Many small-scale management decisions, which can be cumulative over time, are made without thorough assessment of some of the consequences. For example, the siting of campgrounds in locations which may be prone to flash floods. Here, research and the utilization of accumulated knowledge in the planning process can forestall serious problems in the future. Avalanche control in ski areas is an on-going management practice in some park areas. The results of this control in terms of
decreased avalanche deaths or injuries to recreationists may be impressive, but has anybody bothered to assess the effects of avalanches on erosion rates, soils, vegetation, and wildlife? Garbage management in campgrounds and back-country, although seemingly trivial, can be aided by knowledge of the feeding habits of bears. Conflicts between bears and people via the medium of garbage is of growing concern to park managers and solutions must be based on careful study of bears, people, and garbage (Herrero, 1970).

CONCLUSIONS

Many of the same qualities that have led to an area's designation as a national park also have attracted researchers, particularly in the biological and earth sciences. The criteria of uniqueness and representativeness used by Parks Canada are used by scientists seeking study areas. While most researchers support in principle the concept and objectives of national parks, the juxtaposition of interest in particular land areas and the regulatory practices of Parks Canada can lead to conflict between park interests and research interests. The juxtaposition of interests and the rich history of research in some park areas provide evidence that areas in Canadian national parks have served as important research resources. They have served as resources prior to, during, and after park designation in some cases.

Official policy towards research in national parks has changed through time. Prior to the 1960's a laissez-faire attitude seems to have been most evident. In the 1960's policy and collection permit system, the attitude toward research was more restrictive. Research activities which were thought to be more appropriately conducted outside the park were not encouraged, nor was research unrelated to park objectives. By 1978, with the new draft policy, Parks Canada's official attitude had become more positive with recognition of a wide range of research subject matter and explicit recognition of the necessity of research for park planning and management. In other words, the research community and research process were seen as an important resource.

The commissioning of the Cowan Report on research is further evidence of the growing recognition of research as a resource.

Recognition of the importance of research in planning and management has led Parks Canada into a much more active in-hours and contracting research role. Whereas the university scientist in 1967 largely played the role of the academician doing basic research, university scientists in 1977 often were working on park-related issues under contract. Government agencies, particularly the Canadian Wildlife Service and Parks Canada itself, played a very active research role. The shifting emphasis over the past decade was a boone to consulting firms as well. In the area of applied research, one can conclude that the 1978 draft
policy reflected practice.

Although the 1978 draft policy implies a more positive and comprehensive attitude towards research of all types, there is less evidence that basic research is being encouraged. There are examples of refusal of collection permits for qualified but independent researchers, and an apparent reluctance to encourage research that does not relate directly to management and control. This is unfortunate given the importance of some of the park areas as research resources and the rich and varied research history of areas like Banff National Park.

The Cowan Report on research emphasizes the role parks can play as a research resource and provides numerous recommendations regarding closer ties between Parks Canada and the research community. These include scientific advisory groups for parks, visiting and resident scientist programmes, and publication, through the normal scientific channels, of contract research results. Serious consideration of these recommendations, many of which can be implemented at little or no cost, is essential if Parks Canada is to play an active and leading role in the future benefit, education, and enjoyment of Canadians.

Research is a more formalized version of the basic learning processes. Maintenance and encouragement of these processes is essential for future enjoyment and perhaps survival. Public institutions like Parks Canada, dedicated to education, have a responsibility to maintain and encourage learning as a process whether it takes the form of a sophisticated ecological energy flow study in some unique or representative area or the form of the questioning and experimenting of pre-schoolers in public campgrounds. This requires a very sensitive and deep understanding of what research and learning are. They are processes which require nurturing and preservation. In this area, interpretive programmes can serve research and research can serve interpretive programmes.

Finally, the following are among the more important substantive considerations for research in national parks in the future:

1. Further development of ties between research community and Parks Canada;
2. Sharing through publication, of the results of research sponsored by Parks Canada;
3. Identification of critical basic research questions that best can be studied in park areas;
4. Increased emphasis on social science research as it relates to park usage;
5. Continuing evaluation research of park management ideology and practice;
6. Identification and monitoring of critical environmental variables as indicators of the state of the environment in parks; and

7. Information system development for storage and future access to results of all research carried out in parks.

ACKNOWLEDGEMENTS

Parks Canada, in particular W. C. Turnbull, Director of the Western Region, and D. Hodgins, Chief of Resources Conservation of the Ontario Region, are to be thanked for their assistance in providing data on collection permits. E. J. Hart and the staff at the Archives of the Canadian Rockies kindly provided data on research requests.

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Recreation always has been important in Canada's national parks. It is a justification for them, a land use of and an environmental impact on them, an economic cost-benefit measure of them, and a cause of management problems in them. As Table 13.1 shows, in national parks the variety of recreation activities is enormous, some being more popular than others, and some being deemed more appropriate than others. Usually it is the facility and road-based activities that are the most popular. Hence they certainly merit attention and careful management. However, the less popular resource-based activities often are considered more appropriate in national parks. In recent years these activities have increased rapidly, have had a considerable impact, and have posed serious management problems. This paper therefore is addressed particularly to resource-based recreation and the wilderness experience. A discussion of their changing characteristics in Canada's national parks from 1968 to 1978, serves to update the paper I gave at the Canadian National Parks: today and tomorrow conference in 1968 (Marsh, 1970a).

First, attention will be directed to the wilderness resource base. Second, the nature of wilderness recreation demand will be examined and, third, changes in the wilderness recreation experience will be looked at. Finally, changes in policies and the management of wilderness recreation in the national parks will be discussed.

The Wilderness Resource

Regardless of one's definition of wilderness, it is likely that one would agree that during the period 1968 to 1978 the area of wilderness in Canada decreased. Urban development, roads, mining, logging, reservoirs, oil exploration and extraction, and other activities of man have encroached on areas previously undeveloped and relatively natural. Theoretically, therefore, recreationists seeking wilderness saw their opportunities diminish as the wilderness resource shrank (Figure 13.1).
<table>
<thead>
<tr>
<th>Basic Activities</th>
<th>Urban Activities</th>
</tr>
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<tbody>
<tr>
<td>Cooking</td>
<td>Dancing</td>
</tr>
<tr>
<td>Drinking</td>
<td>Indoor sports and games</td>
</tr>
<tr>
<td>Eating</td>
<td>Movie going</td>
</tr>
<tr>
<td>Sex</td>
<td>Museum visiting</td>
</tr>
<tr>
<td>Smoking</td>
<td>Souvenir buying</td>
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<tr>
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<td>T.V. watching</td>
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<tr>
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<td>Window shopping</td>
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<td>Attending interpretation centres</td>
</tr>
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<td>Camping</td>
</tr>
<tr>
<td>Chairlift riding</td>
</tr>
<tr>
<td>Cycling</td>
</tr>
<tr>
<td>Driving for pleasure</td>
</tr>
<tr>
<td>Golf</td>
</tr>
<tr>
<td>Pool swimming</td>
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</thead>
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<tr>
<td>Backpacking</td>
<td>Painting</td>
</tr>
<tr>
<td>Berry picking</td>
<td>Photography</td>
</tr>
<tr>
<td>Canoeing</td>
<td>Picnicking</td>
</tr>
<tr>
<td>Caving</td>
<td>Rafting</td>
</tr>
<tr>
<td>Cross-country skiing</td>
<td>Snowshoeing</td>
</tr>
<tr>
<td>Firelighting</td>
<td>Star gazing</td>
</tr>
<tr>
<td>Fishing</td>
<td>Swimming in lakes</td>
</tr>
<tr>
<td>Hang gliding</td>
<td>Walking</td>
</tr>
<tr>
<td>Horse riding</td>
<td>Wilderness camping</td>
</tr>
<tr>
<td>Interpretive hikes</td>
<td>Wildlife observation</td>
</tr>
<tr>
<td>Mountaineering</td>
<td>Wood chopping</td>
</tr>
</tbody>
</table>
FIGURE 13.1 Wilderness Resource Model
The vast majority of such recreationists, however, seek the wilderness experience in national and provincial parks or relatively accessible crown lands. Fortunately, since 1968 there has been an expansion of many provincial park systems, as well as of the national park system, and much of the additional creage generally would be considered wilderness (Table 13.2). For example, ten new parks have added 53,852 square kilometers to the national park system. Ninety percent of that added area is in the northern parks of Auyuittuq, Kluane, and Nahanni. In 1978, a further five areas in the North were declared national park reserves, although an area around Great Slave Lake has had such status since 1970.

While national parks do not create wilderness, they do draw attention to it; and the government's provision of access roads, trails, and information encourages wilderness recreation in national parks.

One also has witnessed, in the last decade, the improvement of road systems in the wilder parts of Canada. Although roads eliminate some wilderness, they often provide access to new areas for wilderness recreation. For example, while a new road on the western side of the Mica Reservoir, British Columbia, has been a further influence on the landscape of the Columbia Valley and has enable logging there, it also has greatly facilitated access to the Northern Selkirk Mountains. Some new roads, like the improved Kananaskis highway, have not only improved access to crown land but also have made more accessible formerly remote areas of national parks, in this case Banff. Such developments highlight the need for the planning of national parks in a regional context.

Given the problems of defining wilderness and of determining changing access conditions and their influence on the wilderness and recreation opportunities, it is difficult, unfortunately, to tell whether on a national basis there has been a net loss or a gain in accessible wilderness for recreation during the last ten years.

As the national park system's contribution to wilderness recreation opportunities is primarily of interest here it is necessary to consider changes to the wilderness resource within the national parks. In 1968, I noted that 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 (Marsh, 1970a, p. 127). Fortunately, public pressure and government response have prevented, at least for the time being, some potential developments in park wilderness areas. Generally speaking, since 1968, developments prejudicial to wilderness zones have been confined mainly to the intensive use, facility zones of the parks. Expansion of logging and mining has been averted, in most cases by the acquisition of claims and leases. New road construction in wilderness areas, such as the proposed Cascade Valley road in Banff Park, has been avoided and some roads, formerly open to the public, have been closed to vehicular traffic.

In the facility zones, however, development has continued. For example, the ski area facilities in Banff National Park have been expanded since 1968 and construction in Banff and Jasper townsites
Table 13.2  
National Park System Growth 1968-1978

<table>
<thead>
<tr>
<th>Year</th>
<th>National Parks</th>
<th>Reserve Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>18 National Parks</td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>Kejimkujik, Nova Scotia, 363 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>Kouchibougouac, New Brunswick, 225 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>Gros Morne, Newfoundland, 2,000 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>Forillon, Quebec, 238 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>La Mauricie, Quebec, 544 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>Pacific Rim, British Columbia, 155 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>Pukaskwa, Ontario, 1,888 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>Kluane, Yukon Territory, 22,000 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>Auyuittuq, Northwest Territories, 21,600 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1972</td>
<td>Nahanni, Northwest Territories, 4,800 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>28 National Parks</td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>Great Slave Lake, Northwest Territories, 7,400 square kilometres</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Banks Island, Northwest Territories</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Wager Bay, Northwest Territories</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Ellesmere Island, Northwest Territories</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Bathurst Inlet, Northwest Territories</td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>Northern Yukon, Yukon Territory</td>
<td></td>
</tr>
</tbody>
</table>

has continued. Such developments affect the wilderness zones indirectly, for example, by generating more traffic that requires more road expansion, by accommodating more people who seek wilderness recreation near the townsites, or by generally fostering the image of a national park as a facility-based tourist resort. There seems to be a strong likelihood that intensification of development in the facility zones and communication corridors of the parks will continue. Expansion of the Trans-Canada highway in the Banff area seems likely, new railway trackage in Banff and Glacier parks is planned, and further expansion of the ski resorts in Banff and Jasper has been sanctioned (Parks Canada, 1978). Thus, while major developments were kept out of national park wilderness zones in the last decade, there was increased development in the facility zones. Given continuing development pressures, the diminuition of the wilderness resource within the national parks remains a strong possibility. In the future a sharpening of the distinction between these two zones seems likely, and their boundaries accordingly will become more obvious and critical.

The most important thing to notice about the wilderness recreation resource base, inside and outside the national park system, is its changing spatial distribution (Table 13.3). As noted, much of the new national park area is in the North. And, like much of the new provincial park acreage, as for example, in Ontario, it is remote from major centres of population. This remoteness has achieved certain ecological objectives, but has only marginally improved the protection of wilderness readily accessible for recreation. The implications of establishing parks in remote areas primarily for ecological purposes are discussed later.

WILDERNESS RECREATION DEMAND

In 1968, I stated that the recreational use of wilderness areas has increased markedly in the last two decades, and the trend seems very likely to continue (Marsh, 1970a, p. 129). This generally is recognized to have been the case, but the statement requires more elaboration with reference to the national parks.

In the early 1960's there was much concern about increasing wilderness use, visitor impact, the justification for wilderness preservation, the nature of the wilderness experience, and the need for wilderness management policies. These concerns prompted a spate of studies of wilderness recreation in national parks aimed at determining the number of people using park trails, the activities and satisfaction of users, and their socioeconomic background and attitudes to wilderness (Marsh, 1971a; Marsh, 1971b; Thorsell, 1967; Thorsell, 1968). Such studies provided the first comprehensive statistics on the use of the wilderness zones in Canada's national parks, and some of the findings deserve repetition. For instance, the proportion of park visitors going further than one mile from a road was very small, usually under twenty percent. The majority of trips were day trips not involving camping in the backcountry.
Table 13.3
The Changing Spatial Distribution of the National Parks

The Centre of Gravity of the System

<table>
<thead>
<tr>
<th>Year</th>
<th>North</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>51° 30'</td>
<td>116° 0'</td>
</tr>
<tr>
<td>1900</td>
<td>50° 30'</td>
<td>115° 45'</td>
</tr>
<tr>
<td>1911</td>
<td>50° 0'</td>
<td>106° 30'</td>
</tr>
<tr>
<td>1930</td>
<td>50° 30'</td>
<td>106° 05'</td>
</tr>
<tr>
<td>1950</td>
<td>49° 45'</td>
<td>98° 30'</td>
</tr>
<tr>
<td>1960</td>
<td>49° 40'</td>
<td>96° 0'</td>
</tr>
<tr>
<td>1970</td>
<td>49° 20'</td>
<td>90° 40'</td>
</tr>
<tr>
<td>1978</td>
<td>50° 40'</td>
<td>92° 30'</td>
</tr>
</tbody>
</table>

(The calculation does not take into account the acreage of national parks only their location).

Table 13.4
Projected Trail Use Waterton Lakes National Park, 1966-1976

<table>
<thead>
<tr>
<th>Year</th>
<th>Trail Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>13,539</td>
</tr>
<tr>
<td>1972</td>
<td>19,651</td>
</tr>
<tr>
<td>1973</td>
<td>29,858</td>
</tr>
<tr>
<td>1976</td>
<td>27,750</td>
</tr>
</tbody>
</table>

(Projected means adjusted for non-response to self-registration stations)

There was a great variation in visitor pressure from one trail, or area, to another; there was a marked seasonality of trail use, winter use being negligible; and, in some cases, there was heavy weekend use. The studies showed that trail users came from a wide area, that is, continental, but a high proportion of them were from the closest provinces, states, and cities. They differed from the average park visitor in terms of their origins and socioeconomic characteristics. For example, in Glacier National Park the proportion of Americans using the trails was higher than the proportion of Americans just visiting the park and campgrounds; and trail users tended to have higher levels of education and income than the national average. The studies revealed that the questions asked of visitors regarding the wilderness character of parks produced a wide variety of answers according to the individuals asked and the areas discussed. These answers emphasized the difficulty of defining and studying wilderness. There was also a wide range of opinion regarding the appropriate level of facilities in wilderness areas; there was, however, a general preference for restriction of major development. Some visitors expressed concern about crowding, garbage, and conflicts between horse riders and hikers, but, in general, a high level of satisfaction was noted. People were usually in favour of further trail expansion and more national parks. The age of respondents, their investment in equipment, and their levels of satisfaction and interest in further wilderness trips all suggested a likely expansion in this type of activity, with the national park wilderness resource as a prime objective.

A variety of data support the general contention that from 1968 to 1978 wilderness recreation increased rapidly in Canada (Bernard and Scotter, 1977; Government of Ontario, 1976). While this seems true for many national parks, the data available for analyzing this trend in specific parks are limited in quantity and quality. Only a few visitor studies have been reported in a fashion reliable and comparable enough for trends to be discerned.

A 1976 survey of wilderness trail use in Waterton Lakes National Park, however, provides data comparable with that from surveys done in 1966, 1972, and 1973 (Table 13.4). Such comparisons show that trail use in that park increased 2.4 times from 1966 to 1973, but has declined somewhat since then. The marked difference in use between 1972 and 1973 can be accounted for by the contrasting summer weather of these years.

Registration data on backcountry travel in Banff National Park from 1970 to 1976 suggest that the growth in wilderness recreation evident in the 1960's and early 1970's has levelled off (Table 13.5). Data on the use of specific areas of this park, from 1967 to 1974, show inconsistent trends indicating perhaps a redistribution, rather than a growth, in use (Table 13.6). Backcountry use data for Jasper, Revelstoke, and Glacier National Parks also show fluctuations in recreation demand and not a consistent growth pattern (Table 13.7).

Such data reveal a recent disruption of the patterns of growth of wilderness recreation evident in the national parks in the 1960's. While the statistical evidence is limited, it seems likely that
Table 13.5

Backcountry Trip Registrations, Banff National Park, 1970-1976

A. Backcountry Registration for Hiking and Climbing in Banff National Park.

<table>
<thead>
<tr>
<th>Year</th>
<th>Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>12,603</td>
</tr>
<tr>
<td>1971</td>
<td>9,311</td>
</tr>
<tr>
<td>1972</td>
<td>11,721</td>
</tr>
<tr>
<td>1973</td>
<td>14,036</td>
</tr>
<tr>
<td>1974</td>
<td>15,284</td>
</tr>
</tbody>
</table>

Source: Parks Canada, Regional Office files, Calgary

B. Overnight Backcountry Trip Registrations in Banff National Park.

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitor Nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>32,860</td>
</tr>
<tr>
<td>1975</td>
<td>32,688</td>
</tr>
<tr>
<td>1976</td>
<td>32,218</td>
</tr>
</tbody>
</table>

Source: Parks Canada, Regional Office files, Calgary.

Table 13.6

Registration Data for Specific Areas of Banff National Park

1967-1974

Egypt Block

<table>
<thead>
<tr>
<th>Year</th>
<th>Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>256</td>
</tr>
<tr>
<td>1974</td>
<td>1,210</td>
</tr>
</tbody>
</table>

Larch Valley:

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitor Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>9,505</td>
</tr>
<tr>
<td>1972</td>
<td>8,212</td>
</tr>
</tbody>
</table>

Consolation Lakes:

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitor Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>3,305</td>
</tr>
<tr>
<td>1972</td>
<td>6,390</td>
</tr>
</tbody>
</table>

Plain of The Six Glaciers:

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitor Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>11,128</td>
</tr>
<tr>
<td>1972</td>
<td>10,800</td>
</tr>
</tbody>
</table>

Taylor Lake:

<table>
<thead>
<tr>
<th>Year</th>
<th>Visitor Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>237</td>
</tr>
<tr>
<td>1972</td>
<td>551</td>
</tr>
</tbody>
</table>
Table 13.7

Hiking and Climbing Registrations, Jasper, Glacier and Mount Revelstoke National Parks, 1969-1977

A. Jasper National Park, Hiking and Climbing Registrations

<table>
<thead>
<tr>
<th>Year</th>
<th>Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>4,641</td>
</tr>
<tr>
<td>1970</td>
<td>7,565</td>
</tr>
<tr>
<td>1971</td>
<td>8,829</td>
</tr>
<tr>
<td>1972</td>
<td>11,850</td>
</tr>
<tr>
<td>1973</td>
<td>9,679</td>
</tr>
</tbody>
</table>

B. Glacier and Mount Revelstoke National Parks, Overnight Hiking and Climbing Registrations.

<table>
<thead>
<tr>
<th>Park</th>
<th>Year</th>
<th>Registrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glacier</td>
<td>1975</td>
<td>1,019 registrations</td>
</tr>
<tr>
<td>1976</td>
<td>566  (May 1 - Aug. 31)</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>848</td>
<td></td>
</tr>
<tr>
<td>Mt. Revelstoke</td>
<td>1975</td>
<td>119 registrations</td>
</tr>
<tr>
<td>1976</td>
<td>63   (May 1 - Aug. 31)</td>
<td></td>
</tr>
<tr>
<td>1977</td>
<td>129</td>
<td></td>
</tr>
</tbody>
</table>

Source: Parks Canada, Regional Office files, Calgary.

Letter, Superintendent, Mount Revelstoke and Glacier National Parks to Director, Western Region, Parks Canada, 15 September, 1977.
participation in wilderness recreation in the national park system, as a whole, is conforming to a classic S Growth Curve, and that the period of explosive growth is over. Thus, growth probably will continue at a lower rate, with some sudden increase in visitation to new areas and new parks causing management problems (Table 13.8).

As mentioned earlier, access is a critical influence on the spatial distribution of wilderness recreation, both at the regional level and within a national park; and access has changed in many places since 1968. The completion of the Yellowhead Highway through the Rockies had a marked impact on visitation to Jasper National Park; and in Waterton Lakes Park, the closure to vehicles of the Snowshoe fire road markedly reduced the use of trails beginning at its former terminus. The lack of trail or public boat access in Pukaskwa Park probably accounts for the relatively low level of wilderness use in this new national park near the Trans-Canada Highway in Ontario. Access will continue to be an important factor influencing the level and distribution of wilderness recreation, and it is a factor only partially within the control of park agencies. Cheaper flights to the North could greatly increase demand on parks there. However, energy costs may restrict mobility and increase demand on parks near cities.

An important change in the wilderness recreation pattern in many national parks since 1968 is the expansion of winter and off-peak season use. This is consistent with growing interest in winter sports and holidays in Canada. Two activities deserve special mention, snowmobiling and cross-country skiing. In 1968, I expressed concern about the recent introduction of snowmobiles into the national parks and the danger of such a precedent. While snowmobile use continues in some parks it certainly has been restricted severely, generally to roads not useable by vehicular traffic in winter. This potential threat to national park wilderness was curtailed perhaps as much by a levelling-off of growth of the activity, and the availability of snowmobile use areas outside national parks, as by park regulations.

Cross-country skiing has increased markedly in popularity since 1968, and it has become an important activity in some national parks (Table 13.9). Its appeal stems from its low cost, its potential as a family activity, and the variety of places suitable for it. Other factors include the ease of learning it, its benefits to fitness, and the tranquility it affords in natural settings. Accordingly, in Banff National Park there now is a designated system of ski trails; and there are guided and interpretive trips, and a comprehensive ski-touring guidebook available (Kunelius, 1977). While, along with winter camping, snowshoeing, and mountaineering, cross-country skiing reduces the seasonality of wilderness recreation, it also poses problems. These include accidents due to avalanches and cold weather, as well as the need to provide parking, garbage collection, toilet facilities, and information.

Apart from the changes in the quantity of wilderness recreation, and in its spatial and temporal distribution in national parks, there also have been more subtle and complex changes in the quality
Table 13.8

Registered Backcountry Users and Climbing Expeditions,
Kluane National Park, 1976-1977

A. Registered Backcountry Users

<table>
<thead>
<tr>
<th>Year</th>
<th>Parties</th>
<th>Persons</th>
<th>Man-Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>100</td>
<td>267</td>
<td>892</td>
</tr>
<tr>
<td>1977</td>
<td>162</td>
<td>415</td>
<td>1,557</td>
</tr>
</tbody>
</table>

B. Climbing Expeditions

<table>
<thead>
<tr>
<th>Year</th>
<th>Expeditions</th>
<th>Climbers</th>
<th>Man-Nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976</td>
<td>10</td>
<td>57</td>
<td>1,300</td>
</tr>
<tr>
<td>1977</td>
<td>17</td>
<td>95</td>
<td>1,769</td>
</tr>
</tbody>
</table>

Source: Parks Canada; Information Analysis, Kluane Alternatives 1978.

Table 13.9

Estimated Number of Ski Tourers, Banff National Parks, 1966-1974

<table>
<thead>
<tr>
<th>Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1966-1967</td>
<td>3,500</td>
</tr>
<tr>
<td>1970-1971</td>
<td>5,700</td>
</tr>
<tr>
<td>1971-1972</td>
<td>7,500</td>
</tr>
<tr>
<td>1973-1974</td>
<td>27,069</td>
</tr>
</tbody>
</table>

(Estimated means ski tourer registrations were inflated 20 percent)

Source: Parks Canada, Winter Season 1974 Trail Use.
of the wilderness recreation experience itself. These changes deserve detailed discussion.

THE WILDERNESS RECREATION EXPERIENCE

For the purpose of discussing how the wilderness recreation experience in the national parks is changing I should like to introduce a visual model indicating some of the principal components of the experience (Figure 13.2). The model can be used for the analysis of the concept of the wilderness experience of an individual, a cultural group, or a nation. It also can be used for assessing the changing of a park or other area to provide a wilderness experience. By changing the components the model also could be used for analysing other types of experience in the national park or for analysing different recreation activities. The ten components of the wilderness experience depicted here have been selected from the vast literature on the wilderness experience. Individuals naturally will place more emphasis on some components than on others, and even may consider some to be irrelevant (Figure 13.3). However, for the purposes of this paper it is assumed that all ten components are important and that changes in any one component will alter the overall wilderness experience. Accordingly, each component and how it is changing, will be discussed individually, with special reference to the national park context.

First, there are the landscape components of variety and beauty. In the last ten years additions to the national park system have widened the variety of landscapes available for wilderness recreation in national parks, and this variety has increased the contrast between national park and urban landscapes. Within the parks there has been little change in the variety of landscapes, except as a result of events such as forest fires. However, with the growth of winter recreation and the penetration of the more remote areas, there has been an increase in the variety of landscapes seen by visitors. The standardization of facilities in national parks has served to reduce their variety, but this is evident mainly in the intensive use zones.

The restriction of roads and development in wilderness zones has maintained the beauty of national park wilderness. However, in places this beauty increasingly is marred by garbage, environmental damage, the volume of visitors, and the visibility of development in the intensive use zones. The erosion of beauty often is a slow and incremental process, mainly evident to repeat visitors. It is a process that is difficult to reverse and it should be monitored constantly by photographic, ecological, and visitor survey methods.

Next, we have the social and solitude components. While at first these may appear contradictory this usually is not the case. Most people choose to experience wilderness with a small group, and the experience is heightened by the social interaction. At the same
FIGURE 13.2  Wilderness Experience Components' Model
FIGURE 13.3  Wilderness Experience Components for One Person
time the group often is seeking solitude, and excessive encounters with other groups degrade the experience. There is little evidence of change in either the size or composition of wilderness user groups to suggest a major change in the social component, although the women's liberation movement may have had some impact (Calvert, 1978).

Clearly the increasing numbers of wilderness visitors in national parks are affecting the solitude component, though this may not be evident from visitor surveys because of a clientele shift. It seems probable that people seeking a high degree of solitude are shifting their activity to remoter areas of the parks, to the remoter parks, or to undiscovered areas outside the national parks. Concern for solitude also may explain some of the interest in off-peak season visitation. Thus, a Calgary writer noted probably the nicest feature of backpacking in the fall is the fact that for the most part the masses have left the mountains, and it is again a pleasure to hike in the national parks (Skrastins, 1977). The new wilderness recreationist in the more highly used areas may be less sensitive to crowding than those who have shifted elsewhere, and hence offers few complaints about crowding. In general, wilderness visitors seem less concerned about the numbers of people they encounter than about the types of people they encounter and their behaviour. However, in the future, as the numbers of visitors increase, and the wilderness diminishes, there no longer will be areas for the clientele to shift to, and regulation will be necessary to preserve the solitude component at an acceptable level.

This brings us to the next interrelated components of freedom and fear. For many people wilderness constitutes a place to be free, free of the patterned behaviour, obligations, and regulations of the working world and urban living. It is a place to take risks and to realize fear, in a society that generally seeks to protect its members from both. As society increasingly takes care of the individual, the importance of the wilderness as a place of challenging fear and risk increases, for risk taking is essential for psychological development and well-being (Gardner, 1978). While society establishes risk environments like motor racing tracks and casinos, many people appear to prefer the challenge of risks in the natural environment; the risks from weather, wildlife, and topography, as encountered in such activities as climbing, caving, white-water canoeing, and hang gliding. Gardner (1978, p. 20) correctly notes that wilderness as fear has changed but it has not disappeared as part of the wilderness experience. During the last decade a number of factors have influenced the nature of fear and risk in the national parks. First, there is more information now on park environments and their hazards. Improved maps, even air photographs, are available to reduce the risk of getting lost. Information is available on climbing and white-water canoe routes, and the degree of difficulty of each. Current information is usually available at park offices on weather conditions, avalanche and wind hazards, and water conditions. The provision of some more trails, emergency shelters, bridges, and signs has reduced the risk. The volume of people also reduces risk levels. Help, in the event of a mishap, is more readily at hand. Improved equipment potentially reduces risk. However, it can encourage people to attempt more
hazardous activities such as winter climbing and camping. Improved individual knowledge about risk conditions, such as hypothermia, has probably reduced risk, but education programmes regarding such hazards may not be as effective as one would hope. Training courses and guiding, as well as greater fitness, probably have improved people's ability to cope with risk. Finally, advice and regulations in national parks increasingly have served to protect people from risk and misadventure. Improved rescue services not only have reduced the dangers of miscalculating risk but also may have influenced the perception of risk.

While for most people the national park wilderness experience now is probably less risky, some visitors have found ways to maintain high risk levels, albeit without public approval and in contravention of regulations. Other people seeking high risk experiences, like those seeking a high degree of solitude, have shifted their activities outside the national parks where regulations are fewer. In terms of risk and fear the national parks may become a beginner's wilderness; but this may well satisfy the majority of wilderness recreationists, especially when no more challenging environments remain.

Increased regulation of wilderness recreation activity not only is influencing risk taking, but also the general sense of freedom people seek in wilderness. Visitors no longer can expect to camp and light fires where they want; fishing is regulated and hunting usually is prohibited. The use of horses in the parks has been controlled progressively and discouraged. As our free society has become more regulated so has the park experience. While the regulations generally are introduced to protect the environment and the visitors undertaking a recreation experience, they do restrict freedom, produce a clientele shift, and ultimately detract from the wilderness recreation experience in the national parks.

A sense of physical achievement often is part of the wilderness experience and this component also is changing. National park wilderness provides opportunities for people to test their physical capabilities, irrespective of whether risk is involved. These include, for example, the capability of walking or paddling a certain distance, carrying a certain load, or beating one's companions to a destination. Improved facilities and equipment can reduce the physical capability required in the wilderness. Good boats, lightweight packs, and freeze-dried food have made hiking easier. Waterproof tents, low temperature sleeping bags, and portable stoves make camping more comfortable. However, all such equipment moves one further from the reality of nature and, therefore, changes the nature of the wilderness experience. Thus, some people argue that modern mountaineering, with all its hardware, is largely an engineering exercise rather than a test of physical ability. Our approach to the wilderness has changed since John Muir clung to the top of a tempest-tossed pine tree to see what it was like, and Joseph Knowles stripped himself bare in the Maine woods to see if he could survive (Knowles, 1913).
Modern equipment makes it physically easier to travel further in the wilderness, to stay longer, and to enjoy more comfort. It gives wilderness recreation a technological attribute that many recreationists apparently find appealing, even though it seems contrary to expressed desires of escaping civilization. The easing effects of such equipment can, of course, be offset by accepting greater physical challenges. Equipment may well have been an important factor in making wilderness recreation more popular, but it reduces one's physical sensitivity to the experience of wilderness.

Modern equipment, regulations, and man's impact on park landscapes have reduced the comparability of the present day wilderness experience with that of the early explorer or pioneer; and for some people a sense of historical insight and reenactment is an important component of the experience. Despite this trend, the national park landscapes retain a greater historical identity than do the landscapes of urban Canada; and information and interpretive services have, in the last decade, fostered an appreciation of the historical significance of the wilderness experience.

It is generally recognized that outdoor recreation experiences can be divided into five stages, the first and last being anticipation and retrospection (Clawson, 1966). It is desirable to examine what has happened to these two wilderness experience stages which occur outside the parks. The anticipation stage is changing, firstly, because the information available to one prior to a wilderness trip is greater now. There are maps, guidebooks, magazines, historical books, television programmes, films, and advertising, all of which contribute information and create an image of the wilderness and the experience there. One now can be much more prepared for the experience, hence, the surprise element is less. This has advantages and disadvantages. One knows more about what to expect, what the scenery will be like, and what problems and risks will be entailed; but the spontenity, novelty, and challenge are probably reduced. Presently, one still can seek the least publicized areas of parks, or areas outside parks, where information is minimal. But given the information explosion, this option may be shortlived, and the benefits of facing the great unknown will be lost.

The retrospective part of the experience is also changing. The camera long ago enhanced one's ability to recall a wilderness experience; and more sophisticated, lightweight cameras, movie cameras, and tape recorders have increased this ability. However, this emphasis on, and means used for, recalling the experience influences the experience itself. Equipment has to be carried and its usefulness depends on days of fine weather and scenes that suit the medium. The camera emphasizes a visual appreciation of the landscape and is poorly designed for capturing scenes of panoramic beauty or the interiors of dense, dark forests. Accordingly, the experience recalled is distorted, often glamorized and heroic. Such recall, however, becomes part of the information base and anticipation phase for further trips, and for other individuals. As many people make decisions about wilderness activities after communicating with friends, this form of recall is clearly important.
Every pretty slide of Kluane Lake, the Pukaskwa River, or Mount Dawson becomes an advertisement, albeit a distorted one.

For less mobile and active citizens, the recall of wilderness recreationists offers an alternative to visiting parks and wilderness areas. Wilderness experiences can be relived through the medium of photography in the comfort and convenience of the home. Thus the benefits of the national parks and wilderness recreation experience are brought, admittedly in a selective form, to a wider audience. This process, as well as the sophisticated audio-visual presentations in some park visitor centres, draws attention to the possibility of simulating the whole wilderness recreation experience, but there is not space here to debate the implication of trends in this direction (Davis, 1975).

Having disaggregated the wilderness experience into component parts and suggested how and why they are changing, it now seems desirable to recombine them to give an impression of the changing totality of the wilderness experience. However, as the experience varies with the individual, and is complex, such a task is very difficult; hence, only a few tentative generalizations will be offered here.

First, the wilderness experience is synergistic in that it represents more than the sum of its components. At its best, it is what has been termed a peak experience (Gardner, 1978; Maslow, 1968). As such it satisfies an important human craving for self-fulfillment or re-creation, and has overtones of a religious experience. The religious connotations have been discussed at length recently (Erickson, 1977; Graber, 1976). They were clearly evident in the writings of Victorian visitors to the national parks, and in those of J.B. Harkin, First Commissioner of national parks, who observed that in these silent wildernesses there are 'holy places' that allow one to experience the mysterious, the fundamental emotion that constitutes the truly religious attitude (Williams, 1957).

Second, the wilderness experience is changing, but whether for better or worse depends on the individual. Those seeking a high degree of solitude and freedom probably now find national park wilderness less satisfying than it was ten years ago and are seeking their experiences in the remoter parks, remoter areas of parks, or beyond the parks. The average wilderness visitor remains largely satisfied with the experience obtained except in a few heavily used areas such as that around Lake Louise.

Third, changes in the behaviour and attitudes of recreationists have been more important influences on the wilderness experience than changes in national park landscapes have been.

Fourth, information and education have influenced many components of the experience and have affected its quality both positively and negatively. Much of this information and education is provided outside the national parks and is beyond the control of Parks Canada.
Fifth, while many factors are tending to reduce risk and fear levels in national parks, some individuals feel a strong need for such challenges, and they continue to find ways to obtain them in the national parks and elsewhere.

Sixth, in keeping with our times, wilderness recreation has an increasingly technological orientation that may both enhance and detract from the experience.

Finally, the wilderness experience has become increasingly institutionalized (Thorseil, 1977). In the 1960's it became fashionable and popular, appealing not just to eccentrics, but to families, schools, and government ministers. Accordingly, business has taken commercial advantage of the activity, academics have studied it, and governments have recognized it. Parks Canada has attempted to provide for it and maintain quality control. Hence, the next section of this paper deals with the changing management of the wilderness experience in the national parks.

WILDERNESS RECREATION PLANNING AND MANAGEMENT

In the last decade Parks Canada has been forced to pay more attention to the planning and management of wilderness recreation. This can be attributed to the following: growth in wilderness use, impact on wilderness environments, concern about the ecological integrity of national parks, concerns about wilderness recreation quality and safety, and the experience of United States' wilderness agencies.

Growth in wilderness recreation and public pressure have helped to justify the expansion of the national park system. However, as indicated in Table 13.2, most of the national parks and reserves created since 1968 have been in the North. This pattern of expansion reflects not only the availability of suitable park land but the emergence since 1968 of a definite and finite objective. As stated in the National Parks System Planning Manual (Parks Canada, 1976), and repeated in the new draft policy (Parks Canada, 1978), this objective is the development of a system of national parks representative of Canada's major terrestrial and marine natural regions. The pursuit of this objective has important implications for the future of wilderness recreation in Canada. More national parks will be created to complete the system, thus making more protected wilderness available for recreation. Furthermore, many of the new national parks will have a higher proportion of wilderness than those now established in the South. In particular, the proposed national wilderness parks in the North would contain only protection zones and would be planned and managed to provide a wilderness experience for park visitors (Parks Canada, 1978, p. 82). However, most new national parks will be remote from the major population centres and so, despite their wilderness character, will not necessarily have high wilderness recreation potential. Parks established primarily for ecological reasons may not prove attrac-
tive to recreationists, and the season for recreation activity is very short in the North. Considerable time and money will be needed by recreationists to reach remote parks, especially if transport costs escalate; hence, they may become, as in the past, playgrounds of the rich, unavailable to the majority of taxpayers.

The main implication, therefore, of present Parks Canada policy is that the national park system will not meet the future demand for wilderness recreation, and that if adequate wilderness is to be preserved and recreation opportunities provided in southern Canada, provincial and other agencies will have to assume a more significant role in this work. The new draft park policy emphasizes that (Parks Canada, 1978, p. 20):

\[
\text{public demand for outdoor recreation opportunities in a particular locality cannot alone justify Park Canada's participation. Provincial governments and their agencies have a specific mandate for recreation. Private organizations and individuals also play a role in meeting these demands.}
\]

Similarly Eidsvik (1978, p. 101) has pointed out that Parks Canada or the federal government does not control resources south of 60 degrees and therefore we cannot be looked upon as the key future wildland management agency. Whether provincial agencies will respond to this challenge, or whether the national parks in the south will bear the brunt of future wilderness recreation demand, remains to be seen. Certainly there is no shortage of suggestions for provincial action and, as the situation becomes more critical, increased public lobbying can be expected (Coalition for Wilderness, 1974).

For sophisticated management of existing national park wilderness Parks Canada required improved information; and since 1968 there has been a growth in research on the wilderness environment and recreation. Biophysical inventories have been, or will be, prepared for each park, giving more information on the wilderness recreation resource, its potential, and its sensitivity. As mentioned earlier, there have been some further studies of wilderness recreation, recreationist attitudes, and environmental impact. The initiation of studies of actual and simulated recreational impact represented a significant step forward in determining the recreational capacity of wilderness zones (Nagy and Scotter, 1974b; Scotter and Landals, 1973; Severs and Theberge, 1975). However, much more of this research still is required to determine the impacts of recreation on different environments and on wildlife; and to determine long-term impacts and restoration practices. Fortunately, the new draft policy indicates that research into natural phenomena, public needs, visitor use and impacts will continue to be an important feature of wilderness recreation planning and management (Parks Canada, 1978). Nevertheless, it should be stressed that until park managers decide on the acceptable level of environmental degradation and wilderness recreation quality in national parks, the concept of carrying capacity cannot be
employed effectively to dictate management practices (Nagy and Scotter, 1974a; Wager, 1964).

During the last decade the growth of wilderness recreation demand, problems, and research all provoked a variety of management responses which affected both facilities and behaviour in national park wilderness. After much debate about the appropriate level of facilities in wilderness zones new trail construction has been minimal (Marsh, 1970b). Thus, a new highway corridor plan for Glacier National Park rejects any trail expansion into those areas of the park presently lacking trails (Parks Canada, 1977b). Similarly, the enthusiasm for the Great Divide Trail has subsided, and this project remains unfulfilled. Further restrictions have been placed on the uses of horses on trails, and separate trails for their use have been advocated (Nagy and Scotter, 1974b). Such trail policy presumably reflects growing concern about ecological impacts, conflicts between users, costs of construction and maintenance, and a belief that true wilderness does not have trails.

Following construction of some backcountry huts in the 1960's it quickly became apparent that such facilities can become attractions in themselves, leading to undesirable behaviour and the excessive use of access trails. Thus, with the exception of high altitude emergency shelters, hut construction has been minimal in the 1970's, and even many of the traditional Alpine Club huts are now on short term leases. However, in view of the impact of backcountry camping and new restrictions on overnight trips, a further look at the advantages of huts, and their management, in other countries, such as New Zealand and Sweden, may be warranted.

Degradation of backcountry campsites and trails has led, as predicted in 1968, to a need to limit visitation in the more popular wilderness areas. Accordingly, park wilderness is being divided into management units. Quotas are being established for the number of visitors, and their length of stay, on certain routes and at backcountry campsites. Overnight trips are being regulated through a manatory permit system. Such systems have been in use in many United States' wilderness areas for several years now. The computerization of permit information and the simulation of wilderness recreation trip behaviour are enabling the maximum use of wilderness facilities within carrying capacity limits (Elsner, 1972; Smith and Krutilla, 1976).

Maintenance of environmental and recreational quality is requiring further regulation of visitor behaviour. Restrictions have been tightened on group camping, the grazing of horses, and the use of fires; and it now is being suggested that campfires should be considered a luxury (Parks Canada, 1977a). Increasing concern for, and problems with, visitor safety in park wilderness also has prompted management action since 1968. Rescue services have been improved and more park personnel receive training in this work. Information on park conditions, hazards, and safety has improved. However, the number of accidents involving mountaineering, avalanches, bears, and boating still is cause for concern. Perhaps surprisingly, Parks Canada rarely has insisted, as have some similar agencies
abroad, that wilderness recreationists have suitable clothing, equipment, and qualifications before being allowed to undertake certain activities. However, the new draft park policy does state that (Park Canada, 1978, p. 71):

Parks Canada will encourage private organizations to provide skill development programs (eg. canoeing, wilderness travel, cross-country skiing) and, when necessary, will directly provide such programs for visitors.

A revised optional registration system for wilderness recreationists in Banff National Park indicates Park Canada's continuing willingness to provide rescue services while at the same time remaining free of legal responsibility for visitors' safety in the wilderness. Parks Canada (1977a) describes the new system thus:

A voluntary registration system is available to Park users who, in their opinion, are undertaking risk activities, either of a day use or longer duration. This system involves personal registration and mandatory return registration with the Park Warden Service. Park assistance will be provided should a return registration become overdue.

Whether the new permit and registration system and regulations will prove adequate to control use, provide for public safety, and maintain a high quality wilderness experience remains to be seen. As indicated in the discussion of the wilderness experience, regulations have been negative and positive impacts on recreation experiences. They should not be regarded as a panacea for all recreation management problems.

Visitor education would appear to be preferable to regulation; and the value of this education in making regulations more acceptable and workable is now well recognized. To have the cooperation of visitors also requires that they be consulted early and in full on all major decisions about the planning and management of park wilderness areas. This, in turn, places on individuals and citizens' groups involved in wilderness recreation, a responsibility to be informed, to participate in such consultation, and to convey information to the public at large. Given the importance of such cooperation and consultation and the economic weakness of many citizens' groups, it well may be desirable for the government to assist such groups in fulfilling their role (Nelson, 1979 p.8). It also may be desirable to establish more formal connections with the wilderness user, through the establishment of citizen advisory groups relating to wilderness and recreation management in the national parks. The involvement of the New Zealand Federation of Mountain Clubs in national park decision making merits attention in this respect.

The final point I should like to make regarding management of wilderness recreation in the national parks repeats remarks made in 1968 that still deserve emphasis. While the wilderness zones
of the national parks have not suffered great encroachment from
development or facility-based recreation in the last decade, the
threat of this always remains. Until wilderness zones in national
parks are established by legislation similar to the United States'
Wilderness Act, the preservation of wilderness for the types of
recreation experiences that only it can afford, remains tentative,
subject to short term commercial pressures, and to management
policy changes. New legislation for the proposed national wilder­
ness parks may be a step in the right direction but it will not
guarantee protection of wilderness zones in established national
parks; and it is in these that pressures will be greatest to
develop tourist facilities that encroach on the wilderness.

CONCLUSION

Although wilderness recreation remains a minority activity of
national park visitors, it has increased in popularity rapidly
since 1968 and has necessitated increasing management attention
and response. The number of national parks has been increased,
and wilderness zones in existing parks have been protected from
major encroachments. However, most new national park acreage is,
and will be, in northern and remoter areas, inaccessible to much
of the population. Provincial governments, with a mandate for
recreation and control over crown land in southern Canada, should
play a much larger role in preserving wilderness and in providing
for wilderness recreation opportunities in the future. The wilder­
ness recreation experience reflects our society at large. In
addition, it is changing not only in response to increasing park
visitation, information, education, and equipment, and also as a
result of more intensive park management and regulatory practices.
As the experience becomes more institutionalized in the national
parks it may continue to satisfy many visitors, but others may
feel, as some do already, that parks are parks and wilderness is
wilderness (Drew, 1978). Making the national park and wilderness
landscapes and experiences synonymous will remain a challenging
task for Parks Canada, and the public in the future.

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INTERPRETATION IN CANADIAN NATIONAL PARKS
AND RELATED RESERVES – TO WHAT END?
J.P. Foley and J.A. Keith

INTRODUCTION

While there always have been activities in parks and reserves which generally relate to interpretation, the concept of interpretation as currently understood is relatively new. Consequently, the philosophical base is still evolving, and there is considerable discussion on the nature and role of interpretation.

The purpose of this paper is to examine the current aim of interpretation from the perspective of Canadian federal resource management agencies, particularly the roles of Parks Canada and the Canadian Wildlife Service in nature interpretation, rather than in historic sites interpretation.

It was in the United States that the first large scale programmes were organized and it is there that the philosophical roots of interpretation lie. In 1916 the United States National Park Service established an education section. It apparently failed to catch on within the organization. The Park Service then turned to a cooperative programme with a private organization, The National Parks Association (Ise, 1961, p. 200). Interpretation programmes developed quickly from this point and by the 1920's many parks had developed programmes of guided walks, campfire talks, and natural history presentations, which are still standard today. In Canada, it was not until the 1940's that the Province of Ontario began the first officially organized programme. This was followed by British Columbia in the 1960's and the federal National Parks Branch in the early 1960's.

Since then, most of the provinces, several federal agencies, and private organizations have begun interpretation programmes. Later this week the 6th Annual National Workshop of the Association of Canadian Interpreters will include up to four hundred representatives of agencies with interpretive programmes from across Canada.
WHAT IS INTERPRETATION?

Obviously, if so many people are working in interpretation they must have some understanding of what it is. A quick excursion back into the United States will help illustrate interpretation's conceptual base.

Ise (1961, p. 201), when referring to the United States National Park Service, points out: In the earlier years education was both the word used and the objective, in the sense of imparting information and enlarging the knowledge of visitors. He goes on to say that: Later - no date can be set - the service turned more and more to the word and concept of interpretation, as espoused by Freeman Tilden (1957). Tilden's position is that the chief aim of interpretation is: not instruction, but provocation; and he defines it in terms of an educational activity which aims to reveal meaning and relationships through the use of original objects, by first hand experience, and by illustrative media, rather than simply to communicate factual information.

In Canada, there is a paper by Yorke Edwards (1965) which was quoted from extensively by Pimlott at the 1968 Conference. It has since come to be regarded as a classic. In referring to interpretation in the parks of British Columbia, Edwards states: So while entertaining, we give directions, 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.

These two papers by Tilden and Edwards clearly reflect a common view of practising interpreters, and serve as the basis for most interpretive programmes in North America today.

For the moment, we shall leave the question of why we wish to provoke people, or why we wish to inspire them, and take a brief look at the current guidelines for Canadian federal interpretive programmes.

WHAT ARE THE FEDERAL POLICY GUIDELINES IN CANADA?

The oft-quoted section 4 of the National Parks Act of 1930 (Government of Canada, 1930) states in part:

The parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment ....
Aside from the introduction of the problem of education, which constitutionally is under provincial jurisdiction, the statement does not clarify what the aims of the education should be. Are visitors being educated so they can appreciate the parks better, or so they can name all the trees in the park, or so they will develop an environmental conscience, or what?

The Canada Wildlife Act (Government of Canada, 1973) provides the basis for interpretation programmes in C.W.S. The Act specifically authorizes the Minister to:

- undertake, promote or recommend measures for the encouragement of public cooperation in wildlife conservation and interpretation

- initiate conferences and meetings respecting wildlife research, conservation and interpretation.

Under Powers of the Minister on Public Lands he also may:

- establish facilities or construct, maintain and operate works for wildlife research, conservation and interpretation ...

Further, the Minister may enter into an agreement with the government of any province, or with other organizations or individuals, to provide for:

- the undertaking of wildlife research, conservation and interpretation programmes and measures ...

We still are not given clear guidance as to why this wildlife interpretation programmes is to be established. Both Parks Canada and the Canadian Wildlife Service recently have completed policy papers which help clarify the situation. According to the Canadian Wildlife Service policy (Canadian Wildlife Service, 1978) the objective of wildlife interpretation is:

- to encourage and to provide opportunities for the development of awareness, enjoyment, understanding and appreciation of Canada's wildlife heritage and its environment.

The National Parks Policy on Interpretation (Parks Canada, 1978) states:

- interpretive programmes will be provided to encourage an understanding and enjoyment of the park's natural values and to develop an awareness of man's relationship to and dependence on the natural environment.
WHAT SHOULD INTERPRETATION BE?

The literature quoted earlier refers to a number of activities associated with interpretation ranging from simply giving out information to actual propaganda. The policies refer to a spectrum of activities from providing opportunities for enjoyment to developing an awareness of man's relationship with the natural environment.

Clearly, there are many things that people would like to accomplish through interpretation. For the purpose of discussion, we have found it useful to group them into the following four categories:

1. Interpretation as a tool for attitude change;
2. Interpretation as a resource management tool;
3. Interpretation as an educational tool; and
4. Interpretation as a recreational/inspirational experience.

INTERPRETATION AS A TOOL FOR ATTITUDE CHANGE

Alderidge (1974), at the Second World Conference on National Parks, stated: "Interpretation is the art of explaining the place of man in his environment to increase visitor or public awareness of the environment, and to awaken a desire to contribute to environmental conservation." In other words, there is a widely held feeling among conservationists that it is a primary responsibility of major resource management and conservation agencies to get out there and change public attitudes in the appropriate directions before it is too late!

We agree that conservation agencies should contribute to the development of a conservation ethic in society, however, we would just like to raise a question. Should civil servants change public attitudes, or is it their responsibility to provide opportunities, or to develop awareness, so that the citizen is in a position to develop his own intelligent opinions and attitudes? In other words, should civil servants be doing things for people or to them?

Aside from questions of political philosophy, is there any value in a hard core propaganda programme? Considering the barrage of doom and gloom messages and the immense amount of conservation ethics material Canadians have been receiving over the past several years, is it not discouraging to think the conservation movement has not made greater strides? Why has the movement failed to develop the appropriate public attitudes? But has it failed? How many Canadians would say it was a waste of money to preserve wildlife or establish parks, or generally preserve and conserve the environment? Probably not very many. To that extent the conservation movement has succeeded. It has failed, however, to stimulate the public into translating those attitudes
into action and a way of life. To continue preaching doom and gloom, particularly to those who come to parks and reserves in North America, is preaching to the converted. What is required is to provide the increasing number of urban Canadians with an opportunity to experience their natural heritage so that they can relate to and understand the significance of the conservation messages. Only then will attitudes be translated into action.

In summary, we believe government interpretation programmes should provide park and reserve visitors with the opportunity to understand, appreciate, and enjoy their natural heritage. Visitors also should be clearly presented with the problems and challenges of conserving that heritage. Given these opportunities, people will be in a much better position to work out their own attitudes on conservation generally, and on the problems inherent in their wanting, simultaneously, the benefits of both conservation and economic progress.

INTERPRETATION AS A RESOURCE MANAGEMENT TOOL

When one is attempting to secure manpower and dollars for interpretation programmes, one of the most successful approaches is to demonstrate how valuable the programmes are to the manager. For example, if campers know that stripping the bark off birch trees will kill the trees, they are less likely to do it, and the park can save money by employing fewer birch-tree protectors. Interpretation also can reduce public criticism of major management policies if people understand, and agree with, the rationale. A classic example is gaining public acceptance for controlled forest fires in national parks. Also, if the public understands the purposes of parks and reserves it is more likely to support them, and the agencies involved will get more money. The Conservation Foundation (1972, p. 61) was referring to this in National Parks for the Future when it stated: Any look ahead reveals that parks are preserved only by an understanding public, and they are used in pleasure only by a perceptive public. Hence, broad and deep environmental education is clearly a responsibility of the system. Aslo, at the First World Conference on National Parks, a discouraged delegate from Japan, Tetsumaro Senge (1972, p. 245), stated: Moreover, the attitudes of travellers are not always wholesome from the standpoint of National Parks. In these circumstances, National Parks are not producing the desired educational fruit.

These are but two of many examples of people expressing the need for interpretation to aid park management in promoting and caring for the resource at hand. However, what we do as civil servants can be justified only in terms of its contribution to society. So, while it can be argued that the promotion of and care of parks are a social benefit, the direct benefactor in this case is the resource manager, not the public.

While recognizing that this resource management element is a most important spin-off benefit of interpretation, we question
whether we can justify the current scale of financial resources being used for interpretation if park or reserve management is the principal aim.

**INTERPRETATION AS AN EDUCATION TOOL**

Probably the most common synonym for interpretation is education, in Ise's sense of imparting information and enlarging the knowledge of visitors.

An area which can be considered education, and which is a major responsibility of the interpreter, is a corollary of the basic concept of Tilden's that interpretation is provocation; namely, that the provocation cannot leave the visitor in mid air. It must be followed by a certain minimum of information in order to orient the person provoked. The interpreter must instruct, to some extent, and provide the visitor with information on where to go for more details to satisfy the curiosity aroused.

There is another area in which federal resource agencies can participate in the business of education, while at the same time staying clear of the provinces' constitutional terrain. Federal agencies should, and do, cooperate both with educational institutions and private organizations to provide research and educational resources. For example, the park naturalists should not take over the role of the teacher in outdoor education, but the park system should provide the resources, that is, areas within the park and park staff, for schools to develop their own effective outdoor and environmental education programmes.

There are several national parks and reserves where these kinds of cooperative programmes exist. For example, Point Pelee, Elk Island, and Wye Marsh all have conducted teacher workshops aimed at equipping the teachers to use the park or reserve effectively on their own, and thereby allow federal staff to continue their interpretation programmes for the general public without being swamped by student groups.

In general, this whole area of cooperative programming with educational authorities has not been adequately developed, particularly here in Canada. It is through this mechanism that the educational system, with the aid of resource management agencies, can concentrate on the job of teaching people the necessity of developing conservation principles and practices. The United States' National Park Service has a highly developed school programme which could be used as a model by Canadian agencies.
Pimlott (1968, p. 273) asked: *Should the educational role of Parks (Provincial and National) not have broader objectives than simply contribute to the recreational value of the experience?* He and others long have been concerned that too much emphasis has been placed on this element of interpretation by the federal agencies.

Others have questioned whether we can justify the scale of efforts currently being put into interpretation if recreation is the major aim.

A section of the Canadian Wildlife Service *Interpretation Policy* attempts to deal with this issue. It points out that there are relatively few people in our society who must hunt for their livelihood. However, there are growing numbers of people who desire, and indeed demand, that we preserve natural areas so that they can broaden their experiences and maintain their psychological balance through contact with the primitive world. With growing urbanization many of these people cannot understand the special language of nature, which, therefore, has to be interpreted to them. The demand is great and *interpretation programmes must exist to provide the opportunity to establish and maintain a link between the hearts of men and their natural heritage.*

Without this opportunity to relate emotionally with the natural environment, Canadians would be deprived of a widely felt need to develop as individuals in the full context of their natural environment.

Can we not justify our programmes on this basis alone?

**CONCLUSION**

Probably the interpretive programmes of federal agencies or other organizations do not exist for any one of the above four reasons alone. Rather, these four should be viewed as threads which, when woven together, form a pattern which is unique to any programme. For example, a private nature conservancy, or a small provincial park, may exist almost exclusively for outdoor education programmes. A migratory bird sanctuary may require a programme specifically to gain public cooperation in protecting an endangered species which frequents the area.

However, we would suggest that, given federal - provincial jurisdiction, growing urbanization, and the need to translate conservation attitudes into action, the federal pattern is clear cut at this point in time. Federal resource management agencies must provide opportunities for Canadians to experience, understand, and enjoy their natural heritage, and to develop an awareness of man's place in nature. These can be done best through an essentially recreational/inspirational programme which stimulates an interest in visitors and provokes them to explore further.
From our perspective, that is the answer to the question:

Interpretation - to what end?

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This paper consists of a brief review of three papers on the subject Uses of National Parks. The format for each of these papers is quite varied; and it has been the intention of this writer to attempt to comment on only the key issues in these papers, and to avoid a great deal of discussion on most of the secondary points.

The papers are:

1. Foley, J.P. and J.A. Keith - Interpretation in Canadian National Parks and Related Resources - To What End?

2. Gardner, J.S. - A Research Resource and Research as a Resource; and

3. Marsh, John - Recreation and the Wilderness Experience in Canada's National Parks

INTERPRETATION - FOLEY AND KEITH

From the outset, this rather concise paper is on target with a discussion of a current issue in park management, that is, what ends are park authorities seeking to achieve through interpretation?

In reviewing the subject, Foley and Keith see interpretation operating in four ways. It is a tool for attitude change, in essence, getting the visitor to comprehend the conservation message. Interpretation as a resource management tool is the second point. The third issue, and probably the one covered in the greatest detail, is the matter of interpretation as an educational tool. The final point is a discussion on interpretation as a recreational/inspirational experience.
It is recognized that the visitor does not have a clear and comprehensive understanding of how interpretation influences his overall park experience. For this matter Foley and Keith comment on how the entire subject of this broad approach to interpretation has been covered a great deal in the past in the literature. Foley and Keith do note that they are not developing new concepts. They are attempting to focus on the question of how much further park interpretive efforts should be pursued by park agencies. Basically, Foley and Keith are saying that more is better in terms of interpretation.

For a moment let us look at public reaction to interpretation in recent years. If one examines park interpretive programmes closely there are some very obvious soft spots. For example, hikes of two or three people, or slide shows for four in a theatre for forty, are not uncommon. Certainly there are the other extremes of over-extended programmes and staff, but there is unused capacity within the present programmes.

We are providing a wide variety of interpretative services now. Are we correct in attempting to pursue an expansion of these services? Should we not be attempting to consolidate our efforts and analyze the effectiveness of our current interpretative programmes and systems? A conference such as this must consider this latter question, as well as the projected visitor needs in parks on into the 1980's.

**RESEARCH - GARDNER**

This is a massive document of over fifty pages, including tables and other back-up materials. Unfortunately, the paper is too diffuse in its approach. It might have been better to focus discussion on fewer of the topics covered in the paper. In checking how the U.S. Conservation Foundation documented research at the 1971 U.S. Parks for Tomorrow Conference, it certainly examined the research area in a more focused way.

Some key points are raised by Gardner. One of the chief points is his documentation of Parks Canada's changing attitude to research. In particular he has examined how research is pursued in the Western Region, and he has made some comparisons of priorities in the east and west of the country.

I am of the opinion that Gardner does ascertain Parks Canada's current attitude to research, but he has dealt with this largely in the context of natural sciences, with some reference to the behavioural sciences. It is important to point out that in a thorough review of Parks Canada's research policy it is necessary to consider both the natural sciences field and the archaeology and history field. Please do not be confused. I am speaking very specifically of national parks in this comment. I am not referring to national historic parks.
Let me be specific about where I feel Gardner's research concepts in the area of the archaeology and history field are not broad enough. In this field national parks very much could be looked to for dealing with such questions as underwater archaeology in Georgian Bay National Park; the paleontological aspects of a location such as Prince Albert National Park; the archaeology associated with Point Pelee; and finally, such a modern question as the industrial archaeology and settlement, associated with the forest industry, at Kejimkujik National Park in Nova Scotia.

Obviously this is a specific point related to research and, within the large treatment of research, it relates only to ensuring that the overall policy on research is a comprehensive one. In attempting to summarize Gardner's paper and inform the reader of some of its more important points, I think the matter of defining a total comprehensive policy on research gets somewhat buried in the report. The commentary certainly is there, as well as the recommendation that a joint effort be made to coordinate future research activities between the scientific and governmental levels. Efforts to co-ordinate future research certainly is an important step, but there obviously is a lesson to be learned from the United States' situation. Similar recommendations were made in 1971 by the Conservation Foundation Conference. If we at this conference are to pursue similar recommendations on research, obviously there should be some consultation with our American colleagues to see how they have progressed with their proposals since 1971.

RECREATION AND THE WILDERNESS EXPERIENCE - MARSH

In approaching this subject, Marsh has demonstrated an understanding of the theme Uses of National Parks, as indicated for this section of the conference. His treatment of the subject demonstrates an understanding of the theme in its broadest context relating in the broadest terms to the resource base, to the user, and to the future implications of use.

In addition, he develops good documentation of the trends from 1968 to the present.

As a government administrator directly associated with parks, I take exception to the initial item raised by Marsh to the effect that wilderness has decreased in the past decade. The register of the Federal-Provincial Parks Conference provides a good overview of how much wilderness actually has been fully classified by park agencies in Canada, and is managed now specifically on this basis. In addition, the point could have been brought out that in total park systems' development, such as ecological reserves, wilderness rivers, and so on, the system also has evolved to a considerable degree. One would certainly support Marsh's argument that much Crown land that could have been looked upon as wilderness, may have been opened
up for other types of development, such as mining and lumbering, in the last ten years; but in the protected sense of true wilderness there has been a substantial gain in acreage in recent years.

The point I think Marsh should have made is that the trends of the 1970's and 1980's may be set very much by our own current economic conditions. In essence, how much more action are the federal and provincial governments going to take on establishing wilderness areas? Times may be too tough in the near future for further major gains in wilderness preservation.

In the area of wilderness user experiences, Marsh certainly has put together some interesting concepts. In many ways his discussion builds on some earlier ideas on the recreation experience developed by Kenneth Anderson in his text A User-Resource Planning Method. Personally I am delighted to see the whole area of historical insight and activity considered as an integral part of the wilderness experience. Too often the concept of wilderness use is perceived only in the context of physical rigour, with mental stimulation and historical use being down-played.

The final section of Marsh's paper is a discussion of the implications of future management. Obviously they warrant consideration by park managers, but I feel the section is somewhat lacking in that it fails to discuss future trends in any detail. Carrying capacity of wilderness is an issue which could have been drawn out more substantially on the basis of Marsh's research for this paper, and his own personal experiences.
Discussion from the Floor

SESSION: USES OF NATIONAL PARKS AND RELATED RESERVES
Tuesday, October 10, 1978 (Morning)

CHAIRMAN: R.C. Scace

PANELISTS: R.A. Reid, J.S. Gardner, J.S. Marsh, J.P. Foley

CRITIC: G.B. Priddle for R.J. Irvine

RAPPORTEUR: R.D. Needham

EDITORS’ NOTE: Each of the panelists presented his or her paper, except R.J. Irvine. G.B. Priddle summarized the Critique.

THE FLOOR: Research in Sunshine during the past 30 years shows that it is an unique, delicate area which needs protection and a commitment. Summer management of this area seems impossible and there seems to be no attempt to confine and regulate Sunshine's development.

My second point is that Canada and Canadians need a spectrum of recreational opportunities, and this has not been stressed at this conference. There needs to be a regional perspective to planning. To a degree Alberta has looked in this direction by providing trails near our major cities; Kananaskis Country is another case-in-point. There we have a situation where a decision must be made on huts versus campgrounds in the backcountry. The Egypt Lake experience is also a valuable lesson.

MARSH: I agree with your position on the need for coordination of recreation and other uses on a regional basis. Research in eastern British Columbia has shown that many gaps can develop in plans from different government levels and within different government agencies. If I may, I would like to say that the role of the city may be crucial in the future. The settled countryside, the farms may also be viable recreation resources. The problem with huts in parks seems to rest in two areas. First, they need to be rotated and have controlled or regulated access. Second, there is a caretaker problem, perhaps volunteers would help administer them.

THE FLOOR: Chairman, you have indicated that Parks Canada does want input for its policy statement. I believe this meeting is the appropriate forum for this process. But, I would like to know how the comments and criticisms of the conference will be built into the draft policy.
SCACE: Do we have someone from Parks Canada that can respond to this question?

THE FLOOR: This is an impossible question to answer. There is no way to score the collective response of this conference. Parks Canada has several senior staff members here, and we will listen. I am sure much of the contribution here can not help but influence any future decisions. The method of assimilation has yet to be decided; however, much will be left up to our Minister. Parks Canada, since May 1978 when the draft policy was distributed, has heard much more silence than advice of any type.

PRIDDLE: I would like to comment on the silence being experienced by Parks Canada. First, it is hard for the man on the street or the average citizen to respond to the draft policy. Second, conservation groups are tired. Parks Canada should use this early experience as a test-case, re-think their method of presentation, and present their position again. Parks Canada really does need a second level of debate and needs to develop a more effective feedback response mechanism.

GARDNER: The draft policy appears to be a tremendous advance forward, particularly for researchers. Yet, the draft policy bothers me because it is the practice that is important. We will all just have to wait and see what transpires.

THE FLOOR: My department has had conferences like this in New Zealand, but the unconverted as well as the converted were invited to participate. The workshops that were held were successful and provided many valuable lessons. Two such lessons were, (1) that in the area of monitoring over-use of wilderness, impacts are better determined by surveys of the sites than by counting heads, and (2) in the context of education and interpretation, we tend to be an elitist group because we believe we can do the interpreting better than anyone else. Visitors to our parks were more often than not treated as second class citizens. The New Zealand tourist industry wanted more entertainment in the parks, and the interpretation services that were really wanted suffered.

KEITH: The comparison of entertainment with interpretation is marvellous, it really is a revelation. I do question the position that some of us are elitists and that visitors in many instances are no more than grist for the interpretation machine. It is important that we keep distinct the interpretation concept from other means or ways of reaching the public with our message.
REID: It should be made known that outside groups and individuals are allowed to provide interpretive materials. It is not just Parks Canada's responsibility.

GARDNER: Interpretation is certainly one use for information and knowledge. The concept of entertainment is something else, and this disturbs me. Research in our parks needs to be nurtured, and the information obtained is not just another commodity. Research is a process that can inform today and pass on information and experience.

THE FLOOR: The *purist preservation ethic* is fine for some areas in Canada, like the west and the north. But it is not appropriate for developed Canada and the Atlantic region. The failures in the Maritimes are not relevant to the many cases presented in this conference. I think we need a new system, a system of marine reserves for Canada, reserves which would not promote conflict between the ethic and the historic or traditional way-of-life in the Maritimes. Parks Canada and the N.P.P.A.C. policies are not flexible enough for the Maritimes. Perhaps we can borrow from the United Kingdom's experience. May I ask what other more appropriate models are being studied for the Maritimes?

REID: I am certain that modifications can be made to take into account the experience of special localities, like the fishing villages and industries of the Maritimes. Perhaps we will hear later in this conference about alternatives or other models.

THE FLOOR: In reality the people of Canada are developing the new models for us. A good example is the St. Lawrence Islands National Park. The *heritage concept* represented here evolved from the discussions we had with people in the area. As an institution we are actively looking at the effect of our actions on people. The provinces may be doing a better job in this area with their public participation programmes. Policy is something we must examine in the context of individual experiences. The establishment of objectives and directions for policy is a dynamic process. Influences through time demand that existing guidelines be approved and be modified accordingly.

THE FLOOR: A valid point has been made from the floor. Little attention has been paid to the Maritimes. Perhaps we should become less concerned or preoccupied with western Canada and the province of Ontario.
**GARDNER:** Parks Canada is currently operating under 1968 policy on research, yet the 1978 draft is quite different on this point. In practice national parks are not offering the opportunity for research, especially the earth and life sciences, and they are not encouraging basic research.

**THE FLOOR:** May I say that research is definitely a use of national parks, and our existing policy shows that we are favourably disposed. I do not think Gardner fully comprehends the data he has displayed on research permits. The data only describe research which demands a permit. There is a large body of research that does not require the collection of samples of flora and fauna, and the set-up of research stations. This research does not require permits. Parks Canada has deliberately emphasized applied research in the past ten years. We have transformed basic research to applied research. The bulk of the work we pay for is for the collection of raw data. Unfortunately, many journals do not want data alone. We, therefore, prefer to create a documentation centre in Ottawa.

**GARDNER:** Research is research and I do not find one type more important than the other types. Research is research until a use is applied to it. Generalizations based on permit data are dangerous and accurate interpretation is frequently difficult. A very useful record of research activity is R.C. Scace's bibliography on Banff, and it provides bone crushing evidence. There is an obvious need to develop ties between the research community and Parks Canada, perhaps through advisory committees. I can envision visiting academics as resident scientists working in parks for a specified term. I can see Parks Canada people teaching courses on park management. It would be nice to see in-house Parks Canada material published in some way. Really, much of what goes on in national parks is of national and international importance, and only can be studied in parks, for example, glaciers as they feed water systems. To finish up, let me repeat major recommendations of my paper and say we need continuing evaluation research on park management, on ideologies, and on policies. We need an on-going and a past research data bank.

**THE FLOOR:** Does the draft policy statement allow for the implementation of Cowan's recommendations on research in national parks? It might be of interest to know that the Calgary office of Parks Canada dismissed the draft policy statement.
GARDNER: The draft policy statement is ambiguous enough to allow for the incorporation of much of what Cowan recommended.

THE FLOOR: Cowan's comments are very broad-ranging and there have been a variety of responses to them in Parks Canada.

THE FLOOR: I would like to know if Parks Canada would be receptive to the idea of a workshop approach as suggested by Lucas? I would also like to comment on the silence of environmental groups. The draft policy was distributed in mid-summer when most members were on holidays or out in the field doing research. Finally, I think we should dwell a bit longer on the consistency problem inherent in efforts at both preservation and development.

REID: There is disagreement with Mr. Faulkner's position on compromise. At some point we have to draw the line and experience confrontation in park management and planning. If zoning is to be effective it must be legislated, reviewed, and enforced. Interest groups must also be provided with open forums to challenge zoning. More examination of park classification as well as the zoning situation is needed.

THE FLOOR: This comment is more of a critique than a question. It bothers me that the draft policy has been available since May, yet I just saw it for the first time in my conference kit yesterday. In addition, why did extra copies of Cowan's report not come with Parks Canada people from Ottawa? We are spoiling this conference by staying with random questions about the draft policy. We need a workshop on the policy. I question in 1978 whether a single parks' policy is possible for this diversified and fragmented nation of ours. I wish Parks Canada had a single news outlet and I wish the chairmen of the sessions would produce a common lexicon of terms and phrases from the papers and the responses from all of us here.

THE FLOOR: May I suggest that the draft policy is an admission of the fact that we have not progressed. There is a rapid deterioration rather than an improvement of conditions in our parks. Parks Canada is not responsible for endangered species, yet parks conditions may be making the situation worse. In addition, while parks do not normally introduce non-native species, there is unintentional introduction, for example, weeds along railway lines and roadways. What is Parks Canada doing in this area of concern?

REID: In support of Parks Canada, the removal of outside species is being undertaken at Point Pelee, for
example. It is true we need monitoring inside and outside the national parks.

SCACE: To summarize the discussion, the depth of the commentary on research practices was quite impressive. It is unfortunate that the draft national park policy was not more widely advertised earlier in the year, and provided to all interested parties. A workshop session is to be arranged for Wednesday evening. We are slowly getting to the meat of the parks' problem, policy experience and field experience, their discrepancies and irregularities.
OTHER ALTERNATIVES

Tuesday, October 10th: Afternoon

Paper 16: THE PARKS OF ONTARIO
           G.B. Priddle

Paper 17: NATIONAL PARKS AND EQUIVALENT AREAS:
           THE BRITISH COLUMBIA EXPERIENCE
           T.E. Lee

Paper 18: LES PARCS DU QUEBEC:
           DES ESPACES A CREER
           J.D. Dufour, G.H. Lemieux, and G. Girard

Paper 19: ECOLOGICAL RESERVES IN CANADA
           WITH EMPHASIS ON BRITISH COLUMBIA
           B. Foster

Paper 20: NATIONAL PARKS AND
           SURROUNDING LANDS
           B. Sadler

Paper 21: NATIONAL AREAS PLANNING IN ONTARIO
           A LOCAL APPROACH
           G.R. Francis

Paper 22: THE PROMISES AND PROBLEMS OF COORDINATION
           IN PARKS DEVELOPMENT AND MANAGEMENT
           T.L. Burton

Paper 23: CRITIQUE
           R.S. Dorney

           DISCUSSION FROM THE FLOOR


THE PARKS OF ONTARIO
G.B. Priddle

INTRODUCTION

I tried to write this paper, initially, from a traditional academic approach. In as much as my training is in geography it naturally followed that I should:

1. Define what I mean by parks;
2. Put the parks of Ontario on a map;
3. Study the spatial distribution of the parks;
4. Make some statement on the adequacy of the Ontario park system in terms of total acreage and the distribution of that acreage. For instance, within Canada, Ontario fares well in terms of total acreage in parkland in an absolute sense, but rather poorly on a per capita basis. There are tremendous shortfalls of parkland acreage when compared to any theoretical norm, be it based on ecological or behavioural principles (Table 16.1).
5. And, finally, make some comment on the rightness and wrongness of current park planning and management in the province.

Unfortunately, what resulted was a terribly dull paper that did not in any way suggest what the issues are that dominate Ontario parks today. As a result of this, I decided on a second strategy that involved reviewing the files of the Ontario Parks Council, of which I have been the Chairman for the last three and a half years. What resulted from this review is a rather personal gut feeling of what issues have evolved and are facing the Ontario parks now and in the immediate years to come. I have tried to put them in some kind of logical order, but certainly not in any particular order of significance. An attempt will be made to illustrate each point by utilizing concrete examples from the experience of the Ontario Provincial Parks System, and, to a lesser extent, the experiences of the Conservation Authorities and the various programmes of Parks Canada within the province of Ontario. I have added, by way of an appendix to the paper, basic data on park acreage in the province (Table 16.1). The maps in Figure 16.1 and Figure 16.2 illustrate the distribution of parkland within the province.
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<td>8%</td>
<td>44%</td>
<td>23%</td>
<td>176%</td>
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**** Includes St. Lawrence and Niagara Commission Parks, and the Department of Highways roadside parks and wilderness areas from 1965 onward.
Table 16.1 - TOTAL ACREAGE OF FEDERAL AND PROVINCIAL PARK SYSTEMS IN CANADA cont'd

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**Total Increase in Acreage (10 years)**
- New Brunswick: 52,554
- Nova Scotia: 1,508
- Prince Edward Is: 1,760
- Newfoundland: 6,552
- Yukon: 1,900,125
- North West Terr: 5,170
- Parks Canada: 13,269,877

**Percentage Increase in Acreage (10 Years)**
- New Brunswick: 6.31%
- Nova Scotia: 25%
- Prince Edward Is: 25%
- Newfoundland: .3%
- Yukon: 172.8%
- North West Terr: 172.8%
- Parks Canada: 172.8%

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* Not including Wood Buffalo National Park
** Includes Gatineau Park-National Capital Commission from 1969 onward
*** Not including Wood Buffalo National Park (11,072,000) and Gatineau Park (88,000)
FIGURE 16.1 Provincial Parks in Ontario.
FIGURE 16.2 Parks Canada in Ontario.
THE LACK OF MONEY

In recent years most Ontario government agencies have experienced financial cutbacks. One result of this situation is that parks programmes seem vulnerable and are suffering severely. Money normally budgeted for land acquisition and development has virtually disappeared. Employees working on contract have not had their contracts renewed. Parks personnel are being moved laterally out of parks and into other branches of the Ministry of Natural Resources. All of this has had a demoralizing effect on personnel, resulting in many of them seeking, and finding, employment elsewhere.

In part, this rather frightening state of affairs can be blamed on the research community. The type of researchers who become interested in park matters tend to be rather religious in their zeal, and have a definite leaning towards the natural sciences. Occasionally some brave soul gets into the business of putting monetary values on the ecological value of natural resources, or the value of a recreational experience. Such attempts are usually treated with some disdain and, indeed, are sometimes labelled as dangerous by others involved in parkland research.

From a practical point of view, this does not really cause much of a problem in good times. In bad times a terrible reality emerges. Political decision makers, and indeed many professional and senior civil servants, see parkland as a frill, something that can be cut in terms of economic constraint. This situation is aggravated by the fact that, in hard times, the effective voices for parkland, the so-called environmental action groups, tend to become hard-up, resulting in the diminution of a much needed political pressure group.

POLICY AND LEGISLATION

One would hope that, in a democracy, a hedge against monetary constraint would be government policy and legislation. Unfortunately, the evolution of clearly defined park policy seems to be a relatively recent phenomena at both the federal and the provincial level. The Division of Parks of the Ontario Ministry of Natural Resources has just had approved a park policy document prepared by a committee of Cabinet (Government of Ontario, 1978). Four years ago, when the Ontario Parks Council was first established, it was given six green papers to review. These represented a new park classification system (Government of Ontario, 1977). The documents envisaged a park system that would include: Wilderness Area; Nature Reserves; Natural Environment Parks; Recreation Parks; Provincial Waterways and; Historical Parks.

These documents were much more than a revised park classification. They were a long way towards providing a rationale for the various types of parks, a means for determining the adequacy of an existing park resource, and a means for determining how to evaluate the
potential of a possible site to contribute to the overall park system. Other provisions included basic management guidelines for determining how parks should be zoned and managed, and the appropriateness of various recreational activities within particular parks and within particular zones within parks. The final submission that went to Cabinet, although not really changed, was watered down considerably. What really were left out were the targets, or the means of determining what, in fact, the park system would consist of, if the policy were fully implemented.

Similarly, at present, there is being circulated by Parks Canada a draft document entitled Parks Canada Policy (Parks Canada, 1978). This document states what the Parks Canada programme is and hopes to become; but this document, too, falls short of establishing actual targets or priorities. The reader comes away from the federal document wondering if it was a political decision not to be more specific about actual targets and how they are to be established, or whether, in fact, that has not been totally worked out yet by Parks Canada itself.

In terms of legislation, the Ontario Parks Act is lacking. There has been a good deal of call for a rewriting of the Act in recent years. The book Environment on Trial stated the need for specific reforms (Estrin and Swaigen, 1974). The Parks Council advised the Minister to fund the Canadian Environmental Law Association to review and research the Parks Act in terms of needed reform. This request was refused by the Minister. However, he noted that he was cognizant of the fact that Council had recommended that park boundaries and zones be given legal standing.

In the last year the Minister has received a submission, from David Estrin and Paul Eagles of the Faculty of Environmental Studies at the University of Waterloo, recommending a series of reforms to the Parks Act. Cabinet's approval in July, 1978, of the park policy has resulted in the need for some changes in the Act. In light of these considerations the Minister has now charged the Parks Council with reviewing and, if necessary, recommending changes to the legislation.

At the present time provincial parks in the province of Ontario have no legal standing. In other words, the will of the Minister determines not only their classification and zoning, but indeed their very existence. Boundaries can be changed without being reviewed by the legislature, and, by the same token, the affected public has no mechanism for questioning, or even being informed about, any pending changes to the park system.

The principal reform that is needed in the Parks Act is to give parks legal standing so that a master plan for a park would have the same status as a municipal or regional official plan. However, these are difficult times for such changes to be affected; for while the Minister has charged the Council with reviewing the Parks Act, he and his colleagues in government are asking for deregulation. Resolution 13 in California has struck a responsive cord in the hearts of Ontario's politicians.
A troubling question for many Ontarion's is whether or not parks can survive in an extractive ministry like the Ministry of Natural Resources. In this author's opinion, such survival is critical so long as the principal government ministry responsible for the management of Crown Land is the Ministry of Natural Resources. The nagging question is: will it be possible for the true worth of parks to be realized in a ministry whose senior civil servants are schooled into thinking about the environment in terms of its ability to produce, be it the production of board feet, hunting successes, or fish catches?

Related to this concern is the more subtle question of whether or not anyone, other than a member of a vociferous minority, can accept the need for places where nature is supreme, and man's only management decision would be to leave it untouched. I must say I find this a difficult notion to accept myself, particularly if the anthropocentric rationale for such places is to provide gene pools, to protect biological diversity, and to furnish an effective life support system. If indeed these are the ecological functions of natural places, is the hands-off approach the best form of management? Recent studies in Algonquin suggest that for both large and small mammals there is much better habitat in areas that have been burnt and/or cut. To what extent would other indicators of habitat diversity suggest the desirability of some form of human intervention in the management of natural places?

Again, I think the research community has failed us somewhat. There seems to be little in the way of concrete answers for management and park programmes suffer in the Ontario Ministry of Natural Resources, when it comes to justifying larger natural and wilderness areas whose primary function is to be natural. However, in terms of Ontario government organization it seems to me that the only viable place for the provincial park system is within the Ministry of Natural Resources. It is there that the battle must be won on the points that just have been raised, and it is there that the capability must exist for managing large tracts of parkland.

THE PROBLEM OF REDUCTIONIST THINKING

Park problems, like all environmental issues, are aggravated by reductionist thinking. Nowhere can this be better illustrated than in the management of Ontario's large multiple use or, if you will, large natural environment parks. Algonquin and Superior come to mind (Figure 16.1). Certainly the multiple use concept was, and continues to be, a rational and forward looking approach to land management. In fact, though, the concept of multiple use in Ontario parks has seemed to degenerate into a zoning exercise that really states you do your thing here and I'll do mine over there and we will try to keep out of each other's way. I think it is rather
fascinating that the park policy calls for two categories of large parks: natural environment and wilderness.

The number and location of both natural environment and wilderness parks are justified in terms of protecting representative natural areas. The basic difference is that one is seen as a multiple use park and the other is seen as a single use park. As a result we have parks like Lake Superior and Algonquin classified as natural environment parks and Quetico and Killarney labelled as wilderness areas (Figure 16.1).

In fact, multiple use really is not being practiced in either parks, like Algonquin, or on Crown Lands under timber licence. In fact, Algonquin and Superior are seen as anomalies within the natural environment category because resource extraction is stated as being one of their principal purposes. On Crown Land under timber licence, recreation use seems to have become a problem. More and more roads and entrance points are being closed, and where people can recreate is being controlled to a greater and greater extent.

The Algonquin Park Master Plan is an attempt within the Ontario Park system to come to grips with multiple use (Figure 16.3) (Government of Ontario, 1974). Logging is seen as continuing but in such a way as not to interfere with the interior users, that is, the canoe tripper. The timber operations now are controlled by a crown corporation, the Algonquin Forestry Authority.

1979 will see a full scale five year review of the Algonquin Park Master Plan. This will be an interesting exercise to follow. What I think will become obvious is what has to be done to make multiple use work, and why it has failed to date. It will become clear that silvicultural practices have been a failure since regeneration has been much less successful than had been anticipated, and the reasons for this are complex. The effort to properly inventory and monitor the resource stock has been a dismal failure; instead of selective cutting in the tolerant hardwoods on the west side of the park there really have been decades of high grading. There has been a tremendous misconception on the part of the forester as to what he had to prescribe to accommodate the recreationists. Careful, selective cutting was prescribed in the tolerant hardwoods, and strip shelterwood was rejected for selective shelterwood in the pine forests. These prescriptions were recommended because it was felt that a closed canopy must be maintained for esthetic reasons. The problems with this thinking is that few, if any, see the park from a vantage point that would be affected by the tightness of the canopy back from the lakes and portages. In the tolerant hardwoods this has resulted in very little regeneration of yellow birch, and, therefore, poor browse for large ungulates such as deer. One of the main reasons that tourists for years have gone to Algonquin is to see the deer; what the forester did for the recreationists was, therefore, counter productive.

Wildlife and fisheries biologists have studied extensively in Algonquin, yet little seems to have resulted in the way of management plans that would satisfy the overall goals of the park. There
FIGURE 16.3 Algonquin Provincial Park Master Plan.
is now a fisheries management plan being developed for the park; some would suggest that the fishery has been so decimated there may be little point in now coming up with a management plan.

In terms of the deer, great speculation rages as to the reason for their demise; habitat deterioration, wolves, and parasites all are given as possible explanations. From a management standpoint it never has been specifically stated as to whether we do, or do not, want specifically to manage the environment to encourage deer.

Most of Algonquin is zoned resource-utilization. Logging can take place in resource-utilization zones. By the same token, outboard motors have been banned on all but a few designated lakes (Figure 16.4). This motor ban is objected to by a great many of the traditional users of the park, particularly people who like to carry their outboard motors into lakes to troll for lake trout in the spring of the year. They argue that they should be able to use their motors in places where logging skidders and trucks are operated. The argument back is that the logging is done under restrictions that prevent it from interfering with canoe trippers; to which the fishermen respond that the timing and spacing of their activity will not interfere with canoe trippers either.

Killarney and Quetico are wilderness parks and, hence, the multiple use concept is rejected by definition. Single purpose parks would seem to solve the use problem for the reductionists, however, they do not. In Quetico the planners could not bring themselves even to zone the park (Figure 16.5). The map of Quetico is one big green wilderness zone. They could not see their way clear to denote some of the very important historical voyageur routes as historical zones, nor could they see their way clear to delimit significant natural features as nature reserve zones. Of greater importance is the inability of the planners, in the case of Quetico, to recognize the need for sensitivity to the traditional users of the park. The plan calls for the immediate removal of all outboard motors from the park. Most of the people who use Quetico are American canoe trippers from the midwestern United States. The only Canadians who use the park on a regular basis are residents of northwestern Ontario, particularly from the Atikoken area. Their use takes the form of fishing with motors on the northern tier of lakes within the park. The other traditional users of the park are the Indians, from the Lac La Croix Indian band, who act as guides, taking fishermen into the western side of the park. The Lac La Croix band is isolated, access to their reserve is only by plane or water, and guiding American fishermen is their sole source of income. The master plan for Quetico has caused tremendous consternation.

We see in Quetico and Killarney two parks dedicated to single purpose, wilderness (Figure 16.6). Such dedication seems to verge on sanctification in many ways. This is understandable as there is a justified feeling that such parks constantly will be challenged by other users. In Killarney the people in the village of Killarney want a road built along, but inside, the western edge of the park (Figure 16.6). They point out that, indeed, there already is a road running through the south of the park. They also suggest,
since much of the wilderness travel that originates in the park goes outside the park boundaries to both the north and the east, that this acreage should be added to the park, giving a much larger and more effective wilderness zone. A basic knee-jerk reaction by people dedicated to protecting wilderness is to say, no! There are only three wilderness parks in the whole park system, and their acreage must be defended at all costs. The difficulty with that, in Ontario, is that it convinces the northern people that they cannot in any way control their own destiny. Southerners can sanctify northern lands for a use for which Northerners have little sympathy.

The terrible irony here is that land can never become single purpose use even if it is sanctified as wilderness. It is surrounded by other lands and waters, in other use, that impact upon it, and, of course, the managers of the surrounding lands and waters are concerned about the impact of the wilderness upon them. Killarney's lakes are deadened by high acidity that is at least in part caused by the acid rain from the nickel smelters in Sudbury. Quetico now is threatened by a thermal generator that is to be built at Marmion Lake not far from Atikokan. Indeed, in the case of Quetico, the park and land planners within the Ministry of Natural Resources see the lands around the park as buffer zones that would allow less and less intensive activity as one gets closer to the park (Figure 16.5).

Killarney really is part of what was envisaged, in 1962, as a North Georgian Bay Recreation Reserve. Indeed, if one stands back from a map of Killarney Park and looks at the entire area that was to make up the Recreational Reserve one would probably draw the boundaries of the Park somewhat differently than they are at the present time (Figure 16.6). Certainly the La Cloche Mountains and the surrounding canoe routes should be designated as wilderness. From a boaters' standpoint much of the Georgian Bay shoreline should be a roadless area of natural coastline. The truth of the matter is that neither protection of the La Cloche Mountains and the surrounding canoe country nor the protection of the natural shoreline necessarily negates, from a behavioural point of view, a road from Killarney Village to Whitefish Falls. Again, reductionist thinking tends to want to make us stamp out our own little territory and ignore the rest of the world; unfortunately it cannot be done.

PEOPLE AND PARKS

In the last two decades the park's business has become much more the people's business than it ever was before. This probably can be accounted for by the fact that an increasingly mobile and affluent population has a desire to travel and experience the out-of-doors. Not all of us can afford cottages or yachts, or a vacation in an expensive resort hotel, so we look for alternatives. The principal alternative selected in the last twenty years has been camping; and, of course, much of this camping demand has been realized in Ontario by provincial parks. Increasing interest in
FIGURE 16.4 Outboard Motors in Algonquin Provincial Park.
FIGURE 16.5  Quetico Provincial Park Master Plan.
FIGURE 16.6  Killarney Provincial Park
activities such as canoeing, hiking, cross-country skiing, sailing, motor boating, fishing, snowmobiling, and scuba diving have dramatically increased the pressure on our parklands. Immediately associated with these factors is the potential for people-to-land conflicts and people-to-people conflicts. Too many canoeists in Killarney and Algonquin result in some lakes being overused, portages degraded, and campsites worn out. Too many campers in the Pinery and Outlet Beach mean vegetation dies back on the sensitive dunes with the possibility of their being leached and eroded (Figure 16.1). Too much fishing pressure in Algonquin, Superior, and Quetico already may have severely decimated the resources; we do not know! Canoeists do not like motorboats in Algonquin and Quetico, and cross country skiers dislike snowmobilers anywhere and everywhere. Suddenly parks personnel are put in the unenviable position of deciding who can go where, to do what, and how they can get there. The planners have to try to zone both spatially and temporally to prevent conflict between the loggers, fishermen, and canoeists in Algonquin Park. What campsites should be closed? Are there places where new campsites could be developed? How can sites suffering from overuse be rehabilitated? Should the number of parties entering a particular zone be limited by a quota system? Should portages be hardened by using woodchips? Does the design of the drive-in campground effectively accommodate the mix of people that are arriving in parks like Cyprus on the Bruce Peninsula? Will there be enough enforcement officers to accommodate a drunken bash if it develops at Turkey Point this weekend (Figure 16.1).

Up until the early sixties, the public's perception of park rangers ranked right up there with commandos, fighter pilots, and the mounties. For a government department like the Department of Lands and Forests, the parks and the people running the parks were their front window. American visitors praised the Ontario Park System and canoe trippers talked about the thrill of meeting the park superintendent in the middle of Algonquin Park. Park naturalists were highly regarded by park users, and all was well for the men-in-green.

In 1962 articles began to appear in the Toronto newspapers which described logging trucks rumbling over portages in Algonquin Park and all hell broke loose. The Algonquin Wildlands League came into existence; the forest industry mobilized its troops; and the fight was on. The Department of Lands and Forests published a provisional master plan for Algonquin which embraced the principal of multiple use. The Wildlands League responded by saying that there should not be any logging allowed on the western side of the park. Public meetings were held which, in turn, resulted in the establishment of an Algonquin Park task force under the leadership of no less than Mr. Ontario himself, the former Premier of the Province, Leslie Frost. A number of studies were commissioned. One of these was directed by the author and was called a Canoe Network Analysis (Clark, 1975). It reconfirmed earlier work done by Robert Lucas and myself. The big problem for the canoeists was not logging, but rather crowding and motorboats (Lucas and Priddle, 1964). It was this type of research that resulted in a quota
1964). It was this type of research that resulted in a quota system being established in both Algonquin and Quetico.

What came out of this early behavioural research was knowledge of the fact that public participation, if strictly dependent on the public meeting, left a great deal to be desired in terms of effectively representing the relevant client groups in the parks.

The master plan for Algonquin Park was released in 1974 and will be reviewed in 1974 (Government of Ontario, 1974). The Parks Council is responsible for the public participation aspect of this review exercise. It has been decided that a publication will be issued that represents what, in fact, the Ministry and the Parks Council perceive in terms of the plan's implementation and the issues that have emerged over the last five years. A series of alternative solutions to these issues will be included. The publication will receive wide circulation. People who over the years have shown an interest, or expressed an opinion, will be sent a copy of the publication. At the same time they will be notified of a series of one day sessions that will be run by the Parks Council in which there will be drop-in centers, question and answer periods, and public meetings.

Rowdyism, or what has come to be known in the literature as Anti-Social Behaviour represents, a pressing people problem for the parks system. In recent years the problem has become critical, particularly on the May 24th, or Victoria Holiday weekend. The phenomena of rowdyism seems to be both time and place specific. Long weekends are bad in parks in southern Ontario, particularly those with beaches. Rowdyism seems to be associated with youth, booze, drugs, stereos, and vans.

This past season saw the implementation of a partial booze ban. The ban was utilized in sixteen problem parks over the Victoria holiday weekend, and it seems to have been effective. There is a need, however, to go beyond writing and enforcing regulations. The design of campgrounds for example really is not cognizant of the variance in people and in the equipment they use.

A relatively new people idea in Ontario is the near urban parks (Government of Ontario, 1975, p. 12). The Parks Council considered three of them that are in various stages of development within the Ontario park system: Bronte, between Hamilton and Toronto; Short Hills, neighbouring St. Catherines; and Komoka, up river from London. Certainly there is something intrinsically appealing about having large natural environments near to where people live, particularly in a time of pending energy shortage. Certainly these developments are a response to the people problems. Unfortunately, the exercise has been nullified at the present time by a lack of money for acquisition and development.

This discussion of people and parks can be concluded by suggesting the need for a new kind of training for park personnel. Whether they be technicians, administrators, master planners, or designers, park personnel must be cognizant, and be able to take into consi-
deration both ecological and behavioural considerations in their work. In terms of recruiting, personnel who are more interested in squirrels and trees than they are in people should be discouraged from pursuing a parks career.

THE NATURAL NEED

I would like to conclude this paper by discussing that aspect of parkland that frustrates me the most. At the present time we have, in terms of extensive parkland in Ontario, three significant programmes in operation; the provincial parks system, the Parks Canada Programme, and the open space land under the control of the Conservation Authorities. At least two of these programmes are striving towards a careful enunciation of policy to describe what in fact it is they are trying to do. The Conservation Authorities rationale for open space land tends to have degenerated to a rather negative and singular concern; that of keeping people from building where they might get flooded or eroded. This failure of the Conservation Authorities is being recouped, at least to some extent, by the success of some municipalities to identify, and indeed attempt to protect, their sensitive areas; the regional municipalities of Waterloo, Halton, Mississauga, and Oxford County are cases in print (Geographical Inter-university Resource Management Seminars, 1978). Both the Ontario and the Canadian governments see the need to protect representative natural areas. However, when we look at the overall natural system there are vital elements that are missing:

1. A lack of coordination between agencies in the natural area business;
2. A lack of inventorying and monitoring of all lands serving a natural function;
3. A failure to state anywhere what the ecological and behavioural function of a natural system of lands and waters should be for the province;
4. A failure to identify how the components of an environmental system established to provide natural function should be managed.

Again, I have difficulty blaming officialdom for this problem. It seems to me, in large part, a failure of the research community to evolve an effective model of what should, even theoretically and hypothetically, exist in terms of natural space. What would the purpose of such space be, how much such space ideally function, and how would it be managed? Until such a model exists it will be difficult indeed to convince the politicians and the bureaucrats that there is a need to dedicate additional landscapes to natural use, particularly during a time of economic constraint.
REFERENCES CITED


The purpose of this paper is to provide a current status of various park related programmes operating in British Columbia; to provide an analysis and discussion of these programmes with an emphasis upon the relationships between the federal and provincial governments; and to provide some thoughts as to the direction of such programmes as we contemplate our own perspectives of the future.

As this is a conference on national parks, this paper deals primarily with matters pertaining to natural conservation. However, these can not be entirely separated from outdoor recreation issues and can not be divorced from the constitutional, administrative, and financial frameworks which we, as Canadians, have chosen as our governmental structure. Therefore, these latter items are dealt with when they occur as issues affecting national and provincial parks.

AN OVERVIEW OF EXISTING PARK-RELATED PROGRAMMES

AND INTERESTS IN BRITISH COLUMBIA

INTERNATIONAL INTERESTS

Two programmes of the United Nations' Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) have a bearing in the park field in British Columbia. These are the Man and Biosphere Programme and the Convention Concerning the Protection of the World Cultural and Natural Heritage, more commonly known as the World Heritage Convention.

Project Eight of the Man and Biosphere Programme is concerned with the conservation of natural areas and the genetic material they contain. Within Canada the programme has been defined as
including areas of land and coastal, or near-shore, environments that require long term management and planning for their protection and conservation. Candidate sites may be selected from sites inventories under the International Biological Program, existing national and provincial parks, Crown lands, wildlife areas, and related areas of demonstrated natural value. No formal designation of such areas has occurred in British Columbia to date although interest has been expressed in three park or park related areas. These three areas are: the Akimena-Kishinena Valley, adjacent to Waterton Lakes National Park in Canada and Glacier National Park in the United States; the Spatzizi Plateau Wilderness Park, a 675,024 hectare provincial park of outstanding wilderness and wildlife in north central British Columbia; and Moresbey Island, a unique marine coastal environment comprising the southern portion of the Queen Charlotte Islands (Figure 17.1).

The World Heritage Convention provides for a programme that is distinct from the Man and Biosphere programme in two respects. Firstly, in qualifying for the programme, areas must be adjudicated as being of outstanding universal significance. Secondly, the Convention includes not only areas of natural significance, it also concerns itself with sites of international interest from a cultural viewpoint, including areas of archaeological, ethnological, and anthropological value. Within British Columbia two areas have been suggested (Figure 17.1). They are the St. Elias mountains, adjoining the Yukon Territory and Glacier Bay National Monument in Alaska and Anthony Island Provincial Historic Park, a major artistic and archaeological site of the advanced Haida Indian culture in the Queen Charlotte Islands.

NATIONAL INTERESTS

The federal government's interest in British Columbia has been expressed through its programmes of national parks, national historic parks, interest in corridor related conservation projects, and various individual programmes relating to youth employment, economic development, environment, and fisheries.

There are five national parks in British Columbia: Pacific Rim, established in 1970, Mount Revelstoke, in 1914; Glacier, in 1886; Yoho, in 1886; and Kootenay, in 1920. With the exception of Pacific Rim the dates of establishment clearly indicate that these parks are part of the original Rocky Mountain base of the national park movement in Canada. The fifty years between the establishment of Kootenay in 1920 and Pacific Rim in 1970 indicate one of the fundamental problems with the national park system in Canada, namely the need for provincial level agreement prior to the establishment of any national park in Canada.

These are only two national historic parks in British Columbia, Fort St. James and Chilkoot trail portion of the Klondike International Gold Rush Park. The latter still is not established but is in the agreement stage.
FIGURE 17.1 Areas of current interest to U.N.E.S.C.O. Programs.

FIGURE 17.2 Areas of active national interest in British Columbia.

FIGURE 17.3 Provincial Parks of potential national significance.
Two areas have been identified for study as part of the federal interest in corridors. They potentially might become a part of a joint agreement between the provincial and federal government as part of the federal Agreements for Recreation and Conservation programme. These two areas are: the Alexander MacKenzie Trail, the first Canadian land link to the Pacific; and a Victoria area corridor tying in coastal ocean frontage, military history, and underwater marine park potential. The above summary includes only those areas which are currently active (Figure 17.2). There is, and has been expressed, interest in many other areas for national park purposes.

BRITISH COLUMBIA'S PROVINCIAL PARKS AND RELATED CONSERVATION AND OUTDOOR RECREATION PROGRAMMES

In many respects the history of British Columbia parks follows a pattern similar to that of other Canadian provinces. Early parks were created by special statute, for example, Strathcona in 1911. Early administration was carried out by the Forest Service. A special programme and legislation were created in the late 1950's and early 1960's, and the system underwent rapid development and expansion in the late 1960's and early 1970's. The park system currently encompasses over 340 areas covering 4,522,345 hectares. Individual parks range in size from Tweedsmuir, covering 981,121 hectares, and Spatzizi, covering 675,024 hectares, to small day use and wayside areas of only a few hectares.

While the general history of British Columbia's parks follows the pattern of other provinces, there are a number of special distinctions within the system that make it different from the others. These include its classification system, its number of parks which potentially have greater than provincial significance, special legislative mechanisms, a diverse pattern of management delivery for outdoor recreation purposes, and an uniqueness of management structure.

CLASSES OF AREAS UNDER THE PARK ACT

British Columbia's park classification is based upon two distinctions: permitted resource activities and people served. Class A parks are fully protected natural or historic parks in which no commercially extractive industrial uses are permitted. This class includes the majority, that is 252, of the provincial parks. Class B parks permit discreet and controlled resource extraction. These parks are, in fact, historical anomalies from a previous time when resource extraction was generally permissible within all parks. There are only six of these areas left and this class is not in use now for newly-created parks. Class C parks are local parks serving small communities in outlying and unorganized parts of the province. There are sixty-two such parks. They are managed by a local board appointed by the Minister, receive virtually no provincial funding, and are essentially an interim service on its way to being trans-
ferred to local government when the opportunity arises. Finally, there are Recreation Areas which are not provincial parks but are managed under the Park Act. Generally this designation has been used for areas in which outdoor recreation is the primary purpose but in which controlled industrial uses, such as forestry and mining, and commercial uses, such as ski hills and lodges, are permitted. There are twenty such areas in the province.

AREAS OF POTENTIAL NATIONAL SIGNIFICANCE


In addition to the above there are other sections of provincial parks, as well as undesignated Crown land, which might be candidates for national designation; and certainly the Provincial Historic Park on St. Anthony Island is of national if not international significance.

SPECIAL LEGISLATION

An amendment to the Park Act in 1973 led to eighty-four parks being protected by statute. Changes to the boundaries of these parks now would require an amendment by the provincial legislature.

DIVERSITY OF OUTDOOR RECREATION AND CONSERVATION PROGRAMMES

In addition to the Provincial Parks Branch, four other government agencies, the Forest Service, Ministry of Environment, Fish and Wildlife Branch, and Fitness and Recreation Branch, have a direct bearing on our field of interest. The Forest Service is second only to the private sector in supplying campsites in the province and provides many backcountry recreation opportunities. The Ministry of Environment is directly responsible for the establishment and management of ecological reserves, and British Columbia pioneered ecological reserve legislation in Canada. In addition, this Ministry, through the public lands system, has a system of recreational reserves, estimated at over 2,000, which are small sites reserved for potential outdoor recreation uses as Forest Service sites, provincial, or local parks. The Fish and Wildlife Branch directly administers a number of wildlife conservation areas as well as carrying the responsibility for wildlife protection.
throughout the province. Finally, through the Recreation and Fitness Branch, a system of grants is available to local and regional governments, as well as to clubs and organizations, for the provision of outdoor recreation facilities and municipal and regional levels of service.

UNIQUENESS OF STRUCTURE

British Columbia was one of the first, and is still one of the few, provincial governments to form a Ministry which encompasses the full range of conservational, recreational, cultural, and historical dimensions associated with park related endeavours. Encompassed within this Ministry of Recreation and Conservation are the following major programmes: provincial parks, fisheries, wildlife, heritage, culture, fitness, and recreation.

This collection of programmes housed in one Ministry provides a mechanism for integrating services across the resource based and people based dimensions of our programmes.

AN ANALYSIS OF NATURE CONSERVATION, OUTDOOR RECREATION, AND ADMINISTRATIVE MODELS AS APPLIED IN BRITISH COLUMBIA

NATURE CONSERVATION MODELS

There are essentially three hierarchical models applied to the systematic preservation of natural areas in British Columbia. These are the international model as utilized in the Man and Biosphere and World Heritage programmes, the national parks' model as developed by Parks Canada, and the provincial model as applied to the systematic selection of provincial parks in British Columbia. The latter also is utilized by the Ecological Reserves Unit of the provincial Ministry of Environment.

THE INTERNATIONAL MODEL

The Man and Biosphere and World Heritage Conservation programmes both use a system of representative biogeographical areas, called provinces, within North America, the Nearctic realm. Eleven of these natural provinces fall within Canada and four of those, the Silkin, Yukon taiga, Rocky Mountains, the Canadian taiga, fall mainly or partially within British Columbia (Figure 17.4).

Silkin. a temperate rain forest exemplified by Silkin spruce, Douglas fir and cedar. Within this province lie the following major parks: Strathcona, Cape Scott, Naikoon, Tweedsmuir, Garibaldi, and Manning Provincial Parks and Pacific Rim National Park.
FIGURE 17.4 International Conservation Model.
Yukon Taiga: a temperate needle leaf forest characterized in this area by great altitudinal variety. Depending upon the precise southern location of this line, this province could include Atlin, Mount Edziza, and Spatzizi Provincial Parks as well as the Canadian portion of the Klondike International Gold Rush Park.

Rocky Mountain: roughly forty percent of this major north American biome is contained within British Columbia. This biome is characterized by a mixed mountain and highland system with complex zonation ranging from desert to tundra-like conditions. Four national parks as well as a large number of outstanding provincial parks occur within this biome.

Canadian Taiga: this biome, characterized by temperate needle-leaf forests, is the largest single biome in Canada. Only a small portion of it falls in British Columbia and there are no major national or provincial parks within it.

THE NATIONAL MODEL

The natural systems model advocated by Parks Canada calls for the creation of national parks within each of the forty-eight defined natural regions of Canada. Nine land and three water units of these natural regions fall within British Columbia (Figure 17.5). Detailed characterization of these natural regions and the degree of current representation is not provided in this paper. Suffice it to say that, with the exception of Pacific Rim, existing national parks are located within a small geographical area and provide for over-representation of the southern Canadian Rocky Mountains. It is also true that existing provincial parks are of sufficient quality and distribution to permit representation of a number of the remaining natural regions.

THE PROVINCIAL MODEL

The natural system plan being used within British Columbia calls for major representative natural parks in each of twenty-three natural regions, supplemented by minor natural parks which would pick up any remaining representative, unique, or special natural features. While detailed assessment is still underway, it is believed that seventeen of the regions may be adequately represented within existing parks, while five regions, the Queen Charlotte Mountains, Southern Coast Mountains, Alberta Plateau, Hecate Lowlands, and the Cassiar-Omineca Mountains are not satisfied within the current system (Figure 17.6).

The major conclusion that can be drawn from the above models is that they provide for a logical and systematic hierarchical method of establishing priorities for natural conservation. Furthermore, excepting the administrative complexities, the international, national and provincial requirements are largely in place through existing national or provincial parks.
FIGURE 17.5 Natural Regions: Natural Systems' Model of Parks Canada.
FIGURE 17.6 Natural Regions: Provincial Park System of British Columbia (as proposed August 1978).
OUTDOOR RECREATION MODELS

For those who demand rationality and order in the provision of outdoor recreation opportunities, these will not be identified easily in national or provincial programmes in British Columbia.

Federal programmes, include proposed initiatives under the Agreements for Recreation and Conservation, economic development incentives, and youth or work based initiatives related to employment. A variety of other federal programmes such as tourism, small craft harbours, salmonid enhancement, and international migratory bird regulations, also impact upon the outdoor recreation scene. In addition, there are less overt dimensions of federally impacting actions relating to such diverse elements as taxation and policies respecting federally held lands. Each of these impact upon the provincial scene in a unique fashion.

The provincial outdoor recreation picture previously has been defined. It does not constitute an outdoor recreation model but a set of loosely amalgamated programmes, sometimes additive and sometimes overlapping in nature, performing in a reactive sense to real or perceived public and political needs. Its greatest assets lie in the range and diversity of its management delivery systems and the complexity and geographical dispersion of natural resources to satisfy systems requirements.

The lack of a systematic approach to the provision of outdoor recreation opportunities is a matter which directly impacts programmes which strive to conserve natural features. The features themselves have been, and continue to be, primary facilities for outdoor recreation experiences, creating impacts which, under heavy population pressure, can result in losses of the natural values which are being preserved.

ADMINISTRATIVE MODELS

Administrative issues are deeply wrapped in constitutional, political, and bureaucratic posturing and their origins pre-date Confederation. Administrative systems used to date can be broadly characterized by the following three categories: line management models, agreement models, and special programme models.

Line Management Model

This is the normal form of administration toward which both national and provincial park agents strive. The line management model is characterized by jurisdiction over resources, special legislation, independent financing, and direct authority over both management policies and programmes. Within the Canadian constitutional system line management by a federal agent in a resource related area normally is met with opposition at the provincial level. Such opposition largely accounts for the current imbalances which occur within our national park system.
Agreement Model

This model is exemplified in the system of conventions used in the U.N.E.S.C.O. programmes and is inherent in the proposed federal programme of Agreements for Recreation and Conservation. It consists of some or all of the following elements: a signed agreement containing a set of principles acceptable to all parties; a method of assistance for planning, research, conservation, and, in some cases, development; and a management arrangement utilizing a flexible system of existing or modified legislation.

Special Programmes Model

This model is exemplified in unit programmes following a special course of action. Such programmes often appear to relate indirectly to parks or outdoor recreation and therefore impact across jurisdictional lines without previous consultation. Employment and economic development incentives are examples of this type of action.

ISSUES AND DIRECTIONS FOR THE FUTURE

NATURAL SYSTEMS

The summary of the conservation of natural systems in British Columbia has shown that international programmes have not been implemented, the national programme is imbalanced, and the provincial programme is in a relatively advanced state. This situation illustrates a point that is often misunderstood. While there will continue to be philosophically based questions relating to the need for the conservation of large natural area parks, the fundamental issue with respect to the achievement of national or international interests centres around administrative roles and mechanisms. We are faced in Canada with a number of questions in this regard. Is there agreement toward the conservation of representative natural areas of Canadian interests? Should the national park system be completed utilizing the national natural system's model and the line management models exemplified in the current system? How should other natural areas of national interest, but outside of national parks, be dealt with? My personal position on these questions tends to be pragmatic.

Initially we should seek an agreement model convention stating a set of principles agreed upon by all parties toward the conservation of natural areas of national significance. Such an agreement might recognize two administrative mechanisms for achieving this intention. One would be the existing national park system. The second would involve an administration form following the U.N.E.S.C.O. type convention.

I believe a system of national parks as recommended by Parks Canada is desirable and attainable and this statement is based upon the following perceived conditions:
1. National parks are in the national interests and represent one simple but effective mechanism to achieve a single comprehensive statement of nationhood. Such a system recognizes the cultural and geographic diversity of our country and contains the basic natural conditions which are part of our confederation heritage.

2. The federal government will meet its primary commitment that such areas will be managed in the national interest and legislated and financed in this manner. This commitment has not been fully realized in the past and to this end the federal programme would require two basic changes in its past activities. Firstly, the full costs of establishment of all such areas should be borne by the federal government. Secondly, appropriate complementary programmes should be instituted for relieving problems in the exterior zone of influence of national parks.

3. Administrative models other than the line management model need not be applied to a system of national parks. I am not convinced that there are any demonstrable advantages to alternative administrative mechanisms and in my experience opposition to the line management form has been less of a political statement than an extension of bureaucratic wrangling by protective federal and provincial civil servants.

The national park model should not be applied beyond the system of national parks. Should natural areas other than national parks be identified as being of national or international interest they should be protected and managed under a convention system utilizing a provincial capacity for their research, planning, and management. I do not see a federal line management role in such areas as a system of designated national landmarks, recreation areas, or equivalent administrative designations.

OUTDOOR RECREATION

It appears that the primary responsibility for outdoor recreation, as in the past, will continue to be carried by the provinces. Better integration of federally related programmes, however, could produce more satisfactory results than have been achieved to date. The following recommendations therefore are directed toward defining a federal responsibility which does not involve a line management type of structure or system in the field of outdoor recreation.

Coordination of Federal Programmes

A structure should be initiated or an existing structure should be modified to create at the federal level a mechanism for monitoring and coordinating federal policies and programmes in such diverse areas as national parks, employment incentives, economic development, fisheries, taxation, and federal lands.
Research

A federal agency should be assigned outdoor recreation and related research responsibilities as a central service to all the provinces. Such an agency should be designed so as to be responsive to provincial needs.

Physical Inventories and Planning

The lead roles that the federal government has played in inventory and preliminary planning of natural areas should be reduced. Under a convention type of agreement provinces should be responsible for researching and bringing forth recommendations for new areas which meet the conditions of the convention.

Administration

As has been indicated previously, past programmes at both the federal and provincial levels have been based upon one administrative model, the line management model. As has been implied in previous sections of this paper, three separate administrative forms should be recognized and utilized.

1. In the context of line management, line management responsibilities of the federal government should end with the completion of the national park system.

2. In the context of cooperative agreements, cooperative agreements should be the primary method of achieving joint interests in natural areas conservation and outdoor recreation. Such agreements should be carried out under a signed umbrella convention, or conventions, which state the fundamental principles which are to be realized. Two of the principal roles of the federal government, under the convention system, would be to provide a forum for dealing with matters of multi-provincial interest and to provide a mechanism for integration of various federal programmes to assist in achieving convention principles.

3. In the context of special programmes, incentive programmes are part of our political and public service systems at both the federal and provincial levels. As practiced in the past these have involved a variety of federal programmes usually indirectly related to conservation or outdoor recreation but directly impacting in these areas.

Previously outlined activities, such as employment incentives, economic development incentives, and taxation policies, are part of the special programme structure. It would not be over-critical to state that, with few exceptions, past programmes have been misdirected, or at their best, incomplete in establishing a permanent and meaningful contribution to parks and outdoor recreation. This does not imply that such programmes should be scrapped. As part of a three part approach involving line administration and cooperative agreements, the special programmes provide a form of
incentive administration which can be used to stimulate activity in the primary delivery mechanisms. The convention system and the cooperative agreements provide an overall umbrella as well as an integrative mechanism through which federal special programmes can be directed in a manner which will meet previously agreed upon provincial priorities.

In summary, as we advance into the future, I see the following important steps toward the rationalization and realization of mutual interests in our field.

1. Umbrella conventions stating mutually agreed upon federal and provincial principles regarding the conservation of areas of national significance, and mutual and cooperative endeavours toward the realization of outdoor recreation needs.

2. Implementation of the system of national parks to its fullest possible extent under the proposed national park system plan, followed logically by a realization of international programme objectives as stated under U.N.E.S.C.O. agreements.

3. A new cooperative agreements programme supplemented by a coordinated federal form of incentive administration reactive to and responsive to provincial requirements.

The first two steps I see as essential cleaning up procedures, methods of consolidating and putting in place existing programmes and providing a way toward an essentially different administrative mechanism. This mechanism is contained in step 3 and constitutes, in my view, the future direction which our Canadian programmes must take.
This paper brings up first the situation prevailing in Québec in matter of parks prior to November 1977 (declaration of a new law on parks) and defines the new strategies adopted by the actual government. Discussions are also presented concerning the problems of conservation and outdoors in Québec more precisely within the non-organized mid-North.

In Québec, concerns with respect to the protection of the environment and the conservation of non-renewable natural resources constitute a most recent element within the provincial legislation. Many years of economy basically extractive and too often despoiling, linked to a profound tradition of outdoors and so-called recreative activities based solely on hunting and fishing, have lead to many aggressive attitudes toward the environment. If we exclude the national federal parks, the true parks of Québec have never existed and remain to be established as such. The territories designated as parks have never constituted conservation areas devoted to educational, interpretative and re-creational activities. On one hand, the reserves were established for hunting and fishing without precise planning schemes whereas the parks were localized and outlined to favour the logging and mining enterprises.

Actually, the creation of a real park network must constitute a national priority. This operation must include the whole provincial territory, especially the Mid-North. Hopes are permitted from the new concepts and policies put forward by the actual administration. It is an urgent matter where the long term approach of the economy must struggle to find its path.
L'ére des parcs n'en portant que le nom ou ayant comme statut juridique celui d'une réserve est maintenant révolue. (M.T.C.P. Vers un nouveau parc de la Gaspésie, 1978, 3).

Pour les besoins de la présente communication, il importe de poser le problème de la situation en matière de parc au Québec avant novembre 1977, de définir les nouvelles stratégies adoptées par l'État et de présenter les résultats des premières opérations. Quelques réflexions sur la problématique de la conservation et du plein air au Québec ainsi que sur le problème de la protection des milieux mi-nordiques complèteront cet exposé.

Au Québec, des préoccupations ayant trait à la protection de l'environnement et à la conservation des ressources constituent un élément tout à fait nouveau à l'intérieur des législations provinciales. Des décennies d'économie foncièrement extractive, voire expoliatriae, liée à des traditions de récréation et de loisir de plein air reposant également sur des attitudes agressives et même destructrices du milieu naturel (activités presque exclusives de la chasse et de la pêche), ont abouti à des situations catastrophiques dont on peut difficilement concevoir les correctifs.

De véritables parc n'ont jamais existé au Québec et c'est pourtant là qu'on utilise le plus fréquemment le vocable parc. Le concept universel de parc n'a jamais vraiment pénétré au Québec et pour cause. Presque tous les modes d'utilisation du sol correspondant à des espaces circonscrits par des limites précises s'appellent des parcs. Mentionnons les parcs industriels, les parcs de maisons mobiles, les parcs de voisinage dans une ville, les parcs de camping et pique-nique, etc.

Il en est ainsi pour les réserves. Des espaces sont désignés comme réserves forestières, d'autres comme réserves de chasse et de pêche et on continue à utiliser le mot réserve dans le cas d'un territoire protégé exclusivement pour des fins scientifiques. On retrouve en outre des centres d'interprétation de la nature, des centres écologiques, des forêts d'observation, des sites historiques, bref toute une gamme de territoires ayant chacun des vocations spécifiques basées principalement non sur les qualités intrinsèques du milieu biophysique mais sur les pratiques commerciales incontrôlées. En 1969, pour la première fois les concessionnaires forestiers, par l'intermédiaire du Ministère des Terres et Forêts, commencent à soumettre au Service de la Planification pour étude leurs projets annuels de coupe de bois faite à l'intérieur des parc (Corporation des Ingénieurs forestiers du Québec, 1974, 57).

Les facteurs qui ont accru la confusion au niveau des concepts en ce qui a trait à la conservation ont été nombreux. Le premier qui a eu une influence énorme a été le fait que les parc au
Québec ont été créés à partir de lois individuelles. D'une part, les réserves ont été des territoires de chasse et de pêche, tandis que les parcs n'existaient que sur le papier, car ils ne connaissaient pas une vocation nettement définie ou une utilisation déterminée en fonction d'un schéma d'aménagement. De plus, les parcs ont été localisés et délimités suivant les désirs des principaux utilisateurs, soit les compagnies forestières et les consortium miniers. En fait, les territoires désignés comme parcs n'ont jamais constitué des espaces de conservation ou de véritable récréation de plein air.

A ce second facteur s'est ajoutée la surimposition d'une grille d'utilisation des ressources fauniques et en particulier ichthyologiques pour le bénéfice presque exclusif des touristes étrangers et de quelques privilégiés. Jusqu'en 1956, le nombre de visiteurs étrangers a toujours dépassé le nombre de visiteurs québécois dans les parcs et réserves. (C.I.F.P.Q., 1974, 43). En quatrième lieu, les réserves forestières ont servi presque exclusivement à la pratique de la chasse et de la pêche, car il n'y avait que cette activité au calendrier des loisirs. Comment pouvait-on concevoir d'autres concepts de développement quand le Ministère responsable de l'aménagement de l'environnement pour des fins touristiques et de récréation de plein air ait porté le nom de celui du Tourisme, de la Chasse et de la Pêche.


LES PARCS ACTUELS, DES EFFORTS GASPILLES

DES LOIS AD HOC

Les premiers efforts de conservation au Québec ont abouti à six opérations législatives majeures ainsi qu'à la création de quatre parcs et d'une vingtaine de réserves de chasse et de pêche.

Ce sont des lois individuelles qui ont stipulé la création des quatre parcs provinciaux existants, à savoir les parcs des Laurentides, Mont-Tremblant, Gaspésie et Mont-Orford. Tous les autres territoires désignés comme tels ont été créés en vertu de la loi de la conservation de la Faune. Cette dernière, comme le faisait d'ailleurs la loi de la Chasse et de la Pêche, autorise le lieutenant Gouverneur en conseil à créer des réserves de chasse.
et de pêche qui ont avant tout pour objectif l'aménagement de la faune en vue de la pratique exclusive de la chasse et de la pêche.

Faute de loi-cadre adéquate on a dû également créer en vertu de ces deux dernières lois, des parcs qui n'ont que de lointaines relations avec la chasse et la pêche comme par exemple, le parc du Mont Ste-Anne, le parc Paul Sauvé à Oka, le parc de l'Île Bonaventure, etc. Ainsi, on créait des parcs de récréation intensive à partir de la loi de la conservation de la Faune.

On constate en outre que des quatre territoires ayant un status juridique de parcs, seul celui du Mont Orford a un status réel de parc. Il en résulte que si la superficie des territoires ayant un status juridique de parc s'élève à 5,200 milles carrés, chiffre très impressionnant, la superficie bénéficiant du niveau de protection inhérent à la notion de parc, s'établit plus modestement à environ 50 milles carrés soit 0,008 pour cent de la superficie totale de la province. A titre de comparaison, les chiffres correspondent à 1 pour cent pour le Maine, 0,6 pour cent pour l'Ontario, 1 pour cent pour l'État de New York. En d'autres termes, le pourcentage de l'Ontario, pour ne retenir que le plus faible, est de 75 fois supérieur à celui du Québec. Ces chiffres ne comprennent pas les parcs nationaux ni pour le Québec, ni pour les autres états ou provinces.

Le réseau provincial des parcs et réserves compte 27 et 35 réserves publique de chasse et de pêche totalisant environ 5,200 et 31,000 milles carrés, soit environ 7 pour cent de la superficie totale du territoire québécois. Il s'agit d'un espace réservé en principe pour les loisirs de la population québécoise et étrangère. Contrairement à la des autres provinces canadiennes il n'existe pas au Québec de mode de classement des parcs et réserves (C.I.F.P.Q., 1974, p. 66). Néanmoins on peut dire que les parcs visent à assurer la protection de la faune alors que les réserves forestières veulent assurer un approvisionnement constant en bois, protéger les bassin hydrographiques et la faune et constituer des territoires publics de délassement.

UNE TYPOLOGIE

La méthode de classification que nous avons adoptée correspond en gros à celle de la C.I.F.P.Q. Ainsi nous avons:

1. Les réserves forestières polyvalentes;
2. Les parcs naturels de conservation;
3. Les parcs naturels de récréation;
4. Les réserves de chasse et de pêche;
5. Les réserves de pêche au saumon.

Une liste complète de cette classification des parcs du Québec apparaît au Tableau 18.1 et 18.2 en continuation.
## Tableau 18.1
**LES PARCS DU QUEBEC**

### 1. Réserves forestières polyvalentes
- Gaspésie
- Laurentides
- Mont-Tremblant

### 2. Parcs naturels de conservation
- Bonaventure
- Bic
- Chutes Montmorency
- Chutes Darwin
- Chutes Ste-Ursule
- 15 non-exploitées

### 3. Parcs naturels de récréation
- Mont Orford
- Mont Ste-Anne
- Paul-Sauvé
- Côte Ste-Catherine
- Dollars-des-Romeaux
- Ste-Véronique
- Ile de Boucherville

### 4. Réserves de chasse et pêche
- 20 exploitées
- 15 non-exploitées

<table>
<thead>
<tr>
<th>Exploitées</th>
<th>Non-exploitées</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aiguebelle</td>
<td>Assinica</td>
</tr>
<tr>
<td>Anticosti</td>
<td>Baie-Comeau</td>
</tr>
<tr>
<td>Baillargeon</td>
<td>Baie James</td>
</tr>
<tr>
<td>Baldwin</td>
<td>Causapscal</td>
</tr>
<tr>
<td>Cap-Chat</td>
<td>Chicoutimi</td>
</tr>
<tr>
<td>Chi-Chocs</td>
<td>Shutes Ste-Phillippe</td>
</tr>
<tr>
<td>Dumièrre</td>
<td>Forestville</td>
</tr>
<tr>
<td>Haute-Mauricie</td>
<td>Frontenac</td>
</tr>
<tr>
<td>Joliette</td>
<td>Ixworth</td>
</tr>
<tr>
<td>La Vérendrye</td>
<td>Kipawa</td>
</tr>
<tr>
<td>Mastigauge</td>
<td>Labrieville</td>
</tr>
<tr>
<td>Matane</td>
<td>Parke</td>
</tr>
<tr>
<td>Mistassini</td>
<td>Petite-Nation</td>
</tr>
<tr>
<td>Papineau-Labelle</td>
<td>Pontiac</td>
</tr>
<tr>
<td>Portneuf</td>
<td>Duchenier</td>
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<tr>
<td>Rimouski</td>
<td></td>
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<tr>
<td>Port-Daniel</td>
<td></td>
</tr>
<tr>
<td>St-Maurice</td>
<td></td>
</tr>
<tr>
<td>Sept-Iles - Port-Cartier</td>
<td></td>
</tr>
<tr>
<td>Chibougamou</td>
<td></td>
</tr>
</tbody>
</table>
5. Réserves de pêche au saumon

<table>
<thead>
<tr>
<th>Petite-Caspadédia</th>
<th>Restigouche</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baie Trinité</td>
<td>Romaine</td>
</tr>
<tr>
<td>Cap-Chat</td>
<td>Ste-Anne</td>
</tr>
<tr>
<td>Darmouth</td>
<td>St-Jean</td>
</tr>
<tr>
<td>Laval</td>
<td>York</td>
</tr>
<tr>
<td>Matamec</td>
<td>Matane</td>
</tr>
<tr>
<td>Matapédia</td>
<td>La Loutre</td>
</tr>
<tr>
<td>Moisie</td>
<td>Jupiter</td>
</tr>
<tr>
<td>Patopédia</td>
<td>Chaloupe</td>
</tr>
<tr>
<td>Petit-Saguenay</td>
<td>Saumon</td>
</tr>
</tbody>
</table>

* (Classification d'après la Corporation des ingénieurs forestiers)

**LA RECHERCHE D'UN RESEAU**

Par rapport à la répartition spatiale de la population, on déplore souvent le fait que la région du Bas St-Laurent et de la Gaspésie, avec 3.8 pour cent de la population, semble nettement avantagée, puisqu'elle compte plus de 24 des 81 parcs et réserves. Deux des trois parcs provinciaux de récréation se trouvent dans les régions les plus densément peuplées. Notons le parc du Mont Ste-Anne et celui de Paul Sauvé. De plus, il n'y a que deux réserves forestières polyvalentes seulement pour répondre aux besoins de plus de 75 pour cent de la population du Québec. La Sagamie, (espace correspondant en gros à celui du bassin hydrographique du Saguenay) compte plus de réserves de chasse et pêche que les régions de la Côte-Nord et de l'Abitibi. Enfin, le Moyen-Nord présente des attractions naturelles et un potentiel faunique particulier; aucun parc ou réserve n'assure leur protection et leur mise en valeur. En somme, il est difficile de parler d'un réseau de parcs ou de territoires analogue au Québec. Leur disposition n'émane nullement d'un plan d'ensemble.

**LE PARC DES LAURENTIDES: UNE RESERVE FORESTIERE POLYVALENTE**

C'est le 12 janvier 1895 qu'est sanctionnée la loi créant le parc des Laurentides: *Ce territoire est mis à part comme réserve forestière, endroit de chasse et de pêche, parc public et lieu de délassement sous le contrôle du commissaire des terres de la couronne, pour les citoyens de la province.*

Du côté des Forêts, on considère le parc des Laurentides d'abord comme une réserve forestière dont la protection des forêts doit favoriser l'exploitation des arbres. Du côté des Pêcheries, on considère ce parc d'abord comme une réserve de chasse et de pêche dont la protection de la faune doit favoriser la venue des sportifs.
Tableau 18.2

LES PARCS DU QUEBEC*

1. Les parcs de conservation

<table>
<thead>
<tr>
<th>Provinciaux</th>
<th>Federaux</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existant</td>
<td>Existant</td>
</tr>
<tr>
<td>Ile Bonaventure</td>
<td>Forillon</td>
</tr>
<tr>
<td><strong>En voie d'aménagement</strong></td>
<td></td>
</tr>
<tr>
<td>Le parc du Bic</td>
<td>Gatineau</td>
</tr>
<tr>
<td><strong>En projets</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cratère du Nouveau-Québec (46 m²)</th>
<th>Iles Mingan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abijevi</td>
<td>Mont Otish</td>
</tr>
<tr>
<td>Gaspésie (264 m²)</td>
<td>Golfe Richmond</td>
</tr>
<tr>
<td>Jacques-Cartier (270 m²)</td>
<td>Iles Digges</td>
</tr>
<tr>
<td>Grands-Jardins</td>
<td>Riv. Manitou</td>
</tr>
<tr>
<td>Malbaie (73 m²)</td>
<td>Iles de la Madeleine</td>
</tr>
<tr>
<td>Rivière Eternité (32 m²)</td>
<td>Kipawa</td>
</tr>
<tr>
<td>Iles Mingan (36 m²)</td>
<td>Ile d'Anticosti</td>
</tr>
<tr>
<td>Ile Anticosti (3100²)</td>
<td>Fjord Saguenay</td>
</tr>
<tr>
<td>Iles-de-la-Madeleine (?)</td>
<td>Monts Torngat</td>
</tr>
<tr>
<td>Mont Mégantic 32 m²)</td>
<td></td>
</tr>
<tr>
<td>Pointe-Taillon (43 m²)</td>
<td></td>
</tr>
<tr>
<td>Mont Valin</td>
<td></td>
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</tbody>
</table>

2. Les parcs de récréation

<table>
<thead>
<tr>
<th>Provinciaux</th>
<th>Métis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existants</td>
<td></td>
</tr>
<tr>
<td>Mont-Orford</td>
<td>Mont-Tremblant</td>
</tr>
<tr>
<td>Mont Ste-Anne</td>
<td>Iles de Boucherville</td>
</tr>
<tr>
<td>Paul Sauvé</td>
<td>Mont St-Bruno</td>
</tr>
<tr>
<td>Côte Ste-Catherine</td>
<td>Frontenac</td>
</tr>
<tr>
<td>Dollars-des-Ormeaux</td>
<td>Kénogami</td>
</tr>
<tr>
<td>Chutes Montmorency</td>
<td>Petièrme-Boucherville</td>
</tr>
<tr>
<td>Chutes Dorwin</td>
<td>Petite-Rivière-St-François</td>
</tr>
<tr>
<td>Chutes Ste-Ursule</td>
<td>Voltigeurs</td>
</tr>
<tr>
<td>Ste-Veronique</td>
<td>Fort-Prével</td>
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<tr>
<td>Val-Jalbert</td>
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</tbody>
</table>
En projets

Mont Rigaud (15 m²)   Ile Perrot (0.5 m²)
Valleyfield (12.5 m²)  Montauban (22.5 m²)
Mont Rougemont (7.2 m²)  Pointe Magoon (3.5 m²)
Forêt Verchères (22.5 m²)  Chutes Chaudière (0.5 m²)
Îles de Sorel (35.6 m²)  Grande-Baies (3.7 m²)
Chertsey (15.5 m²)   Pointe-Platon (0.5 m²)
Arc-en-ciel (16.5 m²)

3. Les réserves de chasse et pêche

20 exploitées   15 non exploitées

4. Les réserves de pêche au saumon

21 exploitées

*(Classification d'après la loi cadre des parcs sanctionnée le 29 novembre 1977).*
La poursuite des objectifs de conservation propres aux réserves forestières polyvalentes est très problématique. L'usufruit de leurs ressources naturelles a été souvent cédé à des intérêts privés. Dans le cas du parc des Laurentides, dès 1905, 93 pour cent du territoire était sous concessions forestières; aujourd'hui, la superficie totale du parc est concédée à des compagnies forestières. L'exploitation de la forêt se poursuit toujours mais à un rythme plus rapide à cause du phénomène de la surexploitation des années 1930-60. De plus, la monoivalence des équipements récréatifs amène la majorité des utilisateurs à s'adonner à la pêche et à la chasse.

On constate en outre que la superficie du parc est trop grande par rapport aux moyens de contrôle existants, que la gestion de ce territoire relève de l'autorité de plusieurs ministères, que l'ensemble des lois et règlements édictés et en vigueur pour assurer la conservation des ressources sont ignorés par les utilisateurs, les gouvernements et les ministères et que l'essentiel de la mise en valeur s'est effectuée sans plan directeur.

LES PARCS NATIONAUX: ESPoir ou échec

Depuis la création du premier parc national du Canada à Banff, en 1885, les responsables du réseau national ont été préoccupés par les mêmes objectifs: Assurer la pérennité de la conservation des éléments typiques de certains territoires, dont le caractère physique ou historique tout à fait particulier présente un intérêt évident pour le pays tout entier (Manuel de planification du réseau des parcs nationaux, 1972, 17). Cependant, ce n'est qu'en 1970 que fut décidé et non sans de nombreux litiges, l'établissement d'un parc national au Québec sur la péninsule de Forillon. Diverses propositions d'aménagement, des audiences publiques, plusieurs plans sectoriels, des comités de toute sorte et une multitude de travaux et de décisions internes ont précédé l'aménagement de ces quelques 92 milles carrés de territoire gaspésien. Un peu plus tard, la même année, le parc national de la Mauricie devenait, avec une superficie de 216 milles carrés, le deuxième et dernier parc de conservation à être établi en territoire québécois.

Au Québec, ce développement récent des parc nationaux n'a pas été sans heurt autant au plan physique que politique. Diverses contraintes d'ordre socio-économique et idéologique sont venues s'ajouter aux autres facteurs négatifs inhérents à toute planification du territoire qui change la vocation de l'espace. La première tient du fait que les aires naturelles proposées pour la protection intégrale étaient déjà occupées soit par des paysans, des compagnies privées qui possédaient déjà des droits de coupe forestière ou d'extraction minière. L'expropriation d'une part a créé de l'animosité encore difficile à cicatriser et le rachat des territoires occasionna des démarches financières pour le moins complexes d'autre part.

La deuxième contrainte majeure relève de la difficulté qu'ont les divers organismes gouvernementaux à évolution avec des objectifs
à long terme pour le mieux être futur de la communauté entière. Les contingences économiques pressantes du chômage, les obligations gouvernementales envers les sociétés d'exploitation des ressources, la crainte de ne pouvoir conserver l'intégrité de son territoire ou de perdre son autonomie de gestion et le manque de tradition en matière de conservation ont vite fait de repousser toute nouvelle proposition fédérale pour l'aménagement de parcs nationaux au Québec. Le dernier conflit politico-idéologique bien connu entre les offres fédérales et les refus provinciaux a eu lieu en 1975 au sujet du parc Saguenay. La nouvelle loi 19 sur les parcs qu'allait proposer le Québec était l'espoir qui permettrait de diminuer la pression d'utilisation intensive qui s'exerçait déjà sur les deux parcs fédéraux.

Les statistiques d'utilisation actuelle des parcs nationaux Forillon et la Mauricie démontrent grandement leur raison d'être et la nécessité d'avoir plus d'espace de ce genre au Québec. En 1977, les entrées estivales étaient au nombre de 276,069 et 523,670 visiteurs pour la Mauricie et Forillon respectivement. Ces chiffres avaient pratiquement doublé en deux ans, car les statistiques de 1975 étaient de 130,250 et 372,700 visiteurs pour ces deux parcs respectivement. Bref, la capacité de support de ces parcs est sur le point d'être dépassée. S'il n'y a aucun autre territoire qui ne vienne offrir de nouveaux espaces récupérés et protégés, les 308 milles carrés de parcs nationaux au Québec, représentant 0,048 pour cent de la superficie totale du territoire québécois, seront de bien petite dimension pour servir à sensibiliser et éduquer les québécois en matière de conservation intégrales des écosystèmes. La loi 19 permettra-t-elle de créer de véritables parcs?

LES NOUVELLES STRATEGIES

Depuis le 29 novembre 1977, date où fut sanctionnée la loi des parcs, le gouvernement du Québec dispose d'un outil législatif l'autorisant à créer ou à abolir des parcs, à modifier les limites de ceux qui existent déjà et à les classifier en parcs de conservation ou de récréation.

Les parcs de conservation visent à protéger certains territoires représentatifs du patrimoine culturel ou des sites à caractère exceptionnel, tout en les rendant accessibles au public dans un but d'éducation et aussi de récréation extensive; ce type d'activité requiert des équipements peu élaborés et n'engendre pas une utilisation intensive du territoire.

Les parcs de récréation viennent répondre à une autre facette des besoins de la population qui, de plus, manifeste avec avidité le goût de renouer avec son milieu naturel et de pratiquer des activités de plein air dans un environnement protégé.

En vertu de cette nouvelle loi, il sera interdit dans un parc de chasser, de prospector, d'utiliser et d'exploiter des ressources
à des fins de production forestière, minière ou énergétique. De même le passage d'oléoduc, de gazoduc et de ligne de transport d'énergie y sera prohibé, sauf l'installation des équipements nécessaires à son fonctionnement. Exception sera également faite pour les infrastructures de même nature qui existent déjà dans les parcs (M.T.C.P., 1978, 7).

LE RESEAU PROJETE: RECUPERER CE QUI RESTE

Le réseau de parcs provinciaux à mettre en place devra permettre d'assurer la protection des éléments exceptionnels ou représentatifs du patrimoine naturel du Québec et mettre à la disposition des québécois d'abord et des touristes ensuite des espaces où ils pourront pratiquer une variété d'activités de plein air dans un décor naturel protégé.

Ce réseau veut répondre au besoin de récréation physique et psychique au contact de la nature. Les caractéristiques souvent aliénantes du milieu de vie habituel d'une population de plus en plus entassée dans les villes vont rendre de plus en plus impératif le besoin de ces évasions périodiques dans un milieu naturel protégé. Il devra servir également à des fins éducatives.

Ce réseau apportera une contribution certaine au développement de l'industrie touristique en retenant à l'intérieur des limites du Québec ceux qui sont obligés de le quitter pour profiter des avantages de véritables parcs. En outre, le réseau pourra contribuer à atténuer les disparités régionales. Enfin, les éléments les plus spectaculaires du réseau constituieront des pôles d'attraction suffisamment forts pour inciter les non québécois à visiter le Québec ou du moins à y séjourner plus longtemps.

Cet apport économique devra cependant être subordonné au maintien des valeurs fondamentales qui doivent rester à la base de l'implantation et de la gestion du réseau, c'est-à-dire la conservation, la récréation et l'éducation.

Le réseau sera formé d'une partie des parcs déjà existants. Leur superficie d'environ 5,200 milles carrés passera à 2,500 milles carrés. On estime que ce sera suffisant pour établir les bases d'un réseau adéquat de parcs véritables. Il s'agit là d'une réduction de 50 pour cent si on considère la superficie des territoires légalement désignés comme parcs mais une augmentation très importante si on se réfère au territoire véritablement protégé.

La diminution se fera largement grâce à la réduction très importante de la superficie du parc des Laurentides qui sera ramenée à des proportions plus réalistes. La partie du parc qui sera retranchée deviendra légalement ce qu'elle est depuis toujours dans les faits c'est-à-dire une réserve de chasse et de pêche concédée à des compagnies forestières.

Un pourcentage important des 2,500 milles carrés représentant la superficie du réseau de parcs projeté sera constitué par trois
parcs de grande superficie c'est-à-dire ceux du Mont Tremblant, de la Gaspésie et de la rivière Jacques-Cartier.

LES PARCS DE CONSERVATION: UNE TENDANCE À LA CONCENTRATION

En plus des parcs de l'île Bonaventure, Forillon et Mauricie, déjà existants, on propose à Québec la création des parcs suivants (Tableau 18.1): le parc du Bic, le parc de la Gaspésie, la rivière Jacques-Cartier, le secteur des Grand-Jardins, le parc Malbaie, le parc de la Rivière Eternité, les Îles Mingan, l'Île d'Anticosti, les Îles de la Madeleine, le Mont Mégantic, le parc Abijevis, le Cratère du Nouveau-Québec et le Mont-Valin. À Ottawa, on retient les espaces mi-nordiques suivants: la région du Golfe de Richmond et du Lac-à-l'eau-claire, le région des Monts Otish et du lac Naococane, le fjord Saguenay, le cap Wolstenholme et les îles Digges, la rivière Manitou, Kipawa, les Îles Mingan, l'Île Anticosti, les Monts Torngats et les îles de la Madeleine.

Ces propositions constitueraient un réseau permettant de protéger un espace suffisant pour répondre aux besoins des visiteurs québécois ou de ceux venant de l'étranger au cours des quinze prochaines années. On observe que les planificateurs ont tendance, au Québec, à développer le réseau dans le Québec méridional et négliger les espaces mi-nordiques. Sur ce plan, les propositions de Parc Canada pourraient s'avérer précieuses dans l'avenir.

LES PARCS DE RECREATION: UN TRAVAIL DE CONSOLIDATION ET DE CONTROLE

En plus des quinze parcs possédant plus ou moins ce status (Tableau 18.2), quatre sont présentement en voie d'aménagement et treize ont été proposés par le M.T.C.P. La plupart se situent à proximité de Montréal et du Québec et combleront le vide existant entre les grands parcs de conservation et de récréation (Mont-Tremblant) et ceux des régions métropolitaines. Ils ont été retenus à partir des critères suivants: un potentiel intrinsèque élevé pour la récréation, une bonne accessibilité, des aptitudes à la polyvalence des activités de plein air, un coût d'appropriation raisonnable, une bonne répartition des équipements autour de Montréal et une utilisation compatible avec les modes d'utilisation du sol des environs.

DES ESPACES EDUCATIFS DE PLEIN AIR ET DE CONSERVATION

LES RESERVES ECOLOGIQUES: UNE NECESSITE COMPLEMENTAIRE

La loi des réserves écologiques a été sanctionnée en décembre 1974; c'est le Ministère des Terres et Forêts qui est chargé de l'application de cette loi. La réserve écologique se définit comme étant un territoire protégé, constitué de terres publiques, représentant un échantillon-témoin de patrimoine naturel créé dans le but de:
conserver certains territoires à l'état naturel; réserver ces territoires à la recherche scientifique et sauvegarder les espèces animales et végétales menacées de disparition et/ou d'extinction.

A l'heure actuelle, le Québec peut compter sur quatre réserves écologiques, soit celle de Tantaré (1985 ha), de Pointe-Heath (864 ha), du Pin Rigide (75 ha) et de Rivière du Moulin (2,8 ha). Il y a plus d'une vingtaine de propositions restant dans les dossiers faute de temps et d'argent. En effet, les budgets sont très restreints; ils ne sont même pas ce qui avait été promis à l'origine. Au rythme où vont les choses, le réseau qui devrait être créé sur une période de cinq ans prendra au moins dix ans à être réalisé. Aussi, il apparaît que le choix des écosystèmes à protéger était fort aléatoire et ne reposait sur aucun inventaire sérieux du territoire québécois. On s'est contenté de dresser une liste de suggestions basée sur les connaissances empiriques et les intérêts généraux de chacun des membres du groupe. La liste des projets de réserves témoigne de cet état de fait car la plupart des réserves projetées le sont dans le but de protéger des écosystèmes forestiers ou végétaux au détriment des écosystèmes fauniques. Ceci est le reflet des préoccupations personnelles des membres du Conseil Consultatif des Réserves Ecologiques (C.C.R.E.).

En plus, dans le cas de la faune, la réserve écologique intégrale devient dans 90 pour cent des cas un mauvais instrument de conservation car elles sont trop petites pour protéger la faune successionnelle. Aussi, étant mi-accessibles pour le public, elles ne peuvent remplir un rôle éducational.

LES ZONES D'EXPLOITATION CONTROLEES (ZEC): DES ESPACES DE PLUS EN PLUS POLYVALENTS

LES CENTRES D'INTERPRETATION DE LA NATURE

Un centre d'interprétation de la nature peut être défini comme une aire naturelle, préservée et aménagée fondamentalement à des fins d'éducation populaire. Un tel centre offre les facilités et les services nécessaires à la présentation de programmes de vulgarisation des sciences naturelles, d'étude, d'appréciation et de conservation de la nature. Il existe une dizaine de centres d'interprétation de la nature du Québec; certains sont administrés par des organismes semi-privés pour le bénéfice de leurs membres.

VERS UN NOUVEAU PARC DE LA GASPESIE (M.T.C.P., 1978)

Le Ministère du Tourisme, de la chasse et de la pêche entreprend une sorte de grand ménage dans ce secteur. L'opération débute avec les quatre grands parcs du Québec soit ceux de la Gaspésie, du Mont-Orford, du Mont-Tremblant et des Laurentides. Le premier dossier ouvert est celui du parc de la Gaspésie. Un plan directeur provisoire sera soumis à la population qui pourra formuler ses remarques et suggestions lors d'audiences publiques et devenir ainsi un partenaire indispensable à la planification et au développement du parc.

UN PARC CREE POUR LA CONSERVATION (1937)

Est réservé comme parc public et lieu de délassement sous le nom de parc de la Gaspésie, le territoire dont le lieutenant-gouverneur en conseil fixera le site dans la péninsule de Gaspé.

Voilà donc le parc de la Gaspésie créé par une loi spéciale sanctionnée en avril 1937. Les principes sou-jacent qui menèrent à l'adoption d'une telle loi visaient essentiellement à faire du parc de la Gaspésie, un parc de conservation et il est intéressant de constater que la coupe des arbres, la chasse et même la prospection et l'exploitation minière y étaient interdites.

Cependant, de nombreuses entorses à l'esprit de la loi ne tardèrent pas à la faire dévier de son objectif original de conservation et le parc se mit à subir de nombreux assauts d'exploitation forestière et minière. Cinq arrêtés en conseil en témoignent, dont les plus marquants entraînent des actions préjudiciables à l'environnement.

UN POTENTIAL EXCEPTIONNEL

Situé en plein cœur de la péninsule gaspésienne, le parc de la Gaspésie appuie la majorité de ses limites sur l'unité physiographique la plus remarquable de la région: la chaîne des Chic-Chocs.
Il s'agit donc d'une vaste région accidentée formée de vallées profondément encaissées et de hauts sommets. Véritable épine dorsale du parc, la chaîne des Chics-Chocs, de par sa qualité esthétique et panoramique, confère au parc de la Gaspésie un caractère grandiose et unique au Québec. Le parc de la Gaspésie présente un milieu naturel exceptionnel dont il faut s'efforcer de préserver le caractère particulier sans qu'il ne s'altère au fil des ans. La solution: un plan de zonage qui respecte les capacités de support du milieu en même temps que sa richesse sur le plan végétal, faunique, etc. On a ainsi délimité les diverses zones selon le degré d'utilisation qu'on compte en faire. La zone du Mont Albert continuera d'agir comme pôle principal du parc. Le secteur du lac Cascapédia deviendra le pôle secondaire. On prévoit aussi l'aménagement d'un réseau de sentiers de divers types sur une longueur de 225 km. L'accueil et l'information se feront dans six endroits stratégiques. L'hébergement se fera de quatre manières différentes:

1. Au gîte du Mont Albert;
2. Dans des chalets de villégiature;
3. Dans des refuges;
4. Dans les campings.

Il y aura des activités d'interprétation de la nature et des activités de récréation. Il y aura aussi de nombreuses améliorations au réseau routier, pavage et réfection des abords de certaines routes.

**UN IMPACT ECONOMIQUE POSITIF**

Il y a trois grandes sources génératrices d'activité économique en ce qui a trait au support et à la création d'emplois: les dépenses effectuées par les touristes visitant le parc, les investissements nécessaires à la réalisation du programme d'aménagement du parc et enfin, les frais occasionnés par son exploitation (emplois créés au total: 1718 hommes/année). L'emploi régional se traduit, à toutes fins utiles, uniquement dans l'emploi direct commandé par le projet du parc de la Gaspésie (emplois créés au total: 985 hommes/année). Conscients de l'importance vitale de ces trois secteurs d'activités dans le développement économique de la région, les planificateurs du M.T.C.P. se sont efforcés d'en arriver à un modèle optimal en terme de rendement économique du territoire.

Ainsi, le plan directeur provisoire exclut du parc de la Gaspésie le gisement cuprifère des mines Madeleine, de même que la partie est des contreforts des Monts Jacques-Cartier où les chances de découverte et d'exploitation minières sont les plus grandes.

La délimitation du nouveau périmètre fut soumise à un examen attentif pour n'inclure que les secteurs vitaux de conservation et de protection de la faune et de la flore, de sorte que le nouveau parc ne retranche pratiquement rien du potentiel exploitable de la forêt domaniale des Chic-Chocs.
Le gouvernement du Québec a de bien bonnes intentions en voulant redonner au parc de la Gaspésie sa vocation première mais quelques gestes posés jusqu'à date nous permettent de croire que les objectifs louables que s'était fixé le M.T.C.P. ne seront pas faciles à atteindre:

1. La superficie du parc passe de 1290 km$^2$ à 688 km$^2$; donc seulement les secteurs vitaux de conservation seront inclus. Les contreforts est des des Monts Jacques Cartier, soit les Monts McGerrigle, seront exclus du parc pour permettre l'exploitation minière.

2. Soquem a le droit d'effectuer des travaux d'exploration minière jusqu'en novembre 1979; ils permettront de déterminer le potentiel minéral et les limites définitives.

CONSIDERATIONS FINALES ET RECOMMANDATIONS

La carte des espaces à conserver au Québec doit être celle de tout le territoire québécois y compris le Nord. En d'autres termes, le réseau de ces espaces doit être établi à partir d'une analyse des qualités bio-physiques intrinsèques de l'ensemble du milieu naturel québécois. Un plan de zonage doit guider l'utilisation de chaque espace créé. Le choix des limites de ces espaces doit tendre à se rapprocher au maximum des limites des bassins ou sous-bassins de drainage. Un système de contrôle puissant et énergique doit prendre place avec la collaboration étroite des organismes régionaux voués à la conservation.

Enfin, l'établissement d'un réseau de véritables parcs au Québec doit constituer une priorité nationale. Cette opération doit prendre une envergure beaucoup plus importante et mobiliser toutes les énergies utiles des québécois. Seuls de meilleurs concepts de base, des politiques économiques socialisantes et des actions concertées en matières d'éducation permettront de rattraper rapidement dans ce domaine les autres entités nationales.

Rappelons-nous qu'il s'agit d'un état d'urgence et qu'il sera toujours plus rentable de protéger aujourd'hui ce qu'on sera en mesure de mieux utiliser plus tard.
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Reserves non Exploitées par le M.T.C.P.

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P: Parc  
R: Réserve  
C: Créé en vertu de la loi du ministère  
Z: Transformé en Zec  
RC: Réserve exploitée par une corporation à but non lucratif.
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ECOLOGICAL RESERVES IN CANADA
WITH EMPHASIS ON BRITISH COLUMBIA
B. Foster

the last word in ignorance is the man who says of an animal or plant 'What good is it?' ... To keep every cog and wheel is the first precaution of intelligent tinkering.

Aldo Leopold

The setting aside of ecological reserves and other natural areas for baseline and genetic research purposes had its beginning with the International Biological Program: Conservation Terrestrial (I.B.P./C.T., 1964-74). Canada was one of fifty-eight countries which participated in the programme.

In Canada, panels were set up in each of ten geographical regions to locate and describe representative samples of ecosystems suitable for conservation (Puller, 1970; Weetman and Cayford, 1972). While hundreds of candidate areas for ecoreserve status were proposed to the appropriate levels of government, the actual establishment of reserves across the nation has been variable; there is a good record in some provinces, and a poor one in others.

With the termination of the I.B.P. in 1974, the National Research Council (N.R.C.) established an Associate Committee on Ecological Reserves (A.C.E.R.) to carry on some of the activities formerly under the I.B.P. This Committee recently was disbanded, to be replaced by an Associate Committee on Ecosystem Conservation (A.C.E.C.), also under the wing of the N.R.C. Appointments have not yet been made to this new Committee; this is to be accomplished by the end of 1978. Unlike A.C.E.R., A.C.E.C. will have public servant representation from each region, as well as representatives from universities and other non-government agencies.

In spite of the I.B.P. having been an international programme the federal government never has given the leadership it warranted. The progress that has been made in establishing ecological reserves has occurred at the provincial level. The lack of federal leadership partly accounts for the varied progress among the provinces. Hopefully, this new committee will provide a neutral form in which the multitude of activities related to ecosystem conservation, carried on by the various levels of government, can be coordinated
so that the resources available can be used as effectively as possible. Timothy Lash, Environment Management Service, Environment Canada, is the mid-wife to the new committee. Its Terms of Reference are proposed to be as follows:

1. To advise the National Research Council, and as required by the Council, federal and provincial government departments and other interested organizations, on the development of systems and areas within Canada to be protected for ecosystem conservation; and the coordination of activities related thereto.

2. To act as a focal point for the consolidation and dissemination of information in the field of ecosystem conservation. This could include information related to the following tasks:
   (a) classification of unique and representative ecosystems;
   (b) proposal of areas of significance for protection;
   (c) suggestion of scientific guidelines and standards of protection and management for these areas;
   (d) provision of information and services regarding areas surveyed and recommended for preservation as ecological reserves by I.B.P./C.T.
   (e) evaluation of Canadian areas proposed for nomination as M.A.B. Biosphere Reserves, in accordance with M.A.B. criteria.
   (f) evaluation of Canadian natural sites proposed for nomination to the United National Educational, Scientific and Cultural Organization (U.N.E.S.C.O.) World heritage list, in accordance with World Heritage Convention criteria;
   (g) evaluation and upgrading of the data base for the above tasks' and
   (h) in general, the preparation of status reports on the designation, protection, and use of ecologically important areas in Canada.

3. To bring together specialists from the various disciplines involved in ecosystem conservation to formulate guidelines for the protection and management of such areas and to promote adequate protection and appropriate management of said areas.

4. To carry out such other tasks as may be assigned by the N.R.C. from time to time.

5. It is understood that this is an interim committee that will be disbanded when the tasks, described above, are completed or when they can be taken over by a committee having similar and continuing responsibilities.

The Biosphere and Heritage programmes, which are clearly international in intent, and, therefore, largely a federal responsibility in implementation, have not yet significantly overlapped with the provincial ecological reserve programmes. In the years ahead there will be chances for confusion, overlap, and conflict unless the characteristics of each programme are clearly understood, particularly by the politician. The new A.C.E.C. is the key to orderly progress.
Of course, national and provincial parks give a degree of protection to natural areas, but research in them is always secondary.

At times we are accused of trying to preserve our entire planet as park, Biosphere Area, Heritage Area, or ecological reserve. In fact, we are merely trying to make up for lost time. Already there are virgin forest community types in British Columbia which have been entirely obliterated, leaving to guesswork the species of trees which should be planted in a logged area. The knowledge of rates of growth and, therefore, annual allowable cut, is unobtainable. On a world basis the rate of environmental destruction is even greater, particularly in the tropical ecosystems.

Success in establishing protection over a natural area is always potentially temporary; the area could be degazetted or destroyed by wars or natural disasters. Destruction of a natural area is always permanent in the sense that the area never will be quite the same again. Battles to save natural environments are never completely won, but they can be forever lost.

Across the nation progress in setting aside ecological reserves varies widely. The federal government has the responsibility for these reserves north of 60 degrees; largely this responsibility has not been exercised. While excellent areas have been proposed by the I.B.P. panels, none have become established reserves ostensibly because of conflicts with Inuit land claims and gas and oil extraction. Recently the Honourable Hugh Faulkner, Minister of Indian and Northern Affairs, announced his intention to proceed with the establishment of the ecological reserve proposal on Bathurst Island. Hopefully this is the beginning of a positive trend.

Newfoundland has some excellent I.B.P. proposed sites which it hopes to preserve under a new Wilderness Areas and Ecological Reserves Act.

Prince Edward Island has four proposed ecological reserves which it intends to establish under the Planning, Fish and Wildlife, or Recreation and Development Acts.

Nova Scotia has established one reserve under the Museum Act. An Ecological Reserves Act is pending.

New Brunswick has established four reserves under its Ecological Reserves Act.

Quebec has also four reserves under its Ecological Reserves Act.

Ontario has eleven natural areas established chiefly for research under the Park Act.

Manitoba has two reserves under its Land Act.

Saskatchewan is working towards an Ecological Reserves Act before establishing any reserves.
Alberta has an Ecological Reserves Act pending. In the interim, 260 natural areas are protected by Order-in-Council under either the Public Lands Act, the Provincial Parks Act, or reserved as candidate natural areas pending final evaluation.

British Columbia has ninety-two areas protected under an Ecological Reserves Act (Krajina, 1973).

It is difficult to compare the effectiveness of each ecological reserve system because of the varying legislation used. Some further details on the maritimes can be found in Taschereau Maritimes (1974).

In describing the progress and problems provinces have had in establishing ecological reserves, I shall use British Columbia as an example since I know that area best.

After years of pressure, led by Dr. V.J. Krajina, the House unanimously passed the Ecological Reserves Act in 1971. The steady progress in establishing and managing ecological reserves since then has resulted in a growing animosity towards the programme by some other resource users.

The overriding concern among these other resource users is that ecological reserves may lock up an inordinate amount of land for single use purposes. Let us look at where British Columbia stands now. The ninety-two reserves comprise 85,040 hectares and cover about 0.09 percent of the province. Productive forest land in ecoreserves amounts to less than 18,000 hectares, or 0.034 percent of the total 52,650,000 hectares of forest land in the province. All ecological reserve proposals are referred to all relevant government ministries for comment; no reserve ever has been created over the objections of even a single ministry. There are no known minerals or proposed hydroelectric dams in any reserve.

There is concern in some quarters about the fairly large size of some of our reserves and proposals. Our largest reserve is 33,185 hectares. It was established for the protection of Stone sheep, mountain goats, and their ecosystems. This area is not large enough to protect either the Osborn Caribou or the grizzly bear both of which also reside in the reserve. Numerous studies of island biota have clearly demonstrated the disappearance of species from ecological islands such as parks and reserves (Diamond, 1975; Sullivan and Shaffer, 1975; Terborgh, 1974). Probably some of our reserves are too small to protect some of the species they were intended to protect. Undoubtedly we should continue to request areas as large as needed for ecological purposes, while keeping in mind a holistic view of provincial priorities.

While the referral process to other agencies is long, and sometimes tedious, it serves the essential function of finding accord on reserve proposals. The process also brings to the attention of many people the ecological reserve programme, thus giving us the opportunity to explain what we are trying to do and to dispel myths.
Myths abound, and sometimes are used to discredit our ecological reserve programme. Some believe a proposed area need not be set aside as an ecological reserve because nothing is unique about it. In fact, we value representative areas more highly than unique ones because they are more typical of the natural variation in the province. However, all reserves will tend to become unique as the country around them is altered by man.

Many believe no trespassing is allowed in any ecological reserve. Not so. All reserves in British Columbia are open to the public for casual, non-consumptive, non-motorized use except those reserves which protect seabird colonies, and a delicate fen of rare orchids near Vernon. In particular, we sometimes are accused of setting aside areas for single use. Our Minister of the Environment stated in a January 20, 1978, press release: Some people believe Reserves are single use areas and, therefore, inappropriate in these days of multiple use planning. In fact, most Ecological Reserves are available for baseline research studies, obtaining genetic material for plant breeding, ecological and behavioural studies, soil and hydrology research, conducted school classes, hiking, photography, birdwatching, and so on.

Others believe ecoreserves should be located in parks. In fact, over one-third of the area of our reserves is surrounded by provincial park land. However, this can cause conflicts since parks are on tourist maps and, therefore, attract people; something we prefer not to have happen to a reserve. Generally we try not to place ecoreserves in or near parks in order to avoid future conflicts as population pressure grows.

Some suggest that parks could function as ecological reserves. This would not work. Parks are for people; ecoreserves, for research. The two usually are not compatible. Park's officials often object to the collecting of plants or animals, or even to having some animals marked for research purposes. These sorts of activities often may be encouraged in an ecological reserve, and rarely are denied. Above all, we all have seen that park policy changes over the decades. This could be disastrous to long term research programmes. Hence, the need for ecological reserves; parks are not substitutes. A separate Ecological Reserve Act helps to keep the distinction clear and, therefore, to minimize confusion in the public mind.

Now that we have ninety-two ecological reserves in British Columbia, we are spending more time systematically assessing the province in order to determine the kinds of environments we still need to have an adequate sampling of our rich natural diversity. It appears we may need to establish a great many more ecological reserves over the next few decades. Most will be small. We believe a goal to shoot for is about 0.5 percent of the land area of the province.

However, the two and one-half of us on staff are hard pressed to establish new reserves, attempt to manage them in such a huge province, encourage and direct research in the reserves, as well as give attention to the growing criticism of the programme. More
of our time is being diverted into public relations to provide some balance to the *get the province rolling again* philosophy.

The tinkering with our environment has reached unprecedented heights. It is up to the few of us, against great odds, to try to make sure that we save samples of all of the *cogs and wheels*.

**REFERENCES CITED**


INTRODUCTION

National parks are special places set aside for landscape and resource protection, but they do not exist in isolation. A complex network of social and ecological relationships tie them into a larger area of surrounding land (Hart, 1966, p. 1). These linkages are exemplified by distinctive patterns of visitor movement which connect national parks with nearby and distant urban regions (Campbell, 1966), and by the chemical and energy flows which maintain stability or initiate succession in natural ecosystems (Watts, 1974). Such relationships underline the argument that national parks cannot be managed as discreet, self-contained entities. To be effective, plans and strategies for national parks must be coordinated with a broader regional framework of land uses for recreation, conservation, and development.

This theme was interwoven through analysis and discussion at the First and Second World Conference on National Parks (Adams, 1964; Elliott, 1974) and established as a priority concern for future attention at the previous forum on The Canadian National Parks: today and tomorrow (Nelson and Scace, 1969, p. 986). It is this call for action which provides the point of departure for the present analysis of theory and practice in the regional integration of national parks and surrounding lands. Discussion is organized in three main stages.

1. The rationale for planning beyond national park boundaries is established in relation to the fundamental problem of reconciling preservation and use in these lands.

2. The specific roles this planning approach can play are outlined and their potencies and problems documented.

3. A case study of the relationships between policies and plans for national parks and surrounding lands in the Eastern Slopes of the Rocky Mountains is undertaken to review the progress that has been made in this area in the decade since the 1968 Conference.
This regional focus provides some continuity and comparability with previous material since the mountain national parks and Banff, in particular, were the main geographic reference points of discussion. It also provides an appropriate basis for developing guidelines for improvement in regional integration policy and practice.

NATIONAL PARK PROBLEMS

The contemporary problems of national parks and their historical background are now fairly well documented (Nelson, 1973b). Not only does the original statement of purpose for national parks contain divergent objectives for landscape preservation and public enjoyment, but a wide latitude traditionally has been left to administrative discretion in interpreting the legislation. The development and application of policy consequently has been incremental and piecemeal, a course of events reflected by the diverse land use histories of individual events reflected by the diverse land use histories of individual parks (Lothian, 1976). In short, national park landscapes are the cumulative product of past decisions, taken in circumstances and guided by attitudes quite different from those prevailing today.

THE INTERACTION AND IMPACT OF DEMAND AND DEVELOPMENT

Only with the onset of mass demand have the contradictions in park purpose and the inconsistencies in past practice been brought into sharp focus (Sadler, 1974a). The five-fold increase in attendance at national parks that has occurred during the last two decades is well known. The important point to note is the way the scale of demand has interacted with the legacy of tourist facilities and recreation activities from past eras. It has worked to trigger pressures for use and development which have varying degrees of discordance with the preservation mandate of national parks. At issue here are questions about urban expansion, especially in existing townsites (Herrero and Irwin, 1976; Scace, 1968); the development and improvement of highways and related facilities for automobile traffic (Nelson, 1974; Sadler, 1974b), the expansion of ski areas and associated recreation and service facilities (Herrero, 1979; Touche, 1978); and the introduction of snowmobiles into backcountry regions (Masyk, 1973).

This interlocking spiral of demand and development has had some far reaching environmental and social impacts. A continued erosion has taken place in the ecological and aesthetic values these lands are set aside to safeguard. This process of attrition typically has occurred on a piecemeal basis, through a series of small additions and compromises (Henderson, 1969, p. 894). However,
the cumulative effects have been considerable. A visible sequence of landscape changes is complemented by more intangible alterations in the sensory quality of park environments. These focus on urban stresses, such as crowding and noise, and conflicts between user groups (Nelson, Cordes, and Masyk, 1972, pp. 24-49; Nelson and Butler, 1974, p. 299; Sadler, 1972, pp. 32-33).

INSTITUTIONAL ADJUSTMENTS IN POLICY AND PLANNING

The question of how increasing numbers of visitors can enjoy national parks without damaging the intrinsic values of the parks is a testing one for decision-making at all levels. It has strained routine mechanisms for translating basic purposes into concrete actions. Parks Canada has responded to this challenge throughout the sixties and seventies by undertaking an ongoing review of philosophy and policy with the aim of providing coherent and documented guidelines for planning (National and Historic Parks Branch, 1969; Parks Canada, 1978).

Some important steps have been taken in this direction, although there is still room for a conservative interpretation of the degree of advance. The general principles guiding national park administration and management certainly have been clarified, consolidated, and changed to reflect the new order of social values for the environment. A primary emphasis is now placed on resource protection, and within this interpretation specific goals, objectives, and programmes have been developed for the national park system. In short, policy making has become more systematic as well as more preservation oriented. At the same time, conservation critics, such as the Alberta Wilderness Association (1978), have noted continuing inconsistencies between policy and its application in recent decisions on tourist and recreation development.

Such contradictions between principle and practice often involve political intervention, but they also direct attention to the process by which policy is implemented. Management plans for each park are the central mechanism for this purpose (Eidsvik, 1977, p. 11). In particular, they specify how the resource base is to be preserved, what types of activity and development are to be allowed, and where these various zones, classified from strict protection to intensive use, are to be located. The major problem encountered here is not so much with the method of planning, as with its direction and context. A critical reference point for national park planning is the concept of carrying capacity, however this is conceived and applied (Ovington, 1974; Sinden, 1976). Some limits on use and development ultimately will have to be set if park landscapes and ecosystems are to be maintained unimpaired. And in the final analysis, the practicality of this course of action will depend on the degree to which the planning process can be broadened and related to conditions in surrounding lands (Foster, 1973, p. 43).
The regional integration of national parks is being actively pursued by Parks Canada (1978, p. 25) as part of a new policy segment dealing with the roles and relationships of the agency in carrying out its mandate. Within this thrust there are a number of individual policies designed to relate park plans and activities to the area in which they are located. As a unit, however, they are piecemeal rather than comprehensive, and afford little concrete guidance for planning. This cautious approach is understandable. Such a course of action cuts across entrenched jurisdictional boundaries and clashes with traditional viewpoints and modes of operation. This decision milieu thus provides a testing context in which to draft an agenda for coordinated planning. As a first step, the establishment of a normative framework for analyzing and managing national parks and surrounding lands may prove useful for developing guidelines for planning strategy, and a model basis against which to contrast present realities and gauge progress.

A SYSTEMS FRAMEWORK

The relationship of national parks and surrounding lands can be profitably modelled along the lines established by systems theory. For this approach to planning, by definition, involves considering all the resources and activities of an area as a whole and examining their interactions in a comprehensive fashion (McLoughlin, 1969, p. 75). On a regional scale, national parks can be modelled as distinctive units within an interconnected matrix of land uses and open spaces. All units are interdependent and change if any one has serious repercussions on the others. The total system is dynamic and constantly undergoing adjustments as a result of the decisions of politicians, planners, and the public.

Within this system, strong functional linkages operate between national parks and other types of recreation and open space areas and are of particular interest here. Demand for recreation is the thread which knits these areas together, and ties them to the urban centres where the bulk of the population lives (Perloff, 1969; Perloff and Wingo, 1962). The patterns of interaction between demand and supply are complex and many sided, but the main lineaments are aptly summarized by the general classification of recreation activities and areas into user oriented, intermediate, and resource based types of land use (Clawson, 1959, p. 11). This classification also implies guidelines for the orderly development of a balanced system of resources and opportunities, in which the number and distribution of facilities and lands are related to demand patterns, coordinated with each other, and adjusted to the potentials of the regional environment. And the extent to which this kind of integrated recreation and conservation system can be developed will condition the degree to which the role and potential of national parks can be realized.
In all events, national parks, as archetypal resource base lands, must be recognized as unique and irreplaceable resources in finite supply, and should be managed accordingly. This specialized status should direct all regional planning efforts in relation to other recreation resources and land uses. From the standpoint of national park goals, two broad interrelated avenues of approach are suggested by the previous analysis. The first involves ecological assessments of regional conditions in order to ensure the full protection of park resources. The second covers recreation evaluations of alternative opportunities in an attempt to regulate the pressure on park use.

PROTECTING PARK RESOURCES

The perpetuation of the resource base of national parks is inextricably linked to what happens outside the park's boundaries. Few of these reserves encompass self-regulatory ecosystems and the management of their integrity is correspondingly difficult. This problem, and the dynamic inter-relationships between the animal and plant associations that are involved, can be illustrated by reference to the larger predators and their extensive territorial range. Even in the larger mountain national parks, the wolf and he cougar are extremely rare, partially because of hunting and other pressures on those parts of their annual ranges which lie outside park boundaries (Fuller, 1969, p. 193). And their relative absence can, in turn, be related to excess herd of larger herbivores, over-grazed range land, and vegetation change (Cowan, 1969, p. 936).

National parks can be thought of as ecological islands subject to direct or indirect modifications by activities in surrounding lands (Owen, 1972, p. 241). The effects of new large scale economic development are especially pronounced and nowhere is this more evident than in regard to road construction (Hart, 1966, p. 64). For example, the environmental impacts associated with the proposal to twin the Trans Canada Highway inside Banff National Park were inevitable from the time the road was upgraded to the park entrance; yet even today little thought seems to be given to alternative solutions (Nelson, 1973a). As a rule, the repercussions of such developments on national parks increase in scale with the dimension of park boundaries.

In some cases, however, development projects remote in location from national parks have had a considerable environmental impact. The Peace-Athabasca delta disaster is perhaps the classic example. A massive alteration in the hydrological and ecological character of this unique wetland landscape, mostly contained within Wood Buffalo National Park, occurred as a result of dam construction several hundred miles upstream (Peace-Athabasca Delta Project Group, 1972). Further flow regulation measures were required within the delta region to try to reverse these effects (Environmentl Conservation Authority, 1974). By contrast the effects of air pollution from aluminum smelters on plant communities and food chains in Glacier National Park, which together with Waterton National Park forms a unique international reserve, only can be halted by pre-
vention at the source (Bradley, 1972, p. 133). In short, environmental quality is indivisible, and even the remote wilderness reserves in the northern latitudes do not remain unaffected in some way by man's activities (Thomas, 1956).

All of the above examples underscore the need for park management plans to reflect an understanding of regional ecological relationships, to monitor the sources of outside pollution, and to intervene in cases of resource impairment. These management responsibilities are acknowledged by Parks Canada (1978, p. 77). Yet, the main emphasis in any regional integration policy is placed on regulating the impact of national parks on adjacent lands (Parks Canada, 1978, p. 25); a reversal of the priorities implied in the preservation mandate. At the very least, this bias needs correcting by the development of a comprehensive policy for the assessment of outside impacts on park resources.

The concept of a park influence zone offers a useful organizing device for this purpose. It may be defined as the area where human activities or natural processes significantly affect the quality of the park environment (Strong and others, 1972, p. 84). Ideally, the preparation of environmental impact statements along lines similar to those followed in the United States should be mandatory for all major projects in this zone, as well as in national parks (Nelson, 1974, pp. 379-389). No policies are currently in force requiring such measures, but precedents have been set in both cases by the application of the Federal Environmental Assessment and Review Process to highway development in Banff National Park and the Wreck Cove Hydro Electric Power Project on the southern boundary of Cape Breton Highlands National Park (Environment Canada, 1978). Unless a systematic monitoring and review of all major projected changes within national parks and their influence zones are undertaken, however, unforeseen impairments of the kind outlined above will continue.

**REGULATION RECREATION USE**

Regional monitoring to safeguard park resources should take place along side external measures aimed at regulation recreation use. At present, many of the pressures placed on national parks are as much a commentary on the quantity and quality of external recreation resources and facilities as they are on the attraction of those contained within park boundaries. National parks are accommodating mass recreation demands they are not intended to meet and over which they can exercise only restrictive control. The stated policy of excluding inconsistent uses needs to be pursued more rigorously and matched by regional strategies for developing alternative areas and facilities. In this connection, the approach followed by the United States National Park Service (n.d., p. 2a) in the Grand Teton Master Plan offers guidelines for what may be accomplished over the short term and in the long run. On an interim basis, direct measures to minimize discordant facilities and uses in national parks should be actively pursued. As the time horizon expands, only the promotion of coordinated planning,
directed at maximizing the recreation potential of regional resources, can tackle the fundamental problems outlined above.

The lands adjacent to national parks can play a special and immediate role in the future location of intensive tourist service and recreation facilities. In particular, gateway towns and communities, strategically located near park entrances, may provide convenient existing sites for the development and consolidation of commercial developments and park administration buildings. This potential role is recognized in Parks Canada Policy, and the commitment to limit the territorial expansion of Banff and Jasper townsites is a necessary step toward its eventual implementation (Parks Canada, 1978, pp. 73-74). A recent study of townsite planning for Banff, however, suggests that the main emphasis there is on redevelopment rather than decentralization (Community Planning Consultants, 1976). The emphasis should be on more innovative thinking. Ideally, gateway towns could be developed as part of an integrated plan for restructuring park facilities and removing those which go beyond the level implied in the concept of visitor service centres. This course of action presently is being followed as part of the master plan for Yellowstone National Park (United States National Park Service, n.d. pp. 17-18). In addition, gateway towns also might become a nucleus for experiments in public transport programmes designed to decrease reliance on the automobile and the problems associated with its operation inside national parks. The influential and authoritative report on National Parks for the Future (1972, pp. 11-22) undertaken by the Conservation Foundation recommended a course of action along these lines to safeguard American national parks as they entered their second century. And specific proposals to implement this approach are contained in the draft management plan for Yosemite National Park (United States National Park Service, 1978).

The application of the gateway concept also offers potential economic benefits to the target communities, but it will demand careful planning to adjust to their prevailing physical and social structure. Unless this care is exercised, national park problems simply will be relocated rather than resolved. Localized patterns of land disposition and use largely will condition what can be achieved. The ideal goal, where large amounts of land are federally owned, should be the creation of a model community of the kind proposed for El Portal, adjacent to Yosemite National Park (United States National Park Service, 1978, p. 13). At the very least, the aim should be to avoid another West Yellowstone. To this end, a combination of measures may be applied to control land use including monetary incentives, tax concessions, direct purchase, and scenic easements (Peterson and others, 1972, p. 53). Such a strategy is worth serious study in cases where development pressures threaten national parks, although it remains only a stop-gap solution.

The long term challenge is the cooperative design of a comprehensive regional system of recreation areas and open spaces to overcome the existing imbalances between current demand and effective supply. At the present time these are the source of specific problems in
those national parks which are within relatively easy reach of the large urban populations, and Banff National Park provides the classic example. A range of routine recreational activities is undertaken in Banff by visitors from nearby Calgary in part because of the lack of intervening opportunities (Hamill, 1969). This case underlines the argument that the main problem in recreation today is not so much the need to establish more national parks, although the heritage representation of natural landscapes in Canada is far from complete despite the recent expansion (Faulkner and Carruthers, 1974, p. 148). Instead, the main problem is the need for the ready availability of recreation space for varied use by all sectors of society (Perloff and Wingo, 1962, p. 82).

One obvious solution advocated by Parks Canada (1978, p. 20) is to promote the provision of more appropriate recreation areas and facilities. But this is difficult to carry out effectively for a number of reasons.

1. The strategy involves a major commitment of time and resources by other agencies and, therefore, will only be politically acceptable to the extent that it meets with their existing priorities. It also implies some revision in the routine procedures of allocating resources on the basis of environmental analysis. Unless planning is oriented much more toward people and their activities and preference patterns, it will not serve the intended purpose (Fisher, 1968), which, in this case, is the reinforcement of the preservation of national park lands and the special recreation experience they yield.

2. A fragmented system of administrative responsibility for recreational lands also has to be overcome before functional development is likely to occur. On a regional scale, jurisdiction typically is divided between different levels of government and particular management responsibilities are invested in a welter of agencies. Some strategic or intergovernmental mechanisms for recreation coordination have been established and described at this conference by Lewis, in addition to the profusion of routine ones, but they typically fall short of stated requirements for effective integration of policies and plans (Canadian Council of Resource and Environment Ministers 1974, pp. 16-19).

3. Recreation developments, finally, have to be accommodated within an overall regional pattern of land disposition and use in which there is a rising demand and a growing competition for all types of resources. The result is often conflict within and between recreation and other traditional uses of land for economic production. And these conflicts are difficult to resolve satisfactorily because of the complexity of the trade-offs involved in decision-making for multiple use resource allocation (Sadler, 1978, pp. 88-90).

In short, attempts to regulate use within national parks is largely dependent on the activities of other agencies; and to achieve a more balanced system of recreation resources demand an overall
consistency and social responsiveness in policy coordination which is hard to approximate in practice.

Some encouraging steps towards meeting this challenge recently have been taken by both Parks Canada and related provincial agencies. The federal initiative outlined as *Byways and Special Places* (Parks Canada, c. 1972) and now known as *Agreements for Recreation and Conservation* is aimed at joint actions to manage heritage resources, such as wild rivers and historic trails, which complement national parks and equivalent reserves. On the provincial scene, steady, though uneven, progress can be recorded in the development of other recreation potentials. The provincial parks of Alberta, for example, were assessed as inadequate in 1973, and a new policy was drafted. It aimed at creating a larger, more diversified, and more accessible system better integrated with other recreation resources (Alberta Lands and Forests, 1973a, pp. 2-3). It is given particular expression in the comprehensive resource management policy developed for the public lands of the Eastern slopes region. And, this initiative has far reaching implications for the major mountain national parks of Banff and Jasper that are worth detailed study.

THE EASTERN SLOPES OF THE ROCKY MOUNTAINS:
A CASE STUDY IN REGIONAL INTEGRATION

The Eastern Slopes of the Rocky Mountains provide an instructive setting for examining the inter-relationships between national parks and surrounding lands. All of the vast region, covering the alpine, sub-alpine, and foothill landscapes east of the Continental Divide between the 49th parallel and 54 degrees north, is designated as public wildland, except where it is bisected by the three trans-continental corridors that link the area to the parallel belt of axial settlement in Alberta (Figure 20.1). National park land occupies the central heart of the area, where the coterminous reserves of Banff and Jasper cover 6,000 square miles of the front and main ranges of the Rockies. Wilderness areas and parks under provincial administration are located adjacent to parts of their eastern boundaries and, on this slope, the national parks are virtually encircled by a wide belt of provincial forest land (Figure 20.1).

This strategic green area of forest land is managed under a multiple use policy to yield a range of commodity and amenity outputs. It is rich in productive land, water, and mineral resources, and contains a wealth of recreation, scenic, and wildlife values. An escalating demand for these tangible and intangible forest products has accompanied the rapid expansion and diversification of the provincial economy and has required more intensive management inputs. This has led, amongst other things, to a closer correspondence between land use policies for these lands and the adjacent national parks, although this has occurred independently rather than through formal design.
FIGURE 20.1 Public Lands of the Eastern Slopes.
THE CONVERGENCE OF LAND USE POLICIES: 1968-1978

A general indication of the extent to which policy integration has occurred can be gained by a brief summary of the situation in 1968. At that time the provincial forest lands of Alberta were managed under a rather loose philosophy of multiple use which did not correspond to social, economic, or environmental realities. It was characterized by heavy emphasis on the physical production of commodity resources, low priorities attached to recreation opportunities and amenity values, numerous cases of unresolved land use conflicts, and signs of deterioration in environment quality (Hamill, 1969). This inventory of problems can be usefully contrasted with the recreation development threats to Banff National Park reported by Nelson (1969). When considered together, these assessments suggest a rather disjointed relationship between the mountain national parks and the surrounding area.

One decade later, this criticism has been met to a considerable degree. The following changes in resource management policy for the provincial wildlands of the Eastern Slopes are especially noteworthy (Government of Alberta, 1977).

1. A high priority is now assigned to realizing recreation potentials, maintaining scenic values, and protecting environmental quality, largely as a result of inventories of resource capability and public opinion (Alberta Lands and Forests, 1973b; Environment Conservation Authority, 1974b).

2. The policy incorporates a land use classification and zoning system that identifies suitable activities for each type of area. It provides a broad framework for resource allocation and includes a complete spectrum of recreation opportunities from wilderness to resort development (Table 20.1).

3. Within this scheme, detailed plans for recreation development are being prepared on a priority basis which includes recognition of national park pressures (Alberta Recreation, Parks and Wildlife, 1977).

These new directions in provincial policy and strategy complement the reduced emphasis placed on development in Banff and Jasper National Parks following the public hearings on provisional master plans (Parks Canada, 1974).

SPATIAL COMPLEMENTARITY OF ZONING AND PLANNING

The critical test of regional integration, which indicates the way surrounding lands support or constrain national park objectives, involves examining the spatial complementarity of land use. It is undertaken here at macro and micro scales. On a regional level, the correlations between patterns of zoning in adjacent provincial and national park lands are assessed. A review is then undertaken
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/ Permitted Uses - Uses that will be allowed under normal guidelines and land use regulations.
X Not Permitted - Uses that are not compatible with the intent or capabilities of a land use zone.
R Restricted - Uses that may be compatible under certain circumstances and stricter than normal controls.

of the spatial linkages between recreation plans for Banff National Park and the immediate gateway area.

From a general standpoint, the zoning plan for provincial lands in the Eastern Slopes is well adjusted to the national park system. The instructive lessons are drawy by comparing the relevant zoning categories. In this case, provincial allocations for environmental protection, general recreation, and facility development parallel national park areas classified as resources preservation, general outdoor recreation, and intensive use; and amalgam of the natural environment, wilderness and special ecological designation (Parks Canada, 1970a; Parks Canada, 1970b). The salient relationships are summarized in Figure 20.2 and for each of the main categories the following points can be noted:

1. Provincial lands designated as prime protection to safeguard sensitive and spectacular alpine and sub-alpine environments provide an almost continuous buffer zone along the eastern boundary of Banff and Jasper National Parks. It reaches its maximum in the Saskatchewan river area, where it amounts to a de facto extension and rationalization of park boundaries. By contrast, the entire eastern boundary of Waterton Lakes National Park is presently designated for multiple use and is thus potentially open to the impacts of resource development. This anomaly demands revision and is presently the subject of discussion between Parks Canada and provincial agencies.

2. The designation of general recreation space in locations near to national park entrances and in linear corridors along the highway arteries leading to them represents a strategic source of alternative opportunities. Such areas are intended as focal points for the provision of a range of dispersed and concentrated recreation activities. As activity settings they represent a reasonable substitute for routine uses now taking place in the national parks.

3. The number and distribution of sites for recreation facility development have similar implications for urban land use problems in Banff and Jasper National Parks. New locations for development in or near to park entrance points are identified, as well as those in existing urban communities. The zoning pattern thus permits the full scale development of the gateway concept previously outlined.

On a broad regional basis, then, the geographical framework of land use surrounding the national parks provides an important margin of extra protection for these reserves and has a high potential for redirecting recreation pressures.
The way zoning policies are translated into concrete plans will largely determine whether this potential is actually realized. A critical area for attention in this regard is that adjacent to the east entrance of Banff National Park where existing demands are most pressing and some major planning decisions already have been taken and are in the early stages of implementation (Alberta Recreation, Parks and Wildlife, 1977; Alberta Recreation Parks and Wildlife, 1978). This strategic region comprises the Canmore Corridor, the intermontane portal of the Bow Valley, and the area to the south designated as Kananaskis Country (Figure 20.1). It is a vast 2,000 square mile area which is set aside and zoned primarily as a recreation region; large tracts of protected mountain backcountry are interspersed by linear ribbons of general recreation space along the main access valleys which contain several sites for facility development (Figure 20.2). A comprehensive package of opportunities are planned for this region including new and upgraded scenic highways, various trail systems and activity spaces, several resort villages, and consolidation of regional services in the Canmore Corridor (Figure 20.3). The newly designated Kananaskis Provincial Park is the integrative focus for these developments, but the critical point to note is their regional scale and overall coordination. When it becomes operational, Kananaskis Country will provide a major recreation alternative to Banff National Park and offer a major chance for relieving some of the existing day and week-end use demands placed on the reserve.

Before this stage is reached, however, a number of land use issues emerging from current operational plans by federal and provincial agencies will require resolution; and tourist and recreation facility developments represent a special case for study. The pressures for this form of development are concentrated especially in the Banff, the Lake Louise, and the Canmore-Kananaskis areas. At this time, provincial decisions to establish three alpine villages in Kananaskis Country parallel approved plans within Banff National Park for the expansion of Sunshine Ski Village and the active consideration of further development at Lake Louise. In addition, a series of commercial proposals for major tourist and recreation developments within, or adjacent to, the Canmore Corridor remain outstanding following their presentation at public hearings (Environment Conservation Authority, 1973). Facilities proposed for corridor locations are unlikely to be constructed during the foreseeable future according to the Calgary Regional Planning Commission (1977, p. 69), but the nearby Assiniboia proposal for the development of a ski and summer resort community at Spray Lake (Figure 20.3) has been submitted to the provincial cabinet for preliminary disclosure (Connelly, 1978).

The range of developments that are proceeding more or less independently raise some basic questions about the nature of their relationship to each other and their impact on the park environment. How compatible or competitive are the various plans and proposals for development in Banff National Park and the surrounding area? What is their individual and cumulative relationship to the structure of demand? How will they interact to reduce, or to
FIGURE 20.3 Recreational Development in Kananaskis Country.
increase, the pressures on the national park? The need for tourist and recreation development in this region is not in question. Rather, the problem lies in deciding what mix of facilities is appropriate and how these should be phased over time and between locations. No serious consideration of the integration and pacing of development inside and outside national park boundaries is apparently being made by the agencies responsible. Such an assessment would be valuable, for it may indicate the need for reciprocal adjustments between developments, perhaps with Parks Canada reconsidering the form of Sunshine and Lake Louise expansion might take in relation to feasible additions to existing provincial projects, or to the possibilities for re-ordering development priorities. This approach also may be profitably applied to the other areas of development. For example, the planned trail access system from Kananaskis Provincial Park into the sensitive wilderness zone covering the southern arm of Banff National Park warrants detailed attention to its environmental implications.

In the final analysis, then, uncertainties associated with the inter-relationships between detailed plans for Banff National Park and the surrounding area cast some doubt on whether regional integration will be achieved in practice.

SUMMARY AND CONCLUSIONS

The solution to the basic problem of reconciling preservation and use in national parks ultimately lies outside their boundaries. Master plans incorporating land use zoning and other controls to distribute and limit user activities in the context of resource preservation are an important keystone of park management, but not sufficient alone. Use and development demands in national parks, and especially more intensive pressures, can only be properly met by developing other more appropriate outlets. Nor can park landscapes and ecosystems be perpetuated in an unimpaired state unless sound stewardship is exercised over adjacent land, water, and other natural resources. To fully meet their resource management objectives, national parks should be planned within the context of a regionally integrated system of land use and open spaces, although this model is extremely difficult to realize with traditional institutional arrangements.

One benchmark example of the way national park purposes may be reinforced by management strategies for surrounding lands is provided in the Eastern Slopes, and this case study offers several instructive lessons in regional integration.

1. It illustrates what can be achieved in developing correspondence between land use policies for multiple purpose wildlands and national parks and equivalent reserves. The zoning system of interrelated areas for protection, recreation, and development adjacent to national parks resolves many of the previous conflicts between these lands and provides guidelines for planning which have broad applicability.
2. More detailed operational plans are less well correlated, however, and this suggests that regional integration becomes progressively more difficult in moving from the policy to project levels of decision-making. In particular, the issues raised by overlapping decisions to develop tourist and recreational facilities inside and outside national park boundaries indicate two basic shortcomings in the planning process and underline its continuing sectoral nature. Above all, they imply a lack of working coordination between federal and provincial agencies. Less obviously, perhaps, they point towards a lack of any substantial information about market factors, or about the various client groups and their patterns of use and preference.

3. A call for more coordination is easy, but it is much more difficult to specify the measures which can actually accomplish this. The problems here are not so much the lack of formal channels for interchange as of their regular and efficient utilization. Bureaucratic caution against sharing responsibilities is likely to prove the hardest barrier to overcome in designing an integrated system of land use management which cuts across intergovernmental resource jurisdictions. One immediate route for coordinating development plans for national parks and surrounding lands in the Eastern Slopes involves striking joint federal-provincial task forces to resolve issues of concern to one or both sides, as working extension of the present vehicles for general consultation.

4. Assessment of market factors is constrained by problems in demand measurement. Recreation demand is undoubtedly a shifting and elastic basis for planning; most consumers are relatively unspecialized, substitute freely amongst a range of activities and areas, and shift in response to changes in supply. Even some modest improvements in this kind of information, however, could pay dividends in the form of improved decision guidelines about the number and distribution of resources and facilities that are required within and outside national park boundaries.

These broad recommendations for improvements in the regional integration of national parks and surrounding lands involve the adoption of revised procedures for planning within policy and zoning frameworks which are unusually correspondent. In this case, an outstanding opportunity exists for Parks Canada to assume leadership in strengthening the basis for integration. This assessment, in turn, raises the question of how the agency can intervene, in less suitable environments, to maintain park resources. Some broad guidelines are derived from the previous discussion of the roles regional planning may play. At a broad level, the regional integration policies articulated by Parks Canada need to provide a more systematic focus and clearer direction for the development of working strategies. What can be achieved in any situation obviously will vary with local conditions, but research along the following guidelines represents minimum initiatives:
1. Ecological monitoring of regional developments to analyse their possible implications for resource perpetuation, with environmental impact assessment procedures applied, directly or through other federal agencies, in cases where serious potential threats are identified.

2. Regional studies of recreation use to identify relationships between excessive or inappropriate pressures in national parks and deficiencies in the provision of alternative resources and facilities.

Once the groundwork is established, the specific course of action open to Parks Canada in cooperation with other agencies can be more readily determined. This kind of intervention is likely to provide a politically unrewarding option, but every indication is that it will become imperative over the long term if the national park system is to serve its intended purpose.

REFERENCES CITED


INTRODUCTION

One important development since the first parks conference ten years ago has been a gradual diffusion of the ecological and aesthetic values expressed through the creation of parks and equivalent reserves into other areas of land use planning and management. It has coincided with increased environmental awareness in the general public over the past decade, and the growing respect for ecological principles now demonstrated by a number of practitioners in the planning and resource management professions.

One expression of this in southern Ontario has been a revitalized interest in natural areas planning encouraged by the fact that some municipalities now are willing to give recognition to such areas in their official policies plans, and a measure of protection for them under municipal planning procedures or by-laws. As the first of these innovations in local approaches to natural areas planning showed evidence of acceptance, various groups and individuals in a number of municipalities embarked on their own inventories of local natural areas, and sought ways to obtain recognition of them by the appropriate municipal authorities (Adindu and Eagles, 1977; Hilts, 1978). Preliminary inventories of natural areas now have been compiled for at least fifteen regions, counties, or urban municipalities in southern Ontario.

Most natural areas in southern Ontario now occur only as relatively small disjunct remnants of former landscapes, surrounded by agricultural, urban, or other intensive land uses. They consist of scattered rural woodlands; relatively undisturbed stretches of river valleys; small lakes and marshes, bogs, and swamps; and a few municipal parks which somehow escape being manicured by horticulturalists. No rigid definitions have been formulated for classifying such remnant areas, but the common characteristic they share is that they still retain natural features which, in varying degrees, are closer to what the southern Ontario landscape would presumably be like if human
influences were absent. All of these remnants, in fact, have been influenced by human activities over the years and some have been abused.

At the present time, progress towards recognizing these remnant natural areas in the context of municipal planning has gone furthest in the Regional Municipality of Waterloo which has had an approved policy for them operating since late 1976. Progress also is evident in the Regional Municipality of Halton whose Council approved, in September, 1978, an Official Policies Plan which includes a policy for such areas; and in the Regional Municipality of Haldimand-Norfolk whose Council approved a Draft Official Policies Plan with a similar policy in mid-1978. In the latter two instances, the policies are subject to revision since they still require the approval of the provincial government.

Regional Municipalities in Ontario were created by the provincial government mainly in the early 1970's as one way to reform and strengthen municipal government over areas experiencing urban growth pressures. They essentially are strengthened County governments. The general approach to establishing them was to consolidate, and reduce, the number of local municipalities within the boundaries of one, and sometimes two Counties; and then to create a two-tier arrangement whereby some functions and responsibilities previously exercised by local municipalities were transferred upwards to the new Regional administrations. Each Region is governed by a Council of officials elected by the local municipalities within the Region.

Responsibility for overall planning, along with powers to coordinate the plans of local municipalities under them, were given to these Regional governments. Preparation of a Regional Official Policies Plan then became one of the first tasks each was to undertake. It may be significant to note that the new receptivity to making policy provisions for natural areas occurred in this context of new governmental structures taking up new kinds of responsibilities.

In the following sections, the approach taken to formulate and implement policies for remnant natural areas in the Region of Waterloo, and the approach proposed for the Region of Halton and the Region of Haldimand-Norfolk are described. These three were selected as the best examples because of the support the policies already have received from elected officials. Some observations then will be made on problems which have to be addressed in working out effective policies for remnant natural areas at the municipal levels in Ontario. A few concluding comments point to some significant opportunities which may have been opened up by this new component in wildlands planning generally. Much of what follows is, necessarily, similar to recent accounts given elsewhere (Francis, 1977; Francis, 1978a).
The Regional Municipality of Waterloo officially came into being in January of 1973 after extensive studies and discussions of local government reorganization. It managed to have its Official Policies Plan prepared and approved by the Regional Council in late 1975, and, subsequently, it became the first of the new Regional Municipalities to receive approval of its Policies Plan by the provincial government, in December of 1976 (Region of Waterloo, 1976). Soon after the Regional government was established, members of citizen groups already involved with environmental and conservation issues in the Region saw merit in the creation of an advisory body to work closely with the Region on environmental questions.

Following representations to this effect, Regional Council responded by creating an Ecological and Environment Advisory Committee (E.E.A.C.) in mid-1975 to work informally with Regional planning staff and to report to the Planning and Development Committee, a standing committee of Council. Members of E.E.A.C. were appointed by the Regional Council and were persons associated with organizations having a recognized interest and expertise in environmental matters. The appointees, about twenty altogether initially, were affiliated with citizen environmental and conservation groups, land developers and builders, planning and environmental consultants, universities, district offices of provincial government Ministries, and other Regional organizations. E.E.A.C. was given very broad terms of reference to raise or respond to various environmental issues affecting responsibilities of Regional government and advise on the environmental components to be incorporated into the Official Policies Plan. Meetings were held about twice a month, and were open to the public and covered by the local press.

The Regional Municipality of Halton came into being in 1974, and by early 1976 it, too, created an E.E.A.C. with a structure and mandate comparable to the one in Waterloo. So far, these are the only municipalities with this kind of advisory committee, but the possibility of creating others is apparently being discussed elsewhere.

Provisions for remnant natural areas come under policies for environmentally sensitive areas in the approach adopted by the Regions of Waterloo, Halton, and Haldimand-Norfolk. Use of the term sensitive indicates only that special restrictions are deemed necessary on the kinds or intensities of use permitted for these lands, either to protect the natural features of the site from degradation, or to protect property from the inherent dangers of locating on the sites. Flood plains and other hazard lands, such as areas of steep slope, high erosion potential, or organic soils, were the lands first considered for special
provisions under some municipal environmental policy. Remnant natural areas soon came to be included as well, especially since they so often coincided with lands in the flood plain or hazard categories. As Regional environmental policies were formulated, the term environmentally sensitive area appears to have become more closely associated with remnant natural areas, while other stipulations have been included under environmental policies applied to flood plain and other hazard areas.

The identification of areas to be designated as environmentally sensitive was done in consultation with the advisory committees in both Waterloo and Halton. In Waterloo several studies and surveys, conducted through the University of Waterloo over about a five year period from 1970, allowed E.E.A.C. to compile useful information, review it, and propose areas to be designated as environmentally sensitive. The Halton Region drew on two studies, one by a consultant firm and the other by its E.E.A.C., for the same purpose. In Haldimand-Norfolk, the areas were identified by staff in the Ontario Ministry of Natural Resources and the local Conservation Authorities.

In the course of reviewing and discussing candidate areas, clarification had to be reached on the selection criteria being used implicitly to judge which areas should be included under the designation. A statement prepared by the Halton Region E.E.A.C. in June, 1976, is a concise summary of the thinking which had emerged from the Waterloo and Halton experiences up to that time. It is quoted in full, below, since it gives an important insight into how remnant natural areas are coming to be perceived and understood in the context of municipal plans and planning in southern Ontario. The statement is as follows (Region of Halton, 1976):

Environmentally Sensitive Areas, as defined by the Ecological and Environmentally Advisory Committee, are those land and water areas containing natural features or ecological functions of such significance as to warrant their protection in the best long-term interests of the people and environment of Halton Region. These areas may be essential in maintaining a healthy ecological balance within the Region, and may also provide ancillary benefits for scientific research, education, or recreation. Their protection is an integral part of the fulfillment of man's responsibility of stewardship of the land and other living things.

These sensitive areas may or may not have been significantly affected by current or past human activity and they may or may not require some form of management to restore, maintain, or improve certain of their natural values. However, they all share the need for some degree of protection because of their vulnerability to destruction by man's activities.
Criteria for selecting these highly sensitive areas for designation in Regional Official Plans and local zoning bylaws include, but are not necessarily restricted to, any one or combination of the following:

1. The area represents a distinctive and unusual landform within the Region, Ontario or Canada.
2. The ecological function of the area is vital to the healthy maintenance of a natural system beyond its boundaries by serving as a water storage or recharge area, important wildlife migratory stopover or concentration point, or a linkage of suitable habitat between natural biological communities.
3. The plant and/or animal communities of the area are identified as unusual or of high quality locally within the Region, Ontario or Canada.
4. The area is an unusual habitat with limited representation in the municipality, Ontario or Canada, or a small remnant of particular habitats which have virtually disappeared within the Region.
5. The area has an unusually high diversity of biological communities and associated plants and animals due to a variety of geomorphological features, soils, water, sunlight and associated vegetation, and microclimatic effects.
6. The area provides habitat for rare or endangered indigenous species that are endangered Regionally, Provincially or Nationally.
7. The area is large, potentially affording a habitat for the species that require extensive blocks of suitable habitat.
8. The location of the area, combined with its natural features, make it particularly suitable for scientific research and conservation education purposes.
9. The combination of landforms and habitats is identified as having high aesthetic value in the context of the surrounding landscape, and any alteration would significantly lower its amenity value.

Using this general set of factors applied judgementally to various candidate areas, Waterloo eventually designated sixty-nine areas, ranging in size from just under two acres to just over 500 and totalling some 19,450 acres or six percent of the Region as environmentally sensitive policy areas. Before deciding on these areas, the Regional Council had over 1,200 individual owners of these designated areas and the adjacent lands notified about the policy it was considering to solicit their reactions. The Region received fewer than one hundred responses, usually in the form of queries or objections, and only about twenty representations were made at hearings on this proposed policy prior to its being approved.

There essentially are two main policy provisions in the Waterloo Plan. The first requires that before any change in the
present legal land use of any environmentally sensitive area, or lands abutting it, will be considered, the owners or the local municipality have to submit an environmental impact statement concerning their proposed change in land use or proposed development. This is to be included with whatever other documentation may be required for deciding on whether, or under what conditions, such a change may be approved. The second provision in effect takes note of various ways in which the Regional government may work with local municipalities and individual land owners to reach satisfactory agreement on the implementation of the intent of the policy. If agreement cannot be reached, the Plan provides for the deletion of a designated area through the statutory plan amendment process, which would serve to open the question to public discussion.

The intent of the environmental impact statement, as declared by the Waterloo Regional council is to have a determination made of how sensitive a designated area is to whatever change or development is being proposed. This is to be reported in terms of the possible impacts the change would have on the natural qualities which led to the area being designated in the first place, and ways in which negative effects might be avoided or ameliorated. The E E.A.C. has been given responsibility under the Official Policies Plan to review these statements and offer recommendations concerning them to the Regional Planning and Development Committee.

This role has now become the more important one for the E.E.A.C., although it still serves as a forum to discuss general environmental issues. It was judged necessary to revise the structure of the committee somewhat in the light of the more direct role it now has in advising on development decisions, as well as to define more explicitly this role in the overall planning and decision process. The committee itself has been working out broad guidelines for environmental impact statements for use by proponents of changes to designated areas, drawing largely on proposals by Robert Dorney (1976) who is one of its members. It also is clarifying its own procedures, in part through the actual handling of submissions.

Most of the environmental impact statements reviewed so far have pertained to changes on land abutting designated areas. These deal with the precautions the proponents were prepared to take to protect designated areas from external influences. The submissions dealt with various matters such as buffer strips, fences, and hedgerows, sedimentation ponds, fill, and drains.

Only two submissions have dealt with proposals for development which intrude over most of a designated area. In one case, there had been a proposal some three years earlier to build about fifty estate homes on 175 acres which overlapped an area which at the time was under consideration for designation. There were a number of factors, not all environmental, which delayed a decision on this. The proponent subsequently revised the proposal completely to one which envisaged construction of a compact set of
townhouses well removed from a thirty-five acre woodland of greatest interest as a natural area because of the variety of its flora; this latter feature was the main one underlying the decision to designate the area. This current proposal still awaits clarification of other questions concerning the development of the hamlet where the townhouses would be located.

In the second case, a major subdivision development was proposed for some 400 acres of land adjacent to an urban area. It included about fifty acres of a designated area. Environmental consultants did field studies on some 200 acres centering on the designated area and its surroundings to recommend ways in which the key natural features could be maintained by incorporating them into an open space buffer zone separating housing from a main railway line and a proposed utility easement. After considerable discussion of the consultant's report it was also decided to try and maintain a small pond in a semi-natural state as an amenity, rather than fill it in, and revise the boundary of the designated area to exclude the portion where housing will be built. No decision has been taken yet to revise the boundary by extending it to include a small carr thicket, as was also recommended by the consultants.

Although the Regional Policy explicitly indicates that boundaries of designated areas are to be drawn more precisely as part of the environmental impact studies when required, there is nevertheless a temptation to assume that the preliminary boundaries shown on a map in the Official Policies Plan are the appropriate ones to adhere to. This has been a point of recurring discussion in the E.E.A.C.

In the Regional Municipality of Halton, the policy approved by the Regional Council for its Official Policies Plan designated thirty-eight areas, ranging in size from about fifty acres to one complex of some 7,000 acres, as environmentally sensitive areas. Some of these are on flood plain hazard lands. The intended policy is to permit, as a general rule, no change in physical or environmental character of these areas and to encourage development to locate outside of them (Region of Halton, 1977b, p. 20). In cases where a change of character is proposed, then an environmental impact assessment is to be required as well as a site management plan for any alteration in land use which may affect the natural values for which an area was designated. Policy provisions also will require measures to protect such areas from proposed nearby changes in land use, and these can include setback provisions to buffer the area from external influences. The plan also notes that the Halton E.E.A.C. will assist in monitoring and reviewing implementation of this policy.

The Regional Municipality of Haldimand-Norfolk has designated thirty environmentally sensitive areas which it has classified into those which are provincially, regionally, or locally significant. Provincially significant areas include Long Point peninsula and its inner bay along Lake Erie, and also Turkey Point, both well known for their recreational and natural history value in Ontario.
The proposed policy would restrict permitted uses in designated areas, as well as restricting the lands immediately adjacent to them to their existing uses. It also intends to discourage the expansion of non-conforming uses viewed in the context of what would be appropriate for effective conservation, forestry, fish, and wildlife management. Before granting approvals for other uses or development, the Regional council will require an environmental analysis prepared to the Council's satisfaction to assist in determining the degree of sensitivity of the site and the compatibility of the proposed use with the preservation of the sensitive area (Region of Haldimand-Norfolk, 1978, p. 6). One important feature in the Haldimand-Norfolk Draft Plan is its proposed designation of selected streams and known fish spawning areas in the environmentally sensitive category.

SOME POINTS REGARDING POLICIES FOR REMNANT NATURAL AREAS

The actual, or proposed, policy provisions of the three Regional Municipalities summarized above indicate the main direction this local approach to natural areas planning is taking in Ontario. As yet, none of the traditional county governments appear to have made similar commitments, in one case, at least, because of uncertainty regarding how they could be implemented without the enhanced resources of a Region (Rich, 1978). Nevertheless, there are some points to note regarding the approach taken so far, and some problems which have to be considered in order to carry it forward.

As the Halton statement on selection criteria to identify areas for designation indicates, the values being expressed are much the same as those underlying the creation of national or provincial parks or equivalent reserves. But the context in which they have to be applied is clearly quite different. This in turn becomes reflected in the rationales and the approaches to implementing policies for such areas.

First, the ecological and aesthetic values which are being attributed to remnant natural areas arise from viewing them collectively, as important components in the whole landscape, and individually, for the particular natural features each exhibits. This means that the overall mosaic of areas is seen to have value, not just the individual components alone. Second, the importance of remnant natural areas is becoming recognized in terms of the free ecological services they may be performing, such as regulating hydrologic regimes or buffering the impacts of certain land uses on adjacent areas. The areas may be identified by their features but they may be valued more for their functions. Third, management is readily accepted as necessary, especially since remnant areas are relatively small and vulnerable to human activities on or around them. The intent is usually to seek some pattern for their continued use which is compatible with their recognized natural qualities. Strict preservation would be the
exception rather than the rule. Finally, since most remnant natural areas in southern Ontario are privately owned, often under multiple ownership, policies for them require agreements to be made implicitly or contractually with land owners if policy and management objectives are to be achieved.

These considerations each point to the need to view remnant natural areas from a number of perspectives, extending well beyond the perimeter of individual areas. Planning and management for them must be situated in the larger spatial context of land and resource management in a county, watershed, or other physiographic region. The administrative arrangements for them must fit into the larger body of legal, regulatory, and incentive provisions for reconciling private interests in land as a commodity with societal interests in land as a community resource. This leads to a number of points to consider in the identification, designation, and management of these remnant natural areas if policies for them are to be implemented effectively.

The identification of candidate areas for designation is not difficult. Remnant natural areas contrast well with the agricultural or urban areas surrounding them. In a number of municipalities in southern Ontario the reconnaissance surveys to identify possible areas and compile preliminary information on them have been done by teams of students funded through the Ontario Ministry of the Environment as part of the provincial government's expenditures for student summer employment. This was done for example in the Counties of Oxford (Hilts, 1976) and Wellington (Eagles, 1976; Elrich and others, 1977) as well as in the Region of Waterloo. However, moving beyond the reconnaissance stage towards obtaining more detailed information along the lines indicated by the selection criteria may lead to certain difficulties.

One of these is the time and cost of detailed ecological analyses which would be needed to document diversity or determine the role of a given area in say, the hydrologic regime. While to some extent this kind of information might best be sought only when and where needed, there is nevertheless a dearth of basic survey material to allow more detailed studies to be readily done. In the Halton Region for example, a hydrogeologic investigation was commissioned to determine evidence of major recharge or discharge areas, significant aquifers, wetland storage, and potential problems of groundwater contamination (Region of Halton, 1977a). The results were drawn upon in part to help designate environmentally sensitive areas. But this was an exception. Selection of remnant natural areas for proposed designation in other counties or Regions has been done without such information being readily available.

Even at the level of basic natural history, there is a surprising lack of reliable information on the local distributions and occurrences of plants and animals in southern Ontario. This in turn makes arguments concerning rare or endangered species difficult to document. In the Waterloo Region, drawing together
a basic working list of flora required considerable effort in compiling data from various sources to up-date an earlier list prepared some thirty years before. Other municipalities have no working lists of their flora or fauna at all.

As the number of remnant natural areas being designated by municipalities increases, the question then arises about whether or not they are also contributing to the building of some comprehensive system of protected representative natural areas at the provincial or some other level (Francis, 1978b). While there seems little doubt that the small remnant areas could be useful complements to whatever natural areas are protected on federal or provincial government lands, much remains to be done to define the larger system of ecological diversity which ideally should be conserved. In Ontario, work has been underway for some time to develop a systematic classification scheme for nature reserves based on site regions, characteristic vegetation, chronostratigraphy, and landforms (Beechey and Davidson, 1976). The federal government also has embarked on a Canada-wide approach for parks planning which takes into account the need to protect representative natural areas deemed to be of Canadian significance (Carruthers, 1977).

More multi-jurisdictional cooperation involving municipalities will be necessary to pull these efforts closer together for the eventual creation of some comprehensive system of representative natural areas.

Designation of lands as *environmentally sensitive* in official policies plans is a kind of shadow zoning. The lands, in fact, may remain under the more traditional zoning categories, such as agriculture or open space, with the policy provisions for designated areas only coming into play under particular conditions. As previously noted, in the Waterloo Region the policy applies only when proposed changes in the use of a designated area also require rezoning, while in the Halton Region the policy will apply whenever some proposal would result in a change in the physical and environmental character of an area. These conditions pose some dilemmas. Clearly, the stipulation in the Halton Region concerning changes in the *character* of designated areas is open to varied perceptions and interpretations. On the other hand, the approach in Waterloo Region leaves a number of possible loopholes by requiring the policy to be activated with applications for zoning changes. Unless a designated area happens to be on a flood plain, where Conservation Authority regulations restrict land uses, there are a large variety of activities permitted for lands under open space or agricultural zoning. Some of these activities are not always compatible with maintaining the natural qualities of designated areas. These include certain forest management practices, which strive for virtual monocultures of commercial trees, some types of recreation dependent on various motorized vehicles, and *ad hoc* land severences which do not come under legal requirements for sub-division approval. All of these could become major loopholes in particular situations.
There are also a number of potential problems in defining and applying the selection criteria in order to designate areas. These could arise should strict interpretations with documentation be required, especially in the face of a challenge during the planning process. Owners who feel strongly about the issue as a matter of principle simply may deny access to their property to get additional information which may be needed. Moreover, the legal basis for making such designations is not all that clear. The present Planning Act in Ontario (R.S.O. 1970, Ch. 349) is at best permissive; however, should the recommendations of the Planning Act Review Committee be accepted, municipalities would have much more explicit authorization to take natural environment factors into account in their plans and planning (Lang and Armour, 1977).

One other weakness is the lack of any serious sanctions against owners who literally may wish to destroy their own property. This would not be an irrational act should an owner wish to convert land into some intensive urban use which would involve clearing and levelling it anyway. If the presence of some natural feature was perceived as a legal impediment to doing this, as it might if the land was part of a designated area, then the temptation to level it first, and apply for permission to develop after, might well be there. One way to remove this temptation may be to draw on the precedent of the Ontario Heritage Act (S.O. 1974, Ch. 122) which allows strong penalties to be levied on whomever may destroy property of recognized historical and architectural interest, and extend this, in the form of similar provisions, to cover the natural heritage.

Finally, the management of designated areas poses another range of considerations. The resource management aspect has to deal with problems of the site itself, and the impact of external influences on it, in order to be reasonably certain to maintain the natural features and ecological functions sought from designating the area in the first place. Ideally, each designated area should have a long-term management programme worked out for it; but this begs a number of practical problems which would have to be resolved. This is especially so for any area which has to be maintained at some early successional stage, or one which constitutes such an integral part of a hydrologic system it has to be managed in the context of some watershed programme. At present, most of the remnant natural areas being selected for designation are examples of late succession vegetation which presumably would change very slowly if left without site management. However, one example of a possible exception was studied by Tobias and Eagles (1977) in a 1,200 acre tract proposed for designation in an inventory prepared for the Regional Municipality of Hamilton-Wentworth. A 104 acre portion of this tract had a summering bird population of unusual composition and diversity which was related, in part, to the kind of habitat provided by its maintenance as a Christmas tree plantation under private management.
Management, in the administrative sense, requires looking into arrangements whereby agreements could be reached with owners of designated areas in order to have a long-term management programme carried out. Ideally, this would go beyond the essentially negative restrictions against change and include incentives and technical assistance for protective management of designated areas. There is some precedence for this in Ontario under the Woodlands Improvement Act (R.S.O. 1970, Ch. 502) which provides for rebates on property tax for land judged to be under good forest management, usually through long-term agreements with the Ministry of Natural Resources. Professional forestry advice on practical management questions also is available to owners. It would be desirable to have such provisions extended to owners of wetlands, and to use these arrangements more explicitly for protection management, not just for production management; this last point relates more to the attitudes of some professionals administering the statute.

A CONCLUDING NOTE AND LOOKING AHEAD TO THE NEXT TEN YEARS

The local approaches to natural areas planning described here are really just getting underway. They are proceeding largely in the absence of any clear policy, legal or administrative guidance from the province, other than what can be found in the general powers and responsibilities delegated to municipalities. In large measure, the process is evolving in the light of its own experience. In having to find its accepted role in municipal planning and decisions it proceeds, at times, with a cautious uncertainty. This sometimes is perceived as being confused and inconsistent (McCulloch and Finley, 1978), or as posing unfair costs on developers (Housing and Urban Development Association of Canada, Ontario, 1978). There are both practical and state-of-the-art problems to be dealt with.

Yet there are some indications, which municipal politicians are attuned to, that the new perceptions of the values inherent in remnant natural areas are reinforced to some extent in the market place. Discussions over draft official plans and particular development proposals help to reveal this. A growing number of people who have bought parcels of remnant natural areas have done so with the expressed intent of retaining their naturalness; home owners adjacent to such areas often support protective measures in part because they see them reinforcing their own property values; the more astute land developers and builders have discovered that moving away from flat earth planning towards ecosystem planning (Dorney and Rich, 1976) increases the sales value of the results in an economically attractive way; and rural dwellers often see some measure of protection for such areas in the larger context of maintaining the social or economic integrity of the agricultural countryside itself, an issue also of concern in Ontario.
In terms of wildlands planning and management generally, these local approaches may be adding an important new dimension. By providing some recognition and protection for the smaller remnants of former landscapes, they can add to the representational diversity of a system of protected natural areas through complementing whatever is already protected under federal or provincial jurisdictions. And they do this on lands, which for the most part are privately owned, without relying exclusively on public acquisition, a conventional approach which by now in Ontario is fast becoming prohibitively costly and politically infeasible. In the more settled areas of Ontario local approaches like those described may be the only viable way of arranging to conserve some of the diversity still to be found in what remains of the extensive former hardwood forests and their associated habitats.

In looking ahead to the next ten years then, efforts should be directed towards three interrelated goals. One would be to put this innovation in local approaches to natural areas planning on a firmer basis of institutional and public support, in part by strengthening efforts along the lines already initiated.

Second, more attention should be given to developing strategies for landscape restoration and rehabilitation, and applying them where necessary to create and maintain a larger measure of ecological diversity at the municipal level. Restoration here refers to measures to enhance the natural recovery processes of landscapes, as for example some forest management strategies. Rehabilitation refers to measures to re-constitute an area from some degraded condition to something more desirable, as for example converting abandoned gravel pits into wildlife areas. More support of research in applied ecology would be required to pursue this effectively.

The third goal would be to seek a wider and clearer consensus on what overall comprehensive system of representative natural areas should be developed, and the arrangements needed to work collectively towards attaining it. This applies, not only within Ontario, but throughout Canada. The prevailing practice whereby each organization generally looks to developing its own system of protected natural areas which it alone tries to acquire, control, or otherwise manage does not necessarily lead to some optimal overall system reflecting the full range of ecological diversity which should be maintained and protected. This is in part due to the political, jurisdictional, or administrative boundaries which restrict the focus or constrain the activities of each government agency and many private groups as well. While such individual efforts are not to be discouraged, it would seem time to arrange for periodic reviews of their collective aims and results.

Reference to a common ecologically-relevant planning framework would be of particular help in reviewing the present situation. The biogeographic provinces proposed by Udvardy (1975) and adopted as the international reference system by the International
Union for Conservation of Nature and Natural Resources (I.U.C.N.) would be one useful framework. The need then is to embark on a consultative and cooperative planning process involving the various government agencies and other groups working with natural areas under various mandates in different jurisdictions and in the private sector. The first task would be to seek agreement on broad policy goals and the main guidelines for establishing, within each biogeographic province, a system of protected areas to reflect the range and variation of ecological features. These would be composed of sites ranging from the centre through to peripheries and transition zones, including a mosaic of disturbed landscapes with their characteristic early succession ecosystems as well.

The new Associate Committee for Ecosystem Conservation could play a crucial role here if it was able to be a vehicle for working out goals and guidelines through an on-going consultative planning process. Arrangements for a periodic collective review of all programmes and activities contributing to the protection of representative areas could then determine what still has to be done, and, where necessary, help develop the cooperation needed to do it. Once again it should be noted that municipal governments working with private landowners have a particularly important role to play from here on in helping to round out and complement whatever already is protected under federal and provincial jurisdictions.

REFERENCES CITED


THE PROMISES AND PROBLEMS OF COORDINATION IN PARKS DEVELOPMENT AND MANAGEMENT

T.L. Burton

INTRODUCTION

The purpose of this paper is to consider the promises and problems inherent in the notion of coordination of governmental and non-governmental activities in the development of non-urban parks and other kinds of public and private land reserves. It will address such issues as: how the various types of public lands and public agencies and their counterparts in the private sector can be brought together to further the creation of an integrated system of parks and reserves in Canada; what mechanisms presently are being employed by, within, and between the federal and provincial governments to achieve effective coordination; what the weaknesses and strengths are of these existing mechanisms; and whether or not the scope of these mechanisms should be extended to include the activities of landowners, developers, and managers in the non-governmental sector and, if so, how this might be done. In short, this paper is concerned with the issues and problems surrounding the institutional structures and mechanisms employed in the development and management of non-urban parks and land reserves in Canada.

The topic is one that has received increasing attention in recent years from many differing sectors and groups in Canadian society. There have been both positive and negative reasons for this. On the positive side, there has been the growth of systems' thinking, based upon the concepts of holism, in both the academic and business fields. This has stressed the significance of interaction, interdependence, and interrelationships in everyday things and is summed up in the pithy statement that, if you pick up something, you will find that it is attached to the universe. Systems thinking examines a field or topic from the point of view of the interactions, interrelationships, and interdependence between and among its components. Central to the approach are the notions of completeness, structural order, integration, rationality, and organization. Systems thinking has become especially important in a world of finite resources. As Canadians began to realize and accept that the resources of even this resource-affluent country are, in reality, limited and finite, the importance of understanding the interactions, interrelationships, and interdependence among and between these resources, and
human activities with and upon them, became increasingly recognized. It became important to recognize and allow for the effects of development and management activities before these were undertaken, rather than after. A preventive, rather than curative, philosophy has begun to prevail; and systems thinking is central to it.

At a more mundane and immediate level, the notion of coordination has been advanced by events. Parks Canada currently is in the process of reviewing and revising its policies with respect to national parks and national historic parks and sites. In the draft form, the new policies recognize and accept that visitor accommodation must be provided within the national parks. However, the general thrust of the policies is intended to limit the extent of physical construction within the parks, emphasizing instead the development of commercial facilities and services in communities adjacent to them (Parks Canada, 1978, p. 73). Such policies inevitably will place greater emphasis upon the notion of coordination between Parks Canada and other public and private agencies and institutions.

In addition to these positive influences, there have been negative factors behind the growth of concern for and interest in the concept of coordination. Studies since the early 1960's have shown that the rapid growth in the size and scope of governmental activity in Canada has led to the duplication of services, gaps in provision, and services operating at cross purposes (Burton and Kyllo, 1974, pp. 146-152; Ewers, Balmer, and McLemore, 1973, pp. 27-28; McEwan, 1961). Improved coordination within and between governments generally has been posited as a means of resolving these problems.

THE CONCEPT OF COORDINATION

An examination of several dictionaries suggests that there are two major aspects to the concept of coordination. The concept is seen, firstly, as a condition or state, that is, the condition of things being in their correct relationship or proper order. It is seen, secondly, as an activity, the activity of working together efficiently and harmoniously (Gage Canadian Dictionary, 1973, p. 256; Penguin English Dictionary, 1965, p. 159; Webster's New Collegiate Dictionary, 1973, p. 250). The first element, of course, implies the existence of a system, or systems, for that which is to be coordinated. The second implies the existence of mechanisms for efficient and harmonious activity. To take the first element, the concept implies or assumes that a system of non-urban parks and land reserves exists, implicitly or explicitly, in Canada and that this system demonstrates a correct and agreed relationship or order among its various components. This, in turn, demands that the various components of the system can be recognized individually and the specific functions of each readily identified. Yet, clearly, this is not presently the case in Canada. Several attempts have been made in recent years to develop a definitive statement of the system of parks in this country, one of the most notable being a
Parks Canada initiative in 1974 (MacNeil, 1974). These statements however, remain the personal or institutional testaments of their proponents. Certainly, there is not, at this time, a clearly articulated statement of the Canadian parks' system, and its component parts, which is generally accepted by all groups responsible for those parts.

It is clear, then, that the first element in the concept of coordination presently is not applicable to non-urban parks and land reserves in Canada. This leaves the second element, the activity of working together efficiently and harmoniously. This concept would seem to imply the existence of three conditions: recognition of and agreement upon the specific functions or activities that are to be coordinated; identification and acceptance of the various actors, that is the persons, groups, agencies, and institutions, that are to be involved in the coordination process; and the existence of appropriate and adequate mechanisms for coordination to take place. Each of these elements will be examined, in turn. Following this, attention will be directed towards the present situation in Canada and its strengths and weaknesses.

THE FUNCTIONS OR ACTIVITIES

In considering the functions or activities that are to be coordinated, the concern is with the process of decision-making in parks' development and management. Broadly, there are four types of decisions to be made, corresponding to four basic stages in the decision making process.

The first type of decision has to do with the goals, objectives, or ends towards which parks' development and management is to be directed. Employing the analogy of a journey, as shown in Figure 22.1, decisions about goals, objectives, and ends are concerned with defining the destination, or destinations, to which one wishes to travel. What kinds of national and provincial parks and land reserves do the various actors collectively wish to have as components of an emerging parks' system? What, generally, will be the overall purposes of such a system? What will be the specific objectives of the various components of it?

The second type of decision has to do with the establishment of policies for parks' development and management. Continuing the analogy of a journey, the concern here is with determining the directions of travel. Policy making is that aspect of decision-making which establishes the directions to be followed in order to achieve previously determined goals and objectives. What will be the differing roles and responsibilities of the various actors in the parks' development and management process? What, broadly are the parameters that will determine how these roles and responsibilities will be carried out? How does each actor or group of actors propose to go about achieving the specific objectives of the component parts of the system that has begun to emerge with the definition of goals and objectives?
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<tr>
<th>Stage</th>
<th>Purpose</th>
<th>Ends/Means Spectrum</th>
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<tr>
<td>GOAL SETTING</td>
<td>To define the destination or end</td>
<td>Ultimate Ends</td>
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<tr>
<td>POLICY FORMULATION</td>
<td>To give direction and continuity</td>
<td>Intermediate Ends</td>
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<tr>
<td>PLANNING AND PROGRAMME FORMULATION</td>
<td>To define alternative means and instruments</td>
<td>Alternative Ends</td>
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<td>PLAN AND PROGRAMME IMPLEMENTATION</td>
<td>To choose preferred alternative means and to execute these</td>
<td>Preferred Means</td>
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Figure 22.1: Stages in the Decision Making Process

The third type of decision involves planning, including programme formulation, which is concerned with defining process, or alternative processes, for giving effect to policies. In the context of the travel analogy, this type of decision has to do with the alternative routes to be followed and the alternative vehicles that may be employed. What are the alternative ways of implementing a policy which calls for the location of commercial facilities and services outside the boundaries of national parks? What are the specific instruments available to the various actors to ensure that this happens? What will be the anticipated consequences of employing one instrument rather than another?

The fourth and final type of decision involves the implementation, or execution, of plans and programmes. To conclude the analogy, this involves the choice of preferred vehicles and routes and the actual travel itself. Plan and programme implementation is that aspect of decision-making which gives effect to the previous three types of decision. Which of the alternative methods and instruments that will ensure that commercial facilities and services are located outside the boundaries actually will be used? What must be done to give effect to these methods and instruments?

This is, unquestionably, a highly simplified portrait of the decision-making process in parks' development and management. It is a wholly rationalist and scientific exposition which ignores influences, such as historical precedent and political persuasion, that tend to muddy the waters to a greater or lesser extent. It outlines only the types of decisions to be taken, and ignores important activities that precede these decisions, such as information gathering and dissemination and research. And it assumes that each stage in the decision-making process, or each type of decision, while being...
related to the others, occurs in a discrete form and time; that is, that each type of decision, while not independent of the others, is separately conceived and taken. It, thereby, ignored the whole realm of poladmzn, whereby decisions implementing plans and programmes serve not merely to execute policies, but also to define and shape them.

Notwithstanding these limitations, however, the exposition serves to draw attention to a number of aspects of the decision-making process that are important to any discussion of the concept of coordination as it applies to parks' development and planning. First, it makes it clear that there are, in fact, several different types of decisions that can be subjected to and influenced by the activities of coordination. Second, it demonstrates the key characteristics of these different types of decisions. This has implications, to be discussed later, for the kinds of coordinating mechanisms to be employed, as well as the types of actors to be involved. The four types of decisions span the spectrum from ends to means, and it is unlikely that the same actors would be involved in both aspects or that the same mechanisms would be appropriate to both. Third, it suggests that, while the existence of a system of non-urban parks and land reserves is not necessarily a prerequisite for coordination to occur, such a system might very well emerge as an outcome or consequence of coordination activities!

THE ACTORS

The actors involved in the decision-making process and, by extension, in coordination activities linked to that process, can be grouped into three major categories, each of which can be further divided into more groupings. The three major groups, or categories, are governments, businesses, and the public.

Government actors can be subdivided according to the level of government to which they owe allegiance: federal, provincial, or municipal. More importantly, however, they can be grouped according to the positions that they occupy within the structure of government. Politicians and appointed members of statutory boards and agencies are those who have ultimate authority and responsibility for all types of decisions. Generally, they are especially concerned, however, with decisions related to goals and objectives and with policy decisions that establish the directions to be followed in order to achieve those goals and objectives. Professional and technical staff provide the expertise for planning and programme formulation and carry the responsibility for plan and programme implementation. Management and executive staff serve as the link between the other two groups and carry responsibility for interpreting goals, objectives, and policies to the professional and technical staff, and for ensuring that plans and programmes reflect policies to the satisfaction of the politicians and appointed members of statutory boards and agencies.
In the context of parks’ development and management, businesses can be divided into two main groups. Landowners and developers are those whose primary interests lie in the planning, development, and management of specific sites in or near parks and land reserves. Consultants are businesses that provide services to landowners and developers similar to those provided to politicians by professional and technical staff and, perhaps less frequently, by management and executive staff.

The public also can be divided into two primary groups. Members of organized interest groups are those who have a particular explicit concern for an issue or topic and who generally are willing to become actively involved in promoting and supporting the group’s participation in events and activities relating to the issue. The general public, excluding the members of organized interest groups, consists of the consumers or recipients of decisions, those who are affected by decisions but who, for one reason or another, do not become involved in the decision-making process directly.

The relationships among and between these seven groups of actors are complex and will vary considerably from one specific case to the next. It is worth noting, however, that a pivotal role is played by the management and executive staff of government, who often have strong links to most, though not all, of the other groups involved in the process.

MECHANISMS FOR COORDINATION

The concern in considering the range of mechanisms available for affecting coordination is with formal mechanisms only. In many instances a wide array of opportunities exists, in the form of personal contacts among bureaucrats, media pressures, and so on, for the informal involvement of the various actors identified above in the decision making process. Such involvement, however, often is inconsistent, incomplete, and, in many cases, ineffective. In examining the promises and problems inherent in the process of the coordination of parks’ development and management, the focus must be upon the formal mechanisms and instruments for bringing the various actors together.

Coordination mechanisms are, broadly, of two kinds: continuing mechanisms and ad hoc mechanisms. The latter consists of mechanisms that are established solely to handle issues or problems of a particular and specific kind at a given time. The former, in contrast, refers to mechanisms that are established to handle issues, problems, and concerns on a regular, recurring, and on-going basis. Examples of the latter would include task forces, special inquiries, and public participation programmes, such as those presently operating in connection with the planning of Village Lake Louise and Kluane National Park. Examples of the former include standing inter-departmental and intergovernmental conferences and committees,
such as the Alberta Government Recreation Committee and the Federal-Provincial Parks Conference.

Both kinds of coordinating mechanisms make use of a wide variety of techniques in order to operate. In addition to employing the more traditional techniques, such as group meetings, technical advisory services, and surveys, coordinating bodies have made use of joint planning teams, public hearings, and even, gaming and role playing techniques. Many of these techniques, of course, have emerged into the context of the public participation movement of the late 1960's and early 1970's. An illustrative list of some of the available techniques is to be found in Figure 22.2.

THE PROMISES AND PROBLEMS OF COORDINATION: THE CURRENT SITUATION

The promises of coordination stem directly from identified problems in the parks' development and management process. These, in turn, stem from recent changes in the broader field of leisure services' delivery. Both the federal and provincial levels of government, and, indeed, municipal governments as well, have experienced a rapid proliferation during the past decade or so in the volume and types of leisure services that they provide. Of particular significance for present purposes has been the growth in the number of federal and provincial departments and agencies involved in the delivery of leisure services and, specifically, in the delivery of services that impact directly, and, to a lesser extent, indirectly upon parks' development and management. In a study completed in 1974, it was suggested that there were, at that time, sixty-six federal agencies and departments involved in one way or another in the provision of leisure services. The figures for the Alberta and Ontario governments were fifty-eight and fifty-six departments and agencies, respectively. In the less encompassing field of parks' development and management, there were, perhaps, as many as thirteen federal, eight Alberta and ten Ontario departments and agencies involved (Burton and Kyllo, 1974).

With this rapid growth and the consequent scale of government activity in both the general leisure field and the more limited field of parks' development and management, several significant problems emerged. Three of these which appeared to have assumed major importance were: conflicts in services within and between the federal and provincial levels of government; the lack of an agreed basic rationale for the distribution of responsibilities for services between the two levels of government; and an inadequacy in the then current mechanisms for policy development, priority definition, and integrated programme delivery within each level of government. These were not, of course, new problems. The 1974 study, however, was perhaps the first to document fully the nature and scale of such problems in Canada.

Suggestions for tackling these problems ran the gamut from band-aids to radical surgery. The existing governmental structures
Votes, Referendums and Plebiscites
Public Hearings
Large and Small Group Public Meetings
Advisory Groups and Task Forces
Technical and Professional Advisors
Surveys
Petitions
Telecommunications Techniques
Workshops and Seminars
Conferences
Participant Observation
Role Playing and Gaming
Expert Panels
Joint Planning Teams

Figure 22.2 An Illustrative List of Techniques Employed for Coordination Activities, including Public Participation.

and mechanisms could be serviced and repaired to make them run more smoothly. Or, old parts could be removed and new ones put in place so that they would run not only more smoothly, but also to a slightly different tune. Or, finally, they could be entirely dismantled and rebuilt so that they would run not only to a different tempo, but also to a different drummer! But, no matter which approach was preferred, it was apparent that improved coordination, that is, the activity of working together efficiently and harmoniously, would be an essential element in resolving the basic problems.

Both levels of government have recognized the problems and have accepted the need for greater and improved coordination in leisure services' delivery generally and, in parks' development and management specifically. The federal government and almost all provincial governments have established new and/or additional coordinating mechanisms in recent years. And there is no question that some progress has been made in improving both the general leisure services' delivery system and the parks' development and management process. Yet, it is equally evident that the great promises of coordination have not been fully realized. Crises in public confidence in the parks' development and management system still arise from time to time, as evidenced by the recurring problems of the Lake Louise townsite in Banff National Park. More significantly, there is still a strong belief among the senior administrators of provincial and territorial parks' systems that many federal parks' activities are inconsistent with federal responsibilities, as they perceive them, and have detrimental impacts upon the development and management of their own systems (Brooks, 1976). Why is this so? The answer lies, at least in part, in the types of coordinating mechanisms and instruments that have been established or have emerged in response to the problems identified in the 1974 study and earlier, and the ways in which these have been linked to the
various stages of the decision-making process and to the several groups of actors involved in that process.

Almost without exception, the mechanisms for coordination that have been established in the parks' development and management field have served to separate the various groups of actors in the process according to some, usually implicit, assumptions about the proper or appropriate roles of each. In the first place, the mechanisms for involving organized interest groups and the general public, and, occasionally, businesses, are separated from the mechanisms employed to involve the three groups of government actors with each other. Various kinds of public participation programmes, such as the current programme for Kluane National Park, have been designed largely to facilitate links between organized interest groups, the general public, and, to a lesser extent, landowners and developers, on the one hand, and the professional and technical staff of government, on the other. Rarely do such programmes facilitate communication between organized interest groups and the general public, on the one hand, and politicians and the executive and management staff of government, on the other hand.

In contrast to this, ad hoc and recurring interdepartmental and intergovernmental committees and task forces have been restricted in scope to governmental actors only and have, for the most part, separated these three groups of actors from each other. Such committees generally operate either at the political level or at the management level or at the professional and technical level. An hierarchical system has tended to predominate, with management staff generally being perceived as the link between the remaining two groups. Such an approach assumes, of course, that management staff are fully capable and willing to fulfill this integrating role. There is growing evidence, however, to suggest that many management and executive staff in the federal and provincial governments, rather than serving as facilitators for the flow of information and decisions among and between the other actors, have become, instead, guardians of established empires and bastions for the maintenance of the status quo (Gertler, 1977; McEwan, 1961). Bureaucratic criteria have become more critical to their activities than have measures of effectiveness in the actual conduct of the various stages of the decision-making process. But, even if this were not so, these formal committees would serve only to ensure coordination among the three groups of government actors. They do not make provision for the coordination of the activities of the remaining four groups of actors in the decision-making process, that is, the landowners and developers, the consultant businesses, the organized interest groups, and the general public.

Assuming that the establishment of communication is a first and necessary step to the development of adequate coordination in the parks' field, it is useful to examine the extent to which formal coordinating mechanisms facilitate communication among and between the seven main groups of actors in the decision-making process. Figure 22.3 is a representation of the communications links that have emerged from the two major types of formal coordinating mechanisms: interdepartmental and intergovernmental committees;
<table>
<thead>
<tr>
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<td>Government</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>1. Politicians</td>
<td>X X X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2. Management</td>
<td>X X X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Professionals</td>
<td>X X X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Business</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Landowners/Developers</td>
<td>0 0 0</td>
<td>X X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. Consultants</td>
<td>0 0 0</td>
<td>X X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Interest Groups</td>
<td>0 0 X</td>
<td>0</td>
<td>0</td>
<td>X 0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>7. General Public</td>
<td>0 0 X</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Legend:  
X = communication through formal coordination mechanisms  
0 = No communication through formal coordination mechanisms

Figure 22.3 Group Communication through Formal Coordination Mechanisms, including Public Participation Programmes.
and public participation programmes. It is based upon material
derived from the 1974 study of federal and provincial involvement
in leisure services (Burton and Kyllo, 1974), from a recent analysis
of cases of public participation in Canada (Burton, 1978; Burton
and Wildgoose, 1977), and from the author's own experiences as a
member of the professional and, later, executive staff of a federal
government department during the period from 1973 to 1976. It
demonstrates clearly that relationships between many of the groups
of actors do not occur thorough formal coordination mechanisms. Some
of the groups will, of course, communicate through other formal
mechanisms, as for example, through periodic elections, as well as
through informal means. Nevertheless, it is noteworthy that there
is really no formal coordination mechanism that serves to bring
even a majority of the groups together. It also is noteworthy that
the group that has the least opportunity to communicate with the
others through formal coordinating mechanisms consists of members
of the general, unorganized, public.

Just as the mechanisms for coordination that have been established
in the parks' development and management field in recent years have
served primarily to separate the various groups of actors from each
other, so they also have tended to separate the several stages in
the decision-making process and, thereby, have differentiated among
the groups of actors in each stage of the decision-making process
through formal mechanisms, including coordination mechanisms.
Involvement is identified on a four-point scale from low to high,
with nil included. Figure 22.4, while based upon the same materials
as Figure 22.3, obviously reflects a greater amount of judgement on
the part of the writer. Moreover, there is no suggestion, at this
time, that the pattern of involvement is necessarily inadequate or
insufficient simply because all seven groups do not have equal
involvement. Clearly, there is no reason why they should, and
many staff are appointed or elected specifically to carry out the
decision-making process on an essentially full-time basis. Other
groups inevitably must become involved on a part-time basis, and
therefore, for the most part, to a lesser extent. The key consi­
deration in terms of adequacy of involvement would seem to be
whether or not sufficient opportunities exist for the various groups
to become involved in each stage of the process to the extent that
each desires. Recent experience, as exemplified by the Riding
Mountain and Kluane National Park planning programmes and the Lake
Louise and Jasper townsite exercises, all of which presently are
ongoing, suggests that, in specific instances at least, there have
been reasonable opportunities for all groups to become involved,
though not always in the form or on the terms that the groups have
most desired (Brooks, 1976; Burton, 1978).

Yet another problem has to do with an evident lack of clarity and
agreement about the precise objectives of formal coordination
mechanisms. This is especially apparent with respect to public
participation programmes. Is the objective of these merely infor­
mation dissemination and exchange; to inform and be informed? Is
it to seek and give consultation and advice? Is it to undertake
joint activity, say, by federal and provincial agencies? Is it to
provide direction and control of one or more of the four decision-
<table>
<thead>
<tr>
<th>Groups</th>
<th>Goal Setting</th>
<th>Policy Formulation</th>
<th>Planning and Programme Formulation</th>
<th>Plan and Programme Implementation</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Politicians</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Nil</td>
</tr>
<tr>
<td>2. Management</td>
<td>High</td>
<td>High</td>
<td>Med</td>
<td>Low</td>
</tr>
<tr>
<td>3. Professionals</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Consultants</td>
<td>Med</td>
<td>Med</td>
<td>Med</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Public</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Interest Groups</td>
<td>Med</td>
<td>Med</td>
<td>Low</td>
<td>Nil</td>
</tr>
<tr>
<td>7. General Public</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Scale**
High - Medium - Low - Nil

**Figure 22.4** Levels of Group Involvement in Decision Making through Formal Mechanisms, Including Coordination Mechanisms and Public Participation Programmes.

Making stages that an agency goes through? Or is it, perhaps to provide some combination of these? Unfortunately, there has been clear evidence that, in many cases, the various parties involved in particular coordination activities have had quite different perceptions of the purposes or objectives of these activities; and, often, these have been opposing perspectives. One can cite here the cases of the Federal Interdepartmental Committee on Travel, Tourism and Outdoor Recreation Research in 1974-75 and, of course, the Village Lake Louise public meetings referred to earlier.
CONCLUSION AND COMMENTARY

In the decade since the first Canadian National Parks "today and tomorrow Conference was held in Canada in 1968, great strides have been made in the establishment and use of formal coordination mechanisms in the parks' development and management field. In addition to the Federal-Provincial Parks Conference, which existed at that time, there have been new committees and groups established, such as the Alberta Government Recreation Committee and its counterparts in other provinces, with mandates to coordinate activities in the general leisure services' delivery field. More significantly there has been a considerable trend towards the establishment of ad hoc committees and task forces to take responsibilities for at least some stages of decision making for specific parks and areas; for example, the current Lake Louise Advisory Group. In the same vein, there have been major advances in the development of formal public participation programmes for individual parks and areas, a current example being the Kluane National Park programme. All in all, a high degree of awareness of the need for coordination, including public participation, has emerged during the past decade, and has found expression in the establishment of a wide array of formal coordination mechanisms.

Yet, for all this, problems still exist and emerge into public view from time to time. Many of the promises of coordination, in the sense of all groups of actors in the decision-making process working together efficiently and harmoniously, have been fulfilled during the past decade; but all is not wholly sweetness and light and harmony! The Canadian Conference on Public Participation in 1977 showed that there have been recently, and still are, cases of public frustration with decision-making processes in parks' development and management in this country (Sadler, 1978). Coordination mechanisms are in place, but they are not yet working fully satisfactorily.

One cause of current problems is, clearly the tendency of existing coordination mechanisms to segregate groups of actors rather than to bring them together. Interest groups and the general public are brought together through formal coordinating committees, albeit imperfectly! Landowners and developers are brought together with other groups, in part, through public participation programmes, but more often through other formal and informal procedures, not of a coordinating kind. Most groups of actors now have the opportunity to become involved, at least to some extent, in all stages of the decision-making process, but not all at the same time and through the same mechanisms, which would best promote harmonious cooperation.

The current situation, then, leads to the identification of certain key questions for discussion and debate at this conference. Perhaps the most important of these are as follows. Should all groups of actors be involved in all stages of the decision-making process in respect of specific park development and management even though, clearly, all cannot be involved to the same extent? If so, can the
existing formal coordinating mechanism, that is, the committees, task forces, and public participation programmes, be fused or linked together so as to facilitate this? What would this require in the way of a re-distribution of the current responsibilities of coordinating committees and government departments, given that the mandates of most of the former extend only to information dissemination and exchange?

These concerns do not suggest that new or additional coordination mechanisms are necessary in parks' development and management. In general, it is evident that sufficient formal mechanisms already exist for the attainment of efficient and harmonious working together, although ad hoc mechanisms will need to be established from time to time to deal with particular concerns.

What is needed, instead, are clearer and more specific terms of reference for many formal coordination mechanisms to make the objectives of coordination activities patently evident; and an improvement of the entire institutional structure of decision-making in parks' development and management, including formal coordination mechanisms, to facilitate greater and more direct interactions between all groups of actors in the process. In short, better coordination is warranted; not more mechanisms.

REFERENCES CITED


In reviewing the various papers of this session on Other Alternatives, certain biases or underlying assumptions emerge which, if you have been part of the national parks' movement, perhaps are not surprising. The most troublesome for me is the heavy hand of the natural scientist which can be seen in subtle, but pervasive ways, in the biogeographical typology used for parks' system designation, in the emphasis on faunistic and floristic preservation, and in the concern about public overuse or abuse of natural areas. Somehow, what bothers me is not that natural scientists are, or have been, central to the parks' movement, but that the talents of architects, landscape architects, planners, recreation professionals, sociologists, and geographers are not more actively identified and appreciated for the breadth of insight they can bring to the issues at hand. As the papers by Priddle, Sadler, Francis, and Burton point out, the insights provided by these additional disciplines can be just as critical, or more critical, in natural areas and parks' inventory. As a case in point, the designation of sensitive areas, or nature reserves, in Ontario at the country level of government came out of a planning/geography workshop (Dorney and George, 1970), not from a science base or parks' planning base.

Similarly, it seems probable that the desire expressed by Dufour, Lemieux, and Girard to designate provincial parks, by Foster to set aside ecological reserves, and by Francis and Sadler to develop a hierarchy or comprehensive system of national, provincial, regional, and municipal parks, and associated nature reserves/wildlife sanctuaries and recreation areas all will require not only the interagency cooperation that Francis refers to, but also the combined services of natural scientists, recreation professionals, social scientists, lawyers, and designers. For example, we have the skilled manpower to do recreational supply/demand and cluster analysis planning, and to conceptualize the pros and cons of such an hierarchical-integrated system. But, when it comes to data synthesis and to project implementation, the skills of planners, recreation professionals, and social scientists are critical. Without such interdisciplinary cooperation, political acceptability based on a broad base of public support will not
likely be forthcoming. Put another way, such a sophisticated hierarchial natural area system requires that the tree huggers drink more coffee with the people watchers.

Equally apparent in the papers is the lack of emphasis on the urban ecosystem, and the possible linkages of this ecosystem to provincial and national parks. With the majority of young Canadians now raised in cities, attitudes picked up there about man's relation to nature would seem to be of critical interest to parks' managers. Yet, the biographic landscape typology developed by Udvardy (see Figure 17.4 in paper by Lee) utilized for parks' system planning ignores cultural landscapes, that is, agricultural and urban landscapes. As Francis has pointed out in his paper, many excellent examples of natural ecosystems at the city and county scale occur in urbanizing areas. To overcome this deficiency, an alternative typology is presented in Table 23.1. This alternate typology demonstrates how such a seven-tier hierarchial parks' system can be visualized for both natural and cultural landscapes, with international and federal parks at the Land System scale, provincial parks at the Land District scale, county or metro parks at the Land Region scale, and municipal and private parks at the Land Subtype scale.

If such a typology were accepted, Agricultural Ecosystem/Islands (A.E./I.) and Urban Ecosystem/Islands (U.E./I.) within a natural matrix would acquire special attention in parks' planning. Such island ecosystems, as for example, hay land in Riding Mountain National Park, or the Banff townsite in Banff National Park, would be studied in regard to their biological attributes, before being written off as intrusions to be driven out of the park, or to be eliminated totally. Such island ecosystems may have significant biological attributes important to the larger park area, such as providing high protein winter food for deer. For example, the demise of deer in Algonquin Park may have been caused by or exacerbated by the removal of ranger cabins within the Park (Priddle, personal communication). The wintering of deer in Waterton Park townsite might be another example of the same urban island ecosystem interaction. The presence of house sparrows, magpies, and crows in Banff townsite is an unusual mix of exotic and native detritus feeders, as opposed to the house sparrow, starling, pigeon detritus food chain typical of larger urban centres.

Similarly, Remnant Ecosystem/Natural Islands in a cultural matrix acquire special interest for preservation, but require higher levels of protection, renovation, and management on the urban fringe. The Francis paper touched on protection for such areas in southern Ontario utilizing the Official Plan process. A description/function/value analytical procedure for evaluation of these remnant island ecosystems was published in the 1976 Canadian Committee on Ecological Land Classification (C.C.E.L.C.) Workshop (Dorney, 1977a). This procedure can assist in classifying such areas for land-use planning purposes. A
From Udvardy (1975) and Thie (1976)
Natural Land Region has over 50%, Cultural Land Region less than 50% Forest Cover

<table>
<thead>
<tr>
<th>Land Unit Description</th>
<th>Approximate Scale</th>
<th>Minimum Mappable Island-Sized Unit</th>
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</thead>
<tbody>
<tr>
<td>Nearctic Realm</td>
<td>1:8,000,000-1:50,000,000</td>
<td>N/A (one unit)</td>
</tr>
<tr>
<td>Eastern Forest Biome/Province</td>
<td>1:8,000,000</td>
<td>N/A (one unit)</td>
</tr>
<tr>
<td>Land Region</td>
<td>1:1,000,000-1:5,000,000</td>
<td>N/A (one unit)</td>
</tr>
<tr>
<td>Land District</td>
<td>1:5000,000-1:1,000,000</td>
<td>400-1,000 acres</td>
</tr>
<tr>
<td>Land System</td>
<td>1:50,000-1:250,000</td>
<td>15-200 acres</td>
</tr>
<tr>
<td>Land Type</td>
<td>1:10,000-1:20,000</td>
<td>2-10 acres</td>
</tr>
<tr>
<td>Land Subtype</td>
<td>1:5,000</td>
<td>1/4-1/2 acre</td>
</tr>
</tbody>
</table>

AE/I - Agricultural Ecosystem/Island
UE/I - Urban Ecosystem/Island
RE/NI - Remnant Ecosystem/Natural Island
RE/AI - Remnant Ecosystem/Agricultural Island

Complete Description of the twelve and eighteen Land Type and Subtype units can be found in Brady et al. (Submitted to Urban Ecology, 1978).
RE/AI - Remnant Ecosystem/Agricultural Island, differentiated from AE/I on the basis of being a remnant or disappearing land use within an urban area.

TABLE 23.1 A Biogeographic Classification based on an Island Ecosystem Approach. For example, Kitchener-Waterloo (K-W), an urban ecosystem/island at the Land System Scale, comprises twelve different units at the Land System Scale.
valleyland mapping project for the City of Waterloo, depicting sixty kilometers of urban valleyland resources, recently has been completed at a 1 inch to 400 feet scale (Dorney, 1978).

Adoption of such a typology (Table 23.1), or something similar to it, would allow for the mapping of potential park and nature reserve sites at seven scales, and the integration of this hierarchial system with recreation supply and demand studies at four or more similar jurisdictional scales. Quantitative analysis techniques for recreational supply and demand could enhance the cost-effectiveness of such integrated planning efforts, and likely develop or increase the base of public support and private monies needed to implement such a comprehensive system, as mentioned before.

Implicit in this seven-tier natural area system is the necessity to recognize that, in descending order from the Land Region to the Land Subtype, a number of issues become more accurate. These are:

1. the disturbed nature of the ecosystem is likely to become more apparent and require greater rehabilitative effort;
2. land costs may be considerably higher;
3. a wider mix of institutions may be involved, especially in the cultural areas, including school boards, universities, museums, cemetary boards, churches, private corporations, and private citizens;
4. biophysical and cultural-historic/aesthetic mapping will be more expensive;
5. new legislation may be required for land use designations, tax relief, and management;
6. a new cadre of professional and lay personnel will be needed, often working in an interdisciplinary context, for management and interpretation;
7. environmental assessment will be mandatory for projects affecting these island ecosystems;
8. interpretation will be more effective if the man-environment and heritage themes are pursued as opposed to the more natural science-based approach;
9. public works and public employment can be tied easily to the smaller scale projects; many will be in the urban or urban fringe areas, and many will be tied to existing public works projects such as Aquatic Park in Toronto, which is a dredging-land fill scheme, or the Tifft Farm in Buffalo, a garbage disposal site;
10. an effective approach in one regional zone may not work in another, requiring regional flexibility and sensitivity;

11. communication skills become more critical, especially specialized language or jargon useful to some but confusing to others; and,

12. island biogeographical concepts apply to a greater extent at the finer scales.

Another issue not mentioned in the papers of this session is the encouragement of the educational systems to get involved in natural area management and study, thereby broadening the public base of support for parklands and natural areas. The utilization of nature centres is a rather recent phenomenon of this decade and is gaining momentum in primary and high school systems. How can these outdoor education efforts be tied to the hierarchial scheme postulated above? Could mini-ecosystems (Dorney, 1975; Dorney, 1977b) be developed in school yards, at the Land Type or Land Subtype scale, as the earliest links to natural areas so that children can participate in nature renovation and management at their scale of relevance, rather than simply have them observe nature, the no-touch approach? Such miniature ecosystems can be fully functional, biologically, at the 1/100th acre size. They might broaden, for young people, not only appreciation for nature, but a sensitivity to the fragility of nature as well. Such mini-ecosystems could be floristically supersaturated, thereby demonstrating the extinction phenomenon; they also could serve a gene pool function.

Similarly, universities can actively participate in natural area conservation at the Land System scale. The University of Waterloo, for example, now owns Rockwood Quarry, an abandoned quarry donated by Dow Chemical, and Spongy Lake, a bog ecosystem in a kettle lake depression. These acquisitions are justified by the use they receive; over 500 students visit Spongy Lake every year.

An additional issue not mentioned in the papers, but discussed earlier by Nelson (1978), is the movement of plant materials along rights-of-way. Through reforestation efforts, wind and animal movements, and the efforts of nurserymen considerable traffic in new genetic material and non-native flora is occurring. Ontario nurserymen import large stocks from American and European nurseries. Eventually, the gene pool concept used for natural area and parkland preservation will be jeopardized by such activities within and outside of natural areas, particularly where the natural ecosystems have become islands in a matrix of agricultural or urban uses. Much of this foreign genetic material may not be suitable for hardiness, and disease resistance; and the preservation of local provenances, one justification for nature preserves, will be eroded.

The inflexibility of parks' managers and public action groups, to which Priddle refers, is troublesome but perhaps not
surprising considering the countervailing frontier mentality required in settling a nation. A strong residuum of laissez-faire attitudes, such as was expressed when the Kluane National Park boundaries were debated, can be expected. However, given the present increased public interest in Canadian parks and environmental quality issues generally, large public and private projects should be expected, prior to approval, to offset any perceived losses by replacing, renovating, or acquiring additional parkland, even in areas of high land values. The Komoka Provincial Park land acquisition near London, Ontario, referred to by Priddle, the Douglas Point Nuclear Station parkland land swamp on Lake Ontario, and the Nose Hill open space acquisition by the City of Calgary are examples of where development proposals were linked to or approved on the proviso of acquisition of large near-urban park spaces. My personal involvement in two of the parks referred to above has shown that such projects required or will continue to require interdisciplinary efforts to be successful. Parks' planners, rather than over-reacting to such apparent destruction of prized resources, often can prepare position counter proposals which lead to improvement in the overall park system. The fallacy in master planning is its rigidity when such flexibility or horse trading is in order.

I was troubled by the tone of the paper by Lee in regard to downplaying the federal role in Canadian parks. Perhaps I have read too much into his remarks, but my feeling is that national parks are the single best image to attract Canadian and international tourism on the scale needed to help balance the present tourism dollar outflow. It may be worthwhile for the provinces to re-examine some present provincial parks and consider redesignating them as national parks. For example, the Niagara Falls-Niagara on the Lake area is certainly a national-international attraction. If this area were designated as a national park of a national historic park, the monies which come from the sale of electricity, to support the work of the Niagara Parks Commission, might then be released and be utilized for a connecting linear park development at the Land Region scale, specifically the Niagara Escarpment area through the Niagara Peninsula. Substantial public support from outside the Niagara region likely would be needed to implement such a radical change in land ownership and in local vested interests; due attention would be required regarding the social impact of such an enhanced national-regional parks facility.

As Canadians, we are a long way from developing a comprehensive land management strategy which protects natural areas, allows for high productivity of agricultural and forestry products, allows for extractive industries, protects cultural diversity, and provides a wide variety of outdoor recreational pursuits. Hence, the efforts by Alberta to put both national and provincial lands into a broad land-use planning framework, at the 1:500,000 scale, as outlined by Sadler, is an outstanding achievement. Other provinces will have a hard time emulating this bold stroke, within this century. Ontario, sadly, for political reasons, is backing away from such regional planning
efforts, most notably the strategic planning concepts, and the Niagara Escarpment Plan for a continuous linear park facility. Hopefully, public acceptance in Alberta will allow for the implementation of this integrated planning effort; however, the communication gaps so nicely identified by Burton will make implementation difficult to require political leadership and administrative skills of a high order.

In summary, I enjoyed the papers very much, as I hope you have. The recognition and emerging concern for a comprehensive system of parks and nature reserves is a healthy step forward. Embedded within a comprehensive conceptual landscape management framework, as is the case on the Eastern slopes in Alberta, or for the Waterloo Regional Municipality, parks' planning can adjust to changing needs and adjacent land use development pressures. However, if natural preservation interests within the parks' movement are blindly pushed and ignore society's changing needs, considerable back-sliding can occur quickly. Parks' boundaries could be collapsed. Staff, budget support, and loss in public prestige could quickly follow.

I believe such retrenchment in national, provincial and regional parks is more than a remote possibility. The complacency of parks' planners, engendered by having an unbroken string of years of increasing demand for parks facilities, can, if demand slackens, quickly become a rationale for massive bureaucratic pruning and reshuffling. Increasing, now, the interaction between social scientists, recreation analysts, and parks' planners as outlined by Burton hopefully can provide the early warning system needed to allow for adaptation and adjustment to occur smoothly. Such diversity of points of view is particularly critical when socio-economic stability, not just in Canada is putting severe stress on all governmental agencies and the various publics which have supported their activities and programmes. Along with this need to increase interdisciplinary work is the need to broaden quickly the base of public support. Three ways, slow but proven effective, are firstly to start by developing programmes for grade and high school children, secondly to develop urban-based interpretation facilities, as suggested by Gavin Henderson, October 9, 1978, at this conference; and, thirdly, to build better bridges, which need was identified by Burton, to the consultants, private, and public groups not now interacting directly with parks' people.

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Tuesday, October 10, 1978 (Afternoon)

J. Potton


R.S. Dorney

R.D. Needham

Each of the panelists presented his or her paper.

Why is the amount of money spent on British Columbia's parks such a small percentage of its gross national product, especially when the demands for money for education and highways are declining?

Some fifty to sixty million dollars are being spent and this amount may not seem to be much or enough. Perhaps the B.C. government believes that the private sector can provide some recreational resources. If the services are not adequate, the public would be more vocal. An overall constraint is the trend to reduce the growth of the provincial budget.

I advocate coordinated land use planning, particularly for the areas outside of parks. More consideration should be given to comprehensive zoning and classification. This may do more to preserve prestige wilderness.

It must be remembered that dollars spent for parks do not necessarily reflect dollars spent for recreation. There are other facilities on which monies are spent.

Using the Kananaskis Country example, I believe the critical issue is not the systems' approach, but rather the regional assessment and zoning within the overall plan. The problem of complementarity becomes significant when viewed in the light of the problems along the eastern slopes of the Rockies.

Rather than offering an alternative, Kananaskis Country is increasing pressure on the whole region. I doubt the effectiveness of coordination within planning circles.

I am not an official commentator on provincial and federal policy. I can say that Kananaskis appears to offer an alternative at the regional level. We need to be careful at the implementation stage that problems do not get out of hand.
POTTON: There is an on-going parks' consultative committee for the Kananaskis Country, and it maintains an excellent relationship with the Parks Canada regional office.

THE FLOOR: Why are there no alternatives to national parks, and why do we continually play with the concept of ecological reserves when other alternatives exist. A countryside perspective may be a better approach. In this framework regional recreation development and planning and national recreation development and planning would take place.

FOSTER: Ecological reserves are primarily for research and education and for this reason must be defined in different terms than national parks.

BURTON: This session should have been labelled *Complements* and not *Alternatives*. This long-term goal of all our efforts should be an integrated system of large and small scale parks and reserves.

THE FLOOR: Is British Columbia aware of the fact that a logging road terminates near the boundary of Kananaskis Country, and was the province consulted about the Kananaskis development by Alberta?

LEE: An informed decision was made on the logging road and the Kananaskis development by both provinces.

THE FLOOR: There are many examples of the access problem, for example, the Assiniboine area.

LEE: What has been said may be true, but planning and coordination are not necessarily at the root of the problems described.

THE FLOOR: Developments can take place on one side of a boundary and have effects on the other side of that boundary. Planning and coordination are needed to reduce the negative impacts of such developments.

POTTON: The number of different units may be right, but perhaps we need to look more at the situation in a collective sense.
INDIGENOUS USE OF NATIONAL PARKS AND RELATED RESERVES
Tuesday, October 10th: Evening

Paper 24: INTRODUCTION
W.W. Mair

Paper 25: TRADITIONAL LAND USERS AS A LEGITIMATE SOURCE OF ENVIRONMENTAL EXPERTIZE
M.M.R. Freeman

DISCUSSION FROM THE FLOOR
INTRODUCTION
W.W. Mair

Good evening ladies and gentlemen, and welcome to this very important and topical session on Indigenous Use of National Parks and Related Reserves. My name is Winston Mair and I am a member of the Board of Trustees of the National and Provincial Parks Association of Canada.

I hope that our small numbers here on the platform this evening will not be taken as suggesting in any way that our topic is one to be passed over lightly. Ten years ago, at the first parks' conference, our subject would receive little attention. There certainly was experience that should have alerted us to concerns, but in government, at least, we were slow to interpret from those experiences and to formulate new concepts and policies. I refer here to such things as the reaction of people disturbed by the St. Lawrence Seaway, the attempts to resettle coal miners in Nova Scotia mining districts in other parts of Canada, and the significant lack of enthusiasm of farmers on marginal lands to move to the good life of wage employment in industry towns. I could mention, as well, the movement of people from the outposts of Newfoundland, and other examples. Within the last ten years, though at the earlier part of it, some still argued that whole groups of people, entire communities, in remote areas could best be moved to areas where education, social services, and job opportunities could more efficiently be made available. There seemed little understanding of the attachment of people to the land, and to the places of their origins.

We have learned quite a bit about these things in the past ten years. But of course the most outstanding or significant change has been with the Indian and Inuit people. They moved from the relative passiveness or hopelessness engendered by having all their decisions made for them by government, in the main, to a position of insistence upon their rights, as citizens and as original peoples, to make their own decisions, to enjoy social and economic opportunity on a par with other Canadians, and to have a major say in all the various kinds of developments which directly or indirectly affect their lives and culture. They developed their various land claims, they retained their own legal counsels and consultants, and they brought home to fellow Canadians in a very forthright manner many of the things we had been so slow in learning from the earlier experiences just mentioned.
It was during this same ten year period that the opportunity for expansion of the national park system also became favourable. We all know of the proposals for North of 60 degrees and how these might impact upon, or themselves be impacted upon by, proposed land settlements and by traditional rights. But there have been studies as well of a number of areas south of 60 degrees that have national park potential; a number of these encompass areas presently or traditionally occupied or used by Indian people. As a conference, as a meeting of people concerned with national parks, we must accept and come to grips with this newly understood reality or dimension. It is complex and touches upon the very basis of our human-ness, our respect for and understanding of our fellow Canadians and their needs, and our willingness to work with them. It calls for good sense and sensitivity.

We are exceedingly fortunate to have with us this evening Milton Freeman, Professor of Anthropology at McMaster University. His undergraduate training was in biology and his Ph.D., in Anthropology. He is a human ecologist and worked for several years in the Institute of Socio-Economic Research at the University of Newfoundland. He has carried out biological research in the Arctic, and was director of The Inuit Tapirisat land use and occupancy study, a classic work in human ecology and in Inuit use of land. His topic this evening is Traditional Land Users as a Legitimate Source of Environment Expertise. I know that following his address he will be pleased to respond to questions on his paper or some of the broader issues related to Inuit and various land use proposals including national parks and related reserves.
TRADITIONAL LAND USERS AS A LEGITIMATE SOURCE OF ENVIRONMENTAL EXPERTISE

M.M.R. Freeman

INTRODUCTION

My purpose in this paper is to discuss certain management related matters concerning land use in the tundra areas of Canada, more especially those involving Inuit-occupied lands in the Northwest Territories. I take as my starting assumption that decision-making in respect to land management practices requires sound ecological data in respect to those lands and the populations using, or potentially using, those lands. This includes decision-making relating variously to national parks, game sanctuaries, and ecological preserves. I stress the word ecological here, for it seems very evident that sound management in this context depends upon understanding the role of a number of critical interacting variables that function within a complex system of interrelated parts. In this sense, ecology is the study of the relationships that exist between those parts, and it implies that a holistic, contra particularistic, approach be followed. Insofar as we are speaking of management of the human environment, such an understanding must encompass not only biological and physical parameters, but also variables associated with cultural and institutional environments. Thus, the way people perceive their environment, and the manner in which various institutional arrangements pattern or constrain behaviour, assume significance. Disputes over competing land use based on these very real differences are common and known to all: whether to preserve land for a single purpose or to allow a multiplicity of uses, whether to concede that the rights of some particular group of users has primacy over some alternate group, and so on. Insofar as a nationally important decision, in respect to the routing, construction, timing, and manifold implications of a natural gas pipeline and associated development corridor along the Mackenzie Valley, has focussed widespread attention on just such a set of problems in the north, my paper and remarks to this point may appear redundant at this time.

However, what I wish to assert, with some emphasis, is both the legitimacy for seeking alternate sources of expert knowledge from the traditional users of the land when establishing a data base for decision-making and the benefit likely to be derived from involving such experts in the actual decision-making process itself.
Experts quite often disagree among themselves; and, in the absence of absolute, unequivocal standards of truth against which the correctness of statements can be measured, a host of other evaluatory criteria customarily are employed. For example, in some cases credence for a particular statement might rest upon the form, or educational qualifications of the individual expert. Or his/her length of experience gained in that area of work may influence the evaluation. It is not unknown that a local authority on weather, crops, fish runs, and so on, who has no formal training as such, bases predictions of future events on rationalizations which are based upon a critical assessment of a long series of observations related to that particular outcome in the past. The ultimate inductive handling of the data may not be very different for the formal scientist and the folk scientist. Often the largest difference between the two is that the folk scientist controls a larger data base in respect to two important characteristics: firstly, a long time series of observations and secondly, data sets of a wide-ranging and supplementary nature that somehow have bearing on the outcome that is to be predicted.

It is certainly my experience, having worked with both groups of experts, that formally trained scientists, especially those in academic employment, unless they are very well trained ecologists, or generalists by nature, have a reverence for the reductionist approach to problem-solving that too often precludes any wider appreciation of the essentially ecological nature of natural events in the real world. The academic tradition, of course, rewards such blinkered dedication to a narrowly defined, esoteric goal; and social science teaches us that continually rewarded behaviour will tend to be repeated and become a normative response.

It has long been known by some scientists that so-called primitive peoples, meaning, I assume, those with a non western-derived technology, have very discriminating knowledge of the environment. Anthropologist Richard Lee, working with the pre-literate San or Bushmen, in the Kalahari Desert, reports that they can name and describe over 200 species of plant and 220 species of animal. Furthermore, much of this knowledge is clearly esoteric, for only ten species of animal are regularly hunted for food (Lee, 1969, p. 80). The accuracy of these non-western taxonomies, as measured against established zoological criteria, also has been widely commented on. But naming and describing morphology are hardly ecology, and my purpose in this paper is to discuss, for management purposes, the utility of indigenous land users' understanding of how the system works.

THE COMPLETENESS OF INUIT DATA SETS

Earlier I suggested that one reason that indigenous sources of knowledge often are superior to those of the distant-based scientist
is because of the time depth of the serial observations possessed by the former. But how reliable are such data? Experience tends to show that certain types of qualitative data are usually extremely reliable; and, indeed, the vast majority of anthropological and ethnological research is predicated upon the veracity of informant recall. I would point out, however, that Inuit culture, until recently, did not stress numerical exactness; indeed, the traditional counting system was quite cumbersome. Thus it very quickly was replaced, following contact with European derived cultures, with the numerical concepts and lexicons of those alien cultures. The points I would make in regard to the reliability of Inuit data recall are these:

1. Inuit place a very high value on knowledge acquisition and truthfulness (Freeman, 1976, p. 55);
2. Inuit, in common with many traditionally pre-literate societies, train their memories from early childhood (Freeman, 1976, p. 53);
3. Cross-checking, of data derived from independent sources, usually can be employed to substantiate an individual's recall data (Arima, 1976, pp. 31-38).

Elsewhere I have used informant recall information to investigate caribou behaviour. Table 25.1 reproduces certain numerical data from that study and derives from one hunter's memory, spanning eighteen years. These data were in conformity with independently derived data on caribou hunting from other sources (Freeman, 1975, pp. 252-255), and indicate that in today's world at least, if not in more traditional times, hunters certainly pay heed to quantitative information.

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*As of March 31, 1974
The Mackenzie Eskimo, Nuligak, who was born in 1895, completed his autobiography in 1956 (Nuligak, 1966). Throughout his book he makes countless reference to the actual numbers of animals killed, people encountered, dogs in use, dollars paid for pelts, and so on (Nuligak, 1966).

Two passages are worth quoting to illustrate the place of quantitative thought in the narrative.

The first passage states (Nuligak, 1966, p. 135):

In one day we ten hunters killed forty caribou. My uncle had three dogs bring back four caribou on his sled -- and he sat on the sled. Those dogs of his were unbelievably strong; Uncle alone weighed 212 pounds. To my five dogs I had given a load of six tuktuk (caribou). As for my companions I did not pay attention to what they took home.

The second passage states (Nuligak, 1966, p. 175):

With my forty-four cartridges, from January to March (2938, I killed thirty (ringed) seals, five big bearded seals, and four white bears ...

THE INUIT AS ECOLOGISTS

Firstly, I would argue that, in respect to the Inuit in the Canadian arctic, their native understanding is inherently ecological. They perceive the environment to be a complex system of interacting variables, and they appreciate well that interference with one part of the system has implications for the other parts. With regard to the numerous recent inquiries in respect to land use conflicts in, for example, the James Bay Hydroelectric Development, the Mackenzie Valley Pipeline Inquiry, the Beaufort Sea Offshore drilling, mineral exploration on the Barren Grounds, seismic exploration in Hudson Bay and Davis Strait, and so on, and so on, evidence provided by the Inuit at these inquiries bears eloquent testimony to the ecological competence of native land users. Information provided to the Inuit Land Use and Occupancy Research Project by hunters in northern Baffin Island can serve as an illustration for the present purpose. The project fieldworker realizing the importance of narwhal (Monodon monoceros) to the local society, requested that a map be drawn to illustrate the seasonal occurrence and movement of these valued whales. The resulting chart (Figure 25.1) illustrates the co-relations between narwhal sea-ice/open-water margins, and killer whales (Orcinus orca). An understanding of narwhal behaviour, as opposed to a mere description of it, can not be obtained without an appreciation of several related environmental characteristics, namely, the location and timing of spring break-up and lead formation in the land-fast ice, and the local movements of predatory killer whales (Brody, 1976, p. 212).
The ecologic relationships existing between species less dramatic than the economically important whales also are well understood. The preferred co-residence of eiders and predatory gulls, for example, as analysed in the scientific literature is similarly explained by an Inuk hunter on the Northern Labrador coast (Obed, 1977):

(Great-black-backed gulls, herring) gulls and eiders can be together on a little island. If there are gulls on an island, eiders have their eggs on the same island because they are afraid of (ravens) getting after the eggs. When (they) get after the eggs, the gulls fight off the (ravens). That is why eiders have their eggs on the same island where there are gulls.

KNOWLEDGE OF HARP SEAL BEHAVIOUR AS AN ILLUSTRATIVE EXAMPLE

To hunt successfully, the hunter must come to think like the animal he seeks, so as to be able to outwit his quarry. To illustrate this need for extensive biological information, derived inductively from empirical observations, I provide the following summary derived from a Greenland hunting textbook, pertaining to the hunting of harp seal (Pagophilus groenlandicus). The Inuit hunters who collaborated on the preparation of this text were aware that, of the several species of seal available to hunters in Greenland, the harp seal is among the most difficult to hunt. Therefore, to hunt the harp seal successfully clearly requires great knowledge of its behaviour, especially since it is fast-swimming, long-diving and usually alert, but rarely curious as are the ringed seal and the young bearded seal.

In the spring, when the harp seal come inshore to feed on capelin they can stay submerged for some time. An indication of their imminent surfacing is obtained by watching the hovering kittiwakes (Rissa tridactyla); as the harp seal start to rise to the surface, the kittiwake will stop hovering and begin to circle around at a higher level. The seal usually will surface further out to sea than the places where they have been feeding, which are indicated by the kittiwakes overhead.

The hunter is advised to make a judgement on the mood of the harp seal at this time rather than attempt to secure one when it first appears; some seals do not leave their feeding places for some time, and the longer they are feeding, the more confident and less nervous they become. It is important to travel toward a herd of harp seal only after they all have surfaced, for until they are all on the surface they are very nervous and easily will be scared away. Apparently, even if the seals on the surface of the water appear calm, they suddenly can be alerted to danger by those still submerged who are more sensitive. Their hearing and power of smell is very acute.
One can tell when a herd of harp seal are all at the surface, for their heads and necks are completely out of the water. However, within the group some act as guards. These are always watchful and stay erect in the water. It is hard to approach a herd when out at sea because of the guards; but provided the proper precautions are taken, they need not be a problem to approach when near the coast, provided you have a proper background, as described later.

Some guards have their necks outstretched and these require special attention as they have their eyes open; the guards who are erect, but whose necks are not outstretched, mostly have their eyes closed.

When approaching a seal, it must be observed closely; no noise should be made when the seal's nose periodically dips below the surface of the water.

Harp seal always turn their heads toward the coast whilst on the surface, so unless the wind would carry the hunter's scent, they always are to be approached from the seaward side. The nervousness of seals that have just surfaced subsides after a few moments of looking around.

Noise sometimes can attract a harp seal, but generally noise will cause the seal to dive and swim away.

When the harp seal are in smaller numbers, they prefer an offshore location, where they remain on the surface for a longer time than they do inshore. However, they are able to see better than when inshore, so the hunter, wind direction permitting, must endeavour to approach the seal with the sun behind him, so that the seal cannot see the hunter approach.

Harp seal sleep on the surface. Though the seals are less conscious of danger when asleep, they will hear clearly whenever their ears dip below the water, so the approach must be made according to the bobbing of the sleeping seals' heads on the surface. Apparently, when some distance from the seals less caution is needed, but, as one approaches, the danger of disturbing the seals greatly increases. This danger is greatest on a calm day, but on a windy day there is little chance of the noise being heard on account of wind-generated background noise. Paradoxically, hunters observe that it is easier to approach a harp seal, provided all necessary precautions are taken, in absolutely still weather, even if the hunter inevitably makes some noise in approaching, than it is to approach during days with very light breezes causing wave-generated sound.

By careful observation, a hunter can tell when a seal on the surface, with its head in the water, is sleeping or actively listening, for a listening seal does not breathe. Sometimes, with its head still in the water, the seal starts to breathe again, at which time the hunter can continue his approach, knowing the seal is not alerted to his presence.

Hunters must show great restraint: if a seal suddenly becomes alarmed and begins to dive, the hunter must not try to rush in
close. The alarmed seal, if further undisturbed, often will reappear in a few moments, calmer than before, and so the hunt can safely continue. If, however, the seal confirmed its initial suspicion of danger, a second chance to secure it almost certainly is lost.

If the seal disappears below the surface, the hunter should stay within the general feeding area occupied by the seal. Only if the seal is really alerted to danger, will it fail to surface within, or close by, its present feeding location.

Hunters need to distinguish between dangerous harp seal and the more docile ones when hunting them from kayaks; almost full-grown male harp seal, for example, often are more aggressive than any other class. If a harp seal stays up in the water and continues looking at the hunter after it has been harpooned, then it is more liable to bite; the ones who have this tendency are the faster, more agile, harp seal. Care should be taken also when a harp seal is harpooned from the front, for such animals always will move toward the hunter, whereas those harpooned from the back, or from the side, try to flee from the hunter. Harpooned seals will become aggressive if repeatedly, and unsuccessfully, lance. Similarly, a shot seal that subsequently has been harpooned is more likely to bite than a wounded seal that has not been harpooned. It is necessary to carefully ascertain if the seal is dead, for some wounded seals take a long time to die; the harp seal is not quite dead if the jaws are tightly clenched, but it is dead when the jaws do not quite close firmly together.

Hunters are aware that when approaching a seal from behind more care is necessary than when approaching from the front, providing the precautions, about background and wind direction mentioned earlier, are observed. The reason is that when the seal's head is underwater it looks to the rear, not to the front.

The seals' general alertness varies according to the season. In the spring, shortly after the harp seal arrive at the hunting locations, they are easier to approach, and they seem less knowing. The water inshore often is cloudy from the spring run-off and the seals therefore are less able to see underwater. Toward the fall season, on the other hand, the seals see better in the water and are inclined to be on the lookout for danger, even when they appear relaxed and unobservant. It will be almost impossible to hunt these seals unless either the sun or a dark land background is behind the hunter (Bistrup, 1964, pp. 2-5; Bistrup, 1964, pp. 78-81).

The information above, all derived from Greenland Inuit hunters' knowledge, recently has been independently corroborated and augmented by extensive data derived from Labrador Inuit informants (Brice-Bennett, 1977, pp. 128-129; Brice-Bennett, 1977, pp. 144-148).
THE UTILIZATION OF INUIT- DERIVED ENVIRONMENTAL DATA

Much of the foregoing discussion has focussed attention upon the intrinsic value of environmental data derived from Inuit observers, without discussing the applicability of these data for management problems. I would suggest that such data, under contemporary circumstances, will derive their principal value when transmitted via the conventional channels of scientific communication, namely the professional paper. Many scientific publications in the field of arctic zoology derive much from the reported observations of native northerners, and I certainly acknowledged that substantial debt in my own zoological research (Freeman, 1968a; Freeman, 1968b; Freeman, 1970; Freeman, 1971a; Freeman, 1971b; Freeman, 1973; Freeman, 1975).

The potential for an increase in knowledge to be gained can be gauged from a comparison of Figure 25.2 with Figure 25.3. These figures represent the best available data from scientists, and an equivalent compilation of data from the same area provided by resident native hunters, respectively.

Native expertise is beginning to be more widely accepted. Certainly since the publication of the Berger Inquiry report, the credibility of native hunters as accurate interpreters of nature has become more widely accepted. A recent case, involving hunters from the hamlet of Baker Lake seeking a federal court injunction to stop mineral exploration in their hunting territory, is illustrative of the resistance, in narrowly professional circles, to the valuable insights that native ecological interpretations contain.

The circumstances in this particular case involved a dispute over the potential for environmental damage inherent in mineral prospecting activities such as airborne surveys, base camps, fuel caches, hardrock drilling, and so on. The federal scientists and land use managers contended that the threat, to the 164,000 animals of the Beverly and Kaminuriak caribou herds, from world predation and native harvesting activity represented the greatest danger; whereas the hunters, supported by some non-governmental scientists, contended that exploration activity was a more critical threat. The court, in upholding the hunters' assertions, concluded that (Hamlet of Baker Lake and others, The Minister of Indian Affairs and Northern Development, and others, 1978, p. 6):

The weight of evidence leads to the conclusion that exploration and mining activity is incompatible with the natural use by caribou of their habitat at times when and places where they are particularly sensitive and at places where they congregate in large numbers.

Unfortunately, many contemporary land use disputes arise precisely because non-native experts fail to recognize the adequacy of expertise derived from traditions whose legitimation differs from their own. There is no shortage of such recent disputes. Some examples are the Western Arctic areas of Banks Island and the Tuktuyaktok
FIGURE 25.2 Arctic Ecology Map published by federal authorities using best available data from scientific sources (Source: Canadian Wildlife Service, n.d.).
Peninsula, the Hudson Bay at Southampton Island, the Eastern Arctic at Southern Baffin Island, and the High Arctic seas of southern Ellesmere Island and Bathurst Island (Hackman and Freeman, 1978).

THE MUSK OX SPORT HUNTING CONTROVERSY: A CASE STUDY

Musk ox were subject to a total hunting ban in the Canadian north from 1917 until the mid-1960's when the Northwest Territories Game Management Service decided to explore the possibility of allowing a small number to be harvested by non-native trophy hunters.

Decision-making in respect to this proposal was hampered by the small amount of biological data germane to the question of the selective cropping of this arctic ungulate. Nevertheless, a shortage of scientific information was not seen as a hindrance by the administrative and private sector supporters of this proposal. They contended that (1) scientific data could be gathered from the animals harvested; (2) only reproductively inactive, in fact, senile, males would be killed; and (3) appreciable economic benefits to the Inuit would result from the enterprise.

It was perhaps quite unexpected by the proponents of this scheme that the community that would stand to benefit most from the purported economic development registered very strong opposition to the plan. What is perhaps less surprising, in view of the foregoing presentation, is that the principal grounds for their opposition to the proposal were derived from their realization that the plan was biologically unsound. The community in question, Grise Fiord, with a population of about one hundred Inuit, was heavily dependent on hunting. Located on southern Ellesmere Island, it was far removed from scientific sources of knowledge, and had not been in a position to harvest musk ox, despite their proximity, due to the Order-in-Council declaring them an animal in danger of extinction. Nevertheless, the Inuit hunters professed expert knowledge of this sacred cow, including knowledge that the government claimed could best be obtained by killing the animals.

The government position can be summarized as follows:

1. Only males would be harvested, as trophy animals were required;
2. The best trophy animals were the old solitary males that were reproductively, and, therefore, biologically superfluous;
3. The meat of the animals, not being needed by the trophy hunters, would be given to the Inuit;
4. A small quota of twelve animals per year would be set so as not to overtax the local herds; the herds had to be near to Grise Fiord for any economic benefit to derive to that community; and
5. As musk ox and the local, Peary, caribou were in competition for limited food, culling the musk ox would allow the caribou to increase.
The Inuit saw faults in all these propositions. Firstly, they argued that old solitary males are useless as trophy animals; indeed the best trophy animals are the prime bulls in the herds. Beyond prime age the horns of musk ox become damaged or lost, rendering the animals valueless for trophy purposes. Secondly, there is no such thing as a superfluous musk ox; these animals are highly social, maintaining a structured and dynamic social organization wherein the old animals play an essential role at certain seasons of the year. The transitory phenomenon of solitary males occurs during a few weeks of the year when the bulls are in rut and very irritable. However, even at that time of the year, a threat to the scattered animals causes them to bunch into defensive formation wherein the old and most experienced males play a dominant role in maintaining the social integrity of the group. Thirdly, the meat of males is all but inedible during the rutting season, and of old males not very palatable at any season. Fourthly, the slow growth, the importance of social organization for survival of the small number of herds, and variable reproductive success of the herds from year to year makes a fixed quota in a prescribed area a most unsound management procedure.

And lastly, the Inuit observed that musk ox and caribou eat different vegetable matter, and do not appear to be interacting competitively.

Competent professional biologists or game managers would observe, in addition to these Inuit observations, that a selective harvesting of only adult males of a narrow age range, and presumably at one time of the year, would hardly be a satisfactory sampling procedure for ascertaining needed biological input for sound management purposes.

The Grise Fiord Inuit documented their opposition to this ill-founded proposal (Northwest Territories Council, 1967, pp. 452-462), and eventually it was abandoned, to be replaced by a limited and variable harvest of musk ox for local, but not non-resident needs. As time has passed, long overdue biological research has substantially upheld the Inuit interpretation of the situation (Freeman, 1971a; Freeman, 1971b; Gray, 1973; Hubert, 1974; Slaney and Company Limited, 1975; Wilkinson and Shank, 1974).

CONCLUSIONS

Many years ago I was engaged in biological research on the Svalbard or Spitsbergen archipelago, a small group of islands in the Barents Sea several hundreds of miles north of the Scandinavian mainland. One day I was surprised to see an elderly Lapp, accompanied by his small dog, descending a hillside toward me. We could not converse, of course, but we exchanged salutations. I could not help but wonder what his reason was for being there, separated from his homeland, family, and reindeer herds. Later I posed the question to a Norwegian friend, who seemed surprised at my bewilderment;
surely, he implied, the answer was obvious enough. The Norwegian government had management responsibility for the wildlife on Svalbard, wildlife that included wild reindeer. To discharge their responsibility, the Norwegian authorities kept a careful watch over the health of the animals and the condition of their range. I merely had encountered their chosen reindeer expert carrying out his research. Of course he needed no gun, scales, specimen bottles, or other paraphernalia to conduct his research, and certainly he neither killed, nor unduly disturbed, the animals he was studying. How rational this sounds, yet how often do I hear from government circles in Canada that such and such research cannot be done because we can't afford to send a man in there this year. My thesis here is that we do not need to send a man in there this year, unless it be to inform a resident hunter what data need to be collected. Some years ago, using data collected by Inuit hunters, I constructed a model of musk ox population dynamics, which, whether it was right or wrong, and certainly it needed further testing, indicated that skilled, but relatively simple, observations could supply all the data necessary to refine the model and to continually monitor the recruitment of musk ox herds in a given management area (Freeman, 1971a).

The cost of this research was virtually nothing. The observations were made incidentally whilst hunting and travelling. Yet again, it seems that management decisions ordinarily must await the outcome of all too infrequent, and increasingly expensive, field studies conducted by graduate biologists.

I reflect back on my encounter with the footborne Lapp reindeer herder, not because of the relative economic cost of the two ways of doing research, but because of the relative impact of the methods employed on the animals being studied. And I received confirmation of my unease from an increasing number of reports, like the one immediately following, referring to the north Baffin Island region (Brody, 1976, p. 209):

Of all the birds in the region, the snow goose has been seen to change most in distribution. Before 1920, the snow goose was one of the less common birds, and older people remember that only 20 years ago they were rarely found in any numbers outside of Bylot Island ... (But now) they are nesting throughout the region. But snow geese are the most wary of all creatures, and they are quick to abandon a nesting site if disturbed. An old female goose is always on the watch for intruders and, if the intrusion is too great, she will encourage the flock to move away. For this reason, scientific research aimed at better understanding of snow goose behaviour has seriously affected a major nesting area. Hunters insist that the counting, netting and banding of snow geese on Bylot Island was the direct cause of the collapse of an important goose population there.

On a final, positive note, however, an increasing number of individual scientists and agencies are recognizing the value of having
traditionally qualified local residents actively involved in the formulation and conduct of field research. Some examples include the government of the Northwest Territories (1974 and 1975), the federal government of Canada (1977), and the Science Council of Canada. Research to test the accuracy of native peoples' assertions that they know, expertly, the biological systems of which they are so much a part, also has appeared (Berkes, 1977).

Hopefully, the growing consensus can be translated into appropriate action, leading to rational management of those remote areas which increasingly are coming under the aegis of the distant urban bureaucracies, whose involvement in and knowledge of them, hitherto, have been vicarious at best.

REFERENCES CITED


Hamlet of Baker Lake and others v. The Minister of Indian Affairs and Northern Development and others. 1978. Reasons for Order. Federal Court of Canada, Court Number T-1678-78.


Discussion from the Floor

SESSION: INDIGENOUS USE OF NATIONAL PARKS AND RELATED RESERVES
Tuesday, October 10, 1978 (Evening)

CHAIRMAN: W.W. Mair
PANELLIST: M.M.R. Freeman
RAPPORTEUR: R.D. Needham

THE FLOOR: I would be interested to have you discuss some of your methodologies. Did you show maps to the native respondents? What was the scale of the maps? Were they able to respond to them? Finally, can you describe some of the kinds of indigenous maps the native peoples use in their work, if any?

FREEMAN: The native people in the north are quite familiar with the 1:500,000 topographic series of Canada. We used that scale extensively. The area in which we did not use it was the Mackenzie Delta because it has such a complex set of features and habitats. These features made that particular scale impossible to use. We went to the 1:250,000 when more detail at close range was required. The methodology consisted of getting native people to mark on the maps, plastic sheets, or tracing paper, where they used the land. They volunteered all the purposes of the land they wanted to show. It was important to let them define their own areas. For example, we could have asked them to show where they hunted herring gull. But herring gull could be considered starvation food. This would have been insulting to a hunter, to ask him where he hunts starvation food. It might have implied that he was not a good hunter. For the native people on the barren grounds or the caribou Eskimo, we received data on fish, caribou, and wolves. They did not hunt geese or ducks. They would take them and arctic hare if they came across them, but they were not considered significant game. The picking of berries was something you did, but it was not that important. There was no comparability in terms of land use coverage in all areas, because we were trying to compile a record which was significant to the people. It must be stressed that the maps had to be culturally valid. This means that their perception of what traditional land use was must be set down. In the context of verification, the individual maps were coded for specific numerical values. We wanted to know the square miles for each of the resources mentioned. Composites were made for different time periods of each community's averages.
The native people did not see their individual maps again. They were placed in the archives in Ottawa. The composites were taken back to the settlements. We were doing this according to a very difficult time schedule. There were some that were hard to reach. The small and remote communities that might take two or three weeks to get into or out of, and where people were scattered, places like Bathurst Inlet, were not returned to. In seventy five percent of the thirty-three communities studied, we held public meetings with all the men, if that was what they wanted. On occasion, we had meetings with hunters and trappers and their associations. Community councils were also approached. The composite maps were shown to determine if areas had been under or over represented. The community composites were published in the report I mention in my paper. In some cases this process turned up new and significant data. In Eskimo Point, in the southern Keewatin, people were evacuated during the starvation period in the late 1940's and early 1960's when the caribou crisis was on. There was one man here who was a survivor of this period. He had used the area to the extreme southwest and over Lake Angikuni and Yafka. He had visited places far to the west, into Manitoba, and down to Brochet where he traded. Curiously, he had been blinded in an industrial accident some nine years before in Rankin Inlet. The Inuit field workers had not thought it useful to ask a blind man to draw a map. The blind man attended a meeting at Eskimo Point and transferred his mental map to our composite. He described his fishing areas and his camp sites verbally. It turned out that we asked him how Lake Angikuni was named. He informed us that he had named the Lake and he told us what the name meant. Through the verification process we were able to add information of this nature. In my paper I have gone into great detail to show how much value the Inuit place on truthfulness and accuracy. It is unthinkable to them to lie about anything.

THE FLOOR: I am interested in knowing if your paper dealt with any explanation of the concepts of territoriality and boundaries between different Inuit groups. Was there any notion of land ownership expressed in the meetings you held in the various communities? Did the communities show an identification with particular resource values or resource opportunities? Further, was there any evidence of inter-group conflict over access and resource opportunity? I asked this question in the context of fur and trapping rights.

FREEMAN: Yes, there is an interesting problem here, which I do not fully understand. In the past, native people
fought over the land. But this seems to have been lost and today the courts are used for conflicts arising from development. The idea of restricting access to the land is almost unthinkable to the Inuit. It is not unthinkable to non-Inuit and especially in terms of certain resources, such as sport fishing. There was a time when they were concerned about attempts to have sport hunting of polar bears, musk-ox, and other animals. But to some extent this feeling has been played-down in recent management proposals. We did not actually seek land boundaries in terms of traditional ownership. It is a concept that is not an important one under contemporary conditions. The Inuit believe that the land is there to be used. A problem immediately arises when management schemes put closed seasons on caribou or polar bear. The people believe that the animals must be hunted in order for the animal populations to be maintained. The hunters do not go out and take animals, the animals offer themselves to the hunters. This belief is perfectly proper in a cosmological sense if you want to try to explain animal abundance by their traditional beliefs. The important thing to the Inuit is the manner in which the animals are hunted. They have to be hunted with respect and in a way which is appropriate. They believe there is a danger when non-Inuit are allowed to hunt these resources. The Inuit take great pains to tell you how certain management proposals have been detrimental to the survival and the persistence of animal species. The classic example described involved the Peary Caribou on the south coast of Ellesmere Island and the north coast of Devon Island. After the native people were reintroduced to that area in 1953, the Royal Canadian Mounted Police insisted that nobody should shoot a female or a young caribou. The male caribou alone could be hunted. The Inuit knew this practice would bring an end to the caribou in double quick time. They felt that the only way to hunt caribou in small numbers was to take the whole group. Hunters had to do this so that the social dynamics of the small group were not destroyed. It was not chance that five or six animals stayed together. Even though the Inuit did the bidding of the R.C.M.P. they knew its form of cropping would remove the herds in ten years. In fact, even though the Inuit removed only about twenty percent of the caribou, the remainder have disappeared because of wolves, natural mortality, or something else. This case is a justification for their concern that different users or non-Inuit would have a detrimental effect on the animals. The problem is that very often the solutions to perceived problems are suggested from the outside. Conflict is not with neighbours, it is directed at inappro-
appropriate government management. It is very hard for the Eskimo to accuse someone of foolishness. They will use a circuitous route to make a point. Generally, they will try to work out the resulting problems on their own. The more important thing within the Inuit society is to maintain harmonious social relationships. As long as there is an indigenous rationale which people understand for a restrictive behaviour, there is a solution to the problem. The problem is created as a result of imposing solutions on to an alien situation.

MAIR: Can you give us any insight into the reaction of the Inuit to the proposal for northern reserves or national parks?

FREEMAN: I honestly do not know very much about this. I can only draw inference from the Baffin Island - Auyuittuq Park experience. When the native people heard that there would be no infringement of traditional land use activities, there was no opposition to the scheme. Their concern was for their right to resources and the harvesting of their resources. I assume that it would not be the product that would be opposed, but the process. If the management process is inappropriate, then there would be problems. The flack that was generated over Auyuittuq Park was related to the fact that land claim questions were still not answered and large areas were being put aside for the national park and for mineral exploration, oil drilling, and so on. If the experience is open and of a consultative nature, then things should move smoothly.

THE FLOOR: The younger Inuit appear to have a lack of respect for their wildlife resource. The situation bothers both the older Inuit and the white government's game management people. There is a generation gap and much of it seems to be related to the fact that younger Inuit are taken away to boarding schools. They often miss the many cultural teachings of their parents. They would return to their native communities Inuit in physical characteristics, but not in cultural outlook. They did not really understand the white man's view either. They understand some of his technology and the simple reading, writing, and arithmetic, but they miss the basic education of their people. If a government field worker interviews only one group, the perspective of the other is completely missed. There could be potential difficulties here for Parks Canada and its proposal for northern parks.

FREEMAN: You have put your finger on a very real problem. Today, there is an increasing respect for the elder's
point of view. There is a general turn-off to the outside school experience. The generation gap that still exists must be resolved by the Inuit themselves. I would imagine that if we involve all of them in a mature way and resolve things through consensus, the situation would be better. Very often the time frame for decision-making in the north is of the utmost importance. For example, I was recently contacted by Inuit in Pond Inlet, which is in north Baffin Island. They wanted me to come there and explain to them the contents of forty volumes of technical reports produced by scientists working for oil companies and the Department of Indian and Northern Affairs. There is much interest in Lancaster Sound as a source of minerals. I told them that they should not play into this stupid game. They apparently had three days, and they needed at least six months, a team of consultants, and lots of money to even attempt to understand the technical reports. It is a charade that is played, this seeming appearance of mature consultation. Information, education, discussion, and dialogue have to be present in all planning in the north. The people have to have an understandable and a common information base, not forty volumes of reports on microfiche. We are just not giving this process in the north the time and attention or the seriousness that it demands.

THE FLOOR: This generation gap that I have mentioned, and many other cultural characteristics, seems to vary from one settlement, group, or camp to another. It is invalid to base an extrapolation on the experience of one or a few communities. Each settlement and each issue has to be treated as the individual case it is. In our technocratic society there is a rush to get research out. The result is that many false conclusions are being made in the technical reports of consultants or the reports done by agencies of governments. I hope this discussion throws some light on the complexities of doing research in the Arctic and getting through to the people honestly.

THE FLOOR: You have given a very good argument for listening and seeking information from the Eskimo on game and other animals. It would seem logical that scientists would pursue this source of data. Can you make any suggestions on ways we can prevent misunderstandings and improve communication during research sessions in the north?

FREEMAN: I suppose I could be facetious and say everyone should be an anthropologist. After some twenty years of work in the north and after considerable experience working on these very problems of hunting
and ethnozoology, I am just scratching the surface. One of the problems is to put the question you want to ask in the correct cultural context. For example, we use a verb to denote our interest in hunting. But in the northern cultural experience there are four or five ways of discriminating between types of hunting. You can not use our verb to ask where the Inuit hunt caribou or seal. You can not even use the generic term for seal because the Inuit have different words to denote the seal in different states or situations, such as on the ice or swimming. It is very hard to ask the right questions until such time as you have an appreciation of how the Inuit is conceptualizing or perceiving the world about which you are asking the questions. It requires patience in the holding of meetings and patience in the preparing of research on the north and her people.

THE FLOOR: I have a somewhat more general question about the topic of indigenous uses of national parks. This policy of indigenous use of national parks and their resources has a price. Traditional hunting, trapping, and fishing have a great effect on wildlife. It decreases greatly the opportunity of other Canadians to observe wildlife. For example, in Nahanni National Park, a common statement of visitors is, we have not seen any animals. Howard Douglas, an important superintendent of Banff, used to say that people come to national parks to enjoy the animals. I think this comment is true. I worry that the new northern parks are not going to have this dimension. One of the best sections of the draft policy statement deals with indigenous uses. The first three points made in the draft policy in this section are excellent. First, planning and management strategies for these northern wilderness parks will be developed jointly by representatives of Parks Canada and the local people. Parks Canada will have to deal with the questions of traditional resource uses and their area or location. Perhaps, parts of these new parks should be set aside, and no traditional hunting would be allowed. Second, who would have the authority to define the traditional resource uses? What are we going to do if the Inuit population keeps growing? Third, what level of traditional subsistence resource use is appropriate? If the animals in the national parks suffer a natural catastrophe in their numbers, what will Parks Canada say to the native people about hunting in following seasons?

FREEMAN: We are talking about wilderness areas and not zoos. I think that if someone wants to see real wilderness then they have to accept the real possibility of lynx and lemming populations crashing. We can not
guarantee that we are going to alter these natural cycles so people can see these animals. Many people go to Nahanni with their temperate minds set. But the farther north they go, the less is the chance of seeing varied wildlife.

THE FLOOR: I agree with what you say. But in Nahanni, Wood Buffalo, and Pukaskwa, it is not a case of natural catastrophies. What does the park manager say when questioned by visitors?

FREEMAN: The small fur bearers we do not need to worry about because they have the capacity to regenerate themselves very quickly....

THE FLOOR: It is not just the lack of numbers. It is the mentality the hunted animals develop.

FREEMAN: I am sorry but I did not catch that comment.

THE FLOOR: It is their mentality and behaviour. The animals simply do not show themselves. They develop a hunted mentality. Visitors will not see them.

FREEMAN: It is possible to maximize two goals. In effect, we are trying to make multiple land use possibilities in parks. The allowance of a certain level of visitation in parks is an impact. We can not have pristine if we are going to allow visitors and the facilities needed to support them. It is an intelligent trade-off we are engaged in, but one in which I feel we have the ability to manage.

THE FLOOR: The whole issue of controlling native people's use of resources in national parks is distressing to me. It seems to indicate that the idea of national parks is a corrupt notion and in opposition to the traditional philosophy behind the creation of the park system. In part, the function of national parks is to bring people into contact with nature, especially the urban dwellers. How can one justify replacing people who live in harmony with nature, with people who have a different set of values. North of 60 degrees, there are many land claim issues pending. We do not have the right to dictate to native people on land not yet owned by us.

FREEMAN: I share that sentiment. I am an environmentalist by emotional persuasion as well as by profession. What is really enriching to me is not the viewing of walrus or seals, but the experience of having the native people tell me about their perception of things around them. Their use, their understanding, and their relationship with the land as expressed by them is so much more than just observing it.
yourself. I might just as well see a good painting in a museum or see an animal in a zoo in Toronto. The vitality of the man-environment relationship is the true value of the experience.

THE FLOOR: In the context of the discussion on national parks and the absence of animal life, I went to the Arctic coast of Alaska in 1958. It was the year after the lemming crash. I never saw a lemming and I still have never seen a lemming. The experience missed must be considered a part of nature. You can learn just as much from the negative statement or experience. If visitors to our parks fail to see much wildlife, then they still should realize that they have discovered something about nature. I am a biologist so I can sympathize with these types of issues. This whole discussion has given us the opportunity to recognize just how important the human element is in the north. I think that to visit native peoples wherever they may be in the world is an exercise in humility. If you do not have humility, then you are not going to see clearly, ask the right set of questions, or gain the experience you want. You are not going to visit the site without creating harm. More and more it is essential for a guest in the Arctic to be subjected to or invited to participate in an out-reach education programme first. We have access to hunter training programmes and we should have access to visitor training programmes. My question is, would you please give us the full reference of the report which you cite and which so many of us have not yet seen or reviewed?

FREEMAN: I wish I could have expressed some of my concerns as eloquently as you have. I thank you for enlightening the audience. The report in question is entitled: THE REPORT OF THE INUIT LAND USE AND OCCUPANCY PROJECT. It was published in 1976 and is in three volumes. The first volume deals with land use and occupancy. The second volume deals with supporting studies and methodology. The third volume deals with the land use maps and is in the form of an atlas. The report was prepared for the Department of Indian and Northern Affairs and published by the Queen's Printer or whoever handled that sort of thing back then.
VI
INTERNATIONAL PERSPECTIVES
Wednesday, October 11th: Morning

Paper 26: THE AMERICAN NATIONAL PARK SYSTEM: A REVIEW
R.A. Rowntree and J.F. Orr

Paper 27: THE UNITED KINGDOM'S EXPERIENCE WITH THE COUNTRYSIDE CONCEPT
R.W. Butler

Paper 28: EXPERIENCE WITH NATIONAL PARKS AND RELATED RESERVES IN THE SOUTH-WEST PACIFIC
P.H.C. Lucas

Paper 29: PEOPLE, POLITICS, AND PARKS: AN AUSTRALIAN EXPERIENCE
J.D. Ovington

Paper 30: COASTAL AND MARINE RESOURCE PLANNING WITH SPECIAL REFERENCE TO MARINE PARKS AND RESERVES
J.A. Dobbin

Paper 31: PROTECTING THE WORLD'S HERITAGE
P.H. Bennett

Paper 32: CRITIQUE
K. Curry-Lindahl

DISCUSSION FROM THE FLOOR
INTRODUCTION

Since its inception at Yellowstone in 1872, the American National Park System has grown and diversified, expanding to a degree perhaps unforeseen by all but its most optimistic supporters. In 1977 its 295 authorized units played host to more than 262 million visits, with ever-increasing levels of use expected to continue. A diversity of parks and preserves may be found, ranging from natural environments and landscapes to historic and cultural resources, and facilities offering outdoor recreation activity. Indeed America's National Park System not only has attracted world-wide attention, but it also has served as a model for park systems in many other countries.

Despite this reputation, fundamental questions regarding the National Park System's efficacy in our modern society are being raised. In America's technological and urbanized society the role and, ultimately, the benefits, of a system of national land reserves now is being examined in light of energy availability, increasing user technology and impacts, shifting leisure patterns, and environmental protection. Introspection and criticism is spurred by recurrent instances of park degradation and deterioration, or utilitarian claims on reserved lands, and, perhaps most important, by a fundamental inquiry into the role of park land in a modern, urbanized society.

As an outgrowth of this concern, the Conservation Foundation was asked to coordinate a citizens' appraisal of the National Park System on the occasion of the American national parks' centennial in 1972:

- to conduct a study and submit a report identifying the basic problems and issues confronting the National Park System today and those anticipated in the future ... (and to develop) a statement of philosophy and long-range objectives and goals with implementation recommendations, to guide the administration of the National Park System into a Second Century of Parks.
The result of this year-long public analysis of the National Park System, *National Parks for the Future* (The Conservation Foundation, 1972), is a compendium of diverse views aggregated about this central proposition for America's national parks:

> The National Park System can best meet the future needs of all Americans by reasserting its original mission -- the preservation and interpretation of natural landscapes and ecosystems. This function, which must involve truly representative citizen participation, can enable the park system to make its most meaningful and lasting contribution to an urban people, and can exemplify and inspire an enduring environmental ethic.

Within this broad philosophical framework the Foundation (1972, pp. 11-13) organized its conclusions into four major recommendations that address the challenges facing the National Park System as it enters its second century:

1. the National Park System should reassert its traditional role as conservator of the timeless natural assets of the United States;
2. greatly expanded citizen participation should be made fundamental to the planning and management of the National Park System;
3. the National Park System should serve urban America by assuring a distinctive recreational opportunity based on natural values; and,
4. the National Park System should be used as a showcase of man's proper stewardship of land, water, and air.

In its entirety the Conservation Foundation study may be viewed as a critique of contemporary Park System policy and programmes, with recommendations filed for guidance in future action. As such, it serves as a point of departure for our present analysis of evolving conditions and problems, and the implications for America's National Parks. Our paper reviews the ranging literature which addresses both the central policy issues and the pot-pourri of management problems facing the National Park System. We conclude by considering those factors which bear on the future of the System, directing special attention to changes in energy, technology, and leisure time. Our purpose is to make accessible to an American and an international audience ideas, criticisms, and controversies that compose the recent published commentary on national parks and related reserves in the United States.
Between 1960 and 1975 visits to the National Park System tripled, from seventy-nine million to 239 million. The consensus of opinion is that the Park Service faces continuing difficulty in responding to this crush of park visitors. On the eve of this Nation's bicentennial, an editorial appearing in the *Washington Post* described some of these problems (Everhardt, 1976, p. 25):

The nation's parks ought to be at their finest for the bicentennial. Instead, visitors to America's greatest natural and historic preserves are all too likely to find evidence of damage and neglect... virtually every major national park has some deteriorating facilities and services -- roads that are rutted and unsafe, trails poorly maintained, historic structures crumbling, fragile valley streams threatened by pollution and improper use. Similar sentiments were expressed when a Congressional committee released a report, *The Degradation of our National Parks* (House Report, 94-1318), on July 4, 1976, outlining park systems problems. These observations are in sharp contrast to the Park Service's 1916 mandate to conserve the scenery and the natural and historic objects and the wildlife within its areas. Perhaps the most comprehensive critique of conditions in the National Park System was undertaken by the National Parks and Conservation Association (N.P.C.A.). Its report, entitled *Park Resource Inventory*, systematically examined units within the Park System and found that in unit after unit of the National Park System, natural resources and virtually every aspect of park operations have suffered (National Parks and Conservation, 1976d, p. 25). The survey revealed widespread deterioration in facility maintenance and operations, research, historic preservation, and visitor service (National Parks and Conservation, 1976a, p. 21). Given its present rate of deterioration, many question the viability of a system devoted to conserving and protecting our natural wonders, speculating that Americans will indeed love their parks to death. By the most conservative reckoning, the Park System appears to be in grave danger of losing those characteristics which make it a national treasure. In response to this criticism, blame for Park System degradation has been cast over a wide range of organizations and personalities. The National Park Service particularly has been criticized as the agent most responsible for the current state of our parks. The wisdom and competence of the Park Service and its operatives have been challenged as being inadequate for the multitudinous tasks associated with managing our Nation's diverse park resources. Soucie (1976, p. 124) draws this historical contrast with respect to conditions in the National Park System.
While most of the burning issues of the 1960's have been resolved -- those Grand Canyon dams and the transmountain road across the Great Smokies were never built, satisfactory compromises have been worked out with the Florida water barons, and there are ranger stations and nature trails as well as mining camps and logging roads in the North Cascades and Redwood country -- in many respects the problems of the National Park System are worse than ever. The threats are no longer external. Those big battles of a decade ago have discouraged most hydropower planners, highway builders, and other wholesale ruiners of the landscape from looking at the parks as just so much free real estate. Today the threats are internal and perhaps intrinsic to the National Park System, but they are no less real.

This observation suggests that the greatest threat to the parks' integrity lies with the Park Service's management. Yet, upon closer examination, grounds for complaint concerning managerial competence, research capability, user controls, personnel needs, visitor service, and resource protection may not be attributed directly to the Park Service. Rather, one must examine external constraints imposed on Park Service management to understand the current state of American national parks more clearly.

As a result of increased visitation and impact on natural resources, the need for adequate funding for the personnel in the National Park System has never been more acute. Throughout the period 1972 to 1975 the Service received no significant increase in personnel although visitor numbers and park units steadily increased. Congress did authorize an increase in permanent staff positions but they were never realized. Thus, as the Service continues to spread manpower over greater numbers of areas, maintenance, resource management, safety and visitor services programs are not being conducted at prescribed standards. The result is dissatisfied visitors and deterioration and loss of park resources (National Parks and Conservation, 1975b, p. 20). Indeed an unpublished report circulated within the Department of the Interior ominously concluded, continuation of the present trend inevitably will lead to the closing of some park areas so that others may be operated at prescribed standards (National Parks and Conservation, 1975a, p. 20).

Ultimate responsibility for this circumstance rests most clearly with the President and his administration, especially his budget agency, the Office of Management and Budget (O.M.B.). In several accounts, deterioration of the National Park System has been tied most directly to budget and personnel allocations imposed on the Park Service from above (National Parks and Conservation, 1976d, p. 25). There were to be repeated budgetary and personnel cuts in the early and mid-1970's, even with documented evidence of Park System deterioration and continued increases in visitation rates. The previously-cited congressional report (House Report 94-1318) concluded that the primary reason for this decline was twofold: first, O.M.B. has for several years recommended to Congress appropriations which are insufficient for the Park Service to do
its job at even a minimally acceptable level and Congress has not
approved larger budgets; second, O.M.B. has arbitrarily imposed
personnel restrictions below the level upon which Congress pre-
dicated the N.P.S. budget.

In light of several recent developments, inadequacies in Park
System personnel and funding may be improving. The most significant
change is the National Heritage Trust Program, designated to iden-
tify and protect America's natural, cultural, and historic resources.
The intent of this comprehensive federal programme is to identify,
acquire and protect these resources; to provide for rapid acquisi-
tion of the most significant and endangered areas and examples of
natural ecosystems; to protect areas already within federal jurisdic-
tion and to coordinate federal programs with states and private
citizens more effectively (National Parks and Conservation, 1977c,
p. 23). The programme will provide for substantial additions to
Park Service staff and great increased maintenance funding.

One of the traditional sources of funding for the National Park
System is the Land and Water Conservation Fund (L.W.C.F.), which
also contributes to other federal, state, and local agencies and
projects. Because substantial amounts of money are accruing to
the L.W.C.F. through the sale of offshore oil leases, and tre-
mendous backlogs exist in Federal land acquisition programmes,
demands to increase the annual allotment of funding have grown in
number and magnitude. A 1976 amendment allocated $600 million for
1978, an annual increase of $300 million. $750 million has been
allocated for 1975, and $900 million annually for the period 1980
to 1989.

President Carter amended the L.W.C.F. in 1977, providing it with
an extra $450 million over two years to purchase lands already
authorized by Congress. For years Congressional authorization for
park system acquisition had consistently outstripped available
funding. By 1976 it was estimated the Park System acquisition
backlog was $533 million (National Parks and Conservation, 1976c,
p. 21). Zelden (1974, p. 113) estimates the four federal agencies
which share L.W.C.F. acquisition monies need $1.9 billion to buy
lands already authorized or designated as national parks, lake-
shores, seashores, wild and scenic rivers and trails, recreation
areas, and wilderness and wildlife refuges. These figures do not
include recent or contemplates additions to the Park System.

Another recent development of significance to the National Park
System is the National Parks and Recreation Act of 1978 (National
Parks and Conservation, 1978b, p. 20):

In one fell swoop the measure would create fifteen new
national parks, historic sites, or recreation areas;
about 2 million acres of wilderness in nine N.P.S.
units; and seven new wild and scenic rivers; nineteen
wild river study areas; and four new national trails.
It would increase the ceilings on spending for land
acquisition in five park areas and for maintenance and
rehabilitation projects in thirty-three N.P.S. units as
well as make boundary changes, additions, and other adjustments in forty park areas.

The Act resolves a number of long-standing issues concerning protection of units of the Park System. One of the Act's sponsors has stated that apart from the Alaska lands' bill this legislation will stand as the most monumental and significant environmental legislation affecting the United States that will pass this Congress (Parks and Recreation, 1978, p. 12).

PARK SYSTEM EXPANSION AND DIVERSIFICATION

Park System funding and staffing is intimately related to the expansion and diversification of units administered by the National Park Service. The agency apparently has accepted additional managerial responsibilities, many of which are peripheral to its traditional responsibility for conservation and protection of nationally significant resources. These additions have complicated Park System administration to the extent that a redefinition of Park Service policy often is called for. The matter was addressed by The Conservation Foundation which stated (1972, pp. 10-11):

... they must reject any suggestion that the National Park System has a responsibility to engage in programs which cover the entire spectrum of outdoor, historic, and cultural needs of the American people. We are convinced that efforts to make the system all inclusive are triply mistaken: first, such efforts will dilute the internal strength necessary to carry on a vital environmental preservation function; second, they will sap energies and ambitions at other levels of government; third, the American people ought not to expect a single federal agency to give adequate and properly balanced attention to the many separate strands of American society, culture, history and environment.

Today, the units of the Park System are classified into twenty management categories, ranging from national parks, monuments, and seashores to national recreation areas and historic sites. Each category presents unique management conditions and problems which must be managed within one National Park System requiring a degree of uniformity and classification.

From 1964 until 1978 the Park Service separated all units within the Park System into three major classes: natural, historical, and recreational. The functional categorization created many management problems. For example, a unit classified as a recreational area also may have significant natural areas within its boundaries. And the classification of all national seashores and lakeshores as recreational areas raises questions as to the degree of protection afforded these fragile ecosystems when exposed to often intensive recreational development and use.
These apparent difficulties gave rise to a new programme for classifying Park System resources (National Parks and Conservation, 1978d, p. 27):

The new plan includes a land classification system that enables land managers and planners to recognize various zones with differing levels and types of uses, all within one unit of the system. Until the recent decision, the management categories had remained in force. In some cases they had conflicted with the land classification system determined during the planning process. For example, Fire Island National Seashore contains both development zones and environmental protection zones.

The National Park System has grown to an extent unforeseen by its creators. Moreover its geographical centre has shifted. Once consisting primarily of natural areas located in the West, more than half of the units now lie east of the Mississippi; and these are basically cultural or historical in purpose (Duddleston, 1975, p. 2). Perhaps no extension of responsibility has generated more controversy, however, than the agency's participation in urban parks and recreation. Controversy has focussed on the establishment and management of three urban national recreation areas: Gateway, in New York City; Golden Gate, or Gateway West, in San Francisco; and Cuyahoga Valley near Cleveland, Ohio.

Park Service involvement in urban national recreation areas is an offshoot of a recent trend which has seen the Service participate in the provision of recreational opportunities on a large scale. During the 1960's Congress authorized Cape Cod, Fire Island, Assateague, Padre Island, and Point Reyes National Seashores as our first National Lakeshores, thus formalizing active federal involvement in mass recreation. With the creation in 1963 of the National Recreation Area category, the Service was to provide outdoor recreational opportunities of various kinds and of various intensities, preferably at locations in or accessible to large population concentrations lacking alternative opportunities (Smith, 1972, p. 217).

In 1975, Nathaniel Reed, Assistant Interior Secretary, summarized the arguments for direct federal involvement in urban parks as follows (Duddleston, 1975, p. 3):

Openspaces, rivers, mountains, and recreation sites of all kinds that happen to be near cities are being lost for possible park use at an alarming rate.

Most states and cities do not have sufficient resources or flexibility to mount campaigns to save many of these areas. In some cases, the area worth saving spans more than one county or state, and the problems of getting political jurisdictions to act in consort can be insuperable without federal involvement.

The states and cities are beset by severe financial crises that all but preclude major new investment in parks at a time when they are needed most.
Though some of these remaining areas may not quite measure up to the National Park Service 'national significance' standards of the past, they constitute highly significant natural assets.

Reed also noted several factors working against a direct federal role (Duddleson, 1975, p. 4):

The funds, manpower, and facilities of the National Park Service already are strained to the breaking point. The application of high national standards to any area proposed for inclusion in the System is important. So far, we have in the main limited it to lands having 'nationally significant' historic, scenic, or recreational values. To accept less is to debase the concept of a national park and alter attitudes of the public as well as the Park Service in ways that cannot be foreseen.

A direct federal urban role would politicise congressional consideration of park proposals far more than is now the case. New parks may be created not because of national merit but because of local congressional clout -- a process akin to the pork-barrel approach by which many public works projects are federally financed.

Protection and administration of urban-oriented park lands should be the responsibility of local or state jurisdictions because they can tailor such areas to suit their citizens' needs far better than the N.P.S. ever could.

Criticisms of a philosophical nature also have been expressed. Smith (1972, p. 213), for example, observed:

It is a little ironic that the N.P.S. should be in the vanguard of the federal take-over of functions that have traditionally been considered the exclusive domain and responsibility of city government. The Park Service is probably one of the least equipped federal agencies, in terms of staff background, training, bureaucratic philosophy, and traditional agency mission, to deal with the problems endemic in the urban circumstance.

And The Conservation Foundation (1972, p. 15) made the following recommendation:

The Gateways present some real difficulties for they are desperately needed regional recreation facilities. However, the National Park Service has been involved mainly because there was no immediate alternative ... these projects, as conceived, are not intrinsically national parks and would require service and facilities which are quite different from those found in traditional resource - based park units. We recommend that the Gateways be transferred as soon as possible to appropriate state or regional agencies for administration.
A fundamental question concerning urban national recreation areas is the national significance criterion applied to areas within the National Park System. Traditionally the term has referred to natural resources, but, in the case of Gateway, who is to say that provision for 8.7 million recreational visits in 1977 in an urbanized environment is not nationally significant. Furthermore, if parks are for people, then diverse elements of a democratic society should be enlisted in any open examination of park use ... moreover, if national parks are to survive at all they must serve and be wanted by new urban constituencies. (The Conservation Foundation, 1972, p. vii, emphasis added). Looked at in another way although the scenic and ecological quality of lands coming under the jurisdiction of Gateway and its sister parks is, generally speaking, lower than that of other units in the national park system, their metropolitan location and accessibility endow their more limited assets with greater value than they might otherwise deserve (Sage and Hyde, 1977, p. 35).

Following the establishment of Gateway, Golden Gate, and Cuyahoga Valley National Recreation Areas, the Interior Department has decided that more of these types of areas are needed, but that they should be provided by state and local governments, subsidized in part by federal funds, for example the L.W.C.F. The three urban national recreation areas established to date are officially described as experiments which may be used as models for similar future developments, but henceforth, the Park Service will not serve in a direct managerial role.

With respect to expansion of the System, The Conservation Foundation (1972, p. 20) recommended that the National Park System should continue to be expanded, as in the past, by offering protection to outstanding scenic and recreational resources. In this connection we would suggest that greater emphasis be given to rounding out park holdings with examples of those landscape types and natural systems of the United States not yet represented in the National Parks. The following two examples typify contemporary proposals for System expansion.

Proposals for a Prairie-Great Plains National Park are recurrent in national park literature (Allen, 1977; Carton, 1975). Gardon (1975, p. 5) notes that the tall-grass prairie has not been included within the National Park System although the prairies are as unique and distinct as other major ecosystems such as the Redwoods in California and the Everglades in Florida. However, protection of a representative segment of the tall-grass prairie or the Great Plains apparently must await settlement of a larger, more momentous expansion of the National Park System: Alaska.

A brief history of Alaskan national interest or d-2 lands is provided by Morris (1973, p. 16):

In December 1971 President Nixon signed into law the Alaska Native Claims Settlement Act, Public Law 29-203, which directed the Secretary of the Interior to withdraw over a period of months certain public domain lands in
Alaska that he determined might be appropriate to study for addition to the national park, national forest, national wildlife refuge, and national wild and scenic rivers systems. Lands so designated are specified as 'd-2' lands because authority for such designation was described in Section 17(d) (2) of the act. They are more generally referred to as 'national interest lands'... The initial land withdrawal was completed by Secretary Rogers C.B. Morton in March 1972; final withdrawal came in September 1972. The act authorized the Secretary to designate up to 80 million acres as 'd-2' lands. Final withdrawal reserved 79.5 million acres of 'd-2' lands ... The Alaska Native Settlement Act also required the Secretary to present Congress with legislative proposals regarding lands designated 'd-2' by December 18, 1973, and directed that Congress act on the proposals within five years.

Four years later, in September 1977, the Administration's legislative proposal for protecting Alaska was announced. The plan recommended designation of nine-two million acres of Alaska's total acreage of 375 million acres, as national parks, wildlife refuges, scenic rivers, wilderness areas, and forests. In May, 1978, the U.S. House of Representatives passed H.R. 39, the Alaska National Interest Lands Conservation Act. This action could have preserved more than one hundred million acres, but Congressional protection was not forthcoming as the Senate failed to act prior to adjournment. However, on December 1, 1978, President Carter used his executive authority under the Antiquities Act of 1906 to create seventeen new national monuments, totalling fifty-six million acres. His action gives permanent protection to these lands, although Congress can change their designation. Fifty million additional acres of Alaskan land are being considered for administrative protection by the Department of Interior and Agriculture.

The most vocal criticism of land reservation proposals arise from Alaska's development interests, who characterize efforts to protect Alaskan lands as federal land grab which would lock up resources in single use management. In Congressional testimony Secretary Andrus addressed this concern (National Parks and Conservation, 1977a, pp. 28-29):

Some people seem to fear that we are trying to hoard resources needed by Americans today and in the immediate future. There are roughly 375 million acres in Alaska. Our proposal involves 82 million acres. The State of Alaska will be receiving 103 million acres, much of which will be developed. So there will be tens of millions of acres remaining outside the Four Systems which will be largely available for mining, grazing, timber, hunting, fishing and various multiple uses ... If we err in this decision and exclude some previous and delicate areas from the four systems, these areas could be lost forever. But if we err in conserving too much, this can always be changed in the future.
Many observers feel the current state of Park System deterioration and degradation argues for conservation of available resources in a programme of rehabilitation and maintenance rather than continued expansion and diversification. In particular, detailed evaluation of Park Service involvement in urban parks is called for.

THE FUNDAMENTAL CONTRADICTION: USE VS. PRESERVATION

No other single issue so pervades National Park System policy and management as that concerning the balance between preservation and use. This dilemma first appeared in the Act creating Yellowstone in 1872 (Jensen, 1973, p. 60), and was repeated in the 1916 Act creating the National Park Service:

The Service thus established shall promote and regulate the use of Federal areas known as National Parks, Monuments, and Reservations herein after specified by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as to leave them unimpaired for the enjoyment of future generations.

Debate continues with respect to operationalizing this philosophical commitment while Park Service managers are called on to make daily decisions which recognize the need to balance use and preservation. Concessions, river use, and transportation are three areas of activity in which choices about use and preservation must be made.

NATIONAL PARK CONCESSIONS

The Outdoor Recreation Resources Review Commission (O.R.R.R.C.) has noted that the provision of concession facilities in the national parks represents a continuation of the preservation and use dialogue ... There has been a dichotomy within the agency between the purist, wanting the least possible amount of park development, and the recreationist, dedicated to development and expanded use within the limits of the Park Service's conservation and preservation concept (Everhart, 1972, pp. 125-126). Although it is the expressed policy of Congress to encourage and enable private persons and corporations to provide and operate facilities and services ... deemed desirable for the accommodation of visitors (Concession Policy Act of 1965), this partnership between concessioner and government often is a strained association, breeding ill-feeling and operational difficulty among Park Service operatives, the concessioner, and the American public.

Though seemingly in a position of financial advantage because of their quasi-monopolistic status, national park concessions experience
significant construction, operating, and maintenance costs, and a short operating season. For example, almost one-third of all park concessions lost money in 1970 and an equal number could be considered only marginal operations (Everhart, 1972, p. 129). In light of the many problems of private concessions in national parks, consideration often is given to governmental take-over of concessions to satisfy ever increasing demands for visitor services.

A recent trend has been a gradual replacement of long-time, single-interest small ownership concessions by large, diversified corporations such as Music Corporation of America (M.C.A.), T.W.S. and General Host. The Department of the Interior noted (Duddleson, 1975, p. 14):

> Proper concessions management within the N.P.S. is hampered by the fact that concessioners are well aware of their ability to influence decision-making by making direct appeals to political figures or to the higher levels of the Service or the Department of the Interior. One result ... has been decisions which do not reflect, or even take into account, the view of lower-level managers. Another result is that such decisions tend to be uninformed, if not wrong.

The 1972 Conservation Foundation report (1972, p. 22) also recognized this problem and recommended that a long-term program of concessioner replacement be started on a pilot basis and proceed according to an equitable timetable until the parks are free of major private entrepreneurs and the public has regained full control of facilities planning and operations.

An especially troublesome aspect of concession management is the existence of possessory interests by park concessioners which give to them partial ownership of the business operation. Compensation is thus due concession owners should their contract be terminated or altered by the Park Service. The high cost of this compensation makes the Park Service reluctant to initiate changes in concession policy and paralyzes the National Park Service's freedom to manage the Park System in accordance with congressional directives (National Parks and Conservation, 1976e, p. 20).

Perhaps at the heart of these problems is the long-standing latitude of interpretation of concessions policy. The 1872 Act establishing Yellowstone stated rather generally that the Secretary may, at his discretion, grant leases for building purposes, for terms not exceeding ten years, of small parcels of ground, at such places in said park as shall require the erection of buildings for the accommodation of visitors (Everhart, 1972, p. 112). The 1965 Concession Policy Act sought to formalize these institutional relations. But with its broad legislative phraseology the Act provides great latitude for agency discretion with resultant inconsistencies. It remains for the Park Service to develop uniform procedures for managing private concessioners in the National Park System.
The Park Service has proposed a standard concessions contract which would provide for greater control over private operations and return decision-making to the Service. Provisions are being sought to reduce concessioner discretion as well as limit possessory interests accumulated within a park. This effort by the Park Service to constrain concessioner activities within the limits of uniform Park System policy can have only beneficial results for park managers and visitors alike.

COLORADO RIVER USE

The Grand Canyon attracts large numbers of visitors, some of whom desire to boat down the Colorado River as it winds for over 250 miles through the national park. Through both commercial enterprises and private excursions, river runners make this trip using canoes, dories, and large motorized rafts. The impact of this use raised concerns among Park Service managers and conservation organizations that the Grand Canyon was not being managed in accordance with the Congressional mandate. A detailed, five-year study of the Colorado River within Grand Canyon National Park reported that increasing use of the limited number of campsites within the Canyon bottom has led to a widening array of management problems, including trampling of vegetation, littering and accumulation of human wastes, beach erosion, and user safety. The study concluded that the river runners are damaging the canyon/river ecosystem, perhaps not irreparably, but certainly enough to diminish the enjoyment of future visitors. This research indicates that visitor use patterns are more to blame for human impact than actual use levels (Garrett, 1978, p. 22).

Today there is considerable debate over the type of recreational opportunities which should be offered within a national park. Besides offering a contrast between use and preservation the Colorado River case also involves conflicts between different types of river craft used for recreational purposes: free floating canoes, boats, or rafts; and motorized crafts. Conservationists claim that elimination of motorized river travel would have beneficial impacts on the quality and volume of river use ... Promoting slow float trips in small parties manning unpowered dories and rafts could provide visitors with a much more desirable experience, an experience compatible with the existing wilderness environment. This would greatly lessen the noise, water and air pollution, and litter that generally result from the present overuse of the river (National Parks and Conservation, 1976g, p. 25).

The river study confirms that boat motors do, in fact, bother some visitors. Not only do they mask the natural sounds, but they also make communication between boat operators and passengers difficult. The current reliance on motorized craft for 80 percent of all trips has especially contributed to congestion and crowding. It has added noise and noxious fumes to the river trip experience (National Parks and Conservation, 1978b, p. 21). Commercial motorboat operators have countered that the motors permit them to carry more people faster and more safely than non-motorized trips (Garrett, 1978, p. 22).
A Colorado River Management Plan has been developed by the Park Service for Grand Canyon and is being circulated for review. The plan recommends the summer season be extended from three and one-half months to six months and that there be a six-month winter season. This arrangement would double the user days but spread user impacts more evenly over time. All human waste would have to be containerized and removed from the park. The plan's most controversial proposal is to phase out all motors over a three-year period, resulting in longer, quieter trips.

TRANSPORTATION WITHIN NATIONAL PARKS

Automobile travel and its associated development have considerable impacts on the landscape. Thus the presence of the automobile in National Park System units would appear to be inconsistent with the preservation and protection of natural resources in these areas. The Conservation Foundation (1972, p. 16) condemned the automobile's presence in units of the National Park System:

*We believe that automobiles are inconsistent with the preservation mission, with what is called the 'park experience', and with even the most rudimentary ethic. It is not now feasible to recommend that private automobiles be banned from every unit of the National Park System, but that would be our choice.*

In 1970 the National Park Service banned private automobiles from selected roads in Yosemite National Park. A free mass transportation system employing propane-powered shuttlebuses was instituted to carry visitors throughout the park. Somewhat to the surprise of park personnel visitors enthusiastically took to this mass transit programme, citing relief from the pressures of driving and new abilities to observe their surroundings.

Transit programmes were implemented in other system units with similar positive responses. In 1972 when the Park Service greatly restricted automobile use in Mt. McKinley National Park in Alaska, Harrison (1975) found the vast majority of park visitors approved the new transportation policy of free bus service. Butcher (1975, p. 4) has reported similar results from Grand Canyon National Park.

Success has led to increasing use of mass transit systems throughout the Park System (Gilman, 1976, p. 4):

*The Park System has expanded the original Yosemite experiment to include free (or low-fee) alternate transit systems in several other National Park Service areas: Mesa Verde, Everglades, Mt. McKinley, North Cascades, Guadalupe Mountains, and Grand Canyon national parks; Point Reyes and Fire Island national seashores; Lyndon Baines Johnson, Carl Sandburg Home, and Fort Matanzas national historic sites; and the Washington Mall. The systems range from 100 passenger*
multi-unit trailer trains at Grand Canyon to eleven passenger vans at Carl Sandburg home.

It appears, then, that conversion to alternative means of transit will be more constrained by limited Park Service funds than by user reluctance. Butcher (1975, p. 5) projects that nearly all national parks will soon be offering similar mass transit shuttles. This projection appears nearer fruition in light of recent legislation authorizing six million dollars over three years for demonstration transportation projects in various National Park Services units (National Parks and Conservation, 1978c, p. 26).

NATURAL PROCESSES AND PARK SYSTEM MANAGEMENT

Consistent with man's basic instinct to control natural processes, traditional Park Service policy has evolved mandating human intervention in dynamic natural systems and processes. Rowntree, Heath and Voiland (1978, p. 98) observed that the Park Service should be credited with two extremely important lines of applied research that have revolutionized the management philosophy that determines in what way the government cares for the park. These two programmes of research concern the study of ocean and littoral dynamics, or barrier island stability, and the policy of fire exclusion in national park lands.

During the past twenty years the National Park Service has become manager of many of this country's remaining natural barrier beaches, for example, Cape Cod and Fire Island National Seashores. Traditional Park Service management emphasized the control or prevention of natural events and processes considered harmful to Park System integrity. Control measures at the seashores sought to create a steady-state environment amenable to management and development. However, many unforeseen complications have accompanied human intervention in these dynamic littoral processes. Doland and Hayden (1974, p. 10) made two general observations with respect to Park Service management of coastal park areas:

Management actions designed to control and stabilize the natural modifications of the landscape by marine forces usually result in unexpected side effects that in turn require additional management action.

Management actions to control the landscape have been found to be site-specific. Therefore procedures that were successful in one location neither are necessarily successful nor do they result in the same side effects when applied elsewhere.

Human modification of natural shorelines has created a false sense of security among developers who interpreted Park Service management as protection from destructive natural forces. Because of the money and technology invested over the years in shoreline stabilization, the development of communities, tourist facilities, and
took place in an otherwise unstable environment. Before protection, this development had been restricted to the inland side of barrier islands. Once established, these developments exerted pressure for greater Park Service protection. These control techniques were unnatural and sometimes ineffective and often produced undesirable side effects. As a result, Park Service policy was critically reassessed, and in 1973 the Park Service stated that future national seashore policy would reflect adjustment to, rather than control over, the natural factors shaping the coast. No longer would marine and atmospheric forces be viewed as undesirable elements for Park Service management to control. The transient processes of shoreline erosion and deposition, the successional advances and disruptions of vegetation forms, and the impending demise of the artificial barrier dunes at the Cape Hatteras National Seashore should be viewed as natural events of a positive significance that will maximize the recreational values within the seashore areas (Dolan and Hayden, 1974, p. 13). Storm damage is inevitable on these barrier islands, and through adjustments to naturally induced changes, future seashore management will be more realistic and less costly.

A second case of Park Service policy reassessment stemming from research and recognition of earlier misconceptions involves the practice of fire exclusion from national park lands. For decades fire has been fought in the natural landscape and years of intensive forest fire protection programs and 'Smokey the Bear' campaigns have caused a buildup of organic matter and leaf litter on the forest floors of many wilderness areas. The accumulated deadwood and underbrush are responsible for the widespread danger of extreme, unnaturally large forest fires (National Parks and Conservation, 1975b, p. 27). In addition to increasing the hazard, fire control has ecological consequences. The government policy of excluding fire from two national parks in California has resulted in forest invasion of the perennial grasslands of Yosemite Valley, and White fir competition with the ancient and precious giant 'mountain redwoods' in Sequoia and Kings Canyon National Parks (Rowntree, Heath, and Voiland, 1978, p. 87). Wild fire is a natural component of forest and grassland ecosystems as it releases nutrients during combustion, prepares natural seed beds, reduces extreme fire hazards, opens the forest floor to sunlight, and sets back succession. Research sponsored by the Park Service in the 1960's and 1970's has highlighted such problems and stimulated changes in policy. Since 1968 the Park Service has allowed forest fires to burn freely in parts of Sequoia and Kings Canyon National Parks in California, and more recently in backcountry areas of several other parks. Prescribed burning also has been introduced to Sequoia forests to remove unwanted species. Moser (1973, p. 73) reports that when explained to the public this enlightened approach found almost total acceptance, and it has the enthusiastic endorsement of most conservation organizations.

By permitting processes such as shoreline erosion and wildfire to more nearly approximate their natural state, the Park Service has more satisfactorily realized its goal to preserve and protect natural resources. The role of applied research is of special note in the two instances cited, pointing to its value to public land managers.
Perhaps no other set of problems so alarms managers and conservationists as those relating to resource development proposals which threaten the Park System's integrity. Countless such proposals have been brought forth over the years. Construction of a reservoir in Yosemite's Hetch-Hetchy Valley, proposals to harvest old-growth sitka spruce from Olympic National Park, and the Colorado River Water Project are but a few of the better-known examples of threats to the Park System. Similar proposals continue to be of concern for today's preservationists with virtually every unit within the System facing some form of external pressure.

The Everglades

Since its establishment, Everglades National Park has withstood a series of development pressures. Rapid urbanization in southern Florida has placed a premium on land, stimulating dredge and fill operations for real estate speculation. The rapidly-growing cities and suburbs require large amounts of water, some of which has been diverted from the natural drainage into the Everglades. Rich bottom lands surrounding the park beckon to agricultural interests who, in turn, use precious water to irrigate their crops. This intensity of human activity has had pronounced effects on natural ecosystems. According to the United States Geological Survey (U.S.G.S.), approximately thirty-five percent of the natural habitat in south Florida has been destroyed by agriculture and urbanization (National Parks and Conservation, 1977b, p. 25). The U.S.G.S. report also notes that remaining natural habitat is threatened by changing water levels, pollution, exotic plants, and animals, fire, and continued growth and development. The report emphasizes, however, that man's most pronounced and long-term impacts on natural ecosystems have been the result of drainage.

A major threat to the Everglades surfaced in a proposal to build an international jetport serving the greater Miami area. This plan called for development in the Big Cypress Swamp area lying to the north of Everglades National Park. Public opposition to the jetport resulted in its being developed elsewhere, although a training air strip still remains in Big Cypress, now protected as a National Preserve. Addition of Big Cypress National Preserve to the Park System in late 1974 afford protection to a portion of the Everglades' watershed. The Big Cypress area originally was included within the Everglades' National Park, but had been deleted following development pressure. Its reacquisition, at substantial expense, points both to past errors in judgement by the Park Service and a new commitment to protect units under its jurisdiction from external trespass.

Another challenge to the Everglades has emerged. South Florida's agribusiness—once separated from Everglades National Park by a wide, wet plain of sawgrass—has finally reached the very doorstep of the park, and its arrival promises to touch off the next major skirmish in the fifty-year struggle over the creation and protection
of the 1.4 million-acre subtropical park (Toner, 1976, p. 4). In this case, then, non-park uses threaten national park integrity.

Redwood National Park

Threats of a similar nature have plagued this park since it was created in 1968 to protect redwood forests. Apparently little consideration was given to protecting entire watersheds in the redwood forest when this park was established. As logging proceeds on private lands immediately upslope and upstream from the park, significant deterioration takes place (McCloskey, 1973, p. 17):

The erosion hazard on the land surrounding the main unit of the park on Redwood Creek is extremely high because of the presence of highly erodible soil types, heavy rainfall, steep slopes, and narrow, deep tributary channels which are highly susceptible to clogging by debris and consequent bank cutting. Such natural conditions become major problems with the kind of logging now underway: bulldozer logging, complete clear-cutting of everything in sight, logging in the wet season, and access roads that are carelessly constructed and poorly maintained.

Studies have shown that siltation from harvesting operations upstream from park boundaries is endangering redwood survival within the park.

Graves (1974, p. 16) comments on the Park's creation: born of controversy and compromise, Redwood National Park is the cruelest hoax to occur in over one hundred years of conservation efforts. Although corporate lumber interests could not prevent its creation, they almost caused it to be stillborn. The park's boundaries were gerrymandered by Congress and the National Park Service under pressure from the timber lobby, and they do not encompass ecologically manageable watershed units. Thus, as in the Everglades, failure to protect entire ecosystems—watersheds makes lands inside national parks vulnerable to destructive practices beyond their boundaries.

When Redwood National Park was established, the Secretary of Interior was empowered to introduce protective controls, such as mandatory injunctions, fee simple acquisition, harvest regulations on logging operations on lands in the vicinity of the park, and even to acquire additional land to serve as buffers. However, no action was taken until 1976 when the Department sought to establish departmental regulatory authority and control over timber harvesting practices outside the Park. This action came after a voluntary moratorium harvest plan, which had been spurred by a 1975 court decision ordering the Department of the Interior to take effective action to protect the park, had been rejected by the loggers. The necessary approval for this declaration in taking was denied by the Office of Management and Budget, who cited budget constraints.
Fradkin (1977, p. 121) reports that President Jimmy Carter has pledged to remedy the problems. Congressional committees are showing a renewed interest, state and federal agencies are suddenly in accord, and timber companies are increasingly finding themselves in a squeeze which can only force them to become more cooperative. Early in 1978, 48,000 acres were authorized for Redwood National Park expansion, adding significantly to the protection for many critical areas within existing park boundaries.

Strip Mining in National Park Lands

Although mining generally is prohibited in the National Park System, it has been authorized in six Park System units. The precedent was set in Crater Lake National Park in 1902 and thereafter mining occurred in Death Valley and Glacier Bay National Monuments, Mt. McKinley National Park, Coronado Memorial and Organ Pipe Cactus National Monument. In Death Valley at least 1,827 claims covering more than 36,000 acres have been staked (National Parks and Conservation, 1976f, p. 18). The original decision to permit mining may be tied to the romantic image of the crusty old prospector and his faithful burro traversing the West in search of the Mother Lode. These old-time mining operators since have been supplanted by mammoth strip mining operations which appear incongruous when evaluated in terms of the preservation purpose of the National Park System. Entrenched mining interests have proved difficult to displace. However, a new law, PL 92-429, regulates mining in National Park System's lands, so that the filing of new claims in the six units in question is prohibited. Mining production may continue on established claims at current rates. Although it does not provide complete protection from strip mining, the new law effectively sets a limit on mineral extraction within national park lands.

Air Quality in Southwestern Park Lands

A series of operating and proposed coal-powered electrical-generating stations threaten to reduce ambient air quality below acceptable levels at various units within the National Park System. The projected impacts of power plant construction in the Southwest, most notably the Kaiparowits and Intermountain Power Projects, are not only inconsistent with the Clean Air Act, but also the legislative mandate of the Park Service: to conserve the scenery and the natural and historic objects and the wildlife herein ... in such a manner as will leave them unimpaired for future generations.

Everhardt (1976, p. 54; emphasis added) states:

The most deadly threat to the national parklands exists in the Southwest where existing electric generating plants powered by local coal supplies have already created haze and smog in the once clear desert air, and where the present proposal to construct five additional plants in southern Utah may well precipitate one of this country's most momentous environmental battles ... The problem is simply stated. What price are we willing to pay for the development of a new source of low cost energy?
Everyone acknowledges the complexity of the issue and the essential need for energy sources. Yet it is timely to ask the question whether a society can regard itself as successful if in spite of a high standard of living it permits the debasing of the very land and resources upon which the society has been built.

These questions have not been addressed in plans for Southwest power generation. The Park Service found that the existing Four Corners and Navajo plants have produced yellow-brown or reddish haze conditions that seriously interfere with visibility over 100 miles from the plants themselves. Haze conditions are frequently observed in Canyonlands and Grand Canyon National Parks. The Lake Powell Basin in Glen Canyon National Recreation Area is almost constantly affected by haze from the Navajo plant (Fradkin, 1977, p. 147).

Current debate is centered not upon the existing deterioration of air quality, but rather upon the projected impacts of proposed power generating stations. The four billion dollars, 3,000 megawatt plant, four underground coal mines, a limestone quarry, a new town for up to 15,000 people, 2,000 miles of new road, and 1,460 miles of new transmission corridors (Josephy, 1976). The Park Service concluded the power plant would exceed limits established for atmospheric quality by the Clean Air Act (National Parks and Conservation, 1976g).

All of this development was to occur in the heart of the Southwest's circle of national parks and monuments. Within a 200-mile radius of Kaiparowits are eight national parks, twenty-six national monuments, three national recreation areas, two national historic sites, and one national memorial. This concentration of National Park System units comprises one-fifth of the total Park System acreage (Raskin, 1975, p. 11).

Widespread opposition to the proposed development led the sponsoring utilities to announce in 1976 that they were dropping plans for the Kaiparowits project. Yet nothing would keep them from resurrecting the plans at a more politically advantageous time, and other power proposals in the Southwest threaten air quality and other resources in many Park System units (National Parks and Conservation, 1976g, p. 27).

This respite was short-lived. The latest threat to the scenic wonders and clean air of southern Utah's national parks, monuments, and wild areas is the Intermountain Power Project. This new project in close proximity to Capital Reef National Park was actually conceived before Kaiparowits was discarded and is not only equal in size to its predecessor, but is in many ways even more of a threat to the scenic slip rock country (Frear and Salisbury, 1978, p. 27). The Clean Air Act Amendments of 1977, P.L. 95-95, may well spell defeat for promoters of the proposed Intermountain Power Plant. According to this law all existing national parks larger than 6,000 acres, national wilderness areas larger than 5,000 acres, and national memorials larger than 5,000 acres receive mandatory Class I protection. This is a non-degradation regulation which prevents signifi-
ficant deterioration of air quality in those regions of the country where air quality already is cleaner than required by national ambient standards. The law also contains provisions which may restrict operations at Four Corners in New Mexico and the Navajo plant in Arizona by requiring retro-fitting of existing pollution sources near Class I regions.

Many other examples of vexing land use problems could be given. Although not as obviously menacing as deterioration of air quality in Park System's areas, but perhaps no less controversial and troublesome for managers, is the presence of feral animals, that is domestic animals which have been purposefully or inadvertently introduced to the wild, in several units of the National Park System. This issue has received much attention of late as the real impacts of these introduced species are being systematically assessed. Questions also arise from the apparent contradiction between existence of feral animals and the Park Service mission to Conserve the scenery and the natural and historic objects and the wildlife therein ... The question turns on interpretation of natural.

Trends in park use present managers with issues unaddressed in their policy manuals. Hang gliding, which involves harnessing oneself to a large kite and then launching from an elevated position, causes relatively little damage to natural conditions. What became a problem for park managers, however, was the mounting congestion of traffic caused by spectators. It got so bad that in mid-1975 the Park Service decided to ban the activity in Shenandoah National Park and proposed prohibiting hang gliding in all Park System units, except in designated recreation areas. However, upon reexamination, and possibly based on the controllable nature of its impacts, the Park Service reversed itself in December, 1975, with regulations permitting hang gliding in any unit of the National Park System, subject to the discretion of its superintendent.

In a similar vein, nude bathing, itself no more destructive to natural features than other beach activities, has caused headaches for managers because of related impacts. This issue has received greatest attention on Cape Cod National Seashore where discreet nudity had been unofficially tolerated for decades at several isolated coastal areas. These remote strands were frequented without fear of harassment by those local citizens and summer visitors who considered the pleasure worth the pains, and politely avoided by those who did not. By 1973 ... Brush Hollow (Beach's) laissez-faire reputation spread by word of mouth, amplified by titillating coverage in such prurient press as Time, Newsweek and the New York Times, as well as at least one Japanese journal (Wolff, 1975, p. 131). Such publicity attracted increasing numbers of adventurous souls and voyeurs. On one day in August, 1974, twelve hundred people visited Brush Hollow Beach, a site where Park Service managers had estimated 150 visitors reasonably could be accommodated (Duddleson, 1975, p. 12). This high density use was clearly contrary to Park Service policy, for the Hollow officially has been designated as
In summary, a marked and positive trend appears from this survey of National Park System management and policy. Prospects for air pollution control in the Southwest, thoughtful management of dynamic natural processes, and protection of fragile natural systems all point to more effective Park Service treatment of a range of policy issues.

PARK SERVICE PLANNING AND DECISION MAKING

In light of demands for accountability and openness in public policy-making and planning, processes employed by the National Park Service have come under scrutiny in recent years. Traditionally, Park Service operatives had embraced the role of technical experts prescribing desired courses of action based on their professional judgement. The closed nature of many planning processes has been questioned as has the scope of their inquiry. Plans for Park System units often failed to take into account important activities on peripheral lands which may have a bearing on system integrity.

In its 1972 report the Conservation Foundation recognized the need to broaden Park Service planning to include consideration of the park-influence zone. Master plans for each park unit should be developed within a regional geographic framework ... development proposals should be considered in the light of alternative recreational opportunities offered by non-park areas in the region, along with the recreational needs of nearby areas (The Conservation Foundation, 1972, p. 20). These recommendations are based on inadequacies in past Park Service mechanisms.

A classic example of inadequate attention to, and protection of, adjacent lands involves encroachment on the Everglades by agriculture and urbanization. If the original boundaries of Everglades National Park had not been significantly reduced and ecologically sensitive lands opened to development, many of the present day problems would have not materialized.

The Park Service now is seeking to modify traditional processes and open them to a broader constituency. Of particular note are the comprehensive planning efforts in Yellowstone and Grand Teton National Parks (Everhart, 1972, p. 228):

These plans, now under consideration will likely serve as models for all future master planning. They are based, first of all, upon the evident fact that a park cannot stand by itself but must be considered as part of the region in which it exists. The regional highway systems,
the multiplicity of available recreational opportunities, and the location of tourist accommodations and services, along with the recreational developments on adjoining federal or state lands require that a park master plan must be conceived as a part of a regional plan.

In 1975 the Park Service established its Planning Process for all units of the System. This process identifies problems, goals, and objectives, defines responsibilities, generates an information base for planning, and develops alternative strategies to achieve stated goals and satisfy review requirements. It represents a marked advance in Park Service policy through which uniform procedures are applied to the diverse resources of the Park System.

The Planning Process' concern for external influences on Park System's units is demonstrated in specific situations, for example, the planning for Yosemite National Park. In addition to considering intro-park transportation at Yosemite, attention also is paid to access to the national park. It has been judged that some of the services now available within Yosemite, for example, major auto repair, banking, beauty and barber service, car rental, and so on, can be provided more appropriately outside the Park (National Parks and Conservation, 1978d, p. 23). A major effort will be made to improve information dissemination to park visitors. People planning trips to Yosemite can get information about programmes and facilities through news media and at regional information centres in the San Francisco and Los Angeles areas. Thus, factors external to the national park, but important to its planning and management, are being integrated in the Park Service decision process.

One of the very real advances in Park Service policy-making and planning over the past few years has been the evolution of an active, participatory role for the general public in decision-making. For the first time representative citizen involvement is being sought for a wide range of planning decisions, including general park management plans as well as settlement of specific issues and problems. As Winge (1978, p. 1) notes, a combination of legislative and administrative actions significantly have expanded opportunities for direct citizen involvement in planning studies and policy formulations: public involvement is being aggressively pursued in such controversial issues as management of the use of the Colorado River through Grand Canyon National Park, the feral burro removal programs in Grand Canyon and Death Valley, back country management, and programs for management of flora and fauna.

This interest in participatory planning seldom was evident in past Park Service activities. Prior to 1970 (Winge, 1978, p. 1):

most decisions involving the National Parks were made in relative isolation, at least as far as the general public was concerned ... basically, the National Park Service executives took the attitude that they were the experts; that it was their responsibility not only to define the problem but also to provide the solution. Public
involvement, if indeed it could be called that, amounted to no more than an after-the-fact effort to persuade the public that the Service had made the right decisions. It was, admittedly, an elitist philosophy and an authoritarian style of management - no matter how noble the motive - that has since been discarded.

Several developments point to the evolving role of citizen involvement in Park Service planning and management. In 1969 the Secretary of the Interior directed the Park Service to hold public meetings on proposed master plans for park units before the final documents were approved, thus moving away from traditional rubber stamp meetings which were held after the plan had been formulated and served only to educate the public with respect to the wisdom of Park Service decisions. Training now is available to park planners and superintendents, providing them with practical guidelines for developing effective citizen involvement programmes, including involvement techniques, methods of locating and informing publics, and analyzing and evaluating comments which are solicited. An overriding concern has been to involve the public at the earliest possible point in the planning process where their input helps frame issues and define goals and objectives.

This new concern for public input in planning is reflected in the 1975 Park Service Planning Process. Throughout its many phases there are frequent provisions to involve the public in various aspects of planning. The first phase, the Statement for Management, is made available to the public for a thirty-day comment period, thus providing early citizen access to statements of policy and goals. The Task Directive, essentially an outline of the requirements of a specific planning effort, identifies the opportunities to be provided for citizen involvement in planning. Public participation also is emphasized heavily in later plan-making activities, specifically in assessing potential alternatives for park development and formulating the draft general management plan. Opportunities for involvement significantly can reduce much of the negative obstructionism characteristic of past citizen action. Meaningful citizen input aids planners and decision-makers in arriving at superior allocations of scarce resources. Winge (1978, p. 3) judges citizen involvement as prolonging the planning process, but also producing better and more fully accepted documents.

A LOOK AT THE FUTURE OF AMERICA'S NATIONAL PARKS

Today America's urban population exceeds that of rural areas by a three to one margin (United States Department of Agriculture, 1975). Accompanying this urbanization has been a dramatic rise in outdoor recreation participation with exponential increases in use since World War II. Increases in total population and changes in population structure, redefinition of work and leisure, greater mobility and disposable income, more education, and the effects of urbanization, energy, and technology are all factors cited in
conjunction with increased demand for and participation in outdoor recreation (United States Department of the Interior, 1978).

Yet upon closer examination, the effects of these causal agents may be other than might be anticipated. For instance, although America's population continues to expand, its rate of increase has decreased sharply in recent years and is expected to continue doing so. Also, as mean age of the U.S. population continues to increase due to the reduced birth rate, demand for physically active forms of outdoor recreation is likely to decrease. Correspondingly, demand for activities that require travel and relatively large expenditures is likely to increase (Moeller and Moore, 1976, p. 95).

The energy crunch appears to have reduced traditional American mobility. Since the availability and price of various forms of energy are reflected in virtually every other product and service (Rowntree, Heath, and Voiland, 1978, p. 128), the real purchasing power of the American public may be expected to decline as energy costs rise. A reorientation of outdoor recreation activity may follow (Wagner and Donohue, 1976, p. 300).

Uncertainty about future demand for outdoor recreation and leisure in general is evident from a review of the literature. Although a majority of authors project continued increases in the amount of real leisure time (Dumazedier, 1967; McEvoy, 1974; Shafter, Moeller and Getty, 1974; Wolfbein, 1958) significant arguments have been raised which suggest leisure time may actually decline due to offsetting trends of increased time required to commute to and from work, and additional time devoted to non-recreational, non-work activities like home maintenance and community service. Growth in leisure will compete with expanding time demands of maintenance and nurturance activities like sleep, personal hygiene, child care, and household obligations (Zuzanek, 1974, p. 293).

Not only is the total amount of available leisure time questionable, but its distribution among different activities also is being examined. The phenomenon of leisure activity substitutability (Hendee and Burdge, 1974, p. 157) may have a potentially significant influence on leisure behaviour patterns. It is postulated that recreation activities with common characteristics may be substituted for one another without appreciable loss in satisfaction. If substitutable relations can be identified, they may have a substantial impact on public outdoor recreation policy and planning (Moeller and More, 1976, p. 103). Christensen and Yoesting (1977, p. 189) warn against premature application of recreation substitutability; additional investigation of the validity of the premises, assumptions, and conclusions related to 'activity types' and 'substitutability' research is necessary. In light of the confusion over future leisure patterns, Moeller and More (1976, p. 97) postulate that future changes in recreation demands in the U.S. are likely to be influenced more by changes in other factors than by substantial increases in total leisure time. They speculate that the changing role of women may have a greater impact on recreation consumption than all other factors.
combined. As women leave their traditional roles as housewives and mothers, they begin to engage in heretofore predominantly male recreation activities. As a trend, the changing role of women is likely to continue throughout the world (Moeller and More, 1976, p. 99).

Despite the inherent uncertainty in projecting future trends in outdoor recreation participation, some generalizations may be made about the future of America's national parks. These observations fall into five classes: urbanization; user controls; transportation; technology; and energy.

**URBANIZATION**

Conditions in American metropolitan areas have a direct bearing on the demand for use of non-urban parklands. This demand is attributed to a need to escape the rigors of city life. However, if urban conditions improve, will the demand for national parks decline? A panel of experts concluded that, by the year 2020, most urban areas in the U.S. will contain adequate recreation facilities so that the majority of residents will not feel the need to go outside their city for outdoor recreation (Shafer, Moeller and Getty, 1974, p. 15). However, this projection is at odds with contemporary conditions in many American cities, as expressed in the National Urban Recreation Study (United States Department of the Interior, 1978):

> Over 70 percent of our nation's population lives in urban areas. For many urban dwellers, access to recreation opportunities is limited by geographic or economic factors. In a number of cities, opportunities have actually declined in recent years because of aging facilities and fiscal restraints. In a time of increasing recreation demand, when energy and economic conditions are making it more and more desirable to recreate close to home, many urban residents have become deeply concerned about loss of existing and potential recreation lands, facilities and programs.

**USER CONTROLS**

The variety of techniques to control or place limits on the type and number of users of units of the National Park System is increasing. There is good reason to consider user controls in the context of the National Park System: unique recreation resources such as those found in most National Parks, are relatively fixed and cannot be expanded without damage to fragile resources. Under conditions of expanding recreation demand and relatively fixed resources, management and policy decisions will be needed to regulate use if
quality recreation experiences are to be maintained (Moeller and More, 1976, p. 100). Finite park resources can sustain use to a certain level before significant deterioration of that resource and/or recreation experience occurs. This level, or carrying capacity, of an area is not easily or objectively determined and is thought by some to be of only conceptual value. However, the ability of natural systems to support human activity must be estimated to facilitate maintenance of natural conditions and to guide use control.

User control programmes have generated heated debate in the context of backcountry management. Proponents claim the programmes provide a degree of safety and information for users as well as preserving the backcountry wilderness quality. However, direct and indirect costs imposed on users and managers, such as inconvenience, time loss, and personnel and training costs, may outweigh the beneficial aspects of user permits and regulations.

Several studies have been conducted to evaluate user control/permit systems in backcountry/wilderness management, with generally positive results. Fazio and Gilbert (1974, p. 756), who surveyed user reaction to highly restrictive controls on wilderness use in Rocky Mountain National Park, concluded, that fear of massive public resistance to mandatory wilderness permits is unwarranted. A backpacking permit system in Great Smoky Mountain National Park inconvenient few visitors while distributing use more uniformly throughout the entire park (Schlater, 1972). In the Boundary Waters Canoe Area a permit system improved use distribution and generally was accepted by users. One commentator has strenuously objected to the institution of mandatory wilderness permits, likening them to a rustic 1984 (where) Big Brother Bear is watching (Behan, 1974, p. 98).

An ambitious system was proposed by Rowntree to comprehensively control use within the National Park System. Called the visitor management program, it included: (1) an information system, (2) a reservation system, (3) an off-site visitor services center, and (4) on-site guidelines for enhancing the visitation experience while protecting the environmental value of the park. The strategy is to effectively spread out the work of visitor management so that the focus is not exclusively on the in-park experience (Rowntree, 1972, p. 163). By providing sufficient public information on a smoothly-functioning reservation mechanism, park visitors may be distributed more evenly over time and space, thus reducing user impacts on attractive sites. Several aspects of this proposal are reflected in The Conservation Foundation report (1972, p. 23-24).

Historically, all campsites in the National Park System had been awarded on a first-come, first-served basis. In 1972 an experiment involving a nationwide Tickertron apparatus to reserve campsites in several national parks was undertaken to examine user reaction and administrative feasibility. This reservation programme was plagued by logistic and timing problems and ultimately was discontinued. In its place is a reservation system whereby campsites may be reserved in a few Park System areas, including Dinosaur
National Monument; Mt. McKinley, Acadia, Grand Canyon, and Virgin Islands National Parks; Chickasaw National Recreation Area; and Cumberland Island and Point Reyes National Seashores. Reservations in these areas are administered by each unit; campsites in other areas of the system still are available on a first-come, first-served basis.

Forecasts by the aforementioned panel of experts (Shafer, Moeller and Getty, 1974, p. 5) project increased restrictions on recreational use of natural resource lands. By 2000, wilderness-area management philosophy will, by necessity, change to more intensive management to maintain the wilderness environment. Permits, used to control all resource-based recreation, will also include certification for certain user groups, such as wilderness users.

TRANSPORTATION

Earlier in this paper discussion of alternative transportation modes within Park System units revealed much success with mass transit. An associated concern is travel between parks. The Conservation Foundation (1972, p. 85) notes: comprehensive planning of 'external' transportation systems should be an integrated part of planning for all units of the National Park System. Park Service transportation planning should cover external transit - getting visitors to park areas from population centers and back again - as well as transit inside the park.

In approaching the problem of providing transportation to Park System units, a comprehensive approach should be embraced, with separate units appearing as components of an integrated whole. A well-developed interstate highway system serves many outstanding units within the Park Service, making them readily accessible to automobile owners. However, the legitimacy of continued private automobile travel to and within national parks has been questioned, with several alternatives being contemplated (Runte, 1974, p. 20):

In view of the present energy crisis, the restoration of adequate rail passenger service to the reserves is imperative. Which way the fuel problem works out - whether it is resolved or remains a long-time fact of life - rail transportation to distant national parks like Yellowstone and the Grand Canyon is a must. If fuel becomes available in the immediate future, the cars, campers, and off-road vehicles in competition for space will continue to devastate environments of the national parks and their surrounding areas. On the other hand, if the anticipated decline in park visitation reaches dramatic proportions, scenic reserves far removed from urban areas might once more face threats to their existence as visitation numbers no longer seem to justify to many Americans continued preservation efforts.
Another frequently mentioned alternative is mass vehicular access by bus. The move to these mass forms of conveyance does present problems however. At present, travel to parks, especially for families, is still cheapest by private auto. Even if it were more expensive, the car remains more convenient than bus or train ... and even with the most complete transit systems - efficient, on time, inexpensive service to parks, shuttles at gateway towns, and public transit within parks - the problem of the average person's lack of travel sophistication would still be a major obstacle (Gilman, 1976, p. 6). Clearly, any loss of individual mobility and resultant inconvenience must be weighed against energy and environmental savings associated with use of mass transit.

The following example illustrates the Park Service's ability and commitment in the area of external transportation. In 1971 when Gateway National Recreation Area in the New York City Harbor area was in its proposal phase, a major argument for its creation was its accessibility to millions of potential urban users, with public mass transportation being provided to facilitate use and reduce environmental impact. A United States Senate proposal directed the Secretary of the Interior, in cooperation with the Secretary of Transportation, to develop a comprehensive public-transportation plan and project to insure that the millions of people living near this proposed new area of the National Park System will have viable, efficient, and economic means of transportation to and from the recreation area (The Conservation Foundation, 1972, p. 85). However! Sage and Hyde (1977, p. 34) state:

The Park Service's proposals regarding transportation (for Gateway N.R.A.) are mostly unsatisfactory. In order to accommodate large numbers of people within minimum environmental damage, restrictions on the number of automobiles in the park are necessary. This in turn requires improved mass-transit access. The N.P.S. has refused to become involved in planning or advocating mass-transit access to the park, maintaining the external transportation is outside its sphere of responsibility. The Park Service has also refused to plan for shuttle service within several key areas of the park. Instead it has constructed additional parking facilities and opened up new sections to automobiles.

Though advances have been made with mass transit within various Park System units, prospects for similar positive developments with integrated inter-park travel are less optimistic.
Americans have an intimate, yet ambivalent, affair with technology. On the one hand, the quality of our lives is tied closely to tools and machines; on the other, parks and preserves seemingly have been created to foster our periodic rejection of technology. Now, the former may distract us from these natural areas. By introducing new types of recreation equipment, technology provides a continual change in the composition of available leisure activities. For example, the recent development of electronic games has provided new forms of home-oriented indoor leisure pursuits. Development of snowmobiles and other recreational vehicles has created demands on outdoor recreation resources that were not even dreamed of a few years ago (Moeller and More, 1976, p. 102).

One particularly significant development over the past few years has been in television programming and gadgetry which provides the viewer with heretofore unknown freedom and diversity. Cable television, video games, interactive polling, and video-cassette recorders and discs have expanded and will undoubtedly continue to expand the role of television as a leisure device. Significant implications arise from these developments, especially with respect to the diversion of use from remote natural areas to the home (Waters, 1978, p. 71):

What generates the most uneasiness, however, is the suspicion that the new technology will alter leisure habits and social arrangements in ways society may come to regret. Consider the video junkie of a not-too-distant day, snugly ensconced in his all-electronic cocoon, lighting up his three-dimensional wrap-around screen with selections from 100 channels or the latest purchases from the neighborhood video-disk supermarket. Will this mean the demise of all diversions that require going out?

Technology will influence where people go for outdoor recreation. More efficient means of transit will convey users to natural resources; and simulated leisure environment, that is, climate-controlled shopping malls, are being developed close to population centres. Technology also benefits outdoor recreation managers and planners. It allows them to manage more effectively and efficiently by measuring levels of recreation use and influencing use patterns (Moeller and More, 1976, p. 102). Advances in surveillance and visitor monitoring, more efficient user control, lighting, and automated maintenance functions will help expand managerial ability in coping with user impacts on sensitive ecosystems.
ENERGY

The availability of relatively inexpensive energy coupled with a developing transportation technology have contributed greatly to past growth in recreation consumption in the United States. Energy is the bottom-line for many activities; the common denominator in the accounting of all consumptive transactions. Because the cost of energy is a part of every good service consumed by the American public, prices of everything we purchase will continue to rise, and individuals, families and the federal government itself will become poorer. With shrinking revenue power the federal government will be less able, with each passing year, to provide additional parks and, moreover, to maintain existing parks at previous levels of excellence (Rowntree, Heath and Voiland, 1978, p. 128).

This reduced governmental revenue power may have significant distributional effects: the national parks funding pie will simply be sliced so that increasing percentages accrue to urban areas based on the premise that geographical recreation demand will shrink back to population centers as travel costs increase (Rowntree, Heath and Voiland, 1978, p. 129).

Governmental impact is but half the story. During the recent gasoline shortage, U.S. recreation travel patterns changed significantly. The cumulative effect was not a decrease in total recreation consumption, but a change in patterns of consumption. People took fewer but longer vacation trips. They also tended to take more day outings to places closer to home (Moeller and More, 1976, p. 101). Findings by Lindsey (1974, p. 20) support these observations:

Many more people than in the past are planning highway trips to relatively close parks and resorts, within 100 to 300 miles of their homes, a trend that promises crowding at facilities near urban areas and plenty of room at more distant spots.
Larger numbers of families appear ready to stay at one spot during their vacations, reducing long stop-and-go gasoline-dependent sight-seeing tours.
Many families indicate they will take shorter vacations because of inflation, which has raised vacation costs by up to 10 percent since last year (1973). Inflation is also expected to increase low cost camping vacations.

Several other authors (Blair, 1974, p. 28; Gold, 1977, p. 63) are also of the opinion that outdoor recreational activity will be sought closer to home, thus involving lower travel or energy costs.

Rowntree, Heath and Voiland (1978, p. 130), drawing on the idea of recreational substitution, argue against the simplistic notion of directly proportional decreases in recreational travel and participation:
It is a naive hypothesis to suggest that visitation will simply shrink spatially with increases in travel costs from the more distant national parks to the closer state and county parks and finally to city parks. While this may occur in some cases, it may be more accurate to posit, also, significant shifts among the various categories of leisure time activities.

Commentary in the literature points to changes in the structure of American outdoor recreation and park use, that is, shifts in time and space distribution of use as well as changes in preferences for certain categories of leisure activity. The energy crisis of 1973, which seemed to many to be a temporary, inconsequential break in energy supplies for the United States, marked the beginning of a period of reassessment for the American public and park policy-makers.

An important conclusion from this discussion of the future of America's National Park System is the tremendous uncertainty and complexity inherent in projecting leisure trends. One may be dismayed by the absence of hard scientific conclusions and specific recommendations. However, the multiplicity of contributing variables combined with the unpredictability of human nature make concrete assertions about future leisure patterns of dubious validity. Park Service planners and managers seek to attune themselves to the uncertainty and complexity of preferences and behaviour while, at the same time, maintaining a perspective that recognizes and adapts to real and persistent trends in leisure patterns. To rely too heavily on purportedly exact projections of future participation and conditions certainly is foolhardy; but to ignore fundamental changes in American society which shape Park System policy and use is equally ill-founded.

A SCENARIO

An appropriate capstone to this analysis is provided by an intriguing study of future leisure environments conducted by the United States Forest Service researchers (Shafter, Moeller and Getty, 1974). Using the Delphi technique, 900 experts in the biological sciences, ecology, conservation, and related fields were given an opportunity to project future developments in American leisure environments. The following are some of the study's more significant findings.

With respect to wildland recreation, the experts project an expanded role for managers in controlling visitor use. By 1980 several restrictions will be placed on users of wildland areas, these will include the prohibition of glass containers, restriction of off-road vehicle use, time zoning, and computer information systems disseminating travel data to users. By 1985 there will be user limits in all wilderness and remote recreation areas, noise restrictions to maintain the quality of recreation experiences, and the availability of cable television hookups at most campgrounds.
By 1990, increasing pressure will require additional restrictions on recreational use of wildlands. Carrying capacity will be defined and enforced in public recreation areas, reservations will be required for use of developed public recreation facilities, and restrictive management techniques will be adopted to reinforce heavily-used sites and to concentrate use in desired locations. Permits will be used to control all forms of resource based recreation by the year 2000, with severe restrictions placed on transportation modes in and around wildland recreation areas.

Technology will have varied impacts by 2000 according to the experts; artificial lighting will extend facility boundaries and remote sensing will be employed to monitor wildland use. Waste-digesting bacteria will help reduce sanitary disposal problems. Technology also will generate challenging management problems. The experts predict that in the 21st century jet-powered backpacks, hovercraft, small submarines, and one-man helicopters will be in common recreational use. Underwater resorts will be developed and rivers constructed specifically for recreation. It is difficult to predict what kinds of impacts this curious array of technological innovations will have on national parks and related reserves.

CONCLUDING REMARKS

Had this present analysis been undertaken but a few years ago, as the 1972 Conservation Foundation Report was, its tone and content would have been markedly different. Indeed, past levels of negativism are now less apparent, as illustrated in the following excerpt from The Conservation Foundation findings (Bradley, 1972, p. 129):

*It almost seems that all previous activities and worthy endeavors are climaxing in one tremendous failure; a failure manifested by the fact that today (1972) even our parks seem destined for destruction—not only because of the external pressures of the development syndrome, to which they have been subjected since their inception, but also from new internal pressures.*

From this 1978 survey of the literature since 1972, the prognosis for the American National Park System appears brighter than it was six years ago. Advances have been made over the last few years which indicate a breakthrough following a decade of benign neglect and budget parsimony; for example, in the protection of system units for external encroachment, in the preservation of fundamental park values, in budget and personnel reallocation. Surely many ills remain to be corrected, but recent developments in National Park Service policy, planning, and management suggest renewed affirmation of the Service's 1916 mandate.
The *environmental ethic* described by the Conservation Foundation in their 1972 Report, that is, the belief that the National Park System can be used as a showcase of man's proper stewardship of land, water, and air in order to instill and renew basic human values, appears to be coming of age.

REFERENCES CITED


The British Countryside often is viewed as one of the most planned and controlled national landscapes in the world. Such an impression however, is somewhat misleading, for while several major pieces of legislation exist to protect and conserve the countryside, as will be shown, some of the major agents of change are relatively free from planning and development control. Furthermore, unlike the situation in North America, the institutional arrangements which exist to conserve the countryside in Britain are less than thirty years old, and some of the most significant developments have occurred in the last decade, particularly in the field of positive rural planning and management. This paper briefly traces the evolution of the philosophies and institutional frameworks which affect the British countryside, describes the major elements in the conservation and recreation system, and discusses examples of some of the current major problems facing the British countryside and those involved with its planning and management.

THE EVOLUTION OF COUNTRYSIDE PHILOSOPHY AND LEGISLATION

Davidson and Wibberley (1977, p. 1) argue that:

The countryside has a special place in the minds of most people, whether or not they live in it. To many the rural environment appears discrete and recognizable, changeless ... and by its contrast with the town, offers peace and naturalness. But although most people might subscribe to this collective view of the rural heritage, their particular interpretation of it is very different. Attitudes to the countryside, to the use of rural resources and to the operation of rural activities are strongly polarized ... The case for urban planning is largely accepted; to many people the idea of planning the countryside is not only anathema, but a contradiction in terms. For them, the countryside is the countryside only because it is assumed to be natural and unplanned.
This attraction towards what is incorrectly thought by many people to be a natural changeless landscape, and, at the same time, a deep affection for rural life and rural activities is a primary paradox. The British landscape, even in the most remote areas of Scotland or Wales, is a functional, managed resource, significantly modified by man over many centuries, and still is subject to often quite severe changes, albeit some of them imperceptible in the short term to the average individual. The fact that the countryside, even the most scenic upland areas, provides the basis for settlement and employment has been recognized in all legislation dealing with conservation. The thrust of this legislation has been to conserve the appearance particularly of the most scenic parts of the countryside, without disrupting too severely the existing way of life of residents of the areas affected by the legislation. The basic tool used to achieve this goal has been development control, administered in a variety of forms, and of late, increasingly combined with positive planning and management of resources. The degree to which it has been successful depends upon one’s viewpoint. However, some 25 percent of the land area of England and Wales is given currently a relatively high degree of protection because of its scenic attributes.

As by far the greatest proportion of this land, and indeed most of Britain, is in private ownership, a concern of almost equal importance to the protection of the countryside has been that of access to it by the public for recreational purposes. Despite pressure from various groups little action occurred until 1929. In that year, partly as a result of pressure from the recently formed Council for the Preservation of Rural England and the Royal Society for the Protection of Birds, a Committee, chaired by Viscount Addison, was convened in order (Ministry of Agriculture, 1931, p. 1):

*To consider and report if it is desirable and feasible to establish one or more National Parks in Great Britain with a view to the preservation of the natural characteristics, including flora and fauna, and to the improvement of the recreational facilities for the people.*

The financial situation of the Depression curtailed further action despite the fact that the Addison Report favoured the establishment of national parks. Two further Committees both supported this concept, and in 1945 two further reports were commissioned which dealt specifically with the identification of areas for designation as national parks (Ministry of Agriculture, 1944; Ministry of Works and Planning, 1942). The Ramsay Report identified eight areas, five primary and three secondary ones in Scotland, as suitable for national park designation (Secretary of State for Scotland, 1945). The Dower Report identified ten areas for designation as national parks and a further twelve areas as reserves for possible designation in England and Wales (Ministry of Agriculture, 1945). Little further progress was made in Scotland beyond the establishment of a Scottish National Parks Committee under Ramsay’s chairmanship, partly because of opposition from landowners, an existing relative freedom of access to the countryside in a *de facto* sense, and much lower recreational pressure on the land than in England and Wales.
The reaction to Dower's report in England and Wales was much more positive; two months after its publication the Hobhouse Committee was created, and two years after its report was presented, the National Parks and Access to the Countryside Act 1949 was passed (House of Commons, 1949). Within eight years the ten national parks of England and Wales, covering 9 percent of the land area, had been established (Figure 27.1). Since 1957 no new national parks have been created; proposals to establish Cumbria National Park in Central Wales were rejected by the Secretary of State for Wales in 1973. As will be discussed later, the possibility of an eleventh national park being established in the Norfolk Broads, one of the areas proposed by the Hobhouse Committee but not designated as national parks, has materialized in the last few years.

The 1949 Act has remained the cornerstone of countryside legislation in Britain, but justifiably has been criticized for lacking much of the political power of its earlier urban planning counterpart, The Town and Country Planning Act 1947, (House of Commons, 1947). Despite its title, this latter act, which (Miles and Sealbrooke, 1977, p. 5):

\[\textit{laid the foundation for modern town planning, omitted virtually anything other than superficial reference to the countryside, thereby losing the opportunity to consider the interdependence of town and country ... The relative lack of autonomy of National Park Authorities subsequently established remains a continuing evidence of the uncorrected deficiencies of the early legislation.}\]

The Town and Country Planning Act 1947 referred to above, ensured decentralization of planning control and, also, that almost all development came under that planning control. By requiring that all local authorities prepare development plans, and that all proposed development require approval by the local authorities, approval would be given only to development in line with the development plan. This concept of local control explains why the national park administrations have a majority of local representatives. Like its successor, the Countryside Commission, the National Parks Commission, during its nineteen year existence, was an advisory body, and appointed one third of the members of each national park administrative body. Where a park lay entirely within one local authority, a joint planning board was established; and where a park crossed local authority boundaries, a joint advisory committee was established. In each case two thirds of the membership was locally elected, and the potential for conflict between local and national goals and philosophies is clear.

A second major consideration in the establishment of the parks was the absence of large reserves of Crown or public lands in Britain from which parks could be created as in North America, and this is reflected in the concept of national parks as outlined in the Hobhouse Report (Ministry of Town and Country Planning, 1947, p. 9):
FIGURE 27.1 National Parks and Long Distance Footpaths in England and Wales; Proposed National Parks in Scotland.
National Parks in England and Wales will not be small-scale copies of the vast reservations which have been set aside in larger countries, but will have a character of their own. The richly varied landscape of our country is a joint creation of natural growth and man's cultivation...we are dealing with a closely populated and highly developed country where almost every acre of land is used in some degree for the economic needs of man, and has its place in a complete design of agricultural, industrial or residential use... Since, therefore, it is not possible to sterilise great tracts of land...it is all the more important to ensure that some of the extensive areas of beautiful and wild country...are especially protected as part of the national heritage, that their use for popular enjoyment and open-air recreation is encouraged and that their aesthetic and education values are recognised.

The need to recognize the existing uses of the countryside and to accommodate these while preserving the scenery of an area and encouraging recreational use has remained the critical problem. The implications of this problem were recognized in the definition of a national park, framed by Dower, and adopted by the Hobhouse Committee (Ministry of Agriculture, 1945, p. 6):

An extensive area of beautiful and relatively wild country in which, for the nation's benefit and by appropriate national decision and action, a) the characteristic landscape beauty is strictly preserved, b) access and facilities for public open-air enjoyment are amply provided, c) wildlife and buildings and places of architectural and historic interest are suitably protected, while, d) established farming is effectively maintained.

The emphasis in the above definition is clearly upon the maintenance of the landscape in its existing form, a form significantly shaped by man, combined with the provision of recreation facilities. There is no mention of natural landscapes or wilderness, of vegetation, or of the exclusion of resource industry or other land uses. The need to allow the traditional countryside activities to continue was regarded as paramount all the more so as most of the land involved was privately owned and was destined to remain so. This is elaborated on in the Hobhouse Report (Ministry of Town and Country Planning, 1947, p. 8):

National Parks must not be sterilized as museum specimens. Farming and essential rural industries must flourish, unhampered by unnecessary controls or restrictions and protected as far as possible from an increased number of visitors. Other forms of large scale development and land use which may have an adverse effect on natural beauty and popular enjoyment...should be accommodated in National Parks only under proven National necessity.
This philosophy has remained basically unchanged during the thirty years since the Hobhouse Report was tabled. In 1967 and 1968 two significant pieces of legislation were passed, namely the *Countryside (Scotland) Act 1967* and the *Countryside Act 1968*. These Acts established the Countryside Commission for Scotland and the Countryside Commission, whose functions are (House of Commons, 1968, p. 1):

> to be exercised for the conservation and enhancement of the natural beauty and amenity of the countryside, and encouraging the provision and improvement, for persons resorting to the countryside, of facilities for the enjoyment of the countryside and of open-air recreation in the countryside.

The Commissions essentially are advisory and review bodies concerned with all matters relating to conservation of, access to, and recreation in the countryside. They were also given specific powers to conduct experimental projects, and to acquire land, compulsorily if necessary, to undertake such experiments. Both Commissions are empowered to award grants and loans to public and private bodies for a variety of purposes, and to conduct research and investigations related to their advisory functions. The main function of the Commissions however is to encourage and assist other bodies and individuals in the management of the countryside to enhance amenity and improve the provision of recreation facilities.

A major feature of the Acts is the additional powers conferred on local authorities, involving the creation of country parks and picnic and camping sites, and the clarification and extension of means of securing public access to open country. One of the key features of the 1949 Act was the power to establish, for recreation, long distance footpaths, which are national routes with continuous rights of way for walkers, horse riders, and cyclists. To date eleven of these routes have been approved, with a total planned length of 2,413 kilometers.

A major inclusion in both Countryside Acts has been a statement that (House of Commons, 1968, p. 12):

> In the exercise of their functions relating to land under any enactment every Minister, government department and public body shall have regard to the desirability of conserving the natural beauty and amenity of the countryside.

This statement has far reaching implications for the countryside and for the general operations and planning of the actions of any public body in Britain. Perhaps not surprisingly, in view of its potentially vast scope, the requirement sometimes is observed more in spirit than in fact. However, it provides a useful principle which can be used in arguments concerning developments which the Commissions feel may have negative implications for the countryside.

Both Countryside Acts are substantial documents of over sixty pages each, and cannot be fully summarized here. In short, they consolidated, clarified, and added to the basic philosophy of the
National Parks and Access to the Countryside Act of 1949, and, along with this latter Act, are the major pieces of countryside legislation in Britain. The Countryside Commissions have been recognized as the major sources of advice and expertise in recreation planning and management, and are the agents for the disbursements of now considerable amounts of financial aid to local authorities, public and private bodies, and individuals for the provision of facilities for recreation and for the enhancement and protection of the scenic qualities of the countryside.

CONSERVATION AND RECREATION PROVISION

NATIONAL PARKS

The origins of the national park system in Britain already has been summarized briefly above, and for more information the reader is referred to a most comprehensive and readable account of the development of environmental and countryside legislation in Britain by Cherry (1975). The ten national parks that currently exist have changed quite extensively since their creation some twenty years ago. The problems which they are now facing are a combination of the increase in visitor pressure and the opportunities allowed by the deficiencies in the legislation mentioned earlier.

The recognition of the pressure facing the parks, and the problems arising, resulted in the establishment of the National Park Policies Review Commission in 1971. The Commission was charged (Department of the Environment, 1974, p. 1):

To review how far the National Parks have fulfilled the purpose for which they were established, to consider the implications of the changes that have occurred, and may be expected, in social and economic conditions, and to make recommendations as regards future policies.

The Sandford Report contains a considerable number of significant recommendations for modification of future park policies. To date, no new legislation has been presented or passed as other political affairs have intervened. There seems little doubt, however, that some revisions of current legislation and additional legislation will be forthcoming. The Report ultimately was followed by a circular indicating the government's position on the recommendations of the Commission (Department of the Environment, Welsh Office, 1976). Perhaps the most significant recommendation is that, in national parks, priority should be given to conservation over all other purposes, and that environmental quality should be the primary criterion in all matters of development. Points of significance include recommendations for improved and increased access by the public, the adoption of more positive management policies, and the systematic provision of alternative attractions for urban residents between population centres and national parks.
The Countryside Commission and many other bodies were disturbed that the government did not support the recommendation of the Commission that forestry operations in national parks be brought under the formal process of development control. As Sidaway (1976) points out, opposition to forestry planting is not always rational and often is based on misconceptions; but coniferous plantations, particularly in national parks, have not been accepted readily. The opposition is not against specific species, or the introduction of exotic species, which is hardly an issue in the British context, but more over the restrictions on viewing the countryside and, particularly, over visible change occurring to the landscape.

Relatively little consideration was given to the problems of mineral extraction in the parks, an activity which seriously affects a number of parks; and the problems resulting from highway development were also not resolved. Other critical problems apply to specific parks, such as the military use of Dartmoor, the ploughing of moorland in Exmoor, and pollution in the Pembrokeshire Coast Park. The Countryside Commission, itself, proposed further modifications, including that it be given the right to acquire and manage land in the parks; that national park authorities be given the power of compulsory purchase for conservation purposes, for at present, they have that power only for access; that special areas of open country could be defined in national parks to ensure special management; and that provision be made for advance notification and temporary restriction of conversion of open country to agricultural land. The results of these and other recommendations will be determined when legislation finally is formulated.

The reorganization of local government in Britain in the early 1970's resulted in some changes in park administration. Each park is now the responsibility of a single National Park Authority advised by a National Park Officer, with an independent staff of wardens and officers. The only two autonomous park planning boards, the Peak and the Lake District were retained, and all Authorities were charged with producing a National Park Plan by April 1, 1977. The park plans contain policies for park management and are reviewed at not more than five year intervals. All plans now have been completed and published, and vary significantly in orientation and emphasis, and in the degree of public participation which was incorporated into them. These differences reflect the different nature of the individual parks and the problems they pose for management. However, as Dennier (1978, p. 177) indicates:

In considering management objectives and policies for landscape conservation (all) National Park Authorities agree that the fundamental problems lie with farming and forestry.

The local representation still remains dominant in the new park Authorities, and reflects the varying desires and opinions of the more than one quarter of a million people who live within the boundaries of the ten parks. The parks, therefore, certainly have not remained unchanged since their creation in the 1950's. However, they have been subject to less change than would have been the case.
without the establishment of the legislation discussed above. For example, planning permission was granted for 4,772 proposals in the ten parks in 1976 and 1977, and refused on 1,341 occasions. Of 236 appeals, only fifty were allowed (Countryside Commission, 1977a). The proposed National Parks Bill, it is hoped, will encourage more positive management and planning policies and reduce the need to rely so heavily upon negative development control to conserve the countryside in the parks.

OTHER RECREATION AREAS

In addition to national parks, the 1949 legislation enabled the establishment of national nature reserves, and the Countryside Acts created the opportunity for country parks and picnic sites throughout the countryside. A nature reserve was defined as land for the purpose (House of Commons, 1949, pp. 13-14):

\[ a) \] of providing, under suitable conditions and control, special opportunities for the study of, and research into matters relating to the fauna and flora of Great Britain and the physical conditions in which they live, and for the study of geological and physiographical features of special interest in the area, or

\[ b) \] of preserving flora, fauna or geological or physiographical features of special interest in the area.

The Nature Conservancy, known since 1973 as the Nature Conservancy Council, is the body appointed to manage these nature reserves. The Council allows informal recreational use of nature reserves only when such use is compatible with the research and preservation aspects of the reserves. Considerable interpretive education has been developed in the nature reserves, with the establishment of nature trails and interpretive centres. The nature reserves, which date back to 1951, are the public lands in Britain which are closest to the international concept of national parks, where the emphasis is clearly upon preservation rather than multiple use. The Council administers 145 national nature reserves, covering 119,585 hectares, of which 27 percent is publicly owned, and advises over 3,500 sites of special scientific interest. The Council has a statutory duty to detect and monitor ecological changes, and can give grants for projects on related matters. While the Council itself is not, therefore, a recreational agency, the creation of reserves and the relationship of much of its research to sensitive recreation and amenity areas illustrate its strong links with Countryside management.

The country parks and picnic sites mentioned above are at the centre of recreational use of the countryside. These features were a follow-up to statements in a government White Paper on Leisure in the Countryside which indicated that it was (Ministry of Land and Natural Resources, 1966, p. 4):
essential to make provision for the enjoyment of the countryside elsewhere (than in the National Parks) both to meet public demand and to relieve pressure on remote or outstandingly beautiful places.

Country parks, of which 148 now exist, were designed very much to relieve pressure on national parks, to enable urban dwellers to participate in countryside recreation nearer to urban areas, and to reduce social and environmental impact on the countryside and its residents. They are defined as (Countryside Commission, 1972, p. 3):

An area of land, or land and water, normally not less than 25 acres in extent, designed to offer to the public with or without charge, opportunity for recreational activities in the countryside.

The Commissions are able to offer grants and loans up to seventy-five percent of the cost for land acquisition, facility development, warden service, and other features. Financial support is available to local authorities, public agencies, private groups, and individuals. Thus, parks have been established by local authorities at Clumber Park in Nottinghamshire, by the National Trust for Scotland at Culzean, and by individuals at Hardwick Hall in Derbyshire, and the parks vary in size from seventeen to over 3,600 acres. To date, over 220 picnic sites have received grant aid. Most of these are smaller than twenty-five acres, but in some cases, are very similar to country parks.

Two other major elements of the recreation system in the British countryside are areas owned by the state Forestry Commission or by the two National Trusts. The Forestry Commission is the largest land owner in Britain, and traditionally, much of its holdings have been relatively inaccessible to the public for recreation, as its terms of reference emphasized timber production entirely. Recent policy changes, in part because of increased public pressure, have resulted in significant recreation use for camping, walking, riding, and interpretation being made of the properties. Forestry Commission land received over twenty-five million visits in 1974, and the Commission provides over 400 access points, over 300 picnic sites, 225 forest walks, 31 campgrounds, and 24 information centres (Butler, 1975, p. 24). The Commission was the first public body to create national recreation facilities when in 1935 it established national forest parks, which now number seven and cover 171,600 hectares (Figure 27.2).

Properties owned and administered by the National Trusts, including one sixth of the Lake District National Park, total 236,740 hectares, with 258 properties being open to the public, and ranging in size from small historic properties to reserves of several thousand hectares. These properties attracted over 5,700,000 visitors in 1975, and membership in the Trusts, which are non-profit making charitable organizations, has grown from around 26,000 in 1950 to over 600,000 in 1975 (Countryside Commission, 1977). The Trusts play a major role in both preservation and recreation opportunity
FIGURE 27.2 National Forest Parks in England, Scotland and Wales.
The primary responsibility is the preservation of places of historic interest or national beauty. It is also our duty to give access to these places but we are not designed as a money-making concern... We are not part of the tourist industry. In a way this makes our job, which is essentially preservation, all the more difficult.

Since 1965, the Trusts also have been concerned with acquiring stretches of undeveloped coastline for preservation purposes under a scheme called Enterprise Neptune, which is discussed below.

In addition to the bodies discussed above there are many more local and national agencies involved in recreation provision, including the Crown, with royal estates and palaces; numerous private landowners, with stately homes and safari parks; the Department of the Environment, with 700 sites attracting over fifteen million visits a year; and many local preservation oriented bodies throughout Britain. The rich mosaic of widely varying attractions accounts to a large extent for the tremendous appeal of a trip in the countryside for many people and explains, in part, the 275 million trips made to coast and countryside annually. As well as the specifically recreation areas described above, two other significant elements exist in the countryside which are related to countryside conservation and have major recreation implications, and these are discussed below.

### AREAS OF OUTSTANDING NATURAL BEAUTY

The idea of Areas of Outstanding Natural Beauty originated in the Hobhouse Report (Ministry of Town and Country Planning, 1947), where it was recommended that the National Parks Commission could designate any area in England and Wales, not in a national park, that appeared to be of such outstanding natural beauty that the provisions of the National Parks Act (House of Commons, 1949) should apply. Local planning authorities of such areas were thereby given the same powers as applicable to national parks to preserve and enhance the beauty of the area and put under the same obligation to consult the Commission when preparing development plans (Figure 27.3). Emphasis in Areas of Outstanding Natural Beauty (As. O.N.B.) is placed on preservation, rather than on promotion of recreation, as powers to promote recreation development were specifically excluded. The original recommendation called for fifty-two conservation areas extending over some 16,000 square kilometres.

In the years following the passing of the 1949 Act attention was first given to the establishment of the parks rather than conservation areas. From 1955, however, the National Parks Commission began to examine the areas suggested by the Hobhouse Committee, and in 1956 the first Area of Outstanding Natural Beauty (A.O.N.B.), the Gower Peninsula, was designated. In the period up to 1968, when the Countryside Commission replaced the
National Parks Commission, thirty-three areas, totalling 14,478 square kilometres, were designated, twenty seven of them as Hobhouse conservation areas, two as recommended for national park designation by Hobhouse, and four new national park areas (Countryside Commission, 1977a, p. 2).

A review of proposed and potential areas in 1971 resulted in the rejection of some areas and the selection of fifteen areas for future designation. This review reinforced the philosophy that As. O.N.B. should contain landscape of national significance and the first of these new areas, the Scilly Isles, which was a Hobhouse conservation area, was designated in 1976. Changes have taken place in the process of designating As. O.N.B. in an effort to gain wider public understanding and acceptance of the designation of areas. Local authorities have been requested to produce statements of intent outlining planning and conservation policies, and procedures are being explored to encourage public participation in the formative stages.

No large scale urbanization has taken place in As. O.N.B. and special regulations exist for control of reservoir development. There also is opposition to major commercial, industrial, or mineral working schemes, and major transportation developments. Higher standards of building design have been enforced through development control policies, warden services established in thirteen of the areas, derelict areas restored, and access agreements negotiated. The emphasis has been given to projects which conserve and enhance the appearance of the countryside, and which support the secondary objective of As. O.N.B., the quiet enjoyment of the countryside (Countryside Commission, 1977a, p. 4). Formulation of management plans for As. O.N.B. incorporating such agreements between local authorities and resource interests could significantly assist in the conservation of the landscape which resulted in the designation of an area as an As. O.N.B.

As. O.N.B. currently cover over 9 percent of England and Wales, and while the area of fifteen proposed new As. O.N.B. has not been finalized, it will increase this figure significantly, probably to around 14 percent. Because of the emphasis in these areas on conservation and the enhancement of the landscape and on the restrictions on development, and because there is less necessity to develop recreation facilities than is the case in national parks, As. O.N.B. may be viewed as one of the most effective methods of landscape preservation. Indeed as recreation pressures increase to even greater levels in established recreation areas such as national parks, As. O.N.B. may emerge as potentially better protected examples of the countryside. Trends towards positive management planning, provision of warden and interpretive services, and the establishment, albeit slowly, of joint advisory committees, or an equivalent, to oversee administration all will go further to achieve the purposes of the designation. Further policies towards As. O.N.B. will be shaped by the results of a two year major review which will examine the effects of A.O.N.B. designation, and the degree to which the purposes of designation have been achieved.
HERITAGE COASTS

A visit to the seaside, especially at holiday time, has for long been a part of the British way of life. The coastline is, and will continue to remain, our main national playground (Countryside Commission, 1970b, p. 1).

Despite the importance of the coastline in the recreation scene in Britain, as outlined in the above quotation, and despite its great inherent attractiveness and vulnerability to despoilation, little specific attention was paid to this environment until the 1960's and there was a complete lack of a comprehensive overall policy for the coastline.

A Ministry of Housing and Local Government Circular (1963), Coastal Preservation and Development, identified this lack of coordinated policy and the need to protect undeveloped portions of the coastline. In 1965 the National Trust launched Enterprise Neptune, an appeal for funds to acquire critical scenic areas of the coastline; and in 1966 a second circular entitled The Coast was produced (Ministry of Housing and Local Government, 1966). The then National Parks Commission was invited to conduct a major study of the coastline of England and Wales, and subsequently convened nine regional conferences with coastal planning authorities and other interested and appropriate bodies. The resulting study was claimed to be the most thorough study of the coast that has been made by any country in the world (Countryside Commission, 1970b, p. v), and resulted in the publication of five related volumes concerned with the use, protection, and planning of the coastline (Countryside Commission, 1968; 1969a; 1969b; 1970a and 1970b), and nine volumes of reports of the regional conferences (National Parks Commission, 1967-1968).

The key recommendation to emerge from this study was that stretches of coast with the highest quality scenery should be nationally designated by the Countryside Commission, as Heritage Coasts (Countryside Commission, 1970b, p. 8). The initial recommendation noted thirty four areas stretching some 1,168 kilometres, and comprising 26.6 percent of the whole coast of England and Wales (Countryside Commission, 1970a, p. 11). This concept was supported in the Department of the Environment, Welsh Office (1972) Circular, The Planning of the Undeveloped Coast, which recommended that local authorities define Heritage Coasts and prepare management plans in consultation with the Countryside Commission. As of September, 1977, two coasts had been completely defined (Figure 27.3), thirty-one coasts laterally defined, extending over 1,054 kilometres, and a further ten, covering 255 kilometres, had been proposed (Countryside Commission, 1977c, p. 72). In total, some 40 percent of the undeveloped shoreline of England and Wales ultimately will be defined.

The designation of an area as a Heritage Coast is the first step in securing its conservation, and it is intended to combine both planning and management in a positive framework. In order to develop
FIGURE 27.3 Areas of Outstanding Natural Beauty and Heritage Coasts.
the concept and gain practical experience, three experimental projects were instituted in Glamorgan, Dorset, and Suffolk Heritage Coast areas in 1974. A key feature of these projects was the appointment of Heritage Coast Officers, 90 percent of whose salaries were borne by the Countryside Commission during the experimental period. The officers work within the local planning departments and have four primary tasks: a) to be a focus for the Heritage Coast, b) to develop a liaison between local authorities and landowners and farmers, c) to develop and implement positive management improvements, and d) to advise the local authority on Heritage Coast plan preparation and implementation (Countryside Commission, 1977c).

The experimental projects have seen a wide range of relatively small scale management works being executed including traffic management, waymarking, removal of eyesores, interpretation, and reducing recreation pressure on some agricultural areas. The basic purpose has been to ensure the conservation of the coast for local people, farmers, and recreationists; and a main feature of the programmes has been the ability to produce quick, effective results at a minimum cost. To this aim, the close personal liaison and consultation work of the Heritage Coast Officers has been of critical importance.

In addition to the management and improvement of the coastline, work has continued on the production of the Heritage Coast Plans. Basic objectives of the Dorset management approach are (Dorset County Council, 1977, p. 26):

i) To conserve the undeveloped character of the coastline and hinterland, by controlling development and making landscape improvements where necessary.

ii) To protect the valuable agricultural, ecological and geological resources of the area as well as its historical and archaeological heritage.

iii) To promote and enhance the enjoyment of visitors through the encouragement of recreational activities which are consistent with the first two objectives.

The adoption of local solutions to specific problems has been one of the keys to the initial success of the Heritage Coast concept. In the first five years since its inception, over two thirds of the definition programme has been completed, a management approach has been developed in three pilot areas, and an increasing adoption of that approach by other local authorities has taken place. In addition to the creation of the Heritage Coasts, the Countryside Commission has given financial support of approximately $200,000 over four years, to the National Trust to acquire four properties under the Enterprise Neptune project. In the thirteen years since its inception this project has resulted in the acquisition of some 570 kilometres of the undeveloped coastline of England, Wales, and Northern Ireland.
The Heritage Coast programme has evolved rapidly and successfully, perhaps because of the recognized seriousness of the problem and the willingness of all levels of government to act positively, and partly because relatively little land actually is involved. An average width of one mile for all Heritage Coasts would involve less than one percent of the land area of England and Wales. Despite the small area involved, the Heritage Coasts are extremely important to the recreation pattern in Britain; and many of them experience visitor pressure because of the proximity of the coast to urban centres, equal to or greater than that experienced in some of the national parks. The conservation of these areas, like the establishment of national parks in Britain, has come relatively late. The concept represents a similar basic philosophy to that of the national parks, but also reflects the increasing emphasis on positive management and experimentation which has characterized activities of the Countryside Commission in the last five years.

CURRENT DEVELOPMENTS IN COUNTRYSIDE MANAGEMENT

The institutional arrangements discussed above emphasize a somewhat unique variety of solutions to the problem of preserving the appearance of a dynamic landscape and allowing access to that landscape by increasing numbers of people. The basic approach until recently has been development control, mostly exercised over private land, with a variety of formal and informal agreements ensuring to the public the right to engage in certain activities and visit certain areas, particularly open country, relatively easily. In recent years the pressures on the countryside have increased markedly; the traditional problems of agriculture, forestry practices, urban and industrial development, and recreation visitation have been exacerbated by increases in the rate of the agricultural change of the landscape, increases in the frequency of recreation visits, enforced cuts in public expenditure, and developments, often in highly scenic areas, related to oil exploitation. In response to these pressures the Countryside Review Committee was established in 1974 as an interministry committee with the following terms of reference (Department of the Environment, Welsh Office, p. ii):

To review in relation to land outside urban areas, the state of the countryside and the pressures upon it; to examine the effect of existing policies for, or causing an impact upon, the countryside and the extent to which they are adequate to contain or modify the pressures given the existence of other major policy objectives, including the maintenance of agricultural production, to consider whether changes of policy or of practice are necessary to reconcile these objectives where they conflict with the conservation of the countryside, the enhancement of its natural beauty, and its enjoyment by the public, and to make recommendations.
The Committee has produced one report and two topic papers to date, neither containing specific legislative or institutional recommendations. The report entitled, *The Countryside - Problems and Policies*, in rather broad terms identified some major topics for consideration including the potential weakness in a situation where, inevitably decisions affecting the Countryside over a whole range of key activities are the respective responsibility of a number of different Government Departments (Countryside Review Committee, 1977, p. 1). Perhaps the strongest commitment made in that report concerned the question of single or multiple use of resources (Countryside Review Committee, 1977, p. 7):

One concept underlying the designation system must remain unchanged. This is the idea of allocating priorities - for landscape, for recreation, for flora, and fauna - rather than defining exclusive uses: Our densely populated country does not have the room for the luxury of a single-use system of designation.

In the interim period, between the passing of the Countryside Acts some ten years ago and the awaited legislation resulting from the recommendations of the Sandford Report, emphasis in countryside planning has switched to experimentation and positive management (Department of the Environment, 1974). Both Countryside Commissions have been at the forefront of this change in emphasis. The establishment of the Countryside Recreation Research Advisory Group (C.R.R.A.G.) has stimulated and supported research on a variety of topics related to recreation planning and management. The statutory powers given to the Commissions to engage in research and experimentation and to provide advice and leadership in countryside planning have been put into practice in a variety of ways.

The Countryside Commission for Scotland, for example, has completed or has in progress, over seventy research projects, both in-house and commissioned; offers short courses in interpretation and management for countryside rangers; and has a well developed display of management apparatus at its headquarters near Perth. It has commissioned major studies on topics such as the beaches of Scotland, on rural roads, and most recently, upon the Scottish Countryside itself. This latter study (Countryside Commission for Scotland, 1978) represents the completion of a long term goal of the Commission, expressed in its first annual report (Countryside Commission for Scotland, 1968 to 1978, 1969, p. 8):

At an early stage the Commission considered the question of the need for a recognizable and accepted national hierarchy of scenic resources as a guide for planning conservation of the countryside in the future. The establishment of such a hierarchy is seen as essential if the unique scenic qualities of parts of Scotland are to be considered for the enjoyment of future generations and at the same time given a degree of purpose and use appropriate to their character.
The report, *Scotland's Scenic Heritage*, identifies forty areas of national scenic significance, covering 12.7 percent of the area of Scotland, and represents the first comprehensive review of Scotland's scenic resources in thirty years. The absence of legislation similar to the *National Parks Act* in England and Wales has meant that there has been no comprehensive policy for conservation of scenic parts of Scotland except those covered by National Park Direction Area Orders or designated by local authorities as Areas of Great Landscape Value. The Commission's report, *A Park System for Scotland* (Countryside Commission for Scotland, 1975), concluded that the same objectives of conserving and recreation provision as existed in England and Wales could be achieved in Scotland without the establishment of national parks partly through a park system of country, regional, and special parks, and partly through policies and procedures to conserve the most attractive areas of the country. The Scenic Heritage report identifies the critical areas and has been accompanied by the suggestion that certain classes of planning application within these areas be notified to the Secretary of State until long term strategies can be produced by local authorities. Amending legislation also has been suggested to allow the Commission to enter into management agreements with landowners in these areas, with any compensation required being met from Exchequer funds. The differences in legislation, in recreational pressures, and in landowning patterns have always made the management of the Scottish countryside very different from that in England and Wales. Access agreements, for example, have never been strongly supported despite efforts by the Commission, in part because the public feels such agreements would in fact limit and even reduce the *de facto* access they currently enjoy. Complicating the future of countryside management in Scotland is the political issue of devolution, and possibly independence, a problem which also faces Wales. The possibility of far reaching changes in land ownership and management, and the present planning and management structure do not make the task of countryside planning in Scotland any easier.

In England and Wales emphasis has been placed on many similar areas, landscape evaluation projects (Robinson, Laurie, Wager, and Traill, 1976), coastal management schemes, and the development of interpretive services for example. Two areas in which the Countryside Commission has been more extensively involved than its Scottish counterpart have been the impact of agricultural change on the landscape and an increasing interest in the urban fringe, as well as management problems related specifically to national parks.

In 1974 a report entitled, *New Agricultural Landscapes*, was published by the Commission, which examined the changes brought about by modern farming methods on the landscape (Westmacott and Worthington, 1974). A major concern was over losses of woodlands and hedgerows, as farm units were amalgamated, and the subsequent impacts upon the landscape vista and upon wildlife. The Commission response was in part to propose a campaign to promote the creation of new landscape features on land not required for cropping, as well as improvement in landscape quality by removal of derelict buildings and eyesores (Countryside Commission, 1974). Commission grants are available for Tree Planting Schemes (Countryside Commission, 1977b), a
particular concern following the loss of over nine million elms because of Dutch Elm disease, or over ten percent of the hedgerow and parkland trees in England (Countryside Commission, 1977d, p. 2).

The objectives of the Commission in counteracting the effects of modern farming techniques involve stimulating greater agreement and support among landowners to minimize the effect of the techniques and to participate in landscape management agreements. Related to the attainment of these objectives and the provision of facilities for recreationists the Commission has instituted Upland Management Experiments (U.M.E.X.) in the Lake District National Park. The basic problems U.M.E.X. attempted to resolve were (Countryside Commission, 1976d, p. 1):

1) How to maintain details of the landscape critical to its appearance;
2) How to make small improvements in facilities for informal recreation for the general public;
3) How to help farmers by reducing the conflicts with their activities caused by visitors;
4) How to encourage farmers to adopt more positive management practices towards landscape conservation and recreation.

As with Heritage Coast Pilot schemes described above, the emphasis on quick effective low cost action proved very successful. A similar scheme in Snowdonia National Park will be completed in 1978, and in both cases the Park Authorities have decided to put the experimental work on a permanent footing, and other parks have begun to develop similar projects (Countryside Commission, 1968 to 1977, 1976-1977, p. 33).

A similar situation has developed with respect to the involvement of the Commission in the urban fringe area. A major experiment was conducted in the Bollin Valley, and since its conclusion similar projects have been initiated in other urban fringe areas (Countryside Commission, 1976b). General areas of concern have been the minimization of public intrusion on farmland, enhancement of the landscape by eyesore removal, and improvement in public access to areas where recreation use will not be detrimental to farming. Project officers have been appointed in a number of areas by the local authorities, with financial assistance from the Commission. Country parks now have been developed in urban fringe areas as have recreational footpaths, and significant proportions of grants given in some regions are for projects in the urban fringe, as high as fifty percent in the Northwest and South Wales for example (Countryside Commission, 1968 to 1977, 1977, p. 18).

Part of the reason for the much heavier involvement in positive management in the urban fringe by countryside planners has been the realization that this area represents a part of the countryside accessible to the population without an automobile. In the last few years extensive experimental and new permanent programmes of public transport provision have taken place. Perhaps the most
adventuresome, and one of the most successful, has been the Dales Rail service, instituted in cooperation with British Rail, local bus companies, and the Yorkshire Dales National Park Authority, which allows wide access to the park and involves the provision of guided walks within the park for visitors who wish to participate. A link is also possible to the Lake District National Park. Bus and mini bus service has been developed in several other parks such as Snowdonia and the Pembrokeshire Coast, and other traffic management experiments put into practice, including a bicycle hire programme.

The second area of development is in the creation of recreational footpaths. Long Distance Footpaths have already been mentioned and six more, three in Scotland and three in England and Wales, are planned. In 1976 the Countryside Commission initiated a new policy with respect to footpaths and over twenty schemes have either been aided or are being considered. The Local Government Act 1974 extended the Commission's grant-aiding powers to include anything conducive to the purposes of the countryside legislation, and assistance for footpaths was made possible. The extension of support to footpaths was eminently logical, walking is a major recreational pastime, with very low costs to the participant. A complex system of footpath rights of way already existed, but the footpaths as a recreation resource rarely were developed by local authorities (Countryside Commission, 1976a, p. 3):

... more emphasis should be given to well-published, signed and waymarked routes designed specifically to meet the needs of the day walker and casual visitor ... Footpath strategies should form part of an integrated plan for recreation provision at county and district levels.

The provision for car parking, networks of linking routes, and footpaths to and from points of interest were identified as major needs, as, too, was the need to identify footpaths suitable for intensive and extensive use. The application of footpaths development in a range of areas from national parks to urban areas also was encouraged, and in 1976 a Public Rights of Way Advisory Committee was established to guide research and experimental work in this area. The concept of footpath development is anticipated to prove attractive to local authorities as capital outlay and management costs are relatively small compared to numbers of potential users, and it is supported up to seventy-five percent by financial aid from the Countryside Commission.

The recent developments of policies and participation by countryside agencies into new areas, such as the urban fringe and the coastline, should not mask the critical importance of the necessity of conserving the countryside in the established national parks. In the last two years serious threats to the landscape of two national parks have emerged to emphasize this point. In the case of Exmoor National Park, loss of wild moorland by conversion to agricultural land by ploughing long has been a problem. A study of land use in Exmoor, undertaken by Lord Porchester, recommended
the identification of Critical Areas, and a commitment to conserve such areas against agricultural reclamation by the Park Authority, a policy which should ... involve a commitment to purchase land within the defined area as and when the opportunity exists (Porchester, 1977, p. 57). The final solution to what has been a perpetual problem in Exmoor and other national parks is difficult to foresee. Total acquisition of the park is impractical and, under current legislation and policies, undesirable. Management agreements, with compensation and acquisition of critical areas, would appear to be the most likely solution.

Another long term problem in the national parks has been the one of mineral extraction in parks. A proposal for limestone working in the Peak District National Park went to a public enquiry, as did a proposal to mine potash in the North York Moors Park. This latter case saw the Countryside Commission strongly supporting the National Park Committee against the latter's local authority, concluding (Countryside Commission, 1978a):

_In short, the developments would be totally incompatible with the preservation of this National Park, and would detract from the whole notion of National Parks in England and Wales._

The need to impose time constraints on mineral workings has been a matter of considerable concern to the Countryside Commission and other conservation bodies as permission for working for periods of forty-five years have been given, even in Areas of Outstanding Natural Beauty.

The issues generated in these two examples of land use change in existing national parks explain to some degree the opposition to proposals which, under the legislation, originate with the Countryside Commission for the designation of any new park. Such opposition appeared following publication of _The Broads: A Consultation Paper_ (Countryside Commission, 1976c). The Norfolk Broads were one of the original areas proposed by the Hobhouse Committee (Ministry of Town and Country Planning, 1947) for designation as a national park. In 1961 it was decided finally not to designate this area a national park. The Broads are bodies of water, formerly medieval peat cuttings, connected by waterways, and extremely popular for water activities; some 10,000 pleasure craft, of which 2,000 are for hire, are kept on them. Because of severe environmental problems, primarily resulting from the use of agricultural fertilizers on surrounding land, and rapidly increasing recreation pressure, it became generally agreed that changes in management and planning of the area were necessary. The Consultation Paper produced a wide variety of responses, and these were summarized in a second publication, _The Broads: Possible course of action_ (Countryside Commission, 1977e).

Opposition to the designation of a national park appeared to be based primarily upon the feeling that a national park was not the ideal body to solve the somewhat unique problems of this area. Certain groups were strongly opposed to the national park proposal;
for example, the Norfolk County Branch of the National Farmers' Union passed a resolution (Countryside Commission, 1977e, p. 17):

> strongly opposed to the suggestion that the Broads should be designated as a National Park, which would, in their view, be seriously detrimental to agriculture and food production within the area.

The responses varied with the interest of the responding agency and with their location (Countryside Commission, 1976c, p. 19):

> There was overwhelming support for the setting up of a National Park from those with addresses outside the Broads area; while local residents either regarded the problem as a complex one requiring the establishment of a specially adopted authority for the Broads; or were opposed to the concept of a National Park.

The immediate solution in the case of the Broads has been to create a joint consortium of local authorities and other bodies. The Countryside Commission agreed to place national park designation temporarily aside, but if the consortium has not been established by the end of 1978, or if progress has not been satisfactory within the first two years, the Commission will proceed with designation as a national park. A reconsideration will take place on designation, in any event, at the end of 1983 (Countryside Commission, 1978b, pp. 8-9).

Undoubtedly much of the opposition to the designation of a national park came from fears of national, rather than local, control over planning and development, or the requirements of additional local expenditures. This, despite the expenditure of over four million pounds, or eight million dollars, of central government funds in national park areas in 1977 and 1978 (Countryside Commission, 1968 through 1977, 1977, p. 70), and the obligation upon the Commission to have due regard to the needs of agriculture and forestry and to the economic and social interests of rural areas (House of Commons, 1968, p. 38). The creation of additional national parks in England and Wales apart from the Broads, is extremely unlikely, and in Scotland has been accepted as somewhat unnecessary. One further method of conserving the countryside has received some added support in the last two years, however, because of changes in legislation affecting estate and death duties, now called capital transfer tax. As early as 1894 the policy was considered of giving national heritage property special tax treatment, and under the Finance Act 1976 it is possible that land of outstanding scenic, historic, or scientific interest can be exempted from capital transfer tax. The essential condition is that reasonable steps be taken to preserve the property and secure reasonable public access. Proposed exemptions for scenic land are referred to the Countryside Commissions for advice, and scientific land to the Nature Conservancy Council. Scenic land needs to be outstanding beyond its general type and its preservation in the national interest, while historic land should have significance in national or international terms.
Scientific land, such as found in national nature reserves, can be accepted on account of its flora, fauna, geology, or physiography. The land has to be managed to safeguard essential features, and details of access and footpaths must be given to the local authorities. Tax exempt trust funds to maintain such land are allowable, and a gift of national heritage property to a suitable non-profit making body may be tax exempt also. In addition, land of particular amenity value, with reasonable public access, may be accepted in lieu of tax due to the government, if a suitable recipient for the land, that is, a national park authority or a National Trust can be found (Treasury, 1977). These new arrangements may result in some important areas of countryside coming under public ownership and management without direct capital outlay, or at least an increase in area of high amenity land opened up for public access and its attractivity preserved.

CONCLUSIONS

The countryside in the United Kingdom is many things to many people, a place to live, a place to work, and a place to play (Lowenthal and Prince, 1964). These varying uses are reiterated and protected in the various pieces of legislation which involve the planning and management of the countryside. The value of the countryside as a recreational resource, particularly for short term day recreation excursions is very high. Recent data indicates that informal countryside recreation attracts more participants than participation in all sports combined, and that approximately three quarters of the population of England and Wales participate at least once per year in informal countryside recreation. An estimated 275 million trips to the countryside and stately homes are made per year in England and Wales, and the average number of trips made is slightly over thirty per year (Fitton, 1976). The private ownership of much of the countryside means that the future of the countryside, like its past, will be largely shaped by the sum of decisions taken by private bodies and individuals (Countryside Review Committee, 1977, p. 9). The increased emphasis upon active countryside management in recent years, rather than a rigid reliance upon development control, undoubtedly will make the task of countryside conservation somewhat more feasible. The wilderness areas of the New World do not exist in Britain, remoteness and relative inaccessibility are the only substitutes, and even areas with these characteristics are being exposed to ever increasing recreation pressure (Davidson and Wibberley, 1977). These pressures, coupled with those of changing patterns of agriculture and forestry, and new pressures such as those caused by offshore oil exploitation make the preservation of the countryside a severe challenge (Countryside Commission for Scotland, 1968 through 1978, 1976, Introduction):

The countryside is a resource to be used productively within changing economic, social and political circumstances. The ability to do this may be put at
hazard by a failure to recognize the limits of what might be feasible in this context ... an assumption of continuity and lack of change may result in inadequate public concern to conserve these basic resources.

The decisions on what areas are worthy of conservation and enhancement and to which areas the public should be allowed access were taken relatively recently. Thus, the pattern of protected countryside also is fairly recent in Britain. The legislation and the institutional arrangements still are being amended and created, and while the underlying goals and philosophies have remained fairly constant since John Dower's enunciation of them in 1945, the means to achieve them have been widened and strengthened. Change is still a key aspect of the countryside because the countryside itself is a function of man's impact upon the land. As long as man continues to modify and improve his technology, the countryside will be exposed to constant pressures and continue its man-modified evolution. The basic decision has been made, however, that parts of the countryside should remain areas of high amenity and outstanding beauty, accessible to the public at large, irrespective of ownership, land use, or location.

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EXPERIENCE WITH NATIONAL PARKS AND RELATED RESERVES IN THE SOUTH-WEST PACIFIC

P.H.C. Lucas

'O wad some Pow'r the giftie gie us
To see ourselvs as others see us!
It would frae mony a blunder free us,
And foolish notion.

Robert Burns

INTRODUCTION

Perhaps the greatest value to be gained from coming together here in the wilderness is a perspective on the role of national parks as our changing world approaches the 1980's. And by comparing experiences internationally, we can better see ourselves as others see us. Certainly, when Gordon Nelson wrote inviting me to deliver this paper, he helped me to better see national parks in New Zealand.

In extending the invitation, Gordon said You may wish to concentrate on progress and problems with national parks and related reserves and other alternatives to recreation, conservation, education and science in New Zealand, a small country with much that is beautiful and valuable to protect but in which agriculture, power developments and other extractive or productive pressures are high and growing. Perhaps you may wish to compare the New Zealand situation with others in the South-West Pacific or elsewhere.

Internationally, New Zealand has been promoted as a pocket paradise, a world in miniature. Perhaps that world in miniature image is a very appropriate one, underlined in Gordon's reference to pressures from a range of developments, including agriculture, which we in New Zealand have seen as complementing and even enhancing our natural landscapes. Perhaps the rose-tinted spectacles through which we tend to see ourselves make us fools in paradise, deluded because of a lack of perspective.
This was further brought home to me by a paragraph in a draft report on *Conservation Needs in Latin America* written for the Audubon Society by Roland C. Clement in 1977 and given me by a young American friend. The author referred to the argument that the pastoral landscape created by agriculture is an improvement on nature and said that, where pastoral landscapes are attractive, this is usually because the process of transformation has evolved slowly enough to strike an ecological balance between man's work and nature's work. Roland Clement went on to say:

> If the transformation process goes too far ... it unbalances the man-nature relationship and results in a superficially appealing landscape devoid of adequate diversity. This is what has happened in most of New Zealand, for example. The result is a landscape less rich than it was or could be, and it therefore impoverishes its residents, though few of them are aware of this since their culture now blinds them to the larger reality they have lost.

So, as one informed observer sees us, we in New Zealand are impoverished. In terms of a balance between man and nature, the preservation of representative ecosystems, of an even spread of opportunities to enjoy outdoor recreation in a natural setting, and of conserving nature in and around cities, it probably is true to say we are impoverished.

Yet we have a fine system of national parks, with 2.1 million hectares set aside in a country of 26.8 million hectares, a high proportion by world standards. But seven of the ten parks are in the South Island where one quarter of our people live. In turn, the concentration of population in the North Island, with consequent landscape modification, reduces the potential for more national parks where the demand is greatest.

Thinking of this, I was reminded of the 1972 Technical Meeting of the International Union for Conservation of Nature and Natural Resources (I.U.C.N.) the last time I was in Banff Centre, and of the resolutions stressing the importance of seeing national parks, not standing alone, but as parts of a wider system of areas set aside for nature conservation and outdoor recreation. The greatest lesson learned by the New Zealand delegation at Banff in 1972 was that national parks alone were not enough; there need to be complementary concepts to bring elements of the national park experience as close as possible to all our people. In the process, not only are their lives enriched, but added protection is given to the national parks.

**NEW ZEALAND NATIONAL PARKS TODAY**

Early in 1978, the New Zealand National Parks Authority, which is a statutory body of private citizens involved in science, conservation, recreation and park administration, plus officials
concerned with land and forest management, wildlife, and tourism, published a revised policy statement. It sets out to put flesh on the bare bones of the legislation for the guidance of members and staff of the ten national park boards and the Department of Lands and Survey, handling both long-term and day-to-day management.

The policy is consistent with international park thinking, with its emphasis first to preserve the parks and then, so far as the principle of preservation allows, to permit the fullest proper use and enjoyment by the public. It outlines the importance of management planning; of the roles of special, wilderness, and natural environment and facilities areas; science and education; and constraints on development and use necessary to achieve preservation in perpetuity.

As far as new parks and additions to existing parks are concerned, the General Policy says that New Zealand accepts as an objective the definition of a national park adopted by the I.U.C.N. at New Delhi in 1969, and lists criteria to be used in assessing the suitability of areas suggested as new national parks.

These criteria underline two essential elements of national park philosophy: the needs of the people must not be forgotten but, at the same time, the quality of national parks must not be watered down to accommodate those needs.

Perhaps the greatest recent problem in national parks in New Zealand has been in the field of political and public understanding. National parks have come a long way in public recognition; but the combination of what some people see as over-protectionist policies, plus over-zealous conservation groups, and an economic downturn, has caused something of a minor backlash against national parks and their extension.

The greatest progress in national park management in New Zealand has been in policy and management planning and in public participation. Publishing the General Policy, and making it available to the public, is seen as a means of explaining policies and of emphasizing that parks are for all people and not merely for the mountaineer, the wilderness buff, or the scientist. Educational and interpretation programmes, limited only by constraints on staffing, are the other means being used to better communicate park concepts. And, perhaps above all, there is new emphasis on public participation in nominations for appointments to park boards, in proposals to establish new parks or vary the boundaries of existing ones, in management planning, and in other fields.

National park practitioners and supporters know the value of parks for recreation in the broadest sense, as classrooms to understand conservation principles, as benchmarks for science, as an economic power in tourism, and as the protection of natural resources inside and outside the parks. But, too often, parks are seen by the public as the domain of the affluent and the aesthete; as resources locked up from use. Hopefully, these attitudes may be modified by more effective communication and greater openness in park decision making.
England's Dame Sylvia Crowe discussed complementary concepts in her paper *The Master Plan for National Parks and their Regional Setting* delivered at the Planning and Management session of the Second World Conference on National Parks in 1972. Dame Sylvia said that she saw national parks as part of a complex of diverse parks: *City parks, county and state parks, forest parks and water parks—places where every outdoor activity can find its place in the right setting...* Linking this complex of diverse parks, there could be a network of long-distance walks, of rides, and of waterways threading through a land of pleasant towns and healthy countryside. This network of ecological corridors would serve all species, not only man.

This, reinforcing the park systems' concept emphasized at the Banff I.U.C.N. meetings in the same year, has given New Zealand a clear message; and the 1970's have been a time of dramatic progress in developing concepts to complement the conservational and recreational values of national parks.

Overall planning legislation has incorporated a range of matters of national importance which local governments must take into account in regional, district, and maritime planning. These matters, set out in the Town and Country Planning Act 1977, include: the conservation, protection, and enhancement of the physical, cultural, and social environment; the wise use and management of New Zealand's resources; and the preservation of the natural character of the coastal environment and the margins of lakes and rivers. They also include the avoidance of unnecessary subdivision on shorelines, on highly productive land, and in rural areas; and the relationship of the Maori people and their culture and traditions with their ancestral land.

Complementary concepts already developed, or now being developed, in New Zealand involve seacoast, lake shores, and river banks; scenic and allied reserves; state forest land; marine reserves; and walkways.

**SEACOAST, LAKE SHORES, AND RIVER BANKS**

A New Zealand-wide assessment of the natural, historic, and recreational values of the seacoast, lake shores, and river banks is well under way, and since 1972 this has been backed by funding of one million New Zealand dollars each year for land purchase, primarily for coastal reserves. Planning techniques designating land for future reserve purposes, while permitting existing compatible uses, spread the period over which land is purchased.
Management of existing *mini-national parks*, the 1,000 plus scenic and allied reserves, is being progressively improved from a caretaking role to one of positive management for preservation and use. Today, more rangers of the National Parks and Reserves Occupational Group in the Department of Lands and Survey work in scenic and allied reserves than in national parks.

The Reserves Act 1977 provides for classification of reserves for conservation and recreation into one of five classifications: scenic, nature, scientific, historic, or recreation; it also provides for their management according to the legislative philosophy for each class of reserve. Administering bodies are required to prepare management plans for which public participation is mandatory. Regionally, complexes of reserves of various classifications are grouped together for better management, for example, the Hauraki Gulf and Marlborough Sounds Maritime Parks. The most significant reserves, such as New Zealand's sub-antarctic islands, may be set apart as New Zealand Reserves.

**PRIVATE LAND**

A range of new initiatives has been opened up through concepts drawn more from the old world than the new. The Reserves Act 1977, as well as providing for the management of reserve land in public ownership, creates new opportunities to encourage the protection and use of the conservation and recreation values of private land. An owner may set aside part of his property as Protected Private Land, with statutory protection for natural and historic features and with management assistance and land tax incentives. The conservation covenant concept is introduced to preserve a natural environment or landscape amenity, or a wildlife, freshwater life, or marine life habitat. In addition, the legislation authorizes the Minister of Lands to make available, to private owners of land that has conservation and/or recreational significance, technical, planning, and management assistance, with or without charge; and the legislation enables money appropriated by Parliament for reserves management to be used on land that is not a reserve.

**STATE FOREST LAND**

Some three million hectares of New Zealand are set aside as state forest land administered by the New Zealand Forest Service. About one-tenth of this land is used for exotic afforestation. The balance is indigenous forest, managed according to an Indigenous Forests Management Policy adopted by the Government in 1975, and designed to balance production with protection and recreation. Essentially, the policy aims to identify indigenous forest areas for total protection and areas for clear-felling and conservation to agriculture or exotic forest, and to adopt a sustained-yield approach to production over the remaining areas by selective logging with four fifty-year cycles.
The Forests Act progressively has been revamped to improve the legislative capacity for preservation of nature and for recreation.

**MARINE RESERVES**

Marine Reserves legislation is another product of the seventies and is administered by the Ministry of Agriculture and Fisheries. Progress in establishing reservations has been slow, there is only one reserve to date, largely because the original legislation proved too inflexible in practice. It made no provision, for example, for recreational fishing, even over a phasing-out period. Complementary legislation under the Harbours Act, administered by yet another agency, the Ministry of Transport, permits foreshores and waters in bays and inlets to be vested in the administering bodies of national parks and reserves; this is ensuring more integrated management at the land-sea interface than has been possible in the past.

**WALKWAYS**

Public enjoyment of the New Zealand outdoors is being encouraged by the New Zealand Walkways Act 1975. This provides for better access on foot to the countryside using both public and private land by negotiated agreement with the landowner or occupier. The ultimate concept includes a system of long-distance walking tracks along the lines of the Appalachian and Pacific Crest Trails, but priority is being given initially to providing shorter walking tracks in the countryside near cities and towns. Management is in the hands of a commission and district committees which include representatives of central and local government agencies, farmers and trampers.

**COORDINATION OF ACTIVITIES**

The need for coordination of the reservations under the National Parks, Reserves, and Forests Acts led to the establishment of an inter-departmental Land Administration Coordinating Committee by the respective administering agencies. Work is in hand to develop guidelines for reservations under the relevant legislation; to coordinate policies for wilderness areas permissible under all three Acts; and, most importantly, to establish an overall scientific committee to inventory ecosystems already adequately protected, those inadequately represented, and those not represented at all.

The Queen Elizabeth II National Trust, another example of a new initiative drawn from the old world, is the New Zealand Government's recognition of the Royal Silver Jubilee. The Trust legislation is designed to provide an umbrella body to identify open-space needs, to guide the policies of other agencies in meeting those needs, to encourage gifts of land and money, and to negotiate open-space covenants to expand the resources of open space. Its directors include ministerial appointees and representatives of the membership, the local governments, the farming communities,
and the Maori peoples. Officials of the relevant central govern­ment agencies are able to participate, but may not vote. The Trust is responsible to the Minister of Lands, who is responsible for the national parks', reserves', and walkways' legislation, and, currently, also holds the portfolios of Forests and Environment.

Ministerial coordination is important, but there is obviously a very substantial demand on officials for day-to-day coordination. This should become less demanding as policies and guidelines are developed.

I have dwelt on the New Zealand scene at some length because I know it best, because I was asked to, and because the developments in the last ten years are important as an indication of the growing recognition that national parks do not stand alone but are a part, albeit a vital part, in an overall conservation and recreation system. They are developments typical of those evolving in other parts of the South-West Pacific.

THE SOUTH-WEST PACIFIC

The concepts of communal and traditional land rights inherent in Maori and Aboriginal cultures are common to other regions of the Pacific inhabited by Polynesian, Melanesian, and Micronesian peoples. Into these historic patterns of land ownership and resource use Western man has introduced a technology that causes concern to some parks' personnel, such as Tom Hare, Australia's Northern Territory Director. It is for example, a technology that destroys reef life on Pacific Islands by the use of dynamite for fishing. Western man also has sought to introduce his concept of national parks and reserves, in an effort to put matters right, but with minimal success to date.

Since 1970, however, significant effort has gone into promoting nature conservation and the national parks and reserves concept in the South Pacific. Important events in this time period were: the 1971 Regional Symposium on Conservation of Nature - Reefs and Lagoons, conducted by the South Pacific Commission (S.P.C.) in association with the I.U.C.N. at Noumea, New Caledonia; the extra day added to the 1972 Ministerial Conference on National Parks at Sydney, New South Wales, to allow discussion on South Pacific issues; the first South Pacific Conference on National Parks and Reserves, sponsored by the New Zealand Government in association with the S.P.C. and the I.U.C.N. in 1975 at Wellington, New Zealand; the second Regional Symposium on Conservation of Nature, and with it a plenipotentiary meeting to consider a Convention on Conservation in the South Pacific Region drafted by the I.U.C.N., hosted in 1975 by Western Samoa in association with the S.P.C. and the I.U.C.N., at Apia, Western Samoa; and, the 1975 International Conference on Marine Parks in Tokyo, Japan, during which the Honourable Tupui Henry, Minister of Lands and Survey for the Cook Islands, offered to the world community the atoll of Manuae as a reserve for international science.
Conferences and conventions do not alter situations overnight, especially when they seek to translate a Western concept into a communal society and more so when that concept is based on a substantial land resource. The total land area of the Cook Islands, for example, is a mere 24,100 hectares spread among fifteen tiny islands scattered over two million square kilometres, and the resident population is in the vicinity of only 20,000. Equally, it is difficult for Western man to sell nature conservation to a society which, until the coming of Western civilization, depended on conservation of resources for survival.

At the 1975 South Pacific Parks Conference, the Minister of Agriculture for Niue, the Honourable Young Vivian, spoke on the Tradition of Conservation in the South Pacific and said this shows itself in many forms and inextricably woven in the socio-religious practices of peoples of the South Pacific, thus indicating a deep cultural need and value. He pointed out that the tapu, meaning sacred or forbidden, concept has a conservation effect. If a forest area such as Huvalu on Niue is declared tapu, it becomes a shelter for the fauna and a source of regeneration and spread of the flora to other parts of an island, which perhaps may have been depredated by man, noxious animals or natural phenomena such as hurricanes or tidal waves.

Mr. Vivian outlined plans for environmental protection legislation to constitute a Ministry, establish environmental protection areas, provide measures for the protection of the environment and Niuean antiquities, and establish a national museum. Besides working with village councils and through education and publicity programmes, the legislation endeavours to work in with existing Niuean custom. We have our traditional tapu area where certain activities are forbidden. The Act creates Environmental Protection Areas ... in other words the Minister for Environmental Protection is given power to impose a national tapu ... The tapu relates only to certain usages and practices carried out in the area. Ownership and title is not affected. The Government is not taking the land, it is merely imposing restrictions to protect it.

If nature conservation is to be a reality beyond the generally limited areas of government-owned land in the South-West Pacific, it seems that an approach such as Niue's will be called for. This is recognized by the United States' National Park Service in its efforts to set up a Guam National Seashore in the U.S. Trust Territory of Micronesia. The area involves a complex of historic sites, geologic features, rare and endangered plants, and pristine marine environment. Moreover, the land ownership pattern is complex, with a parallel complex of existing land uses. Here, consideration is being given to several approaches involving less-than-outright acquisition and including special zoning by the Territory of Guam and a sharing of administrative and funding responsibilities between the territorial and federal governments.
Several of the other South Pacific countries are obtaining outside help to find an answer to the question of nature conservation. American advisers have been working with various agencies in Fiji; the Cook Islands have an Australian adviser; and Western Samoa has received visits from the I.U.C.N., the U.N.D.P., and New Zealand experts and support from the O.N.E.P. and the W.W.F.; and Tonga has been given some advice by a New Zealand forestry expert. In Western Samoa, there does appear to be sufficient government land and a will to make progress towards what should be the island region's first national park, extending from the sea coast to 0 le Pupu to the main range on the island of Upolu. Here, again, significant progress elsewhere will depend on a breakthrough with the use of customary land, which accounts for 77.4 percent of Western Samoa's land area. There is a realization, too, of the link between nature and culture; and the roles of museums and of education are appreciated as the result of the success of a planned environmental exhibits programme in American Samoa developed by the S.P.C.'s Regional Ecological Adviser.

In other island regions, the prospects are not encouraging in terms of Western park concepts. The Permanent Secretary in the Ministry of Natural Resources in the Solomon Islands wrote to me from Honiara and said although there was a proposal to declare by Proclamation National Parks in various parts of the country, the customary land tenure system is such that it is almost an impossibility to do so except on Government-owned land. The only national park we have at the moment is the Queen Elizabeth Park which covers an area about 15,200 acres in the island of Guadalcanal. Even this park is not being properly maintained due to the lack of understanding staff, finance and population pressure and possibly the law itself is faulty. From the Office of the Chief Minister, in the Tuvalu Government, at Vaiaku on Funafuti Island, I received this comment: Here in Tuvalu we have no national parks ... Nor should I be expected to contribute much to this issue in the future unless we can afford to establish one. With limited land area I do not think we would be happy to consider any possibility of having one established.

Only in the largest land area outside Australia and New Zealand has anything remotely paralleling the Western concept of national parks and reserves been achieved. Papua New Guinea, larger than New Zealand, has had the cooperation of the Australian Government in establishing a park system. Three national parks, a district park, and an historic site have been established, and there are plans for other parks and for the declaration of, as a national walking track, of the Kokoda Trail, famous from World War II. Maintenance of a national botanic garden and wildlife reserves are added responsibilities. Here again, the situation report to the 1975 South Pacific Conference said that the main stumbling block to the establishment of national parks and reserves in Papua New Guinea is the land tenure system ... Under the National Parks Act 1966 only land owned or leased by the Government can be set aside. This means that when an area has been investigated and found suitable for a national park
negotiations have to commence for the purchase or lease of the land from the customary owners. If the owners are not keen on either selling or leasing their land then nothing further can be done until and unless they change their minds.

Obviously, as representatives of South Pacific countries prepare for the second South Pacific Conference on National Parks and Reserves to be held in Sydney, Australia, in 1979, there remain many difficult problems to unravel. There must be a search for new approaches, for a South Pacific solution to a South Pacific problem. The Niuean approach of building conservation into the fabric of society may well give a lead to other areas, and to the Western world.
PEOPLE, POLITICS, AND PARKS: AN AUSTRALIAN EXPERIENCE
J.D. Ovington

INTRODUCTION

Australians as a whole enjoy a high material standard of living. The fourteen million people who live in Australia inhabit a vast island continent, rich in natural resources, with wide, open spaces separating a few major coastal centres of urban settlement. Compared with the residents of other, more densely populated countries they are fortunate in still having an opportunity to adopt landuse practices to fulfill their material wants whilst preserving wilderness and safeguarding the unique array of Australian plants and animals.

In Australia, as elsewhere, the achievement of wise land use is conditioned by the interplay of historical, social, cultural, economic, and political factors and is influenced by national and international considerations. The Australian scenario provides an insight into the dynamic complexity of environment issues and the community conflicts that can arise in relation to the establishment of national parks. Some understanding of what the future may hold for the national park movement in other countries can be gained by considering the current Australian situation against the background of human settlement in Australia.

ABORIGINAL SETTLEMENT

Compared with Europe and Asia human settlement in Australia is relatively recent. Aboriginal occupancy of Australia is now believed to have begun over sixty thousand years ago. The Aboriginal people came from the north, moving from island to island through the Indonesian archipelago. When European settlement began in 1788 there were probably about a quarter of a million Aboriginals distributed widely, but unevenly, depending in part on the food and water supply, over a land mass of almost eight million square kilometres.
Unfortunately, our knowledge of Aboriginal life at that time is limited since there are no Aboriginal written records and because many of the first Europeans showed prejudice against the Aborigines in recording their life style which was radically different from that of the Europeans. It seems clear that the Aborigines did not practice agriculture or have herds of domestic animals. Essentially a nomadic people, they lived by hunting, fishing, and gathering edible seeds and fruits and underground stems and roots.

The Aborigines appear to have been an important factor in bringing about environmental change. It is interesting that Aboriginal mythology refers to a pre-human world of giant animals which disappeared with the coming of humans. This accords with the records of geological history in Australia, and the extinction of large animals of species of kangaroos and emus, for instance.

Many of the early explorers and settlers comment that the Aborigines deliberately started bush fires. The Australian vegetation burns readily because plants of many species contain volatile oils and the characteristic long, arid, hot periods, often with strong winds, create conditions whereby bushfires spread rapidly and extensively. There is growing evidence that the Aborigines, by controlling the timing, frequency, patterns, and intensity of burning, affected the nature of the vegetation cover and the survival of some animal species.

Another example of Aboriginal influence in changing natural communities is their introduction of the Aboriginal dog, or dingo, to Australia about eight thousand years ago. This predator is thought to have caused the disappearance from the Australian mainland of two marsupial carnivores, the Tasmanian tiger and the Tasmanian devil. The dingo did not reach the southern island State of Tasmania because of the sea barrier.

Probably at the time of European settlement the initial impact of Aboriginals had waned, and some kind of equilibrium existed among Aboriginal population levels, wildlife, and the environment. This equilibrium seems to have been reinforced by a complex Aboriginal social structure with about five hundred language groups. Tribal and individual behaviour were regulated by an intricate system of taboos and responsibilities associated with environmental constraints and the seasonal rhythms of nature.

EUROPEAN SETTLEMENT

Two centuries of European settlement in Australia have resulted in far reaching changes in land use. The consequent transformations of Australian landscapes and biota are greater than had occurred over thousands of years of Aboriginal occupancy.
With European settlement, the Aboriginals were ousted from the more productive lands and the Aboriginal population decreased progressively to about fifty thousand. Most of the early white pioneers discounted Aboriginal experience of coming to terms with the harsher Australian environments although they did continue to burn the vegetation over large areas. The Europeans' prime motivation was to subdue the wilderness in order to survive, and most wished to establish landscapes, plants, and animals reminiscent of the countries from whence they came. In some places they succeeded, but elsewhere development schemes failed and had to be abandoned often after the biological productive capacity of the site had been depleted seriously.

European timber fellers searched the native forests for prime stands of species such as the red cedar, which were cut down with little thought for the future. Large areas of the native forest and shrubland were cleared for agricultural and pastoral activities. Grazing flocks of sheep, which are selective feeders, changed the plant composition of natural grassland, and pasture change was accentuated by the use of introduced grasses and chemical fertilisers, particularly superphosphate. The expansion of sheep and cattle grazing and wheat farming in good years led, in bad years, to overstocking and crop failures, which caused soil erosion and the loss of site potential. The mechanical and management innovations of the twentieth century are leading to a further spread of cultivation. Other areas were affected by plantation forestry, mining, and urban development.

Once plentiful species of native animals were harvested, by Europeans or North Americans of European stock, on such a scale as to be brought to the verge of extinction. The first onslaught was directed towards marine mammals, the whales and seals. This was followed by the exploitation of mutton birds, green turtles, koalas, crocodiles, possums, rodents, wallabies, and kangaroos.

Even when there was no direct destruction of Australian biota by humans, the biological impact of introduced species of plants and animals was considerable. Rabbits, goats, pigs, Asian buffaloes, donkeys, camels, foxes, and domestic cats gone wild all had deleterious affects on Australia's vegetation and animal wildlife.

**CONTEMPORARY ATTITUDES**

If Australians judge it is in their best interest, they now have the knowledge and capacity to initiate major development programmes which would result in massive environmental change. However, with greater environmental awareness, growing numbers of Australians are concerned that development should proceed in a more orderly way with proper care and thought for the future.
The pioneer era of European settlement of Australia has largely gone. The new generation of Australians has come to appreciate the special attributes of Australian landscapes, wilderness, and wildlife and sees in them subjects of national pride.

Nevertheless, individuals' attitudes to further change vary greatly, with opposing extremists rejecting or supporting the concept of perpetual growth based on technological advance. Environmental issues, including national park issues, have become matters of public debate and demonstration. Most people are undecided as to what the balance should be between development and conservation and are confused by the conflicting evidence presented at public inquiries held to assess the impact of development programmes on the quality of life.

Interwoven in the growth of community concern to protect human living standards is the acceptance of the virtues of nature protection and the provision of outdoor recreation in a wilderness setting through the establishment of national parks. With public awakening to the vulnerability of nature to human influence, sections of the Australian community have been motivated to exert pressure on planners, entrepreneurs, and politicians to ensure that measures are taken to safeguard the natural heritage of wild places.

ESTABLISHMENT OF NATIONAL PARKS

The first Australian national park, and the second in the world, was established as early as 1879 when the New South Wales Government set aside 7,300 hectares of land near Sydney for public recreation. A further 14,000 hectares were added to Royal National Park in the following year. Other states soon followed New South Wales in introducing legislation to proclaim and establish national parks over large areas.

By 1977 the total area of national parks and reserves in Australia amounted to about twenty-five million hectares, or over three percent of the total area, and was equivalent to about two hectares per capita. The creation of national parks was justified in terms of meeting various community needs: scientific study, biological reference areas, education, tourism, recreation, species preservation, national fitness and mental health, and the protection of outstanding natural features and beautiful landscapes. Another objective was the preservation of Australian history including Aboriginal sacred sites and old settlements and buildings of the colonial era, especially those with convict associations.

Understandably the initial emphasis was on the acquisition of land. The control of individual parks usually was placed in the hands of local boards of trustees. As the number and area of parks increased there was a move towards more centralised control
in the States through the establishment of state national park and wildlife services or state national parks authorities. This has led to a greater degree of professionalism in park staff and the formalisation of staff training courses. Another trend was to change the early legislation to provide for greater security against revocation of national parks.

Generally the land set aside as national parks was Crown land not alienated for commercial purposes such as agriculture, forestry, and mining. For instance, Royal National Park was on land where the soil and terrain were considered unsuitable for agriculture and residential development. Paradoxically the situation changed dramatically as Sydney spread, and the real estate value of much of the park, if it was available for development now, would exceed $100,000 per hectare.

In the present affluent society, attitudes are changing and there is increasing acceptance that national parks should not be limited to areas unsuitable for other productive uses. The use of high cost land for national parks purposes is regarded as justifiable where a clear community need exists. Governments are taking action to rectify the selection deficiencies of the past and to develop comprehensive systems of national parks and reserves within the context of overall land use planning.

In the last decade there has been an upsurge of interest in the identification of additional areas which should be added to the existing national park and nature reserve system for scientific reasons. As part of the International Biological Program the Australian Academy of Science in 1967 commissioned a seven year vegetation survey of the main ecosystems of Australia and Papua New Guinea. This was done with the cooperation of many professional and amateur botanists, largely on a voluntary basis.

The survey revealed that of 1,207 major plant alliances identified in Australia only about half are found in the existing national parks and reserves. Large gaps in the protection afforded to some biota were identified, thus tussock grassland and low shrubland plant communities proved to be inadequately protected because of failure to include them in national parks or reserves.

This project was followed by an Ecological Survey, funded by the Commonwealth Government, to determine the most efficient means of using Earth Resources Satellite Imagery to provide biophysical and environmental data as a means of determining priorities in acquiring suitable additional areas for national parks. Other surveys have concentrated on key habitats or habitats under threat, such as wetlands.

Apart from scientific considerations, there is a need to take into account the location of national parks in relation to centres of population and social factors such as the differing national park expectations of various ethnic groups within the Australian community.
Emphasis on the acquisition of areas for national parks has tended to divert attention and resources from the need for park management and environmental monitoring which are necessary to ensure that park values are maintained. In some national parks, failure to implement sound management practices has proved disastrous environmentally and considerable expenditure is required for rehabilitation.

The resources available for, and devoted to, active management vary greatly. Some states have not yet completed a management plan for a single national park, so that management tends to be on an *ad hoc* basis. At the other extreme, some states have active management programmes, based on scientific and social studies, for a good proportion of their parks.

The more recently drafted National Park legislation generally provides for public comment and participation in the preparation of plans of management. Thus, the Commonwealth legislation provides for public submissions before the plan of management for a park is drafted, and for public comment afterwards. Public submissions are reported to the responsible minister, and Federal Parliament may disallow a plan. Much remains to be done in encouraging constructive citizen involvement, from which park managers can gain considerable benefit, and through which public interest can be expected to grow.

Faced with major problems of land acquisition and management and coming increasingly into conflict with competing land uses, the national park authorities are finding it difficult to give adequate attention to the national park implications of contemporary trends. If the national park movement is to continue to have public support it must be able to foresee and accommodate to changing circumstances in a logical way and with regard for park values.

Examples of these trends are increased automation in industry and agriculture, which is leading to more leisure time and greater use of national parks; the greater expectations and understanding of the Australian public, arising from better education and media presentation of natural history; the rejection, by some sections of the Australian community, of urban living; and the growth of international tourism. The effect of increasing costs of public travel, with the energy crisis, is especially important in a large country, like Australia, with a relatively small population concentrated in a few large urban centres distant from the interior.
COMPETITIVE LAND USES

As the area allocated to national parks has increased, and land of greater economic value has been proclaimed as national park, opposition has arisen from other land users, especially those having grazing, forestry, and mining interests. Whilst this opposition is restrained, it is becoming increasingly vocal as national park enthusiasts seek new parks, for instance, in the tropical forest and alpine regions of Australia. An example of a conflict between national park and mining interests is Fraser Island where coastal sand mining for rutile and zircon was ended to protect the national park values. A comprehensive public inquiry on the issue revealed the major differences of opinion that can arise at local, regional, and national levels. The Commonwealth Government paid substantial sums for compensation of loss of income.

Some opponents of the present national parks have come to see them as a vested interest of urban people and urban based bureaucracies. They consider the Australian national park system to be an unrealistic, misguided copy of that of the U.S.A., with an overemphasis on wilderness and wildlife protection. National park legislation in Australia tends to give priority to the scientific and nature preservation functions of national parks and the provision of recreation facilities. The national park critics advocate that wilderness and native species are best protected in small nature reserves, as in Europe, with national parks being aesthetically attractive areas of the countryside wherein man lives, works, and uses the natural resources of plants, animals, soils, rocks, minerals, and water for the benefit of mankind, with due regard for the protection of a pleasing environment. In fact, much state forest and private land is managed in a manner consistent with wildlife and environment conservation, but there is scope to develop this further.

Australia is such a large and sparsely populated country, with relatively short period of use by modern man, that there seems no reason why it should not have a diversity of types of national parks and nature reserves.

Planners are showing growing interest in defining more precisely the criteria whereby the community can decide between competing forms of land use, recognizing that the needs of the community change with time. Areas reserved for national parks, nature reserves, and open space recreation seem likely to become more important as the population multiplies and leisure time increases.

A good example of a practical effort, in which a state government and the federal government are cooperating to resolve conflicting user interests, is the South West Tasmania Resources Survey. This is a regional land use survey, central to which is the establishment of a major national park.
The proposal to establish a major national park in South West Tasmania is important because this is one of the few extensive wilderness areas remaining in the temperate region of the world. Whilst the Tasmanian Government accepts the desirability of establishing a national park there and conserving the natural features, it is conscious of the area's potential for hydroelectric power, forestry, mining, and tourism. The purposes of the survey are to complete a detailed inventory of the resources of South West Tasmania, to provide the basis for land use decisions by the Tasmanian Government, and to describe those attributes which require the preservation and management of a national park of world significance there. Many of the techniques being used parallel those developed in Canadian land use surveys.

GOVERNMENT RESPONSIBILITY FOR NATIONAL PARKS

Under the Constitution of the Australian Commonwealth, the use of land for national parks, and the management and control of fauna generally, are the responsibility of the state governments over most of the continent. Since the states differ greatly in size, population, stages of development, and biology, there are inconsistencies in approach to national parks among the states, as for example, in the classification of national park and nature reserve areas.

In contrast to many other countries, the term national park, in Australia, does not refer solely to areas proclaimed by the national government. In fact, the first national parks were established long before the federation of the six Australian colonies to form the Commonwealth of Australia in 1901. The Canadian national, or federal, and provincial park system does not apply in Australia.

The establishment of State Services responsible for all national parks and wildlife is relatively recent. For example, the New South Wales National Parks and Wildlife Service was set up in 1967; and, in Queensland, responsibility for national parks was transferred from the Department of Forestry to a National Parks and Wildlife Service in 1975. The Queensland Service, for instance, does not have jurisdiction over marine national parks declared in state waters.

The Australian National Parks and Wildlife Service was formed following an Act of Parliament in 1975, with the support of all political parties. Concern was expressed that its activities in the states should be with their consent. In consultation with the states the role of the Australian National Parks and Wildlife Service has been defined with the aim of eliminating overlap and the unnecessary intrusion of the Commonwealth into areas properly the responsibility of the states.
The Service is the prime advisor of the Commonwealth government on national nature conservation policies; and it cooperates with the states and territories in a variety of matters including research, survey, preparation of statistics, training and education in relation to nature conservation, import and export of fauna and flora, and the implementation of international agreements. With the territories the Service has certain prescribed cooperative management roles for those national parks identified as being of national and international ranking. Discussions are taking place between the Commonwealth and state governments on the establishment of an integrated system of marine parks and reserves in Australian waters.

COUNCIL OF NATURE CONSERVATION MINISTERS


The Council is assisted in its task by a Standing Committee of senior government officials and a number of working groups. Examples of these working groups are those established to report on law enforcement, kangaroo conservation and management, training and education, endangered fauna, and endangered flora. Through the activities of C.O.N.C.O.M., considerable progress has been made in obtaining a more unified approach to national park and wildlife conservation matters.

KAKADU NATIONAL PARK

Examination of the proposal to establish a major national park in the Alligator Rivers Region of Northern Australia provides a good example of the complexity of issues that have arisen in Australia. Conservationists have been pressing for the park to be established for over a decade, and the justification for a park generally is accepted by the public and approved by the major political parties. More recently, the Region has been the subject of a detailed, wide ranging public inquiry, The Ranger Uranium Environmental Inquiry. Most of the recommendations of the Inquiry have been accepted by the government and new legislation has been passed by the Federal Parliament to enable them to be implemented.
The proposed park includes a wide range of environments, with a variety of vegetation types ranging from relic pockets of rain-forest through to eucalypt forest, dwarf shrubland, paperbark swamps, and mangroves. The dramatic climatic contrast between the dry and wet seasons causes a remarkable seasonal transformation in the appearance of the landscape. Wildlife is prolific, with many species rare, or unknown, elsewhere. The geomorphological features of plateau and outliers, with a series of waterfalls, provide spectacular scenery with magnificent panoramas to be seen from vantage points. The region is of major anthropological significance with an abundance of Aboriginal sacred sites and cave paintings. Many of the Aboriginal paintings rival the Bushman paintings of Africa. Some art sites are probably eight thousand years old. The area is important in the recent history of Australia because of its association with the early European explorers. There is considerable potential to develop tourism in the park.

The Region has been the subject of Aboriginal land rights' claims which have been reaffirmed with the traditional owners entitled, by tradition, to use or occupy the land. The Region also contains valuable minerals and is especially rich in uranium. Besides the important question of the impact of mining operations on the national park, especially on wetlands and wildlife habitats, there is the problem of the implications of mining on the culture and future welfare of the Aboriginal people. The traditional Aboriginal land owners indicated their wish, if their claim was granted, to lease the land to the Australian National Parks and Wildlife Service to be managed as a national park. As part of the lease agreement the Service is required to provide training for Aboriginals in park management, and to facilitate resettlement in the park. Other interests to be considered are commercial fishing for barramundi, grazing, scientific research, tourism, and stores which sell supplies, including alcohol.

Difficult management problems that need to be resolved arise from the protection of endangered native species and the prevention of poaching, for example, of crocodiles over a large area with few roads. The abundance of certain introduced species, such as buffalo and pigs, is a matter of serious concern. These exotic animals, besides having adverse environmental effects, are seen as health hazards with the possible transfer of stock and human diseases southwards from Asia to the south of Australia. The spread of stock diseases, such as bluetongue and foot and mouth, would have far reaching consequences.

In seeking resolution of these issues regard has to be paid to the political implications of the progress of the Northern Territory towards statehood, the different approaches of political parties, trade union involvement, the polarization of ideology between conservationists and developers, and the understandable desire of the Aboriginal people to protect their cultural heritage and to have a greater role in land management. Other considerations are the differences in the Australian community as a whole with respect to depreciation of Aboriginal
culture. There are also international considerations since Australian uranium is expected to be an important component of international trade with energy deficient countries.

THE FUTURE

The national park movement in Australia is in a period of relatively rapid transition. Encouragement can be derived from the increasing cooperation that is developing, not only among the relevant state and Commonwealth agencies responsible for national parks, but also with other government agencies such as forestry, defence, and transport and with voluntary conservation bodies and the public in general. Discussions on the objectives of national parks, the inclusion of national parks as a component of comprehensive land use programmes, planning for marine national parks, and the growth of public interest in national park establishment and management are evidence of a dynamic approach which promises well for the future in placing the national park movement on a more rational and professional basis.
INTRODUCTION

If we are to effectively manage our national coastal and marine resources, we must develop coordinated regional efforts. In the past, we seriously have altered and reduced the health of our seas by considering them free to all nations, boundless, and invulnerable. These were ideas of Hugo Grotius (1972) who wrote Mare Liberum, or Freedom of the Seas, in 1609, and they formed the basis for our exploitative use of the seas for the next 370 years! The ideas clearly are inappropriate today. In Canada, particularly, where we have the largest total coastline in the world, and the second largest continental shelf, we have a responsibility to properly manage our coastal and ocean resources.

Certainly, planning and managing the coastal and marine environment are more complex than land planning and represent our great challenge. For although we have accepted comprehensive regional planning for the land, we have not yet universally accepted a similar principle for our seas. When we do strive for regional planning of our coastal and marine areas, we cannot simply apply traditional land use planning approaches. There is a big difference in planning for a relatively stable environment and planning for one that, apart from being much larger and more complex, is constantly on the move!

We now have new approaches to regional planning and management for coastal and adjacent ocean zones and we can apply them, as is shown later on in Case studies 1, 2, and 3 towards the end of this paper. An important part of such management can be carried out through independent networks of marine parks and reserves that functionally are related to one another. But we should not confuse the approach to planning marine parks with that of planning land parks. For example, on land, we can define a priority area within a boundary line as a park or reserve and manage it as a protected area. This
park may serve, among other things, as an example for management for unprotected areas. But, although we can define boundaries for a marine park, we cannot effectively manage it as a stable protected area; there is no such thing as territorial water for more than brief periods at a time. Here, we must manage man's activities within the larger ecosystem, of which the marine park is only a part. This requires a comprehensive regional overview of coastal and marine resources and their uses.

Fortunately, with marine parks and reserves, we can turn the apparent problems of large size and constant change and motion to our advantage. The parks can serve as dynamic models, directly influencing coastal and ocean activity because they work as they do, not at a distance from, but within this changing environment. And since one park functionally can be connected to another through monitoring and so on, we can gain even more comprehensive analysis for our management programmes through the comparison and contrast of various factors. Indeed, if coastal national parks could be extended to include a marine component, we would have greater influence on fisheries, coastal and marine habitats, water quality, oil and gas transport, and so on, all of which also may be necessary to effectively manage the terrestrial resources of such parks!

To understand the need for marine park and reserve systems and other programmes, it is valuable to consider, at least briefly, the characteristics of the marine environment and the conflicts within it.

**THE MARINE ENVIRONMENT**

**GENERAL CHARACTERISTICS**

The following discussion, derived from Ray (1976), outlines some of the important factors we face in coastal and ocean planning. On land, life exists on the earth's surface as a thin layer, surrounded by an atmosphere that is relatively uninhabited by life on a permanent basis. But life in aquatic systems occurs in three dimensions: on the water's surface, within the water column, and on the bottom. It is easy to understand, then, that the marine environment is composed of the largest ecosystems in nature. We therefore need a regional overview to manage it.

Added to this complexity is the constant motion of the aquatic environment, as mentioned, as well as the constantly changing texture, caused by currents, eddies, circulation cells, upwellings, salinity, temperatures, and thermoclines. Rainfall and land drainage carry terrestrial and atmospheric nutrients, pollutants, and silt to the sea. The downstream effect refers to the mobility of silt, pollutants, nutrients, and organisms over great distances. And organisms can move both laterally and vertically through the ocean providing short circuits to nutrient and pollutant transfer.
Such features require broad regional monitoring and flexibility in our management programmes.

Spatial and seasonal alterations of inshore and offshore features reflect the most dynamic of all natural processes. Migrations of mammals, fish, and mini-organisms occur seasonally, daily, and hourly. The planning system must allow for such variations.

Another important consideration for marine environmental planning is that most aquatic animals are not sealed off by a relatively impervious skin as most land animals are. Since most aquatic organisms are in physiological continuity with water, they are vulnerable to foreign substances and pollutants. Water quality, therefore, is an essential consideration for conservation.

Within this dynamic environment, there are renewable and non-renewable resources which are among the world's most valuable. Understanding and resolving the threats to them, and the conflicts among uses, is a major objective of coastal and ocean planning.

CONFLICTS IN THE MARINE ENVIRONMENT

One of the most valuable uses of our oceans is the extraction of living resources, through fisheries, for the world's consumption. The economic value, in fact, is greater than that from oil, gas, or mineral exploitation (Ray, 1970). Representing five percent of the world's area, the productive continental shelf supports about two-thirds of the world's population. But the area suffers from many conflicts of use.

As one of the most important realms of human settlement and centres for industry, the coastal zone receives the bulk of human impact in development, dredging, mining, and waste and thermal discharge. In the past, the oceans have had a miraculous capacity to absorb, digest, and degrade contaminants. But many scientists fear we are now reaching the limit of that capacity.

As our population and living standards increase, so will our waste. There will be more tanker traffic, deep oil drilling rigs and pipelines, and huge under-sea storage tanks. The possible dark plumes of red clay discarded at 15,000 feet from deep-sea mining of manganese nodules are a potential threat. A one-in-a-million leak from a floating nuclear power plant could result in destruction of all life on earth (Frank, 1975).

Even without such accidents, failure to adopt a comprehensive environmental protection system will lead to the pollution of the world's ocean in the fullest sense. The establishment of a world-wide system of marine parks and reserves as part of regional coastal and ocean management programmes offers us the potential to help change this momentum.
THE POTENTIAL OF MARINE PARKS AND RESERVES HAS BEEN DISCUSSED AT CONFERENCES SUCH AS THIS FOR MANY YEARS, BUT WE HAVE BEEN SLOW TO ACT. IN 1962, FOR EXAMPLE, AT THE FIRST WORLD CONFERENCE ON NATIONAL PARKS IN SEATTLE, IT WAS RECOMMENDED THAT NATIONS ESTABLISH MARINE PARKS AND RESERVES AND EXTEND COASTAL NATIONAL PARKS TO SOME OFFSHORE BOUNDARY.

UNFORTUNATELY, EVEN NOW, TO MANY PEOPLE THE TERM **MARINE PARK**, IF IT MEANS ANYTHING AT ALL, SUGGESTS A CENTRE FOR SCUBA DIVING, SNORKELING, BOATING, AND SWIMMING. TO OTHERS, IT SUGGESTS THE JAPANESE MODEL THAT OFTEN HAS AN UNDERWATER OBSERVATION TOWER AND GLASS-BOTTOMED BOATS. THESE ARE BY NO MEANS COMPLETE IMAGES OF WHAT MARINE PARKS CAN BE.

SUCH IDEAS, THOUGH, ARE NOT EASY TO OVERCOME BECAUSE IT IS DIFFICULT TO GIVE A STRICT DEFINITION OF A MARINE PARK. THIS IS BECAUSE IN MOST CASES WHAT A MARINE PARK IS, AND WHAT IT COULD AND SHOULD BE, ARE ENTIRELY DIFFERENT. THIS IS COMPLICATED BY THE FACT THAT A MARINE PARK SHARES THE QUALITIES OF NATIONAL PARKS, ÉCOLOGIE RESERVES, INTERNATIONAL BIOLOGICAL PROGRAM (I.B.P.) SITES, WORLD HERITAGE SITES, MARINE SANCTUARIES, AND BIOSPHERE RESERVES.

ONE COULD GIVE A FAIRLY ACCURATE DEFINITION OF THE PHYSICAL FORM OF A MARINE PARK OR RESERVE, BUT DESCRIBING ITS POTENTIAL FUNCTIONS GIVES MORE PEOPLE SOME INSIGHT INTO ITS REAL VALUE. FIRST, THOUGH, ACCORDING TO THE PHYSICAL FORM, ONE COULD SAY THAT A MARINE PARK OR RESERVE IS AN AREA OF SUBMERGED LAND AND THE WATER COLUMN ABOVE IT, WITH OR WITHOUT THE ADJACENT COASTAL LAND. THIS AREA IS DESIGNATED BY A GOVERNMENT AGENCY AS A MANAGEMENT UNIT, WITH SPECIFIC GUIDELINES FOR ACTIVITIES. IT MIGHT BE OF VALUE TO POINT OUT THAT A COASTAL PARK IS NOT STRICTLY A MARINE PARK SINCE THE REGULATION OF ACTIVITY STOPS AT THE WATER'S EDGE. STATISTICS ON THE NUMBER OF MARINE PARKS AND RESERVES IN THE WORLD APPEAR TO BE OUT OF DATE, BUT ACCORDING TO BJORKLUND, IN 1974 THERE WERE 115 MARINE PARKS AND SIXTY COASTAL PARKS (BJORKLUND, 1974). IN MANY CASES, THESE ARE SIMPLY BOATING PARKS OR AREAS DESIGNATED AS MARINE PARKS WITHOUT PROPER MANAGEMENT PLANS.

AS TO FUNCTION, A MARINE PARK OR RESERVE CAN SERVE CONSERVATION, RESEARCH, AND EDUCATION AS WELL AS RECREATION. AND IT IS THROUGH SYSTÈMES OF MARINE PARKS AND RESERVES THAT WE CAN GAIN REGIONAL AND INTERNATIONAL COOPERATION TO HELP IMPLEMENT REGIONAL COASTAL AND OCEAN MANAGEMENT PROGRAMMES. SOME OF THE MAIN FUNCTIONS ARE DISCUSSED BELOW IN GREATER DETAIL TO SHOW HOW THIS IS POSSIBLE.
FUNCTIONS

Conservation

Conservation is the main objective of marine parks and reserves. It includes the management of marine habitats, species, and ecosystem processes. Since some protected areas are too small to preserve all the elements required by some species, we can use a marine park or reserve as a node to provide baseline data. We can then compare and contrast these data with information derived from other nodes, or other marine parks, as well as with areas outside of the parks where, for example, human development and perturbations are heavier. By reviewing and synthesizing evolutionary, ecologic, and genetic data in these different areas, we can apply our findings to develop conservation management policies for the region.

Since marine ecosystems are large and mobile, buffer zones with management guidelines may be required as well. These must be defined through ocean management programmes. Ultimately, the guidelines formulated for marine parks and reserves can provide models that can be extended to help maintain the ecological health of larger coastal, marine, and riverine systems.

Research and Monitoring

As pollution and other threats increase, more sophisticated data collection techniques are required for monitoring and developing appropriate remedial action plans. At the Regional Meeting in Iran in 1975, parks and reserves were described as companions to man's use of nature in which maximum compatibility to man's use of nature may be investigated and achieved (International Union for Conservation of Nature and Natural Resources, 1976).

Meeting this objective requires research and monitoring within and among various parks and reserves and also throughout the larger ecosystem of which they are a part. Again, the node function of marine parks can give us the comparisons and contrasts we need for research and monitoring. Regional research can be connected by monitoring networks or programmes to other parks and to other national and international programmes for both land and sea management.

Regional management programmes are proposed by the current Law of the Sea discussions. These programmes easily could include marine parks and reserves. In spite of certain limitations, the recommendation, in Part III of the Informal Single Negotiating Text, to establish Regional Marine Scientific and Technology Centres is a good one (United Nations, 1975). Marine parks could help establish or actually serve as these centres for developing plans and guidelines for marine resource management, and also become the work-horses for carrying out necessary regional action.
Research and conservation require much public cooperation and support. Education, then, is important as another function of marine parks and reserves.

**Education**

Strict marine reserves, where people are more or less excluded, will not be successful unless people are aware of the significance and relevance of such parks to them. A marine park or reserve can provide the forum to teach the complexity and oneness of the biosphere and conservation for the ocean system. To do this, the important theme would be, *People, Land, and Sea.*

We should remember that public awareness often depends on people being able to experience the marine environment in suitable areas. Sir Peter Scott, an eminent British naturalist, believes that *more use should be made of submarine observation tanks and that there should be further design and development of glass-bottomed or rather glass-sided boats.* He maintains that *if people are to mind about marine habitats, it is important to let them see them, to enter into them, or at least look at them through a window* (Scott, 1972).

Such underwater towers and glass-bottomed boats are used in Japan where three million visitors a year see the beautiful undersea life. The Japanese now are planning comprehensive educational programmes to complement these facilities. Graphic displays, aerial photography, underwater T.V. cameras, aquariums, and films can be used for such programmes where appropriate.

Other themes for interpretative programmes could even include the information gained from the planning, management, and design process for parks and park systems by discussing the criteria used for selecting each park site, that is, the interrelationships among climate, geology, oceanography, marine ecology, history and archeology.

In addition, recreation activities that are compatible with park objectives can be directed toward greater public awareness. These could include underwater photography, scuba diving, and snorkeling, if organized for the appropriate areas.

Although we have been slow to act, the potential of marine parks remains great. The following discussion shows the main events of the marine park movement to date.

**HISTORY**

Bjorklund (1974), Gare (1976), Ray (1976), and Wallis (1971) all have written about the history of the marine park and reserve movement. Dr. G. Carleton Ray, of The John Hopkins University has written extensively on marine parks and reserves since the
1950's, and has developed important ecological principles for their selection and management.

At the First World Conference on National Parks in Seattle in 1962, Ray emphasized the interdependence and oneness of the land and sea. He appealed for action to press for marine as well as terrestrial sanctuaries and for regulations over our marine activities (Ray, 1962). At the Second World Conference on National Parks in 1972, Ray emphasized that marine parks and reserves can exist only within the framework of regional management, including land and sea, or else they will not work at all (Ray, 1974).

At the Regional Meeting of 1975 on Marine Parks and Reserves in the Northern Indian Ocean, including the Red Sea and the Persian Gulf, two important recommendations were made: 1) national parks and reserves should be established as an integrated part of regional development of coastal and marine areas; 2) procedures should be established to plan and manage regional and national systems of marine reserves (International Union for Conservation of Nature and Resources, 1976).

Several recommendations also were made at the International Conference on Marine Parks and Reserves in Tokyo in 1975. These included international agency assistance to countries to promote regional systems of reserves and to implement surveys of coastal and marine environments. At this conference, the atoll of Manuae was presented to the world by the Cook Islands as the first marine park for world science.

This represents only a segment of the world-wide discussions about the value of regional systems of marine parks and reserves. We know that they can help us. But what is Canada's status with marine parks?

**CANADA'S MARINE PARKS AND RESERVES**

There is no formal national marine parks or equivalent reserves policy in the National Parks Act for Canada. In addition, there often is disagreement of federal and provincial jurisdictions over offshore areas. These factors have hindered the establishment of marine parks and reserves in this country.

Although Parks Canada has completed a series of excellent regional and site specific studies, they presently administer only four national parks with marine components. These are Kouchibougouac, Forillon, Pacific Rim and Auyuittuq National Parks. The total aquatic area of coastal reserves is approximately 500 square miles, (Claude Mondor, personal communication). Pacific Rim National Park, located on the west coast of Vancouver Island, unfortunately has an arbitrary straight-line boundary, without any apparent reference to marine organisms or processes (Duncan Hardie, personal communication).
In addition, we have only one provincial underwater park. This is Fathom Five Provincial Park in Tobermory, Ontario, between Georgian Bay and Lake Huron. It is probably the first underwater park in the world, and the author was involved in the planning of this park (Strong Moorhead Sigsby Limited, 1973). The park is intended to accommodate educational and recreational activities as well as conservation and research. It includes thirty-nine square miles of water and a 333 acre land base. If other islands are purchased to be included, eleven square miles will be added. The offshore boundaries are legislated, but not totally resolved. The province owns the lake bed and the federal government owns the surface rights (Robert Beatty, personal communication).

British Columbia has no underwater parks designated for the explicit management of marine organisms. There is, however, a network of boating marine parks in the Georgia Straights (Bryan Price, personal communication).

In Newfoundland, there are no provincial parks with a marine component, but an effort has been made to select coastal parks that eventually may include, or at least offer some management over, offshore components (Don Hustins, personal communication). In the existing parks, the interpretation of marine resources through displays and films is becoming an important aspect of the provincial programme.

Recently, after a twenty million dollar international study, we learned that the Great Lakes are so polluted that control measures may not be enough to save them. We should investigate the role of a network of Great Lakes Aquatic Reserves to manage the most vulnerable areas and establish permanent sites for education, research, and monitoring. This also might help to increase public awareness of the problems throughout the Great Lakes Basin and help the International Joint Commission to distribute and collect information.

But any system of marine parks and reserves, in Canada or elsewhere, must be considered as a part of a larger plan that includes other national, international, and global programmes in coastal and marine resource management. These programmes, like marine parks and reserves, still have some distance to go before reaching their fullest potential.

OTHER COASTAL AND OCEAN MANAGEMENT PROGRAMMES

NATIONAL PROGRAMMES

In the United States, the Coastal Zone Management Act of 1972 offers a forum for each coastal state to determine its high priority coastal and marine areas and begin to address its resource use conflicts. Unfortunately, some state plans include little emphasis on the
analysis of the nearshore environment and this results in a coastal land use management rather than a comprehensive coastal and ocean management.

The U.S. is developing an ocean management programme for the proposed 200 nautical mile Exclusive Economic Zone (E.E.Z.) (Brown, 1978). One of the main issues in the Law of the Sea negotiations deals with management of the E.E.Z. Nations are extending their legal/jurisdictional boundaries out 200 nautical miles into the sea and they must develop appropriate ways to manage their new coastal and ocean resources (Dobbin, 1976a).

In Canada, with our highly vulnerable coastal areas and tremendous interests in fishing and oil exploitation, we are without a comprehensive coastal zone management plan. The first meeting of all federal and provincial ministers who are concerned with coastal zone issues was held in Victoria in the first week of October, 1978.

For ocean management, Canada still appears to be following a sectoral approach; individual agencies or shotgun marriages of agencies are responsible for separate aspects of ocean management without an overall integration of efforts. Fortunately, though, the Canadian Coast Guard and the Fisheries and Marine Service are now identifying the conflicts between fisheries and maritime transportation within Canada's Fishing Zones 4 and 5, which are within the 200 mile limit on Canada's east and west coasts. This represents Canada's first ocean management project. The author applied his newly developed mapping system to this project. The results currently are under review by the Government of Canada and, therefore, unfortunately cannot be presented here.

INTERNATIONAL PROGRAMMES

The General Assembly of the International Union for Conservation of Nature and Natural Resources (I.U.C.N.) met in Zaire in 1975 to seek methods to integrate marine conservation into a regional pattern of ecodevelopment (I.U.C.N. Bulletin, 1976). The action taken to date includes a series of background papers, conferences, workshops, and surveys. Meetings have taken place in Italy, New Zealand, Iran and Japan. Surveys have been made of the Persian Gulf, the South Pacific, and the Indian Ocean. The Caribbean Sea now is being studied by a team that includes the author, and that study is discussed later in this paper.

The I.U.C.N. has been collaborating its efforts with those of the United Nations Environmental Programme (U.N.E.P.) which is promoting regional and international conventions. U.N.E.P. advocates plans to control pollution, protect marine life, and assess, monitor, and exchange information on marine pollution and living resources within its Regional Seas programme. To study regional activities in specific bodies of water, U.N.E.P. intends to develop model plans for the Mediterranean Sea, the Persian Gulf, the Caribbean Sea, the Red Sea, the Gulf of Guinea, Indonesia, the South Pacific, the Southern Oceans, and the west coast of South America. All these regional seas' activities require comprehensive regional planning.

Global networks of biosphere reserves are being proposed under the U.N.E.P.'s and the I.U.C.N.'s programmes and under the United Nations Educational, Scientific, Cultural Organization's Man and Biosphere Programme (M.A.B.) (Ghabbour, 1976).

Certainly, we must continue our research and study to improve our methods and our programmes. But more important, we must effectively apply the knowledge we have. Existing planning methods, tools, and techniques must be used to make this information available to scientists, the public, politicians, and decision-makers. Our ecological principles, our planning methods, and the recommendations of conferences only will be truly useful when they are translated, through systematic processes, into action plans.

COASTAL AND MARINE RESOURCE PLANNING

GENERAL DISCUSSION

We have seen that planning for the marine environment requires full knowledge of the ecological and socioeconomic process that influence an area. The ecological approach to regional planning for the land already has been accepted as necessary for the land. McHarg's (1969) Design with Nature is a clear and forceful argument for this approach.

Harold Coolidge (1975), Honourary President of I.U.C.N. suggests that park and reserve planning, if it is to be effective, should be coordinated with the requirements of economic development. When considering economic and ecological significance, it is of value to remember the meanings of the words. While ecology, as defined in the 1964 edition of the Oxford dictionary, deals with living organisms' habitats, modes of life, and relations to surroundings, the term economy is not as different as we tend to think. Economy, again, as defined in the Oxford dictionary, refers to the administration of concerns and resources of a community. Certainly, the goals of development and conservation must be similar if we are to manage our resources well. Ecological Principles for Economic
Development by Dasmann, Milton, and Freeman (1974) offers excellent guidelines to development planners and decision-makers.

While a regional overview is essential to understanding the complex interrelationships of our environment and its uses, planning methods must accommodate this need. In a sense, we must plan on two levels. First, we must complete a regional analysis to identify the high priority areas, or hot spots, the support systems for them and the threats to them. These hot spots may include areas of multiple high value resources or those which are unique or representative. Then, to develop guidelines for planning, design, and management, we must prepare a detailed site specific analysis of these hot spots, in the context of the larger region (Dobbin, 1976d).

Our challenge is ultimately one of design. Professor Michael Kim, an architect at Harvard University, suggests that the overall success of any design depends on how well the sub-systems are integrated into a larger system creating a positive synergy. Kim (1978) believes that design is creation of value through the manipulation of a situation, or through cleverly putting pieces together. The desired state must be achieved without yielding undesirable consequences.

Our ocean planning methods must allow such a design. We need a fresh, new perspective of integrated coastal and ocean resource planning. Instead of merely trying to correct problems when they become critical, we must anticipate and resolve them before they occur. Rather than reactions to crises, we need planning and design that look to the future (Dobbin, 1976d).

The importance of an interdisciplinary approach to meet this objective cannot be overemphasized. In many cases, the immediacy of a problem is identified within separate fields or disciplines, but communication and integration of information often is lacking. Knowledge should be shared among marine scientists, engineers, planners, economists, international affairs' experts, decision-makers, and the public. The most effective role of any planner is not to plan by himself, but to facilitate planning by and with others (Ackoff, 1974).

For this reason, we must put existing data into a format that all disciplines can understand. Mathematical equations, for example, would be unlikely to serve this purpose, but environmental mapping systems have proven valuable for this purpose.

In addition to understanding the existing status of the environment, we must be able to realize the consequences of possible actions before they are carried out. This is why the tools and techniques of marine resource management are very important.
TOOLS AND TECHNIQUES

An ideal toward which we could strive for effective planning could be an electronic display screen set in a scientific research laboratory. Here, we could store marine resource data on a computer and retrieve them as needed. Satellite and aircraft imagery could supply information to update this data bank. In view of all the participants of a study team, representing various disciplines and interests, we could manipulate the information to develop predictive models and scenarios to help us understand and resolve conflicts before they occur. We also could use such a screen for public education programmes.

In the future, we may develop such sophisticated techniques to represent all the dimensions of the sea. For now, we have mapping, modelling, and graphic techniques, as well as satellite and aircraft imagery as important tools that should be used. With LANDSAT imagery, for example, we can study a relatively large area under the same conditions, at the same time of day, and on a planned recurrent schedule. The author tested the effectiveness of LANDSAT and aircraft imagery for regional analysis in the selection of sites for marine parks and reserves and for data collection. The technique proved to be highly valuable for gaining a regional overview of resources (Dobbin, 1976a; Dobbin, 1978). Figure 30.1 illustrates the analyses of the Fathom Five Provincial Park area in the Great Lakes.

A useful ocean planning tool that the author has developed is Systems Analysis Mapping or S.A.M. (Dobbin, 1976b; Dobbin, 1976c; Dobbin, 1976d). This is a refined overlay mapping system that is based on the IMGRID computer mapping system and the hand-drawn data file system designed by Steinitz, Sinton, and others at Harvard University (Steinitz, Parker, and Jordan, 1976). During research into marine parks and reserves and coastal and ocean planning, the author, also at Harvard University, developed the S.A.M. method as a vehicle to apply his principles of coastal and ocean planning. S.A.M.'s effectiveness first was proven by the author in 1976 in a case study, described later, for the United Nations on the Persian/Arabian Gulf.

Systems Analysis Mapping, as a hand-drawn data file mapping technique, approaches the efficiency of a computer mapping system without the high costs. It combines the analysis, or breaking into parts, of a study problem with the synthesis, or bringing together of separate elements into a whole. It is therefore useful in fitting together the pieces of a predictive model or regional plan.

With the method, a series of maps are drawn to establish a data atlas. These maps show many kinds of existing information, such as biological, socioeconomic, legal/jurisdictional and so on, at comparable and compatible scales. Information is transferred from the data atlas to acetates and weighted in colour densities according to quantitative and qualitative values. The acetates can be selectively re-combined on a planning board with special registration...
FIGURE 30.1 Interpretation of LANDSAT Imagery for Fathom Five Provincial Park using Densitometric Analysis Techniques.
pins to show any number of analyses quickly and easily without re-drawing. It is then possible to see concentrations of resources, conflicting uses, and potential problems. Since the sub-variables also are displayed in the analyses, the criteria that were used are evident. At the same time, areas deficient in information are highlighted to show where new study should proceed.

The method goes beyond traditional overlay mapping since it allows the development of dynamic, predictive ecological models. It serves as an important ocean planning tool since it allows the all-important function of testing solutions according to how various options relate to time and season and other variables. Also important is that decision-makers and others, including the public, can more easily understand displays of complex scientific data and analyses.

S.A.M. may be seen as a useful interim tool before going to more expensive computer methods when data become more extensive. The efficiency of S.A.M. and the value of a regional overview as a first step in marine park and reserve planning were demonstrated in the case studies that are described briefly here.

SELECTED PROJECTS

Case Study 1: Coastal and Marine Resource Planning for the Persian/Arabian Gulf

The author completed this study for the United Nations, Ocean Economics and Technology Office, in 1976 (Dobbin, 1976c). The objectives were to demonstrate the following to the eight nations surrounding the Gulf: 1) the need for integrated land-sea planning; 2) the need for regional co-operation in management of coastal and marine resources; and 3) the application of new planning tools and techniques, especially S.A.M., that are available for regional coastal and marine resource management and development.

From available, but uncoordinated sources, the author developed a regional coastal and marine data base of biophysical resources and socioeconomic activities in the Persian/Arabian Gulf. These included transportation systems, fishery activities, oil and gas activities, urban centres, existing and proposed marine parks and reserves, coastal and marine geomorphology, oceanography, hydrology, and coastal and marine ecology.

Using this data base, two types of analyses were completed. The first type simply overlayed two data maps to show possible geographic and functional relationships. Three series of these maps represented the various human/environmental relationships, such as oil and gas activities, with oceanographic processes. This process highlighted possible areas of conflict and, therefore, the places where future study should occur.

The second type of analysis used S.A.M. to illustrate the method of developing predictive models of vulnerability, attractiveness,
and potential impacts. Sub-variables were weighted in various densities of colour according to their importance and then combined using iterative processes. A predictive model of the entire Gulf was prepared to illustrate which areas were most vulnerable to marine pollution according to the criteria in the data bank and general knowledge.

The darkest areas in Figure 30.2 are the most vulnerable according to the following criteria: high salinity; shallow water; critical marine habitats; and poor circulation.

The darkest areas in Figure 30.3 are the most attractive for industrial location according to the following criteria: coastlines with strong currents; proximity to freshwater; flat, no sabka or marshes; and proximity to transportation networks.

The dark grey and black areas in Figure 30.4 show sites of potential impacts of industry on certain places in the environment. This analysis results from combining the attractiveness and vulnerability models. In the colour version of this illustration potential impacts clearly are visible when green and red combine to form black. This identifies where scientific study should take place at either a national or regional level to help prevent or alleviate future problems. This synthesis also identifies where industrial development may take place with least damage, and thus helps to solve both economic development problems and conservation requirements.

This study illustrates the need for a comprehensive regional overview to identify the marine conservation issues that should be addressed by a system of marine parks and reserves. By analysing these issues through the attractiveness, vulnerability, and impact models, we begin to 1) develop the criteria for marine park and reserve selection; 2) establish the potential conflicts and compatibilities among biophysical and socioeconomic activities; 3) locate the priority areas, such as critical marine habitats, concentrations of multiple living resources and support systems, and areas requiring further research; and 4) determine the urgency for action. From here, we can carry out detailed park and reserve selection, planning, and design according to the particular needs of the region.

Case Study 2: Systems Analysis Mapping: Identifying Critical Habitats of Marine Mammals

Dr. G. Carleton Ray and Rod Salm, of The Johns Hopkins University, and the author completed this study for the U.S. Marine Mammal Commission. Our work served to identify the critical marine habitats and to show the interrelationships among marine mammals, their habitats, and human activities. We used the Pacific walrus in the Beringea region as a case study, but the methods can be applied to the management of any number of species. The result of this work was published in *Oceanus* (Ray, Dobbin, Salm, 1978).
POOR CIRCULATION
HIGH SALINITY
SHALLOW WATER
HIGH TEMPERATURE
CRITICAL MARINE HABITATS

United Nations
Department of Economic and Social Affairs
Charts Prepared by James Dobbin, Consultant
To The Ocean Economics and Technology Office

FIGURE 30.2 Vulnerability Model: Marine Pollution.
FIGURE 30.3 Attractiveness Model: Industrial Location
POOR CIRCULATION
HIGH SALINITY
SHALLOW WATER
HIGH TEMPERATURE
CRITICAL MARINE HABITATS
PROXIMITY TO FRESHWATER
FLAT, NO SABKA OR MARSHES
COASTLINES WITH STRONG CURRENTS
PROXIMITY TO TRANSPORTATION NETWORK

United Nations
Department of Economic and Social Affairs

Charts Prepared by James Dobbin, Consultant
To The Ocean Economics and Technology Office

FIGURE 30.4 Potential Impacts: Industry versus Pollution
To form management strategies for the walrus, we developed a series of predictive models using Systems Analysis Mapping. The first model (Figure 30.5) defines the areas where the walrus is most vulnerable according to habitat and life history requirements. The second model illustrates the interrelationships of these critical habitats with the ecological support systems such as currents, bays, lagoons, estuaries, and rivers (Figure 30.6).

We then prepared a model to see where socioeconomic activities might be concentrated in the future. We weighted each according to the potential influence on the walrus. Figure 30.7 shows the concentrations of existing and potential socioeconomic activities.

Figure 30.8 combines all these analyses to show the conflicts among critical habitats. The support systems, and human activities. In this way, we could identify high priority management areas for sustaining the highest population of walrus.

Finally, the highest priority areas were combined with the jurisdictional information to establish responsibilities for action on regional, national, and international levels (Figure 30.9).

With respect to marine parks and reserves, this study illustrates a method for identifying core and buffer areas for management.

Case Study 3: Preparing a Marine Conservation Strategy for the Caribbean Region

A team, commissioned by the International Union for Conservation of Nature and Natural Resources and including Ray and the author, prepared a marine conservation strategy for the Caribbean. We first developed a comprehensive atlas of the environmental, habitat, species, socioeconomic, and legal/jurisdictional data. We then applied Systems Analysis Mapping to identify the concentrations of living resources, support systems, and socioeconomic activities and conflicts and compatibilities throughout the region.

The work was presented in Ashkhabad, Russia, as a model for I.U.C.N.'s World Conservation Strategy. It is intended for use by the United Nations Environmental Programme for their Regional Seas Programme. The project gives international agencies an approach for identifying coastal and marine priorities for conservation and development action on a regional basis. We now are preparing this work for publication under contract to I.U.C.N.

Another associated project, headed by Kenton Miller and Allen Putney, through the School of Natural Resources of the University of Michigan, analyzed the priority areas. Miller and Putney now are developing an approach for a marine conservation programme.

As with the Persian Gulf study, this study illustrates the need for a comprehensive regional overview to establish the priority areas for management. It is apparent that, in the Caribbean region, greater attention must be placed in establishing marine parks and reserves in areas where living resources and important
Distribution: Walrus
Concentration: Walrus
Low Food Supply
Pupping Areas

Summer Currents
Coastal Nutrient Sources

Critical Habitats of Marine Mammals:
Analysis and Approach

U.S. Marine Mammal Commission

G. Carleton Ray
Rodney V. Salm
James A. Dobbin

FIGURE 30.5 Vulnerability of Walrus' Habitats.
Distribution: Walrus
Concentration: Walrus
Low Food Supply
Pupping Areas

Critical Habitats of Marine Mammals:
Analysis and Approach

U.S. Marine Mammal Commission

G. Carleton Ray
Rodney V. Salm
James A. Dobbin

FIGURE 30.6 Critical Habitat Support Systems
Transportation Systems
Fishing Activities
Oil and Gas Activities
Native Activities

Critical Habitats of Marine Mammals: Analysis and Approach

U.S. Marine Mammal Commission

G. Carleton Ray
Rodney V. Salm
James A. Dobbin

FIGURE 30.7 Concentration of Socioeconomic Activities
Distribution: Walrus
Concentration: Walrus
Low Food Supply
Pupping Areas
Transportation Systems
Fishing Activities
Oil and Gas Activities
Native Activities
Summer Currents
Coastal Nutrient Sources

Critical Habitats of Marine Mammals:
Analysis and Approach
U.S. Marine Mammal Commission

G. Carleton Ray
Rodney V. Salm
James A. Dobbin

FIGURE 30.8 Potential Conflicts
FIGURE 30.9 Responsibility for Action
support systems are concentrated. This must be done in context with socioeconomic activities so that we know the threats with which the park system must deal. Presently, very few of the priority areas identified in this study are managed by marine parks or reserves, sanctuaries, fishery management zones, or coastal zone management programmes. This demonstrates the drawbacks of previous methods for park selection.

CONCLUSIONS

Many nations are extending their jurisdiction over the marine environment and are beginning to understand the need for international cooperation. Systems of marine parks and reserves can work in concert with other coastal and ocean management programmes to contribute to the effective conservation and development of the world's coastal and marine resources.

By completing studies similar to those presented here, where we identify resources, support systems, and socioeconomic activities in relationship with one another, we can determine what kinds of marine park and reserve systems we need and develop the criteria for their selection. Systems Analysis Mapping is a planning tool that gives us the regional overview needed to meet these objectives.

In Canada, before 1977, we controlled and managed approximately 55,000 square nautical miles of sea. Since that time, through extended jurisdictions, we now control almost twenty times as large an area, or 1,183,000 square nautical miles. Who should be responsible for developing systems of marine parks and reserves? Parks Canada? Environment Canada? A co-operative arrangement among agencies? A new agency altogether? This remains to be answered. No matter who assumes the task, it is clear that we need cooperation among government agencies and a marine park programme that is not merely a subsidiary of land park programmes.

Our theme at this conference is today and tomorrow. We have seen today's status of marine parks and reserves and their potential role for tomorrow in coastal and ocean management. Let us look forward to Canada's action tomorrow in developing regional systems of marine parks and reserves on all our coastlines. These can be a vital part of our national conservation and development strategy.

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REFERENCES CITED


PROTECTING THE WORLD’S HERITAGE

P.H. Bennett

For every nation its cultural and natural heritage is amongst its most important and priceless possessions. Because it is irreplaceable, any loss or serious impairment of that heritage is a tragedy. The most important and priceless heritage of all comprises those outstanding properties, cultural and natural, which generally are regarded to be of exceptional significance for the peoples of the world. For a variety of reasons, much of that world heritage now is being impaired or lost at an alarming rate.

Two significant efforts have been made at the international level in the past few years to try to arrest this process. The first is the United Nations Educational, Scientific, Cultural Organization (U.N.E.S.C.O.) Man and the Biosphere programme (M.A.B.); and the second is the U.N.E.S.C.O. Convention for the Protection of the World Cultural and Natural Heritage, known in short as the World Heritage Convention.

M.A.B. was officially launched at the 1970 U.N.E.S.C.O. General Conference. It is an inter-governmental, inter-disciplinary problem-solving effort and brings together natural scientists, social scientists, and decision-makers to solve problems between man and his environment. One of its most important objectives is to develop a world-wide system of Biosphere Reserves to include at least one conservation area in each of the world’s natural regions as defined by the International Union for Conservation of Nature and Natural Resources (I.U.C.N.). A Biosphere Reserve is a term originated by U.N.E.S.C.O. to apply to protected representative areas of the world, in which the diversity and integrity of plant and animal systems within natural ecosystems can be preserved for present and future use and study.

So far there are some 144 Biosphere Reserves in thirty-four countries. In many countries, national parks provide a foundation for the Reserves System. For example, in the United States one-third of the Reserves incorporate national parks; and all other U.S. Reserves are found on federal lands. Canada has one Biosphere Reserve already, Mont St. Hilaire, and now is in the process of establishing its second Reserve, in Waterton National Park abutting on the U.S. Biosphere Reserve in the American Glacier National Park.
Biosphere Reserves have three main purposes: 1) the maintenance of genetic diversity; 2) the provision of areas for ecological and environmental research and monitoring; and 3) the provision for education and training.

Each Biosphere Reserve must have adequate long term legal protection, and must be large enough to be an effective conservation management unit. Each should both encompass a natural area relatively undisturbed by man's activities and be surrounded by a buffer area. Each may include areas either that have had considerable human impact, including degraded landscapes that have experienced severe disturbances, or that rely on human interference for their continuing existence, for example, agricultural landscapes. Master plans for them will include the designation of core and buffer, or manipulative, zones; the development of scientific bases for corrective, or manipulative, management; an estimation of carrying capacities; and regulations governing access and activities within the core and buffer zones. The criteria for Reserves are very similar to those used for World Heritage List natural sites.

The M.A.B. programme is a recommended U.N.E.S.C.O. programme which does not have the binding and legal force of a U.N.E.S.C.O. Convention or Treaty such as the World Heritage Convention. Therefore, Reserve status can only assist in promoting greater environmental awareness and public understanding of conservation objectives; lend prestige to an area; and give it added moral protection.

The M.A.B. programme is, however, an important programme in the international conservation field, and deserves every support. It complements, rather than duplicates, the objectives of the World Heritage Convention. The latter, as mentioned above, has the binding legal force of a treaty on every state which adheres to the Convention, so that any natural property placed on the World Heritage List established under the Convention has a much greater degree of legal protection, and probably more assurance of an effective management programme, than does a Biosphere Reserve. Properties on the List also will be eligible for financial assistance for their protection if they are put on the World Heritage in Danger List.

Over the years, a number of Biosphere Reserves, or parts of them, will appear on the World Heritage List; but not all, since the List is intended to contain only those special natural properties considered under various clearly defined criteria to be of outstanding universal value, to quote one of the key phrases of the Convention. It should also be noted that any Biosphere Reserves that appear on the List are likely to be the core natural areas only and not the manipulative, degraded areas.

Almost immediately after the adoption of the M.A.B. programme, it became apparent that the Reserve programme would not be enough in itself to properly protect the key natural areas of the world. It also became apparent that the world cultural heritage was as much in need of urgent protection as the natural heritage. Accordingly the Member States of U.N.E.S.C.O. took a further major step at
their 1972 General Conference and unanimously adopted a Convention for the Protection of the World's Cultural and Natural Heritage, or the World Heritage Convention in short. It should be noted that in this context cultural refers to immovable properties and not to moveable works of art, which are covered under other international Conventions. The World Heritage Convention came into force late in 1975 when twenty-one Member States had ratified it.

The objective of the World Heritage Convention is to ensure, so far as is possible, the proper identification, protection, preservation, and presentation, or interpretation in North American terms, of the world's most significant cultural and natural heritage. It is intended to complement but not to compete with heritage conservation programmes at the national level. It provides for:

1. **The compilation of a World Heritage List** comprising those properties throughout the world, cultural and natural, which are considered to be of outstanding universal value in accordance with criteria to be established by the World Heritage Committee;

2. **The preparation of a List of World Heritage in Danger**, consisting of those properties on the World Heritage List, threatened in one or more ways specified in the Convention, which the World Heritage Committee considers to require major conservation measures for their protection and for which aid has been requested by the Member States concerned;

3. **The establishment of a World Heritage Fund** to provide aid to Member States in various specified ways;

4. **The provision, generally of technical assistance**, to Member States when requested, including the establishment of regional training centres for professional personnel where needed; and

5. **The general promotion**, throughout the world, of the importance of heritage conservation.

The World Heritage Convention also provides for the establishment of a fifteen-member World Heritage Committee of experts to be responsible for the carrying out of the five functions mentioned above. When the number of signatories to the Convention reaches forty, the size of the Committee will be increased from fifteen to twenty-one members. To date thirty-seven states have adhered to the Convention. Canada was elected to the Committee in 1976 for an initial two-year term.

To assist it in its work, the Committee receives, as specified in the Convention, administrative support from the U.N.E.S.C.O. Secretariat. Technical advice and assistance comes from the International Council of Monuments and Sites (I.C.O.M.O.S.) and the International Centre for the Study of the Preservation and the Restoration of Cultural Property, known as the Rome Centre, on the
cultural side, and from the International Union for the Conservation of Nature and Natural Resources (I.U.C.N.) of the natural side.

The first meeting of the World Heritage Committee was held at U.N.E.S.C.O. in Paris in the last week of June, 1977. It was an encouraging, constructive, and fruitful meeting, and political considerations virtually never intruded. This probably is due, at least in part, to a clause in the Convention specifying that Member States elected to the Committee must be represented by experts in the fields of cultural or natural conservation; not, by implication by diplomats or politicians. Rules of Procedure, the budget for the first year's work of the Committee, and Operational Guidelines all were adopted unanimously.

The Operational Guidelines are of special importance in that they will constitute the basis of the decisions regarding the implementation of the Convention which will have to be taken by all future Committees. They will of course be modified and added to as experience is gained at future meetings over the years. These Guidelines comprise the following main elements: 1) the criteria for inclusion of cultural sites to the World Heritage List; 2) the criteria for inclusion of natural sites to the World Heritage List; 3) the format and content of nominations for the World Heritage List; 4) the annual timetable for receipt of nominations; 5) the method of establishing the List of World Heritage in Danger; 6) the format and content of requests for international assistance; and 7) the list of organizations to be invited as observers to future Committee meetings.

Before deciding upon the criteria for the inclusion of properties on the World Heritage List, the Committee agreed on certain basic principles. The criteria themselves must enable the Committee to act with full independence in evaluating a property solely for its intrinsic merit and not for its suitability for assistance by the World Heritage Fund. There must be two separate sets of criteria, one for cultural and one for natural properties. Properties shall be included on the List according to a gradual process; and no formal limit will be imposed either on the total number of properties to be included in the List or on the number of properties any individual state can submit at successive stages for inclusion on the List. When a property included on the List has deteriorated to such an extent that it has lost those characteristics for which it was included, or when further research has shown that the property is not, in fact, of outstanding universal value, that property shall be deleted from the List.

All property included on the World Heritage List will carry a plaque, in a location which does not visually impair the property in question. The plaque will contain a World Heritage Emblem, to be designed through U.N.E.S.C.O., the name of the property, and a statement as to why it merits inclusion on the List. Finally, the Convention is not intended to provide for the protection of all properties of great interest everywhere, but only for a select list of the most outstanding of those from an international viewpoint. The Committee also agreed that in the case of the word
universal in the key phrase of outstanding universal value, opinions as to the significance of a property may vary from one culture or period to another and the word universal shall, therefore, be interpreted as referring to a property which is highly representative of the culture of which it forms a part.

The Guidelines then specify, in detail, the format and content of the nominations for inclusion on the World Heritage List and the accompanying documentation needed. The information required is under five main headings for each property: specific location; juridical status; identification, including a description, maps, photographs or films, history, and bibliography; state of preservation and conservation; and justification for inclusion on the World Heritage List.

Two items of information required on the Nomination Forms are the nature and degree of existing legislative protection for the property and a comprehensive management plan for it. These are significant factors in enabling the World Heritage Committee to reach a decision as to whether or not a property should be included on the List. However, at a meeting of the Bureau, or Executive Committee, of the World Heritage Committee in June this year, the Bureau expressed the view that sometimes developing countries might find it difficult to give cast-iron assurances on these two points in respect to potential World Heritage List properties that were clearly of exceptional importance; and that the Committee should, therefore, be prepared to take a risk in such instances and put the property on the List without the iron-clad assurances. The Bureau felt, in my view with good justification, that the act of putting the site on the List would accelerate both the enactment of the necessary legal measures by the country concerned and the preparation of a sound management plan.

Finally, the Guidelines contain three interesting suggestions to Member States. First, there should be a buffer zone around a World Heritage List property where it is appropriate and feasible. Second, in order to ensure the efficient carrying out of conservation measures on a World Heritage in Danger List property requiring aid from the World Heritage Fund, a single body, whether international, national, regional, local, public, or private, should be made responsible for carrying out the project. Third, Member States should, when possible, include in their nominations properties which combine in a significant way cultural and natural features of outstanding universal value.

Nominations to the List have to be sent to U.N.E.S.C.O. and will be screened quickly by it for completeness of documentation; they will then be sent to the I.U.C.N. and the I.C.O.M.O.S. for evaluation against the natural and cultural criteria respectively, and a recommendation as to whether or not they qualify. The first nominations were considered by the World Heritage Committee at its second meeting in early September, 1978. At that meeting the Committee also considered in what form the World Heritage List should be published and how the existence of the List can effectively be publicized. In the future, the Committee will meet
annually, probably in September or October, to consider nominations to the List.

The cultural and natural criteria to govern the inclusion of sites on the World Heritage List as stated in the Operational Guidelines are:

Criteria for the Inclusion of Cultural Properties

9. Outstanding universal value will be recognized when a cultural property, as defined in Article 1, of the Convention, submitted for inclusion in the World Heritage List is found to meet one or more of the following criteria. Therefore each property should:

i) represent a unique artistic or aesthetic achievement, as a masterpiece of the human creative spirit;

ii) be of outstanding importance owing to its influence, over a span of time or within a cultural area of the world, on subsequent developments in architecture, monumental sculpture, garden and landscape design, or human settlements;

iii) be unique, extremely rare or of great antiquity;

iv) be among the most characteristic examples of a type of structure, the type representing an important cultural, social, artistic, technological or industrial development;

v) be a characteristic example of a significant traditional style of architecture, method of construction, or human settlement, that is fragile by nature or has become vulnerable under the impact of irreversible socio-cultural or economic change;

vi) be most importantly associated with ideas or beliefs, with events or with persons, of outstanding historical importance or significance.

10. (a) In every case, consideration should be given to the state of preservation of the property (which should be evaluated relatively, that is, in relation to property dating from the same period and of the same type and category;

(b) In addition, the property should meet the test of authenticity in design, materials, workmanship, and setting; authenticity does not limit consideration to original form and structure but includes all subsequent modifications and additions, over the course of time, which in themselves possess artistic or historical values.
Criteria for the Inclusion of Natural Properties

11. Outstanding universal value will be recognized when a natural heritage property as defined in Article 2, (of the Convention), submitted for inclusion in the World Heritage List is found to meet one or more of the following criteria. Therefore properties should:

i) be outstanding examples representing the major stages of the earth's evolutionary history. This would include sites which represent the major "eras" of geological history such as "the age of reptiles" where the development of the planet's natural diversity can well be demonstrated and as the "ice age" where early man and his environment underwent major changes;

ii) be outstanding examples representing significant ongoing geological processes, biological evolution and man's interaction with his natural environment. As distinct from the periods of the earth's development, this focuses upon ongoing processes in the development of communities of plants and animals, landforms and marine and fresh water bodies. They would include, for example a) as geological processes, glaciation and volcanism, b) as biological evolution, biomes such as tropical rainforests, deserts and tundra, c) as interaction between man and his natural environment, terraced agricultural landscapes;

iii) contain unique, rare or superlative natural phenomena, formations or features or areas of exceptional natural beauty, such as superlative examples of the most important ecosystems to man, natural features (rivers, mountains, waterfalls), spectacles presented by great concentrations of animals, sweeping vistas covered by natural vegetation and exceptional combinations of natural and cultural elements;

iv) be habitats where populations of rare or endangered species of plants and animals still survive. This would include those areas where concentrations of animals of universal interest and significance are found.

It should be realized that individual sites may not possess the most spectacular or outstanding single example of the above, but when the sites are viewed in a broader perspective with a complex of many surrounding features of significance, the entire area may qualify to demonstrate an array of features of global significance.

12. In addition to the above criteria, the sites should also meet the conditions of integrity.
i) the areas described in 11. i) should contain all or most of the key interrelated and interdependent elements in their natural relationships; for example, an "ice age" area would be expected to include the snow field, the glacier itself and samples of cutting patterns, deposition and colonization (striations, moraines, pioneer stages of plant succession, etc.);

ii) the areas described in 11. ii) should have sufficient size and contain the necessary elements to demonstrate the key aspects of the process and to be self-perpetuating. For example, an area of "tropical rain forest" may be expected to include some variation in elevation above sea level, changes in topography and soil types, river banks or oxbow lakes, to demonstrate the diversity and complexity of the systems;

iii) the areas described in 11. iii) should contain the ecosystem components required for the continuity of the species or of the objects to be conserved. This will vary according to individual cases; for example, the protected area for a waterfall would include all, or as much as possible, of the supporting upstream watershed; or a coral reef area would be provided with control over siltation or pollution through the stream flow or ocean currents which provide its nutrients;

iv) the areas described in 11. iv) should be of sufficient size and contain the necessary habitat requirements for the survival of species.

A point to be noted here is that the Convention states clearly that only those properties in the territories of Member States of U.N.E.S.C.O. which have ratified the Convention can be nominated to the World Heritage List. This means that until the majority of Member States of U.N.E.S.C.O. have ratified the Convention, the List will necessarily appear incomplete. For example, Greece has not yet ratified the Convention so, until it does, the Acropolis will not appear on the List.

The Convention also specifies clearly that nominations to the List only can be made by states. That is to say, a natural site in Canada, under provincial as opposed to federal ownership, which clearly meets the criteria for inclusion cannot be nominated directly to the World Heritage Committee by the province concerned, but must be put forward by Canada on behalf of that province. The actual nomination form of course could be prepared jointly by Parks Canada and the province. Further, a state nominating a property automatically assumes certain obligations under the Convention regarding that property when it is placed on the List. These obligations are not onerous and are dealt with later. In order that these obligations can be fulfilled, Canada probably would have to enter into a prior agreement with the province concerned through an exchange of letters at the ministerial level, whereby that province would give an undertaking to Canada to assume those obligations.
so long as the property remains under its jurisdiction. The same considerations would apply to any World Heritage List property under private rather than government ownership; for example, in Britain the National Trust for Scotland owns several properties that would probably qualify for the List.

Parks Canada of the Department of Indian and Northern Affairs is the lead Canadian federal agency for the Convention, provides Canada's representation on the Committee, and is responsible for the submission of Canadian nominations to the List. It already has been in regular consultation with senior officials of the relevant provincial and territorial departments about the different aspects of the Convention, including the question of nominations.

The following are some of the implications to the states of the Convention and the Operating Guidelines:

1. There is no limit to the total size of the World Heritage List; it may contain as many sites, cultural and natural, as meet the criteria and are nominated to the List.

2. There is no limit to the number of sites, cultural or natural, that any one state may nominate at any one time or in total.

3. Nominations to the List are an on-going, natural process for as long as the Convention remains in being.

4. There are no restrictions, either in the Convention or in the Guidelines, on hunting or trapping by indigenous peoples within the boundaries of a site, or on the extraction of subsurface resources lying underneath the site from a point outside the boundaries of the site, provided that in each case the integrity of the site and the special qualities which justified its nomination in the first place are not impaired. To use a Canadian example, if a Mackenzie Delta pingo becomes a World Heritage site and later oil is found to be underneath it, there is nothing to prevent directional drilling to that oil source from outside the site boundary, provided the pingo remains unimpaired.

5. There is no prescribed minimum or maximum size limit for sites on the List.

6. There is no obligation to provide unlimited or specially facilitated access to a World Heritage List site; because of their very fragile nature of their virtual inaccessibility, some sites may not be available to the public.

7. There is provision for the Committee to delete a site, either because it has lost the qualities for which it was nominated in the first place or because further research has shown that the site is not after all of outstanding universal value. Any such deletions are likely to be done very quietly and without fanfare, since they will represent either a loss to the world's
heritage, which the Convention is supposed to prevent, or possibly over-hasty action by the Committee in the first place.

8. Because of the very detailed and comprehensive information required for the nomination file for each site, nominations will be time-consuming and will pre-suppose a considerable knowledge of all aspects of the site including a clear management plan for it.

9. There ultimately will be widespread publicity by U.N.E.S.C.O., approved by the Committee, for all sites appearing on the List.

10. Therefore, in the long-term there probably will be considerable additional tourist visitation to those sites on the List in respect of which visitation is desirable and feasible.

11. In the case of Canada, there will have to be extensive advance senior-level consultation between Parks Canada and the provinces and territories in regard to all Canadian nominations, especially of sites not already under federal control. This already has been started and will be continued regularly.

It should be noted that, as the World Heritage Committee progresses in its work, changes or modifications are likely to be made to the Operating Guidelines in the light of experience over the years, and therefore some of the implications mentioned above may change.

The obligations for states under the Convention and Operating Guidelines are neither numerous nor onerous, and should present no difficulties for Canada, at either the federal or the provincial level. In fact in items 1 to 5 below we already are more than meeting them. They are:

1. A requirement to identify, protect, conserve, and present, or interpret, cultural and natural sites;

2. The establishment of national and provincial services for this purpose where they do not already exist;

3. The adoption of appropriate legislation measures to protect sites;

4. The development of cultural and natural heritage research, and scientific and technical capability;

5. The maintenance of World Heritage List sites to acceptable standards;

6. The submission of biennial reports to the General Conference of U.N.E.S.C.O. on the maintenance and operation of the World Heritage List sites, and, in the case of sites under provincial or territorial jurisdiction, the reports would be prepared by
the province or territory concerned in accordance with the required U.N.E.S.C.O. format;

7. The requirement to erect a World Heritage plaque, designed by U.N.E.S.C.O. and approved by the World Heritage Committee, in a suitable position on each World Heritage site; the text will name the site and explain why it is of outstanding universal value.

Two other aspects of the Convention should be noted. First, Article 5(a) provides that every state adhering to the Convention shall endeavour: to adopt a general policy which aims to give to the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes. The remaining sub-paragraphs of the Article spell out different ways in which this should be done. That is to say, there is a clear obligation for each Member State to try to give a high priority to the adoption of effective and comprehensive cultural and natural conservation policies and programmes at the national level. This only can be of benefit over the long-term to the cause of conservation everywhere.

Second, and in a related field, Article 27 provides that the State Parties adhering to the Convention shall endeavour by all appropriate means, and in particular by educational and information programmes, to strengthen the appreciation and respect by their people of the world cultural and natural heritage as defined in the Convention, and shall undertake to keep the public broadly informed of the dangers threatening that heritage and of activities carried on in pursuance of the Convention.

Because the Convention is so new, and the World Heritage Committee itself only has had one meeting, little has been done so far to implement Article 27 at either the international or national levels. The Committee is, however, well aware of the crucial importance of this Article if the Convention, over the long-term, is to have the world-wide impact it can and should have, and accordingly had this topic as a separate item on the agenda for its second meeting in September of 1978. A good discussion resulted and plans now are being made for the development and implementation of world-wide educational and information programmes on the Convention and the work of the Committee, so far as the U.N.E.S.C.O. staff and budgetary resources permit. But whatever world-wide programmes U.N.E.S.C.O. may develop, it also is incumbent on Member States to try to implement suitable educational and information programmes at the national level. In the case of Canada, the cooperation of the provinces would, of course, be indispensable in this regard.

Participation by Canada in the Convention, and the inclusion of Canadian sites on the World Heritage List, will have a number of benefits, both tangible and intangible. Some of these will be: 1) there is international prestige for Canada, and for the province or territory concerned, in having sites on the List; 2) over the long term, there is likely to be substantial tourist traffic to sites on the List; 3) having a site on the List will give it added
moral protection, should there be substantial public pressure for a change in the status of the site; 4) the imminent prospect of nominating a site to the List may speed up the protection and/or development of the site and the enactment of any necessary legislation or regulations for this purpose; and 5) imminent nomination also is likely to accelerate the development of a proper management plan for the site, where this does not already exist.

The criteria for inclusion on the World Heritage List of both cultural and natural sites are rigorous. In the case of Canada, only a small handful of cultural sites are likely to meet the qualifications, but over the years quite a number of natural sites should get on the List. As a result of research to date, some sixteen possible natural sites, and four or five possible cultural sites so far have been identified. This research primarily has been done by Parks Canada, but provinces and territories also have been asked for their suggestions. We also will ask for ideas from interested conservation groups, heritage organizations, universities, and so on, in Canada.

Because in this first year the U.N.E.S.C.O. Secretariat was not geared to handle a large number of nominations, the World Heritage Committee asked that states keep their first list of nominations very short, and preferably to two. Accordingly, Canada only nominated two sites on this occasion, one cultural and one natural.

To conclude, the World Heritage Convention marks a significant start in the important and mammoth task of identifying, protecting, preserving, and presenting the world's outstanding cultural and natural heritage. The task is a daunting one and the financial and other resources available to the World Heritage Committee at the moment are pitifully small. The Convention and the Committee deserve the whole-hearted active support of all those interested in conservation.

UPDATE ON U.N.E.S.C.O. WORLD HERITAGE CONVENTION

The above paper necessarily was written before the second meeting of the U.N.E.S.C.O. World Heritage Committee, which took place in Washington from September 5 to 8, 1978.

At that meeting much was accomplished, of which the following are the highlights:

1. **Nominations to World Heritage List:** Twelve sites were nominated to the List, eight cultural and four natural.

   They are: Canada
   
   L'Anse aux Meadows National Historical Park
   Nahanni National Park
Ecuador  Galapagos Islands
Ethiopia  Simien National Park  
          Rock Hewn Churches, Lalibela
Federal Republic of Germany  Aachen Cathedral
Poland  Historical urban and architectural area of the city of Cracow  
          Wieliczka - salt mine
Senegal  Island of Goree
Tunisia  Ichkeul National Park
United States of America  Mesa Verde  
          Yellowstone

The Committee deferred consideration of thirteen nominations, twelve natural and one cultural, pending the receipt of further information and documentation. In addition, a further twenty nominations for the 1979 World Heritage Committee meeting already have been received by U.N.E.S.C.O.

The Committee also agree on two important related points: deadlines for receipt of nominations and requirements for complete documentation would be strictly adhered to, and there should be, where appropriate, consultations between neighbouring states with similar cultures or similar natural features on the nominations of comparable cultural or natural sites, for example, Cathedrals in France and The Federal Republic of Germany, to try to avoid duplication of similar sites.

2. U.N.E.S.C.O. World Heritage Emblem. The Committee approved the adoption of a U.N.E.S.C.O. World Heritage Emblem which will appear prominently on the plaque which has to be erected at every World Heritage site. It also will appear on Committee letter-heads, publications, and so on.

3. Public Information Campaign: The Committee approved the basic elements of a world-wide public information campaign to be launched by U.N.E.S.C.O. to publicize the Convention and its objectives, and the work of the Committee.

4. Budget: A substantial budget for the Committee's work in 1979 was adopted.
The Biosphere Reserve programme, part of M.A.B. Project 8; *Conservation of Natural Areas and the Genetic Material They Contain*, is a direct outcome of the ten-year International Biological Programme (I.B.P.), an international non-governmental research programme sponsored by the International Council of Specific Unions (I.C.S.U.O.) which terminated in 1974. The ecological reserves established as a result of that programme are expected, where possible, to be associated with or included in biosphere reserves established under M.A.B.

The objectives of the Biosphere Reserve Programme include: conservation of representative ecosystems and their component species, fostering of cooperative, international research, long-term environmental and ecosystem monitoring, education, demonstration and training. A biosphere reserve must consist of at least a natural area where conservation is the prime concern and an associated experimental area, but in addition it may also include harmonious landscapes dependent on man's influences for their survival, areas degraded by man's activities and presenting opportunities for experimental and long-term, monitored rehabilitation. It has also been suggested that biosphere reserves be set up in association with major engineering works to monitor environmental changes occurring as a result of these works.

Each reserve ideally would consist of a core area containing an area that is protected (or at least is managed) to conserve it in its natural state, and in close association or adjacent to it, another similar area which is available for manipulative research. These central areas would be surrounded by, or at least be adjacent to, a buffer area to protect the integrity of the core, but where many activities may be permitted. The buffer area may contain settlements, farms or harvested forests or other economic operations.

Except for the core areas, biosphere reserve land need not be withdrawn for single use. Since the various parts or zones of a biosphere reserve do not have to be contiguous nor all under the same management, considerable flexibility with respect to the make up of a biosphere reserve is possible. However, cooperation among different managers would have to be assured to establish a biosphere reserve with multiple managers. Reserves, therefore, provide areas for long-term studies of natural ecosystems, research on the rehabilitation of damaged ecosystems, and sites for monitoring the impact of permitted activities on the ecosystem, using the core area as the baseline or reference standard.

What are the benefits of participation in this particular aspect of the M.A.B. Programme?
First of all, the assurance of protection of sites and their genetic diversity for long periods of time allows documentation of environmental changes or impacts which may be slow in developing. The baseline information from the protected core areas would enable the preparation of the reference standards for rehabilitation of damaged ecosystems of the same bio-geographical province. The core areas may also serve as early warning systems of environmental change. There is also opportunity for long-term comparative study of unprotected ecosystems and the changes that they may go through as the result of any impact, their recovery or rates or the ways in which they may be reconstituted experimentally. Sites in the buffer zones or manipulative cores where these studies would be carried out would be assured necessary protection for the life of the studies and for subsequent observation. Biosphere reserves would be places for actual demonstrations of what can be done and the outcome of particular treatments, or management practices, over long periods of time. Furthermore, they should become centres of formal and non-formal environmental education and training activities. In addition, international coordination and cooperation on certain research projects can result in a pay-off which far exceeds the relatively small financial input by each participating nation.

A unique characteristic of a biosphere reserve is the combination of protected and manipulative areas, which allows long term experiments in manipulating the ecosystem, a practice that is normally not allowed in most other protected areas, together with long term documentation of changes in the protected areas.

Formal application for biosphere reserve status is made in the first instance to the Canada/M.A.B. Committee (as outlined in Canada/M.A.B. Report 19) which determines, using the criteria outlined in Canada/M.A.B. Report 6, whether the sites should be placed before the M.A.B. Bureau with a recommendation for its recognition by U.N.E.S.C.O. as a biosphere reserve. Further information on all aspects of the M.A.B. programme may be obtained from the Canada/M.A.B. Secretariat.

AUTHOR’S POSTSCRIPT: The information contained in the Appendix was submitted by the M.A.B. Programme, Department of Environment.
CRITIQUE
K. Curry-Lindahl

The task of presenting a critique of the six papers submitted to this session on International Perspectives has, for three reasons, not been easy. Firstly, two of the papers are so voluminous, being ninety-one and fifty-three pages respectively, that they are virtually small books rather than contributions to a conference. Secondly, all of the papers were not received until September, actually just a few days prior to my departure for a month long mission to Asian countries, and from where I had to leave directly to come to Banff. Thirdly, the six session papers leave out Latin America, Asia, and Africa from the International Perspectives. However, as I was obliged to write this critique while travelling in the desert areas of Asia, am usually based in Africa, and am a little familiar with Latin America I will try to add a few points on these continents to the International Perspectives. But first, a look at the six papers available to this session.

Rowntree and Orr review the national park system in the United States with special attention to what has happened since 1972. On the occasion of the U.S. national parks' centennial in 1972 the Conservation Foundation had been asked, in 1971, to coordinate a citizen's appraisal of the national park system. You may recall the harsh criticisms, important conclusion and central recommendation which emerged from the Conservation Foundation's year long public analysis.

The National Park System can best meet the future needs of all Americans by reasserting its original mission - the preservation and interpretation of natural landscapes and ecosystems. This function, which must involve truly representative citizen participation, can enable the park system to make its most meaningful and lasting contribution to an urban people, and can exemplify and inspire an enduring environmental ethic.

The Conservation Foundation also recommended that the national park system should be used as a showcase of man's proper stewardship of land, water and air.
Provided that preservation of ecosystems means that they may evolve naturally without being preserved in a static stage, and that plants and animals are included in land and water, the statement is like music in an ecologist's ear. Have these recommendations been followed in the U.S.? The two authors believe so. Their concluding remarks reflect optimism. They even speak of a genuine breakthrough in national park values following a decade of benign neglect and budgetary restrictions.

However, Rowntree and Orr quote severe criticisms, expressed in 1976 by the National Parks and Conservation Association, pointing to widespread deterioration: natural resources have suffered, back country patrols are nonexistent in many national park areas, funds for research are not forthcoming, and wildlife and other national park resources are left without protection. Such a list of degradation is familiar to those who are working for national parks in developing countries, where the lack of funds creates similar situations. Who are right, Rowntree and Orr or the National Parks and Conservation Association?

From my personal experiences of U.S. national parks during the period 1962 to 1972, when I carried out several long periods of field work in these national parks, the directors of the U.S. National Park Service all were development minded, including allowing liberal concessions to commercial companies; but they had rather little interest in conservation and almost none in research. I remember several conversations on these issues with Conrad Wirth both in and outside the International Commission on National Parks. He did not conceal what he found to be most important. His successor, Hartzog, seemed to follow the same line. It is comforting to learn that this is no longer the dominant approach.

The Conservation Foundation emphasized in 1972 that there is no prairie or great plains national park in the U.S. national park's system. I understand this situation is still the same in both the U.S. and Canada. I hope that this regrettable fact could be stressed by this conference in a resolution suggesting the establishment of a prairie national park. Such a reserve is of international importance.

Another issue of international concern is what happens to the Everglades National Park, which among the world's national parks represents a unique ecosystem of exceptional values. It should be put on the list of World Heritage. I would like to suggest a resolution recommending this.

The carrying capacity of a national park briefly is touched upon by Rowntree and Orr in connection with a discussion on user controls. This subject, during the last decades has become of extreme importance for the management of national parks in order to save them from being overvisited by people and cars. Only continuous research can determine whether a national park is
overused or not. Therefore, this is one of the many reasons why it is unwise to neglect research in national parks.

The second long paper of this session deals with the United Kingdom's experience with the countryside concept. Since the concept of national parks in the U.K. differs from the one used by all other countries except Israel, Professor Butler's review of the British situation tends to be somewhat beside the main theme of this conference. He deals chiefly with other areas than the national nature reserves, which are the public lands in Britain which are closest to the international concept of a national park.

I regret that so little is said about the national nature reserves because I consider the 145 national nature reserves in the U.K. to be an admirable system of areas of significance for the understanding of the landscape history and present functioning of habitats, biomes, and in some cases even ecosystems, despite the fact that the British landscape has been changed significantly by man over many centuries and that most of Britain is in private ownership.

In 1974 I had the opportunity on behalf of the International Union for Conservation of Nature and Natural Resources (I.U.C.N.), and in cooperation with the Nature Conservancy Council, the Countryside Commission for Scotland, and other bodies, to make a survey of the national nature reserves and national parks in Britain. The results of this survey are now in press. What is characteristic for the national nature reserves in Britain is that each of them has a management plan which clearly lays out the aims behind that particular reserve. In each case, this plan is based upon ecological research, which is continuing permanently.

This unique position of Great Britain has created a situation in which the Nature Conservancy Council has elementary research data at hand for a number of national nature reserves on which policy and management can be based. This means that a recovery phase of some national nature reserves to a climax vegetation could be initiated in a meaningful way almost as soon as the decision to do so has been taken.

Of course, there is very little of the virgin country in Britain today, but I think Butler's quote from the Ministry of Agriculture in 1945 contains two exaggerations. One is that most of the American and African national parks are continuously virgin country, and the other one is that no such country exists in Britain. Unfortunately, rather few of American and African national parks are virgin. On the other hand, a reserve like the Cairngorms in Scotland has in its upper parts been little modified by man. It is still the home of plants and animals which colonized the area in the late glacial and post glacial periods. They form unmodified communities. It is, in my opinion, a wilderness area, but Butler claims that no such area exists in Britain.
As to Lucas' paper on the *Experience with National Parks and Related Reserves in the South-West Pacific* I understand that he must have had difficulties keeping his contribution on Australia and the South Pacific islands to a limited number of pages. This might not have enabled him to include many of the new trends concerning conservation and national parks which are at present emerging in the South Pacific. Lucas is pessimistic about many islands of Oceania. He does not say much about the spirit of environmental concern combined with the cultural traditions of the peoples of the South Pacific islands. Yet, this spirit came out very clearly at the series of conferences listed in Lucas's paper. I participated in almost all of them, and I got a strong feeling that most of the representatives of the governments of the Pacific islands realize the necessity of the conservation and environmental management which they link to their traditional cultural habits. However, they need much assistance in order to live up to these aspirations. It is of global importance to provide such assistance. National parks in the South Pacific islands could be established without giving up man's traditional land use patterns and lagoon fisheries. Lucas mentions some organizations and countries giving such assistance. He could have added the United Nations Environmental Program (U.N.E.P.) which has sent out several missions on the South Pacific islands.

In the discussion on his own country, New Zealand, Lucas gives a range of matters of national importance which local government must take into account in regional and maritime planning. These matters include the conservation, protection and enhancement of the physical, cultural, and social environment but seem to exclude the biotic environments. Is this done deliberately? The question is pertinent for a country which in the last centuries has lost seventeen species and subspecies of birds and where a number of tree species and other plants are disappearing.

In a good and interesting paper with historical perspectives, J.D. Ovington gives complementary information on Australia, with reference to land use patterns by Aboriginal people and later by Europeans. The proposal to establish the Kanadu National Park as a major reserve in Northern Australia is most welcome. The national park, covering a wide range of biomes and habitats will be of international importance.

In his study on *Coastal and Marine Resources Planning with Special Reference to Marine Parks and Reserves* James A. Dobbin essentially bases his contribution on Carleton Ray's earlier presentation of the problems. Since Ray's important synthesis has been published and, moreover, has been presented and extensively discussed at three previous conferences, those in Teheran in 1975, in Tokyo during 1975, and at Apia in 1975, I do not comment on them.

Just some words of caution. Dobbin mentions, with reference to Bjorklund (1975), that there are approximately 115 existing marine parks in the world. At the conference on marine national
parks in Tokyo in 1975 I warned about accepting this figure because a considerable number of the 115 areas listed in Bjorklund's paper are not marine reserves in the proper definition of this term.

The other warning of mine refers to the section which praises the Japanese approach to submarine development of underwater observation towers and other installations in marine national parks. Again, in Tokyo in 1975 I was obliged on behalf of the United Nations Environmental Programme (U.N.E.P.) to warn confused delegates, which O.N.E.P., through fellowships, had brought to Tokyo from developing countries, that there are indeed other ways to develop marine national parks than the Japanese model. What I have seen of the latter are underwater installations which interfere so severely with the marine environment that they change or create currents and other factors vital for the very marine ecosystem that the marine national parks were supposed to protect.

Dobbin's important paper emphasizes that so far we have neglected coastal and marine renewable resources in the planning of national parks' systems in the world. Particular attention must be paid to exceptionally productive areas such as estuaries and other coastal wetlands, mangrove forests and marshes, sea grass beds, lagoons, and coral reefs. These habitats and biomes are important economically, because the productivity of their organisms is high and contributes to several food chains in the ocean. Their fishery value is high, both directly and indirectly, for they provide food, shelter, spawning sites, and nurseries for the larvae of commercially important fish and invertebrates. Many marine fish species, which as adults live pelagically in the open sea, spend their juvenile life stages in these coastal areas. The young individuals of several fish species spawning in the open sea migrate to estuaries and coastal shallows, where they spend one or two years before moving back to the sea. It has been estimated that coastal wetlands and shallows support two-thirds of the world's entire fish harvest.

Therefore, significant samples of these productive coastal biomes should be set aside as reference areas so their productivity at ecosystem level can be objectively compared with originally similar biomes which have been altered by man.

Incidentally, I feel that the important aspect of national parks and equivalent reserves as reference areas for comparisons with ecosystems modified by man has been somewhat forgotten by this conference. This function of national parks is, of course, as important for terrestrial ecosystems as it is for aquatic ones.

Marine reserves also should be established where there are offshore upwellings of nutrients. They should be created in the open sea and on the sea beds. The whole pelagic water column is an ecosystem in need of sample protection. The benthic habitats so far have been terribly mistreated. Representative examples of the sea bottoms badly need to be preserved. Also, reserves for
whales are necessary. Two such reserves exist already. Finally, for the record, a plea for marine turtles and the conservation of the shores where they lay their eggs.

Finally, Peter B. Bennett in his paper, *Protecting the World's Heritage*, gives a presentation and a review of the Convention for the Protection of the World Cultural and Natural Heritage, as well as of the so-called Biosphere Reserves. Of the latter space, allows me to say only that the existing national parks have so far been the foundation for the establishment of biosphere reserves.

The objective of the World Heritage Convention is to ensure the preservation of the world's most important and significant cultural and natural heritage. So far not many natural areas have been nominated for inclusion in the Convention while there are a considerable number of cultural sites. This seems to be due to the regrettable fact that natural areas have become secondary or are almost forgotten, by the Convention parties. In my opinion, it was very unfortunate to combine natural and cultural sites in the same Convention. The original idea, launched in the 1960's, was that only natural areas should be the concern of the Convention and that the I.U.C.N. should be responsible for them. However, the United Nations Educational, Scientific Cultural Organization (U.N.E.S.C.O.) became interested in the Convention. At that time cultural activities dominated within U.N.E.S.C.O., and from the beginning the *cultural people* became involved. Moreover, governments identified this idea as chiefly a convention for cultural sites, so they sent experts on cultural sites to the preparatory meetings and have continued to do so also after the Convention was adopted. As you heard from Bennett, there are presently fifteen Committee members. Thirteen of these are *cultural people*.

I was with U.N.E.S.C.O. when the Convention was prepared and tried to get it separated into two different documents, but the cultural side was over-represented and had no difficulties getting its ideas across. In this way the natural part of the Convention has become a Cinderella.

Action now is necessary in order to remedy the situation. It was discussed at I.U.C.N.'s General Assembly in Ashkhabad, Turkmenia, in early October, 1978. A resolution was adopted there on this subject. Perhaps this conference could endorse the I.U.C.N. resolution in one of the recommendations. U.N.E.P. certainly would welcome such a step, because U.N.E.P. also is worried about the present stagnant situation as far as natural areas of the Convention are concerned.

In my introductory words I promised to say something on national parks in Africa, Asia, and Latin America to round out the international perspective. Within the number of pages given to me it can be only a few words. I would like to formulate them in this way. There are today more national parks and nature
reserves in these three continents than ever before. This may be a good omen. But the pressure on these preserved lands and waters is increasing proportionately to the human population increase in the regions concerned. If this latter increase is not controlled or countermeasured by governments, the national parks and equivalent reserves may be given up and destroyed. That would, in most cases, be an irreparable loss to mankind and the generations of tomorrow.
Through the annual meeting of the Canadian Nature Federation two months ago, a resolution on marine reserves in Canada was adopted. It stated that there was a need for such reserves and that a federal task force should be formed to study the situation.

Some ten years ago the United States' list of national parks and equivalent reserves included specific criteria, for example, money available for wardens' salaries and man's role in shaping the landscape. Native peoples do have and have played a role in national parks and other areas. Why has this fact not been recognized in the United Nations' listing? Because man is recognized as a dominant agent, can all United Kingdom parks now be listed and will the classification and description of criteria be reevaluated?

Budgetary and employee numbers are now accepted as criteria, but their importance is diminishing. Currently, new listing procedures for the world directory are being formulated. It will take into account more accurate and reliable criteria.

It can be observed that large, federated countries have a tendency to separate national parks from living space and people. The tradition in the United Kingdom is entirely different. It is very much like the situation in South Pacific nations where culture and nature preservation go hand-in-hand. The Western or the expert's approach is really contrary to the United Kingdom's experience. Is there any possibility for a more integrated approach to nature and culture preservation than the expert's approach we now stress?

The cultural sites of the World Heritage Committee are monuments and buildings. Cultural sites do not need a convention, whereas nature sites greatly need protection. Nature sites need to be
preserved regardless of their value for other activities.

THE FLOOR: It is inappropriate to bring together in the same breath the national park and the marine park concepts. The marine environment is much too complex; it is dynamic and three-dimensional in character. Realistically, they can only be managed and planned for on international basis. The situation is too oversimplified when the marine park concept is discussed in the context of national park experience.

DOBBIN: We need two initiatives in the area of marine parks, the actual selection of sites, and a decision on what body will administer them in Canada. The national and provincial levels of government seem to possess the best knowledge of regional resources. International bodies can only monitor environments and suggest courses of action. A regional-national forum is possibly the only viable alternative for discussion at this time. Parks Canada may not be the appropriate federal or national agency.

THE FLOOR: My experience with the United Kingdom situation was quite favourable, particularly in the context of the good network of long distance walking or foot paths. However, the U.K. programme seemed to be weak in the area of interpretation. This whole interpretation experience left one feeling programmed. There was no interaction; it was totally impersonal, and there was no mutual learning. Is this the typical experience one may expect in the U.K. system?

BUTLER: I have only a passing knowledge of the interpretive services available and I cannot say if your experience was typical. I would suggest that the problem rests with the pressure exerted by the sheer numbers of people who take advantage of the facilities. The Countryside Commissions have been making progress training staff and providing better facilities. In addition, some private interpretive services are working to improve the situation.

THE FLOOR: Indeed, from experience, numbers are a problem in the U.K. system. Pembroke, for example, has a highly developed guided walking-tour programme.

THE FLOOR: A world perspective on national parks is greatly appreciated at this conference. Is there going to be a Third World Conference on National Parks? If such a conference is planned, is consideration being given to holding it in a third world nation? Finally does the I.U.C.N. have a means of pressuring member nations on solutions to contentious conservation and national park issues?
LUCAS: As chairman of the planning committee for the Third International Conference on National Parks, I feel comfortable in responding with a yes. A conference is planned for sometime in 1982. Plans are tentative but it may be held in the Philippines.

CURRY-LINDAHL: The I.U.C.N. pressure in several subtle ways. For example, direct correspondence with heads-of-state and the passing of strong resolutions may be used.

BENNETT: The World Heritage Committee has some influence on member nations because they, as members, have access to the World Heritage Fund. There is a delisting process that may be employed. It is really a moral sanction.

THE FLOOR: Parks Canada and other organizations have been working for twelve years in the direction of prairie or grassland parks. There seems to be a problem with ranchlands because they are not compatible with park policy. Ranches appear to many to be an important part of our cultural heritage, yet Parks Canada has been careful to consider only very small, non-ranched areas. It is hard to understand this situation when oil and gas exploration is allowed in some parks. Perhaps Parks Canada could look at the National Forest-Grassland concept of the United States.

ROWNTREE: United States' National Forests were originally designed to preserve and maintain the country's timber stock, and it has expanded to include recreation. The designated areas are not particularly representative or unique.

EIDSVIK: The general public may be far behind in its knowledge of changes in Parks Canada policy. Past mistakes in ranchland areas and with relocation will probably not reoccur. The issue here is more complex than one of grazing cattle. The immediate question is just how far is Parks Canada willing to go to preserve important landscapes.

THE FLOOR: The Town and Country Planning Act in the United Kingdom is as important as Dr. Butler states. But, the Local Government Act of 1972 is also important. Its provisions are important primarily in the areas of management and planning. For example, each park is managed by a single agency; it has its own superintendent and employees. Each park is obliged to prepare a plan to guide recreation and landscape protection. The 1974 Local Government Act is also important in the context of funding. Both of these acts have strengthened the system. The question is in two parts. First, how much local control should
there be given county council as opposed to large planning boards? Second, can Canada learn from the U.K. experience?

BUTLER: My preference is for a larger planning board. It would help to remove management problems from local economic and political constraints. The Canadian system may benefit from the U.K.'s experience with the Heritage Coast and Upland Management Scheme. Small scale or local councils seem best suited to local management problems in Canada.

Additional Comments

EDITORS' NOTE: J.A. Dobbin requested that the following letter, submitted after the conference, be included in the Proceedings.

There were a few statements that Curry-Lindahl made about my paper that I would like to take issue with. Harold Eidsvik suggested that writing you would be the most appropriate means of clarifying my concerns.

Curry-Lindahl commented that Dobbin essentially bases his contribution on Carleton Ray's earlier presentation of problems. As you will see on pages one and two, I have referred to Carleton's previous discussion on the characteristics of the marine environment. Later in the paper, I refer to Carleton's important contribution to the marine park movement. While recognizing Carleton's outstanding work in developing principles for marine conservation, I have also gone well beyond this discussion to stress the need for tools, techniques, and planning principles to apply such theories. These tools, techniques, and planning methods constitute my contribution and are the subject of the major portion of this paper. Carleton and I have, in fact, brought different areas of expertise together for our work. I find Curry-Lindahl's comment, then, inaccurate.

Curry-Lindahl has seemingly dismissed my paper without any recognition of the new ideas here that have resulted from my studies at Harvard as well as international projects since then. These ideas include the following:

1. The concept of Ocean Planning which I initiated while at Harvard;
2. Systems Analysis Mapping (SAM) developed by my firm;
3. Interpretation of satellite imagery for marine conservation purposes;
4. The concept of how regional systems of marine parks and reserves can function and how their uses can complement one another;

5. The greater currency of marine parks and reserves versus terrestrial parks;

6. Canada's status regarding the Exclusive Economic Zone, coastal zone management, and marine parks and reserves;

7. The idea of having marine parks and reserves as Regional Scientific and Technology Centres as discussed in the Law of the Sea negotiating text;

8. Pointing out the inadequacy of sectoral agency work in the marine environment;

9. The application of our knowledge, guidelines, theories (such as those presented by Ray) into real projects and action plans such as the Persian Gulf study which contributed to a $6 million project for coastal and marine resource management in the Gulf;

10. The idea of a network of marine parks and reserves for the Great Lakes;

11. The inclusion of socioeconomic factors along with ecological and biological factors in conservation analysis;

12. The large regional scale of this work which has not been carried out before;

13. The interdisciplinary team methods that are put to use;

14. Scientific information being presented in a format that decision-makers can understand and deal with;

15. The idea of an electronic display screen in a scientific laboratory;

16. Three case studies that do not have precedent anywhere and have resulted in support from many people.

Another specific issue that I would like to deal with is Curry-Lindahl's comment that Dobbin praises the Japanese approach to submarine development of underwater observation towers and other installations in marine national parks. As you will see, I neither praise nor condemn the Japanese observation towers. I simply describe the facts and praise the beautiful undersea life which I have had the occasion to see myself.

I do make reference to Sir Peter Scott's view of the importance of getting people underwater to gain a first hand appreciation of the marine environment. This is an important way to develop a constituency in support of marine conservation. I also attended
the conference in Japan that Curry-Lindahl refers to and I observed that Budowski and Ray, the two key participants in the meeting, made this point quite clear. I did not observe any confused delegates over this subject.

Curry-Lindahl cautions about the 115 existing marine parks and reserves in the world and stresses that the 115 areas listed in Bjorklund's paper are not marine parks in the proper definition of this term. I feel that I must point out, first of all, that there is no officially accepted definition of this term. More important is the fact that the main point of my paper is that we are not, in fact, making best use of the potential of marine parks and reserves and that we must act to do so. My verbal presentation emphasized this point even further. In view of this, I find that cautioning me about this is a rather misdirected remark. I would even add that I question how many national terrestrial parks work according to a proper definition.

As Curry-Lindahl explained, he was very busy during the time that he was to be reviewing the papers, and this could account for some of his misunderstandings. It is unfortunate that he did not receive the papers until September, but as you know, I submitted mine by mid-July as requested. Because Curry-Lindahl's comments do not reflect my paper or my work accurately, I would be very disturbed if they were published without a response by me. I appreciate your attention to this matter and look forward to your reply at your earliest convenience.

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Publications in the Series, Studies in Land Use History and Landscape Change


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