

EXPLORING THE PAST, SHAPING THE FUTURE

FROM PARKS AS FORTRESSES TO SOURCES OF KNOWLEDGE:

1968 - 2008

Gordon Nelson

ABSTRACT

THE BIG PICTURE

It is an enormous pleasure to be here and have this opportunity to participate in the fortieth anniversary of the first Canadian National Parks Conference in 1968. I was active in the planning and implementation of that conference and in follow-up events in 1978 and 1985: the Centennial of the establishment of Banff as Canada's first national park. I have continued to be active in research and planning of national parks and protected areas ever since 1968 and welcome the chance to reflect on the major changes since that time as well as on the future. In doing so, I must acknowledge my great debt to many colleagues, students, and friends who were engaged in the forty year journey and thank the organizers at the University of Calgary for organizing this unique retrospective.

The first thing to be said is that the changes on the national park and protected area scene since 1968 have been most profound and wide-ranging, a paradigm shift as the scientists and scholars among us would say. Indeed, so many changes have occurred that it is impossible to recognize them all and their implications. Any list could hardly be seen as anything but a personal one reflecting individual experience, knowledge and judgement.

My sub-title begins with the idea of parks as fortresses and ends with the idea of their emerging role as major sources of natural and cultural knowledge. But there are many steps in between, most of which are interconnected and flow into one another. Among the major changes are: moves to greater reliance on ecosystem thinking and planning; the evolution of the idea of wilderness; the impacts of First Nations' thought and practice especially from the North; the decline in the role of government and the rise of private stewardship; the recognition of a growing range of ecological and social services offered by parks; the increase in protected area types; the emergence and influence of new guiding concepts such as biodiversity and ecological integrity; growing linkages between park and protected areas and land use and regional planning; new planning theory and practice, notably collaborative or interactive and civic planning; introduction of landscape ecology and the idea of connectivity; the end of nature; the rising array of land use and environmental stresses, notably climate change; growing linkages between nature and culture in protected areas; parks in urban regions; and parks and protected areas as bastions for research, monitoring and sources of knowledge for communities and society generally.

This is a preliminary list subject to some modification in scope and emphasis as I work my way towards the conference. One activity that remains very challenging since 1968 is tourism and recreation. The 1968 call for greater attention to recreation and tourism technology and its growing impacts has gone largely unheeded in planning parks and protected areas. Another area where few advances have been made is in marine parks and conservation areas. Another major challenge lies in the role of parks and protected areas in highly settled regions in the Atlantic provinces, Quebec, Ontario, the southern prairies and mountains and Vancouver Island. Another area where relatively little progress has been made is in adapting to changing ethnicity among a rising number of new Canadians. And underlying many of these is the failure to adapt the institutional structure and guiding concepts of parks and protected areas in ways that are more appropriate to the addressing of the challenges. I plan to offer some suggestions in this and other regards at the conference.

HIGHLIGHTS

In my mind, few areas of endeavor are more important today than research on understanding, planning, managing and deciding upon parks and conservation areas, particularly in terms of the learning that these offer to local and wider communities. So we are gathered to discuss a highly significant field of public interest, more so than it was 40 years ago at the time of the first innovative Canadian Parks for Tomorrow Conference in Calgary and Banff with leadership at the then new University of Calgary. I list in my Abstract many of the important developments in the park and protected area field since 1968. However, I have time here only to focus on some highlights which I believe should be recognized and considered in charting the way ahead.

The Context in 1968

First, the context in 1968 was far different than it is now. At that time everything seemed young and, while there were problems to face, there was little doubt that we could deal with them effectively. World War II ended in 1945, followed by years of reconstruction and economic renewal in Europe, the USSR, and other parts of the world. In Africa and Asia the escape from colonization was underway. New chemical and other technologies were transforming economies. High population growth was driving trade and industrial expansion. In North America, the great factory of it all, prosperity was widespread and growing.

Ideas were being generated to model and create a new world. Prominent in this regard was Walter Rostow's audacious and simplistic concept of stages of economic growth. This widely accepted model perceived nations moving by means of loans, foreign aid and trade through increasingly elaborate technical and economic development. The notion was that, with the aid of new global institutions like the World Bank, all nations would move up the development ladder with the lower levels increasingly better off and the higher levels rising to even greater heights of technical sophistication and economic

2.

development. The mantra was "growth and development for everyone" by what might at the lower level be called trickle down and at the upper end, innovative processes. It has become obvious in the last decade or so that trickle down has serious limitations in many places, for example, Africa, and the innovative process also works unevenly and imperfectly in terms of benefits to the nations of the globe. Of particular interest to us is the idea that once the development model brought prosperity and well being it would be possible to attend to its effects on natural and social environments more effectively than was the case in times of rapid growth. I believe it is fair to say that this was a flawed vision.

All was, of course, not rosy in the 1950s and 1960s. Observers like Rachel Carson and Barry Commoner drew attention to the environmental effects of high commitment to technology and economic growth and urged restraint and better planning. Lynton Caldwell pushed for more assessments of the effects of development proposals and, with the support of many, led in the introduction of environmental impact and other assessments first in the U.S. and later in Canada. These were quite effective until about a decade ago when the tendency to underfund, standardize and marginalize them led to considerable lessening of their effectiveness in decision-making in the civic arena.

But we were buoyed by the thrust of the 1960s environmental decade at the time of the first Parks for Tomorrow Conference. Even the conference site, the University of Calgary, was new and nurturing young academics who wanted to work with people and governments to set a less disturbing way forward. The trigger for the focus of interest on parks was the announcement that the federal government was planning to introduce a Master Plan for Banff and other national parks in Canada. Inquiries were made and government was urged to hold public hearings on the proposed plans, giving other professionals and citizens a chance to air their views.

At the time numerous NGOs were forming to address water pollution, rapid population growth (Zero Population Growth), wilderness, water diversions and other topics of concern. One of these new organizations was The National and Provincial Parks Association of Canada (NPPAC) led by Gavin Henderson and Al Frame of Toronto. NPPAC partnered with us in the 1968 conference and has gone on to become the major force in the conservation of parks and protected areas in Canada under its new name of Canadian Parks and Wilderness Society (CPAWS).

These civic initiatives were undertaken in a generally positive and optimistic manner. I believe there was a widespread understanding that with cooperative civic and professional action, things could be made better. The new and old universities could play a major role with professionals and citizens in developing the ecological and social knowledge and actions needed to find a better way ahead.

The Context in 2008

Now, today, May 9, 2008, the context is very different. Without dwelling on the details,

the economic pull has been downward as much as upward and, while parks and protected areas have increased in size and number, they have had limited effects on the environmental impacts of technical and economic growth. In fact one of the warnings sounded at the 1968 Conference was the threat that growing interest in recreational technology posed to the wildlands in Banff and other parks. The expansion of townsites, ski runs, roads, camping infrastructure and other developments since that time has, to a considerable extent, justified this warning. On the other hand, lands and waters in parks and protected areas have increased considerably in Canada as well as in other countries and it is clear that we would be environmentally far worse off without them.

Since 1968 some great advances have been made in national park and protected area planning, management and decision-making in Canada. Examples are the many new national parks in the North which function as wildlands used as much or more for traditional practices of First Nations as recreational and tourism sites for outsiders. These areas often are also administered by innovative co-management arrangements with First Nations. Yet, while we have more parks everywhere, and, indeed, are continuing to establish new ones, the intervening areas are much more extensively and intensively exploited and there is a question about the overall gain, especially in environmental terms.

The Lead Role of Government in the 1960s and 1970s

The model in the 1960s and 1970s was leadership by governments with various interest groups, including the conservation organizations, working to influence their decisions. Business was generally interested in avoiding or minimizing limitations that national and provincial parks and other conservation areas, such as wildlife reserves, placed on their growth and development. Universities were busy educating professionals, including many for park and conservation agencies, and in developing research programs that contributed to the evolution of conservation understanding, planning and management. These educational research efforts have, however, been predominantly ecological with insufficient work done, for example, to illuminate the history of conservation ideas and organizations and the environmental history of many parks and protected areas (see, for example, Sellars, 1997). This situation contrasts with that, for example, in the U.S., the U.K. or other parts of Europe where many publications are often available on conservation area policy or on the general history and geography of places such as the Great Smokies National Park in the Appalachians, Rocky Mountain National Park in Colorado, Yosemite National Park in California, or the Lake Country of England. In my opinion in Canada we labour unduly because of the lack of understanding provided by such studies.

The Rise of Private Stewardship

About 1980 circumstances in Canada changed markedly. Stagflationary pressures in the 1970s resulted in very high interest rates, considerable public debt and sharp reductions in government spending. Among the hardest hit were the parks and conservation agencies in the federal government and subsequently in the provinces as

well. Government no longer had the capacity nor the inclination to lead in the old way and a void was left to emerging private conservation organizations. Today there are many of them, they have done much good work and they occupy a lead role on the national scene. Examples are the efforts of the Nature Conservancy of Canada and the World Wildlife Fund. From a broader perspective, the idea of private stewardship emerged in Canada, along with facilitating organizations like the Carolinian Canada Coalition of southwestern Ontario. Easements have emerged as alternatives to direct ownership and trusts have more recently taken a leading role on the national environmental scene.

Today a major, if not the major question, is how to make sense out of all these public and private conservation and stewardship initiatives. How are they to be linked together, if at all? Especially public and private initiatives? To what extent does their proliferation work against effective fiscal efficiency and conservation effectiveness? Is there some way they can be integrated more effectively into land use planning? In this context what, if any, is the more appropriate scale of protected area activity? Is it the federal, the provincial, or the local, or some combination of these? Does the ecoregional or georegional level offer exceptional opportunities for integrating the various levels and kinds of government and private initiatives?

Changes in Theory and Practice

About 1980 major changes also occurred in the theory and practice of protected areas and conservation (Nelson et al, 2003). We need only think of the emergence of the concepts of biodiversity and landscape ecology to realize this. It was such advances that necessitated moving from thinking of national and provincial parks as fortresses or islands in a sea of development to interconnected nodes and corridors in environmentally sustainable landscapes (Forman and Godron, 1986). In this ecosystems model, boundaries shift from hard lines into porous zones of interaction between plants, animals, recreation and other activity in and around conservation reserves. This change has resulted in a blurring of the distinctiveness between land uses in and around protected area boundaries as well as in the responsibilities and activities of protected area personnel. They are increasingly involved in softening the impacts of logging or other activities on park ecosystems and in working with people outside parks in their search for economic activities more commensurate with the conservation goals of protected areas and the economic and social well being of local populations.

In this context it is important to recognize that the emergence of the field of ecological economics placed economic value on the many services that parks and protected areas offer to communities and societies. In addition to conservation and education, these include: research on and monitoring of environmental change; watershed, flood and hazard protection; maintenance of water quality and quantity as well as air quality; soil protection; climatic amelioration; and other benefits. As a result protected areas are now recognized as an essential part of land use and regional planning rather than a frill to be

looked after once growth and development make this affordable.

5.

Interactions Between Nature and Humans

This leads to the growing recognition among scientists, scholars and professionals that the separation of the human from the natural --- with its attendant focus on the biological as the essence of protected areas --- is no longer the *sine qua non* of protected area thought, policy and practice. This should not be construed as suggesting that the biological or natural dimensions of protected areas are not of fundamental importance. But history, anthropology, geography, economics, planning and the broad human dimensions, also need to be major items of interest.

Personally, this interest in the human dimensions of protected areas is an old one. It emerged from land use history and landscape change research in Banff and other western parks in the 1960s and 1970s (See Nelson and Scace, 1968; Nelson with Scace, 1970). This research revealed that Banff, Waterton and other national parks were not pristine or untouched landscapes in the sense promoted by national parks at the time; rather they were landscapes that had long been used by humans. Major impacts on vegetation, wildlife and ecosystems became prominent in the mid to late 1800s with invasion of Europeans interested in mining, logging and other exploitive activities. The introduction of national parks in the late 19th and early 20th centuries slowly excluded such activities and provided the general protection needed for recovery from many of their effects. Various studies have shown that the creation of parks and protected areas had similar effects on disturbed landscapes in California, the American Southwest, New Zealand and other countries. The landscape history of such parks can, therefore, only be understood in terms of the shifting interactions between nature and culture.

The move to extend national parks into northern Canada in the 1970s also raised the issue of interactions between nature and humans and their implications for national park policy and practice (Nelson et al, 1987). It soon became clear that a national park model built around the idea of pristine, undisturbed wilderness could not rest easily in the North, in lands and waters where native people had been a significant and integral force in shaping ecosystems for centuries. Canadian national parks have since accommodated to this by reshaping the classic wilderness model to include hunting, fishing and other historical activities by native people and by curtailing the intensity and level of recreational impacts that would have been encouraged in similar parks in the South. This kind of adjustment has, of course, also occurred in many other parts of the world, notably Central and South America, Australia, and Africa (McGinnes, 1999).

The extent to which human interference has modified landscapes in and around national parks is, however, still being illuminated. An excellent example is the paper by R. C. Walter and D. J. Merritts (2008) on "Natural Streams and the Legacy of Water-Powered Mills". Their historical study of stratigraphic, biological, archaeological and other evidence in the Piedmont zone of the eastern United States shows that the long standing model of meander driven river dynamics independent of human influence does not always appear to hold up. What Walter and Merritts conclude is that most of the

floodplain sediments and alluvial land forms in these valleys are a product of massive, rapid land clearing and slope erosion beginning with the rush of European

6.

settlement in the 18th century. Tens of feet of sediment have been washed into these valleys and deposited behind the growing array of contemporary dams built to provide for water power and economic survival by pioneer European settlers. The Piedmont ecosystem has literally been transformed not only biologically and culturally but also geologically by early European settlement. Areas like the Great Smokies National Park are often recognized today, at least by professionals, as places restored from 19th and early 20th century clearing, logging and other activities since the establishment of this Park in the 1930s. However, this view of what has been restored is much shallower than the picture to be drawn from the massive transformations described by Walter and Merritts.

Similar observations could be made about other places such as the desert lands of the U.S. and the Middle East. In the San Pedro Valley of Arizona, not far from Aldo Leopold's original wilderness area, archaeological evidence shows the presence of humans since late glacial times, about 10,000 years ago. Some of these sites yield projectile points that have been associated with kills of Mammoth and other large Pleistocene fauna. Whether Paleo-Indian peoples were primarily responsible for post-Pleistocene extinction of much of this fauna is controversial. Some feel that increasing desiccation arising from retreat of northern glaciers and ending of wetter, warmer pluvial times in the Southwest was a major contributing factor. The consensus at the moment seems to be that both climate change and human activity were involved, thereby recognizing the long continued role of humans in Southwestern ecosystems. And the great Pleistocene extinctions should by no means be seen as an early and aberrant impact of early human presence in these ecosystems. By the first millennium B.C., for example, corn and other crops had led to the development of cultivation in numerous places in the Southwest and by the early centuries A.D. were associated with construction of irrigation canals and reorientation of hydrologic and riparian ecosystems. In similar fashion, detailed archaeological research in Yemen, Saudi Arabia and the Oman country bordering the Indian Ocean, has revealed 10 to 15 metres of sediment that arose from long continued irrigation practices of early peoples. They built great dams and irrigation systems in which sediments concentrated, beginning around 1500 B.C.

Wilderness Restored

I do not wish to be seen as arguing here against the fact that some park landscapes show little or even very little evidence of the long human presence. In Canada, for example, Jasper National Park seems to fall in this category. What I am arguing is that trying to understand parks in terms of a model of wilderness without humans is far less useful than an alternative which recognizes human activity in terms of varying time spans, scales, intensities and effects within nature. It seems useful to think of the human role as one that perturbs through space and time over the millennia and in this sense has a recurring pattern comparable to changes in climate.

Nor am I arguing for playing down of the wilderness idea as a critical element in understanding, planning and implementing national parks and other protected areas.

7.

For the wilderness concept is an admirable goal, especially given its historic roots and influence in North America. The influence of wild nature, the origins and characteristics of land forms, the diversity and richness of plants and animals, the completeness of trophic levels and prey and predator species, all these things are a boon to the human spirit, a source of learning and a manifestation of the value of nature in its own right.

What I am arguing is that the defining characteristic of many national parks, as well as provincial and other protected areas, is that they are a result of largely undirected restoration arising from strict protection against technological and economic disturbances. Banff and Waterton are major achievements in this regard. Over a span of about 125 years these parks, after considerable exploitation in the 19th century, have returned through protection to a largely wild state, by no means perfect, whatever that means, but an enormous professional and human achievement that deserves more explicit and wide ranging recognition in Canada. Think for a moment of where we are now, here in Calgary, only about 100 kilometres from a great restored wilderness, with extensive forests, grizzly bears, puma, elk, deer, beaver, and other wildlife that has not been preserved so much as restored from a heavily exploited state in the 19th century because of the general protection against exploitive human activities by the national park.

In recognizing and hailing such great restoration achievements and all the symbolic, philosophical, aesthetic, educational, recreational, and other values that we would otherwise be without, I am not unaware of the risks attendant on too great an emphasis on restoration. For one thing the regrowth of forests and repopulation of animals took decades and did not benefit our immediate predecessors as much as us today. Indeed, even imperfect recovery of ecosystems takes a long time and the activities that led to loss of their original state are costly to many, for many years. In the last two decades the value of restoring natural environments in and near cities as well as in agricultural and rural areas has been widely recognized. Many initiatives have been undertaken to reshape, rebuild and improve ecosystems for human benefit. Many of these restoration efforts involve concepts, use of exotic plants, gardening techniques and other technology that would not be appropriate in a national park or highly protected area where ecological integrity or the indigenous nature of the ecosystem is highly valued and seen as a major contribution to human understanding and use. (See, for example, O'Brien and McIvor, 2007 and Higgs, 2007.)

The big question now is what paths to follow in restoration in national parks and other highly protected areas in future. To what degree should we encourage, accelerate or shape certain plant and animal communities, and on what grounds? The technical means to do these things are often there. But the big issue is who decides on the shape of things to come. This is only partly a technical matter. It also involves values and, in our case, the values of various groups in a democratic society. Hence the critical need, which I will return to later, for more ongoing consultation with citizens --- who have to be

made much more aware of the history of natural systems and of nature/human interactions if they are to be wise in their choices.

8.

National Parks and Protected Areas as Sources of Knowledge

This brings me to the principal point I wish to make: national parks and other protected areas should mainly be valued as sources of knowledge. The learning value of protected areas now has to be put alongside conservation, recreation and tourism as a leading purpose of parks and protected areas in Canada and elsewhere. Education and interpretation have long been important functions of parks and protected areas. But what I am calling for goes well beyond that. We are in a time when human impact on nature has proceeded to the point where observers like Bill MacKibben have lamented the end of nature as we know it. A principal motivation for MacKibben was growing evidence of the pervasive influence of climate change.

Forty years ago, when the first Parks for Tomorrow Conference was held, climate change was not on the agenda although it did appear in the 1978 Parks for Tomorrow Conference (Nelson et al, 1979). The Boreal Forest was still largely undisturbed and not increasingly fragmented by mines, oil sands development, clear cutting and logging and the other exploitive activities that have since the extended the human influence remarkably. Since that time the impacts of air pollution and climate change have also been recognized in polar bears and wildlife of Arctic Canada as well as in the diminishing glaciers of Greenland and Antarctica. The effects of climate change have been intensely studied and debated in the last decade in particular and it is now recognized by many scientists and professionals that with global warming and changes in precipitation and moisture levels, the plants, animals and ecosystems within national parks and protected areas are changing and, indeed, shifting outside their boundaries (Barnett et al, 2008). In other words the systems that the protected areas were created to protect are to some extent, moving elsewhere. Parks' officials and other decision-makers are now working with researchers and concerned citizens to understand and adjust parks policy and practice to these changes.

Much of what is and can be done to deal with the effects of climatic and associated changes on protected area ecosystems depends upon the reaction of citizens, at the national, provincial and local levels. I am reminded of an article in a recent issue of the *Herald Tribune* which described the decline in Minnesota of moose, early melting of lake ice, early arrival of migratory birds and other evidence of climate change while at the same time recounting how local people were largely unaware of or dismissed this evidence, not convinced of its potential significance to their way of life. It is here that we see the great cost of one to two decades of great neglect of environmental education in U.S. and Canadian schools. People frequently do not seem to have even the sense of environment that would allow for considered contemplation of these changes.

It is in this respect that I see national parks and other areas as sources of knowledge. Increasing numbers of them are, and more should be, equipped to monitor and report

systematically on changes in temperature, precipitation, soil moisture, species composition of natural communities and the like, serving as environmental benchmarks for surrounding lands (The George Wright Forum, 2007). Many of them are, and more should, report on the results to park managers, other government decision-makers,

9.

business and the wider community. The meaning of the results of such monitoring will, however, often not be clear for many years. Moreover the reports on unfolding scientific results will not always be well understood by other professionals, politicians and citizens. Experience also shows that it is difficult to maintain government, business and public support for monitoring over a long period of time, especially if the ongoing results are not yielding information perceived as of immediate value to people. I will return to this matter later in my comments on the value of national park and protected area advisory committees.

Parks are also sources of knowledge in a wider sense. The landscape of these areas represents an invaluable learning resource. And this resource is multi-disciplinary or holistic in character. People can come to parks and protected areas with an array of differing backgrounds, knowledge and experience and can continue to learn about their evolving natural and human history indefinitely. I visit Rondeau Provincial Park on the Lake Erie north shore numerous times in the normal year. In many trips over the last three decades, I have come to know many, but certainly not all, the trees and plants, many but not all of the birds, much about coastal erosion and deposition, a lot about ecological relationships such as wind storms, tree throw and forest renewal or too many wrens and too few Prothonotary Warblers. But the learning potential and stimulation of the Park stretches well beyond the visits to be made in my lifetime.

In this respect Rondeau Park is like others in terms of its efforts to get people to understand environment and change. The staff are too few. The message is often very general as well as being seasonal and short term in nature. From a policy perspective, although the efforts of undermanned staff are often laudable, the environmental, interpretation programs cannot be viewed as a serious commitment by governments to help people understand climate change and other challenges of our day. Most interpretation programs do not address critical land use issues that stress the environment of the parks and surrounding greater park ecosystems. Examples are: cottaging in and bordering Rondeau Provincial Park, impacts of agricultural drainage and other activities on the Bay on the north side of the Park, impacts of upcurrent breakwalls and other erosion control structures on retreating Park shorelines, and lowering Lake levels on biotic communities. I could make similar observations, although to a greater extent, about nearby Point Pelee National Park.

Interpretation is also traditionally the first to be cut when money gets scarce. This is a risk today when current economic difficulties may continue or even deepen in the years ahead. At a time when environmental issues, such as climate change, are becoming more and more paramount in terms of human well being, our current approach to learning in parks and protected areas is completely unacceptable. Parks need to be recognized as major sources of knowledge about nature and human behaviour over the

centuries. A major change is needed in the recognition, relevance, funding and role of knowledge in national parks and protected areas. In this respect the leaders of protected area agencies bear a special burden.

10.

Parks and Protected Areas in Urban and Highly Settled Areas

Against this background the current very valuable national park model has significant limitations in terms of the needs of our time. The model since the early 1960s has been large parks encompassing as much of the target landscape or ecosystem as possible. The laudable aim is to husband relatively large, self generating, wildlands as irreplaceable heritage for the people of Canada. These national parks and similar provincially protected areas have been and still are frequently located some distance from cities and highly settled regions. The idea, which originated in the 1960s, is that people will drive to them from time to time on long week ends or in two to three week annual vacations. Implicitly, then, national parks and other large protected areas have been built for an automobile society. Long drives by car were and are an integral part of the national park model. The frequent use of the car for long distance visits is, of course, a contributor to high CO₂ levels and climate change. Yet these great wild parks can be appreciated and valued by humans vicariously or in their own right.

The other side of this story is the growing size of cities and urban areas, the growing number of people in them and their changing ethnic and economic composition (Science, 2008). Perhaps 90% of the Canadian population will be urban by 2040. Many will be migrants from other cultures and countries. Those with us today, and those coming in future, will have little or no appreciation of the wilderness idea, or of ecological integrity. Nor are they likely to be supportive of these ideas or of the agencies and people involved with them. Virtual and other means of exposing city bound students to a wildland experience deserve continued attention. However, while desirable, this kind of effort will not bring the direct contact with nature, land use and public policy that is needed. And the need is increasing as evidence shows declines in park attendance generally and especially among young people, a change that is leading to what is called "nature deficit disorder" by some U.S. researchers (Louv, 2008).

More parks and conservation areas are urgently required in and near cities and towns, not only to bring at least part of wild nature to the physically, culturally and economically isolated people living in them, but also to enhance the environmental quality of the concrete jungle. And these urban parks and protected areas can also play a key role in the monitoring, research and knowledge network necessary to inform people about the impacts that their activities are having on the environment and their future well being. Recognition of this need is slow but can be seen in the Environmentally Significant Area (ESAs) and Economically Significant Landscape (ESLs) programs in my home area of Waterloo Region. Comparable developments are occurring in Toronto, Ottawa and other cities. In Ontario these urban protected programs can complement and encourage the conservation area programs of watershed Conservation Authorities and other

organizations operating in the urban domain.

The need for parks and protected areas in urban regions also applies to highly settled agricultural and rural areas such as parts of the Maritimes, southern Quebec, southwestern Ontario, (Carolinian Canada), the southern prairies, the Okanagan and interior valleys of B.C., as well as the southern tip of Vancouver Island. In many of these areas agriculture is very extensive and intensive with many parts of Carolinian

11.

Canada, for example, having less than 10% in woodland cover. The Okanagan is an example of an area with intensive agriculture, highlighted by the great expansion of viticulture and wine production and, proliferation of retirement housing and recreational development around the shorelines of this and nearby lakes. Parks Canada is in the process of trying to create a national park in the Okanagan and is encountering some major challenges including the establishment of a traditional wildland park in a relatively small area amid numerous competing land uses. You may say that creating a park in such a rapidly developing region is not a task for Parks Canada but should be addressed by the provinces or regional or local governments. But these agencies frequently may not have the resources nor the political support to undertake strict protection without federal cooperation, participation and help. And the Okanagan would be Canada's only temperate desert national park.

Nation-wide Assessment of National Parks and the Federal Policy

About eight years ago Parks Canada undertook a valuable cross country review of its philosophy, mandate and operational circumstances across Canada. The product was a ground breaking report that brought the useful concept of ecological integrity --- of indigenous self generating plant and animal communities --- to the fore-front in planning and managing national parks. Ontario has also recently adopted the ecological integrity mandate in its new Park and Conservation Reserves Act.

What we require now, urgently, is a new nation-wide assessment of the federal role in parks, protected areas and related conservation and sustainability needs. The earlier ecological integrity report can be seen as a major step in organizing national parks to meet the environmental challenges of the day on the basis of the new science that emerged after 1980. But this review did not address some substantial items of broad concern to Canadians. One of these is the policy and practice role of Parks Canada and the federal government in protected areas in urban and highly settled parts of the country. Another is the need for greater coordination among Parks Canada and other federal protected area programs, such as wildlife conservation areas and marine protected areas. Another challenge is the low level of coordination and cooperation among federal and provincial park and protected area systems. And another is the fit between government park and protected area programs and those organized at an increasing rate by private organizations.

National Heritage Areas and Canadian Heritage Rivers

In the late 1980s, following the 1985 Centennial Review of national parks across Canada,

a federal committee recommended the creation of National Heritage Areas . The idea was that a relatively strict level of protection would be agreed upon by Parks Canada and provincial protected area agencies. The two could then cooperate in putting mosaics of federal, provincial, municipal and even private lands together into a collaborative National Heritage Area. This proposal died but deserves another look at this time of diminishing resources for parks and protected areas. And I have not addressed the need for the federal government to reach out into what many would call the domain of local governments and support them in developing more effective

12.

conservation arrangements. One possible means is through the Heritage Rivers program. The provinces and the federal government have cooperated in establishing more than 35 of these heritage rivers across Canada including a number that lie in highly settled regions. The crux of the Canadian Heritage Rivers program is the requirement to establish a management plan. These plans often seem to be rather precarious. Furthermore, while some federal funding is available for planning, very little is subsequently forthcoming for more effective management.

Broadening the National Park Portfolio: the Potential of National Landmarks

One big motivation for a broad national review of the federal role in parks and protected areas, is the need to broaden out from the 1960s model of the large wildland park. In saying this I am putting historic parks to the side, because of time limitations, although there is also a need to expand these areas to protect outstanding landscapes which reflect sustainable interactions between nature and culture. Areas that might qualify include parts of Manitoulin Island, the Alberta foothills ranching country, the Cypress Hills, parts of the Eastern Townships of Quebec and the countryside of Cape Breton.

In the late 1970s and early 1980s Parks Canada seemed to be moving toward a wider protected area portfolio. This included Canadian Heritage Rivers, which came into being, and National Landmarks, which did not. The National Landmarks were intended to encompass smaller areas with more specific wildlife, archaeological, geologic or other values. They were not intended to protect representative landscapes or ecosystems, the prime mandate of national parks. The National Landmarks were a potentially promising cooperative enterprise among federal, provincial and other governments as well as private stewards, which today could help meet the need for a federal protected area role in highly settled areas.

In some ways the National Landmark concept parallels the role of the National Monument in the United States (U.S. Department of the Interior, n.d.). Over the years Presidents have used their powers to establish these Monuments in various parts of the U.S. The Monuments have subsequently tended to attract cooperative conservation efforts in surrounding lands. Within the last few years another more flexible type of protected area has been introduced in the U.S., this being the National Conservation Area (NCA). This essentially prohibits mining, forestry and other major economic enterprises but allows for the careful planning of hunting and other traditional activities. These NCAs also attract cooperative conservation activity by other federal departments,

state agencies and private organizations such as the Nature Conservancy. In Canada the need is compelling for a tool or tools that will bring the federal government and the national presence into play outside the traditional national park.

A Civics Approach

And so to my final point: the desirability of a wider civic approach to planning, managing, and deciding upon national parks and other large protected areas in Canada.

13.

For me two lines of development seem essential to this approach. The first is advisory committees and the second is greater links with educational institutions, especially universities.

Advisory Committees

When new national park legislation was passed a few years ago, many conservation groups and concerned individuals pushed for the inclusion of a national advisory committee with a mixed composition of knowledgeable businessmen, scientists, scholars and citizens. This proposal was resisted by senior Parks Canada personnel. The compromise was an annual day long meeting held by invitation by Parks Canada, mainly to introduce people to certain plans and developments and get some feed back. This arrangement has no real substance and staying power as a place for long term monitoring and assessment and careful interactive discussion of policies, practices and their effects. The lack of an ongoing national advisory committee isolates Parks Canada from knowledgeable organizations and citizens. Such a committee exists in Ontario where the Ontario Parks Board advises the Minister of Natural Resources on policy and practice. This Board has studied and made recommendations on, for example, the 2007 Parks and Conservation Reserves Act, logging in Algonquin Park and developing a policy for research as a major park land use alongside conservation, recreation, tourism and education.

Within the domain of Parks Canada itself, I know of one very successful advisory committee. This was set up to provide for exchange of views and information at the time that the Bruce National Park was created on the peninsula between Lake Huron and Georgian Bay in 1986. This committee has functioned, somewhat unevenly, over succeeding decades, while addressing major issues such as the Park Management Plan, the Greater Park Ecosystem Plan, snowmobiling, relations with First Nations and trail and visitor impacts. The committee is more than 80% locally affiliated. I serve as the Canadian Parks and Wilderness Society representative and believe my national and provincial representations have generally been treated with respect and often been effective. In the process, even with turnover of committee members, much intergroup learning and interaction has built up, along with heightened mutual understanding of a national park and its role on the local, provincial and national scenes.

I believe a similar type of advisory committee would be beneficial for many national and

provincial parks in Canada. As a platform for exchange of scientific and general information and views and as an incubator for effective change, such committees can negate misunderstandings and misrepresentations. They can serve as a monitoring and educational tool and as a motivator for research toward better understanding, planning, managing and decision-making for parks and protected areas.

To illustrate more explicitly, the Bruce committee recently decided to adopt a more vigorous and continuous approach through sub committees. The sub-committees will bring Parks Canada staff and committee members together to examine: 1) the increasing impacts of ATVs on lands in and outside the park; 2) the need for more

14.

cooperation with NGOs and other land stewards working to protect valued environments in the greater park ecosystem; and, 3) holding an annual knowledge forum where the results of research in and around the park will be presented to the local and wider community. We need more committees, or bridges, like this --- institutional tools to parallel the greater park ecosystem science of national parks and other large protected areas in Canada.

National Parks and Protected Areas, Universities and Knowledge Institutions

The second major line of development in a civics approach to national parks and similar protected areas is strengthening the links between universities, colleges and schools and national park and protected area agencies. The successful planning, operation and adaptation of national parks and protected areas is necessarily based on knowledge of the natural and human dimensions of the challenges. In this respect Parks Canada has been building strength in ecological sciences, following the report of the Ecological Integrity Panel. Parks Canada has also been working with selected universities and colleges to secure the knowledge it needs for its work. In some cases a systematic approach has been taken; an example is the Parks Research Forum of Ontario (PRFO), a federal, provincial and university consortium, jointly contributing research to and networking among concerned groups and individuals in Ontario (PRFO, 1996-2006).

In ten years of operation PRFO has produced and published hundreds of papers on diverse yet relevant topics such as: species at risk; ecosystem planning; ecosystem science; monitoring and assessment; recreation and tourism; policy and planning; and use of geographical information systems and satellite imagery.

PRFO is a valuable tool for linking researchers, protected area staff, managers, students and other concerned people in the field of parks, protected areas and sustainable development. Similar committees seem to be underway in Manitoba and B.C. Another example of cooperative work on knowledge is the Science and Management of Protected Areas Association, headquartered in the Maritimes. Parks Canada has also recently been exploring the prospects of establishing Cooperative Research Units at universities in the same way as is done in the U.S. These Centers bring federal and state agencies together with universities to form mutually beneficial protected area research networks. Approximately 20 of these Centers exist in different parts of the U.S.

and they hold considerable promise for Canada. And to the extent that these efforts provide for environmental leadership among youth so they contribute to a more informed and sustainable society.

A Timely Conference

So we hopefully are on the threshold of a new era in national parks and protected areas and their vital contributions to the evolving needs of society. These needs are in some ways quite different from those of 40 years ago. I have raised some of the significant ones and offered some suggestions for the future, particularly the development of parks and

15.

protected areas as sources of knowledge for the people of Canada. I have not discussed many important issues which I trust will be effectively addressed in ensuing presentations and discussions here. I look forward to this timely conference and want to express my great thanks to the organizing committee and to the principal organizers in Calgary, notably those affiliated with the host institution, the University of Calgary. The hope is that this university will serve as one major focal point for research and planning on national parks, protected areas and conservation of our national and international heritage. The University of Calgary is a natural hearth for such work in Canada.

Good luck, do good things, and thank you very much.

Acknowledgements

My hand shakes at the thought of even trying to acknowledge the many, many people who have worked with me on issues relating to national parks, protected areas and conservation in Canada and elsewhere. With very few exceptions it is impossible to thank numerous people who helped along the way. Among faculty colleagues at the Universities of Calgary, Western Ontario and Waterloo I am especially indebted to Larry Cordes, Steve Herrero, and my long time friend Harvey Buckmaster. At the University of Western Ontario I began what has been a long and fruitful relationship with Chad Day. At the University of Waterloo I profited from the fine ecological knowledge of John Theberge. In work with the National and Provincial Parks Association, now Canadian Parks and Wilderness Society, I gained greatly from the efforts of Gavin Henderson, Al Frame, Robin Fraser and Bob Peart. I continue to learn from the thought and activities of Harvey Locke. I am also informed regularly by continuing efforts with organizations such as The Bruce National Park Advisory Committee, The Ontario Parks Board of Directors and The Carolinian Canada Coalition. In work with government agencies I have benefited most substantially from associations with Al Davidson, the late John Carruthers and Stephen Woodley. I learned something from all my students but especially remember work with Bob Scace, John Marsh, Jim Battin, Don Mann, Terry Fenge, Kevin McNamee, Scott Slocombe, Lucy Sportza, Sabine Jessen and Karen Beazley. Others to whom I am greatly in debt must remain unnamed, but the work

reported upon here bears their mark. I also wish to thank all the people who, over time, helped put the research that is background to this essay together, through arduous assistance with editing and manuscript preparation. Many students and staff at my universities helped with this as well as illustrations. Here I especially wish to thank Mrs. Gray at Calgary, Mrs. Linda Norton, Beth Dempster and Ashleigh Beyer at Waterloo. Finally much of my work in the last decade in particular has gained from the editing, research and other assistance of Shirley Nelson and the patient support of a family that is now flying on its own. And I would be much amiss if I did not now acknowledge the many government agencies, other organizations and individuals who made the work reported upon here possible through substantial funding or in-kind contributions, notably the old Canada Council, the Social Science and Humanities Research Council, foundations such as the Donner and Parks Canada and other concerned agencies.

Selected References

Barnett, T. P. et al, 2008. Human-Induced Changes in the Hydrology of the Western United States. Science, v. 319, February 22, 2008, pp 1080-1083.

Forman, Richard T. and Michel Godron, 1986. Landscape Ecology. John Wiley and Sons, New York.

Higgs, Eric, 2007. Commentary on Is there Anything Good about Everglades Restoration. Environments, v. 35 (1), pp 21-24.

McGinnis, Michael Vincent (ed), 1999. Bioregionalism. Routledge, London and New York.

Louv, Richard, 2008. Last Child in the Woods, Saving Our Children From Nature-Deficit Disorder. Algonquin Books of Chapel hill, Workman Publishing, New York.

Nelson, J.G., J.C. Day, Lucy Sportza, James Loucky, and Carlos Vasquez, 2003. Protected Areas and the Regional Planning Imperative in North America: Integrating Nature Conservation and Sustainable Development. University of Calgary Press and Michigan State University Press, Calgary and East Lansing, 446 pp.

Nelson, J.G., R.D. Needham, S.H. Nelson, and R.C. Scace (eds), 1979. The Canadian National Parks: Today and Tomorrow. Conference II: Ten Years Later. Banff, Alberta, October 8-13, 1978. Faculty of Environmental Studies, University of Waterloo, Waterloo, Ontario. 2 vols.

Nelson, J.G., Roger Needham, and Linda Norton, 1987. Arctic Heritage. Preceedings of a Symposium, August 24-28, 1985, Banff, Alberta. Association of Canadian Universities for Northern Studies, Ottawa.

- Nelson, J.G. and R.C. Scace (eds), 1968. The Canadian National Parks Today and Tomorrow. Proceedings of a Conference in Calgary, Alberta, October 9-15, 1968. Studies in Land Use History and Landscape Change. The University of Calgary, Calgary, 2 vols.
- Nelson, J.G. with R.C. Scace, 1970. Canadian Parks in Perspective. Harvest House, Montreal.
- O'Brien, William E. and Jennifer A. McIvor, 2007. Is There Anything Good about Everglades Restoration? Environments, v. 35 (1) pp 1-20.
- Parks Research Forum of Ontario, see Proceedings 1998-2006, Parks Research Forum of Ontario, Faculty of Environmental Studies, University of Waterloo, Waterloo, Ontario.
- Sellers, Richard West, 1997. Preserving Nature in the National Parks: A History. Yale University Press, New Haven and London.
- Science, February 8, 2008, Special Issue on Cities. Science, v. 319, February 8, 2008, pp 756-769.
- The George Wright Forum, 2007. Integrating Science and Management. The George Wright Forum, v. 24, no. 2.
- Walter, R.C. and D.J. Merritts, 2008. Natural Streams and the Legacy of Water Powered Mills. Science, v.319, January 18, 2008, pp 299-303.
- U.S. Department of the Interior, n.d., The National Parks: Index 2001-2007.

17.