

# National Parks and Protected Areas as Building Blocks for Regional Conservation Planning in Canada and the USA

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## Abstract

*National park and protected area thought and practice have evolved considerably in the last two to three decades. National parks are increasingly perceived and planned as not only distinct natural areas but also as part of adjacent lands and waters or greater park ecosystems. In this context, protected areas are more and more intertwined with overall land use planning and public and private stewardship in surrounding lands and waters. Planning is also increasing thought of as occurring at several interrelated scales. Planning is also marked more and more by interactive and civic as well as traditional rational or corporate approaches. Relevant protected area processes have extended from planning and management, through co-operation and partnerships, to research, monitoring, assessment, communication and adaptation in interactive and sometimes competitive fields of conservation, development and civic interest. The foregoing ideas are illustrated by referring to some current initiatives in various parts of North America. Some implications are drawn from these cases for concerned governments, private groups, scholars and citizens generally in Canada and the United States.*

## The 1960s to 1980s

When the first national park master plans—later management plans—were prepared by federal governments in the US and Canada in the 1960s, they focused almost totally on the use and conservation of lands and waters within the park boundaries. Areas outside the boundaries were mapped as blank and were generally ignored in the planning documents. The area inside the boundaries was divided into zones ranging in the Canadian case for example, from nature reserve, through wilderness and natural environment, to recreation and service areas.

The preparation of the plans was mainly driven by the perceived need to provide for the increasing recreation and tourism demand arising from population and economic growth after World War II (Nelson and Scace, 1969; Nelson and Scace, 1970). The different zones were intended to provide for various kinds, amounts and intensities of recreation and tourism while also protecting the scenery, wildlife and other natural resources or features for which national parks and protected areas were created. The zones were usually delineated on the basis of historic, current and prospective recreation, road and related land use patterns. Wildlife habitat, old growth forests, and other ecological factors generally played a secondary role.

*Resources* and *wilderness* were basic guiding concepts for planning. Wilderness was generally thought of in the US sense as large remote undisturbed areas where humans were visitors who did not remain. This perception of wilderness was enshrined in the 1964 US Wilderness Act and later legislation applicable not only to National Parks and Monuments but also to designated areas of National Forests, Fish Wildlife Refuges and the Bureau of Land Management (BLM). Aside from National Parks, counterparts to these U.S. federal lands generally do not exist in Canada where their responsibilities and functions fall largely to the provincial governments.

In the 1960s and 1970s, provincial and state governments tended to think about and plan for parks and protected areas in the same general ways as federal governments, although more unevenly and often with greater stress on recreation. Federal and provincial frameworks or systems were created to provide for identification of the natural regions which ideally would each house a representative park. This type of systems thinking took greater hold in Canada than the US where the system was more flexible and a wider range of protected areas was established to meet perceived needs, for example, national recreation areas, national seashores and national preserves.

In the 1960s and 1970s in both Canada and the US, governments, especially the federal, provincial and state governments, were responsible for park and protected area planning, management and decision-making. The private role was to provide public support and advocacy for national parks and protected areas. Non-government organizations (NGOs) such as the Sierra Club, the US National Parks and Conservation Association (NPCA) and the National and Provincial Parks Association of Canada (NPPAC) later the Canadian Parks and Wilderness Society (CPAWS), served as watchdogs along with state or provincial counterparts such as the Federation of Ontario Naturalists (FON).

### **The 1980s to Present**

This general state of affairs began to change quite rapidly in the 1980s for a number of interrelated reasons. Native people such as the Arctic Inuit, refused to work with the classical Yellowstone “uninhabited wilderness” model and succeeded in securing hunting, fishing and other traditional land use rights in northern national parks. In this respect, the Inuit and other indigenous people of northern Canada have been forerunners in the development of the “inhabited wilderness” model now used widely in Central and South America as well as other parts of the world (Stevens, 1999).

In the 1980s, budget cuts led to a reduction in the role and capacity of senior governments in the protected area field. This helped lead to a growing role for NGOs such as the Nature Conservancy, the World Wildlife Fund and more recently the Wildlands Project. These NGOs moved beyond their emphasis on education and advocacy to take on more large scale fund-raising, major research projects,

proactive planning for protected areas, technical assistance, facilitation, and leadership overall. The large NGOs also encouraged the use of leases, easements, trusts and other means of securing development rights on private land. This stewardship approach owes much to the diffusion of ideas and experience from New England and Europe.

The 1980s rise of deep ecology and bioregionalism led to attempts to link science and spirituality—ecology and the wild and beautiful—through concepts such as “home place”, “sense of place”, and watershed planning (McGinnis, 1999). Ecology or ecosystem science flourished and led to the development of new theory and approaches such as landscape ecology, biodiversity and conservation biology (Foreman and Godron, 1986; Noss, 1999-2000; Soulé and Terborgh, 1999). At the local level these new approaches broadened thinking and planning from individual protected areas to surrounding lands and waters or *greater park ecosystems*. At higher levels these new approaches led to planning for connected networks of government and private protected areas and to extensive *regional or landscape scale conservation planning, management and decision-making*. This more extensive thinking and planning worked not so much through the direction of governments as public and private interaction and stewardship.

The foregoing changes were associated with the development of university and college research, education and outreach programs. In the 1960s virtually no research, education and outreach work was undertaken in relation to parks and protected areas as a coherent field of study, public policy and practice. In the intervening thirty years a number of protected area, wildland or related research and educational programs have developed and university people have made major contributions to the scientific, technical, planning, civic and other advances described previously. It is important to note however, that protected area work in the universities is still in its early stages. It requires strengthening not only as a source of new ideas and approaches but to provide the skilled people and capacity building needed to promote the increasingly significant roles of national parks and protected areas and regional conservation planning in North America today. In the context of burgeoning land use and development pressures protected areas are seen more and more as offering ecological or social services essential to sustainability and quality of life. These services include conservation of wildlife species and biodiversity, soils, landforms and scenery, water and air quality, archaeological and historic sites, and human heritage. They also include environmental monitoring, education, research, recreation, tourism and other cultural or economic activities including hunting, fishing, and other practices of indigenous and local people.

### **Greater Park Ecosystems**

Some examples can be discussed of greater park ecosystem or regional conservation planning at the local or greater park scale. One example is the preparation of the Georgian Bay Islands National Park Ecosystem Conservation Plan (ECP) (Nelson and Skibicki, 1997). This ECP is illustrated in Figures 1 and 2.

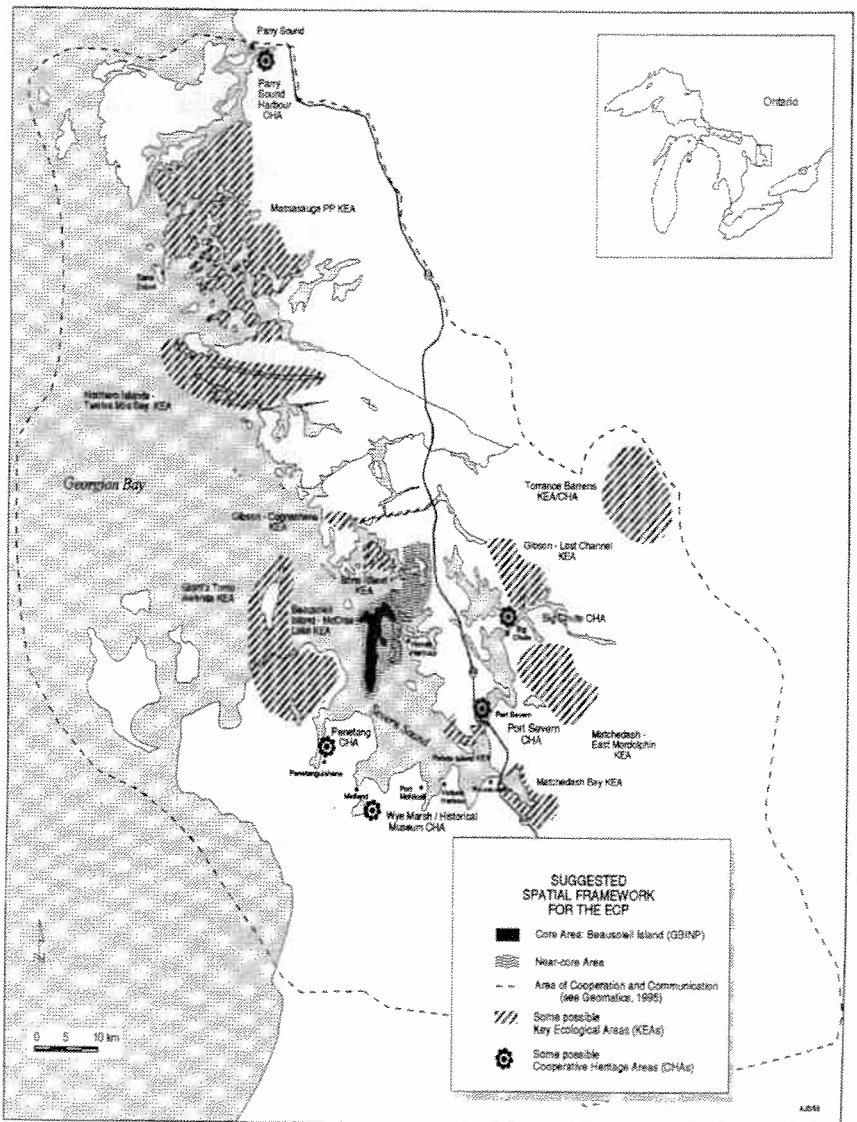


Figure 1: Suggested Spatial Framework for the Georgian Bay Islands National Park Ecosystem Conservation Plan (Source: Nelson and Skibicki, 1997).

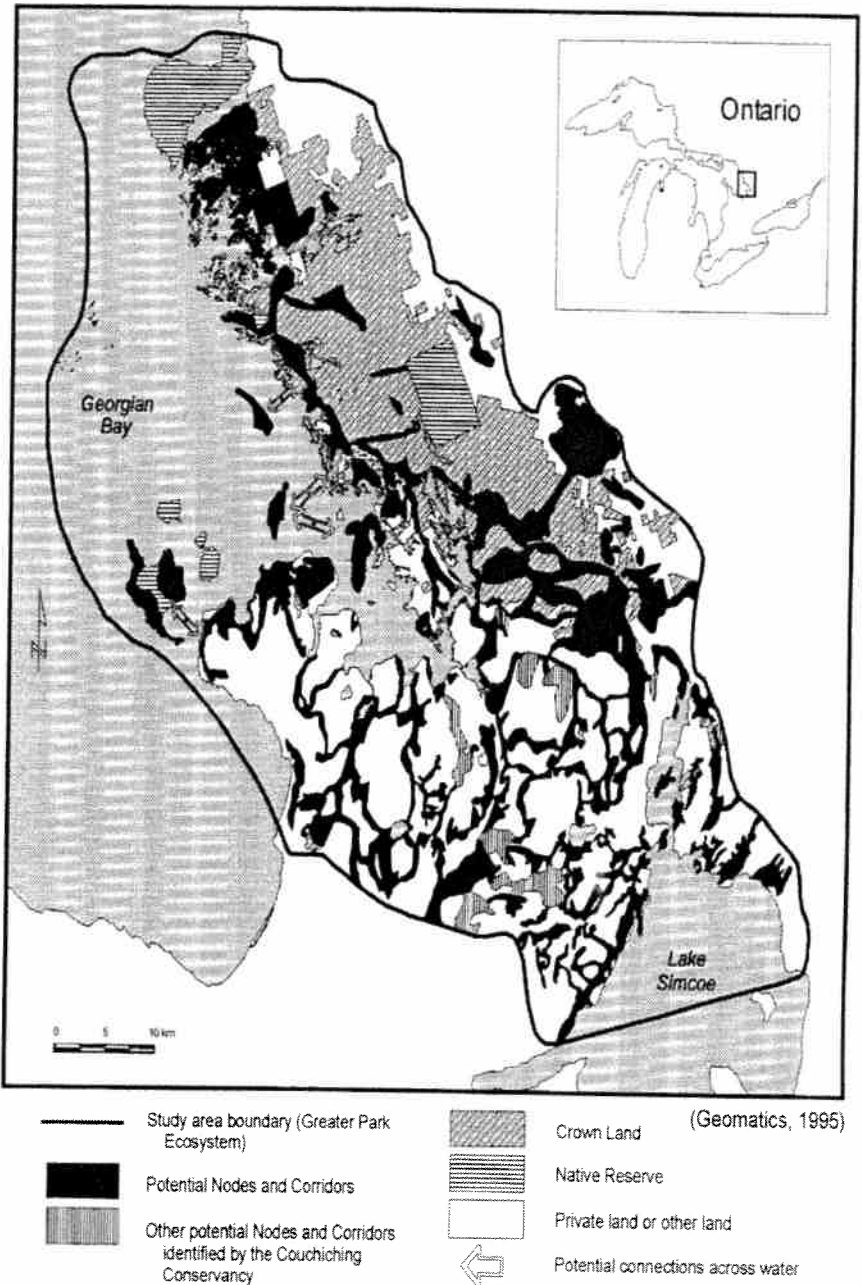


Figure 2: Georgian Bay Islands National Park Ecosystem Conservation Plan Area of Cooperation and Communication (Source: Nelson and Skibicki, 1997).

The Georgian Bay Islands National Park ECP was initiated and is being implemented by the federal government through interaction among Ontario Parks, the Ontario Ministry of Natural Resources, local governments and private organizations. The local municipal District of Muskoka is considering protecting the natural areas or nodes and corridors around the national park by designating them as Environmentally Sensitive Areas (ESAs) in its Official Plan. Private trusts such as the Muskoka Lakes Heritage Foundation are also acquiring appropriate lands around the national park. Proposals have been prepared to include the national park and surrounding lands and waters in a proposed UNESCO Biosphere Reserve which would include much of the littoral area of Georgian Bay. In the recent provincial *Lands for Life* planning program for northern Ontario, Georgian Bay Islands National Park has been linked to nearby Massassauga Provincial Park and other public and private lands in the broad context of a plan for an eastern Georgian Bay Heritage Coast.

The formal Consultative Committee and the Civic Forum recommended in the Georgian Bay Islands National Park ECP have however, not been officially established (Table 1). A small group is working to link the relevant government departments at the federal, provincial and local level. This working group is mainly concerned with developing and sharing information, for example, through Geographic Information Systems. The Annual Meeting of the Georgian Bay Association (GBA)—a private organization of cottagers—brings many different government and private groups together and is functioning in such a way as to partly fill the communication and education role of the proposed Civic Forum.

Table 1: Basic Structure of the Ecosystem Conservation Plan for GBINP Area (Source: Nelson and Skibicki, 1997).

Area	Responsibility for Implementation
Core Area	Parks Canada in consultation with the public.
Near-core Area	Actions implemented mainly through the Consultative Committee.
Area of Cooperation and Communication	Communication and cooperation through the Forum; focus on private stewardship; education; interpretation; collaborative staffing, budgets, land management and other shared or civic activities by concerned agencies groups and citizens.

ECPS have been prepared for other national parks, for example St. Lawrence Islands in eastern Ontario and Fundy in New Brunswick. In both cases these parks have been envisioned in the context of a series of increasingly extensive planning scales. The Algonquin to Adirondack corridor or bioregion around St. Lawrence Islands

National Park applies to hundreds of square kilometers straddling the Canada – US border between Ontario and New York State. Considerable progress seems to have been made in undertaking research, monitoring and implementation of the Fundy National Park ECP (Forbes, Woodley and Freedman, 1999). This work has been conducted through co-operative committees involved interactively in planning for the Fundy National Park ECP in parallel with planning for a Model Forest, which covers hundreds of square kilometers of adjacent lands.

US examples of greater park ecosystem planning include Yellowstone National Park and Sand Dunes National Monument in Colorado. Yellowstone was the site of one of the first if not the first, formal Greater Park Ecosystem (GPE) planning exercises in North America. Yellowstone has been beset by an array of internal recreational pressures for many years including the recent growth of winter uses such as snowmobiling. These recreational pressures have placed stress on wildlife as well as on air quality. Pressures from recreational facilities and activities, logging, grazing, and mining outside of Yellowstone's boundaries also have been increasing over the last two decades.

Planning for the Yellowstone Greater Park Ecosystem occurred principally between the US National Park Service and the US Forest Service which controlled large blocks of land adjacent to the park. The planning was essentially corporate and top-down in nature and was not generally supported by local business and citizen groups when the results were presented for discussion and response at public meetings. These interest groups have refused to agree to the GPE plan. It is however, being used as a guide in decision-making by Yellowstone National Park staff (Jensen, 2000). What the implications of this procedure will be over the longer term remain to be seen.

The Sand Dunes National Monument is an example of more informal interactive and adaptive greater park ecosystem planning. The Monument abuts the Sangre del Cristo Mountains in Colorado. The Monument was set up to protect a set of large sand dunes whose origin lies in the windblown loess and glacial deposits in the valley to the west. The dunes are located in a basin of interior drainage and are stabilized by a surrounding high water table and wetlands which keep the sands moist and tend to hold them in place. The surrounding wetlands and range also provide habitat for antelope as well as migrating waterfowl, sandhill cranes and other birds. The groundwater in the area has been threatened by a private proposal to mine and ship it over the mountains for use in cities such as Denver (Monument Staff: personal communication).

The US Nature Conservancy recently purchased about 100,000 acres of wetlands and range adjoining the Monument for wildlife and water conservation purposes. Some interaction among the Conservancy, National Monument staff and other concerned groups seems to have been involved in this purchase. On the other hand, a group of local residents and state and federal politicians have recently

developed a proposal to have the Monument expanded and turned into a national park which would include various habitats and vegetation communities in the nearby valley and mountains. This proposal may not be an attractive one for other government agencies involved in waterfowl conservation and management, for example, the state fish and game agencies. It also may not be perceived as a good idea by the US Forest Service which could lose lands in the Sangre del Cristos to the national park. Some private groups and residents are also wondering whether a national park is a better way to address the challenges than some type of interactive and evolving framework including the Monument, organizations such as the Nature Conservancy, and state and local groups. Such an informal, interactive approach seemed to be getting underway prior to the national park proposal. The approach involved information exchange and recognition of mutual interest rather than formal predominantly single agency planning of the type represented by the national park proposal.

The Yellowstone and the Sand Dunes cases show that interaction among various concerned government and private groups cannot always be seen as co-operative and formal. Rather the interaction may sometimes be formal, sometimes informal, sometimes co-operative, sometimes competitive and generally adaptive to the context. Overall it is basically civic in nature. In the Sand Dunes case it may open the way to several planning alternatives that are more comprehensive and effective from the conservation and sustainable development standpoint, than the current situation.

### **Landscape Scale Regional Conservation Planning, Management and Decision-making**

Some examples can also be discussed of more extensive corridor, regional, landscape or corridor approaches to nature conservation, planning and human development. These approaches often involve both public and private protected areas, overall land use planning, and leases, easements and other means of public and private stewardship.

One example is the international proposal to link Cascades National Park in Washington with Manning Provincial Park in British Columbia as well as with other public and private conservation programs in the region. This proposal arose mainly from citizen groups and was not always strongly supported by government agencies, for example, the US National Parks Service. The proposal raised questions about loss of sovereignty in the US. The campaign for the proposal seems to have been very aggressively conducted by some conservationists or environmentalists. This approach threatened landowners and other concerned parties. As a result of such considerations the proposal has not progressed far to this date (Miles, 1999).

Another example of regional or landscape scale conservation planning is the Biosphere Reserves advocated by UNESCO since the 1970s. These have not been as



successful as anticipated in North America. The Canadian federal government did not give strong backing to the program. It has however, recently been privatized in Canada and more progress is being made. Many of the Biosphere Reserves that were created in the US included substantial amounts of public land, for example national parks. The program has been hindered on both public and private land in the US by questions about loss of sovereignty to international agencies such as UNESCO.

One case that seems to be relatively successful is the Southern Appalachian Biosphere which includes Great Smokies National Park as well as large blocks of public and private land in surrounding states such as the Carolinas and Tennessee. An excellent report on the workings of this biosphere and of the interaction among parks and protected areas, universities, various government agencies, private groups and individuals has recently been published (Peine, 1999). Much of the progress seems to arise from research, monitoring, assessment and planning by government and university personnel working collaboratively, often through formal arrangements such as the US National Park Service Co-operative Research Unit established at The University of Tennessee.

Other examples of large scale conservation approaches include corridor or bioregional initiatives such as the Yellowstone to Yukon project. The Y2Y is a huge initiative involving interaction among parks and protected areas and private and public lands in the Yukon and the northern and central Rocky Mountains of Canada and the US (Figure 3) (Locke, 1997; Locke, 2000). The project has been led by the Canadian Parks and Wilderness Society (CPAWS) and other NGOs and is linked increasingly with comparable large scale regional conservation initiatives such as the Wildlands Project in the US.

The Y2Y can be viewed in sections or parts, which can be planned in different ways depending on the context. A particularly interesting section involves the Northern Rockies of British Columbia. Here the provincial government's Land and Resource Management Planning process was the vehicle for a new approach to meet the needs of people and nature, A Muskwa Kechika Management area was established by statute in 1999. Originally covering 11 million acres and the subject of a November 2000 announcement of intention to expand it by another five million acres, this vast region represents protected areas planning at a much more extensive and integrated scale than previously seen in North America. Of the 16 million acres, three million acres are in wilderness parks, two million acres will be protected from forestry as "wildlands" which do not preclude mining, and the remaining 11 million acres are a "special management zone". The special management zone permits some resource extraction activity but has a statutory objective of maintaining wildlife and wilderness values over the long term. The entire area is under the oversight of a specially funded Muskwa Kechika Management Board which includes economic and environmental representatives as well as community representatives and First Nations people. Government decisions affecting the area are seen as

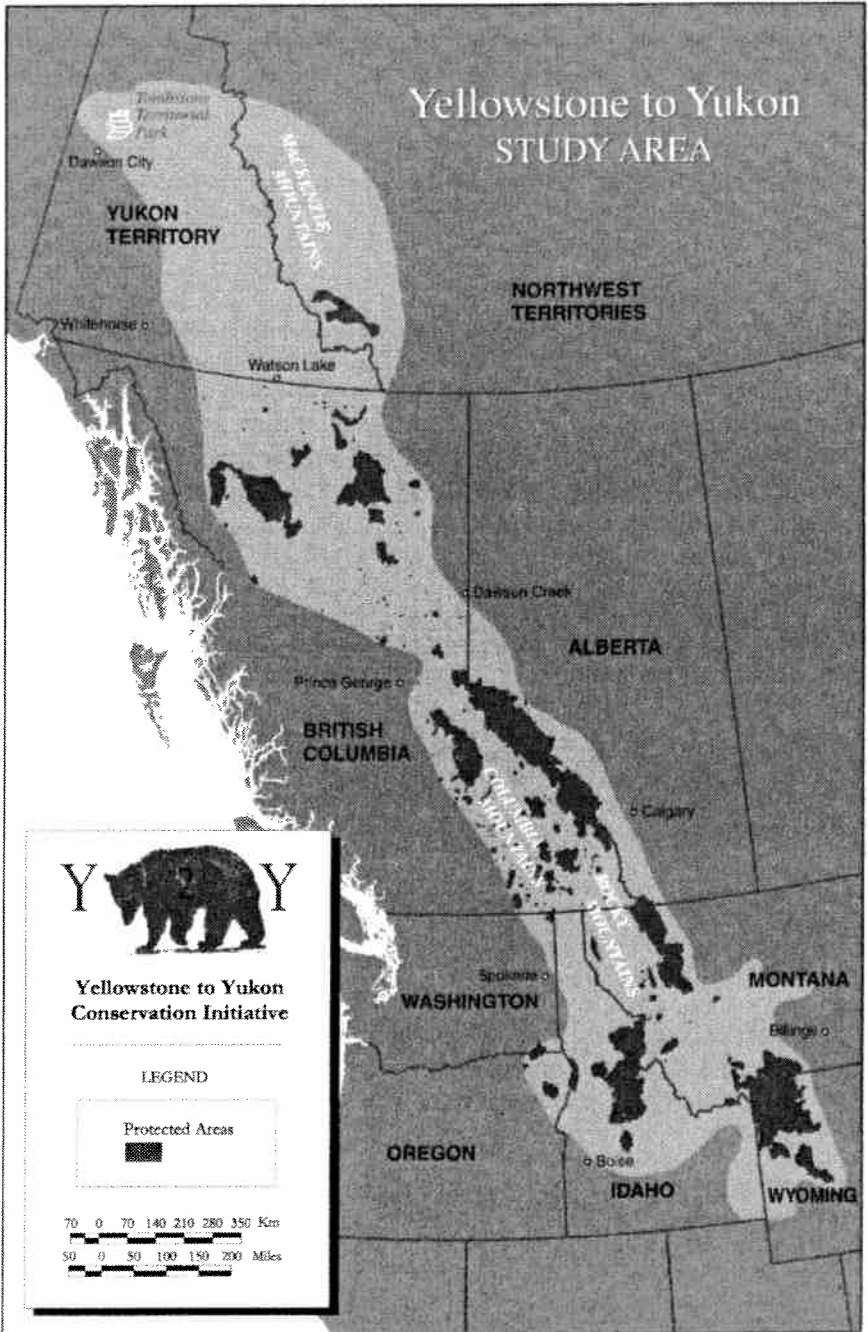


Figure 3: Yellowstone to Yukon (Y2Y) Study Area (Locke, S. 2000).

being cross-departmental so that the more powerful resource ministries are not able to prevail automatically over the environmental ministries. For proponents of the Yellowstone to Yukon conservation initiative, it has the potential to represent the realization of about one twelfth of their goals on the ground (Locke, H.: personal communication).

Another useful example is the Sky Islands Project which is discussed in the Spring 2000 special issue of *Wild Earth* (Locke, 2000; The Wildlands Project, 2000a; The Wildlands Project, 2000b). The Sky Islands initiative is part of the continental work of the Wildlands Project. This Project consists of an interactive group of scientists, scholars, professionals and concerned citizens who are planning large landscape corridors, networks or bioregions among the US, Canada and Mexico. Non-government organizations such as the World Wildlife Fund-US (WWFUS) are also planning and promoting comparable large conservation projects throughout the world, for example in the Chihuahu Desert of the US southwest and Mexico and in the Carpathians of southeastern Europe. Other North American regional projects include the Klamath Siskiyou Ecoregion (Noss, 1999-2000), the central coast of British Columbia (Sanjayan, Jeo and Sizemore, 1999-2000) and the Wild San Juans (Pearson, 2000).

Figure 4 presents a conceptual design or vision for the Sky Islands Project. This design is intended to guide a long term effort to restore and maintain the region's native wildlife and ecological processes as well as its wild nature. The project applies to the high fault block mountains, intervening dry lands, and riparian corridors of eastern Arizona, western new Mexico and the Sierra Madre Mountains of Mexico. The mountains in much of the region rise 10,000 feet or more above the surrounding drylands and basins. The climatic effect of elevation is such that the mountains support different vegetation associations and habitats ranging from desert, grassland and savanna through pine, fir and spruce forests.

Logging, mining, grazing and other human activities have degraded and fragmented these natural systems considerably. Large carnivores such as the grizzly bear, the wolf and the jaguar have largely been eliminated. Many other changes have also occurred, for example in indigenous plant and animal life through the invasion of exotics or control of wildfire. The hydrologic systems of many of the watersheds have been damaged and water flow and water quality reduced.

The Sky Islands Projects is intended to heal "these wounds" by using a variety of approaches such as restoration of the Mexican gray wolf, the promotion of linkages among habitats and the establishment of a connected system of public and private protected areas (Foreman, Dugelby, Humphrey, Howard and Holdsworth, 2000). Some of these areas are planned as core areas including national parks or monuments, national forests, wildlife refuges or other relatively highly protected government and private conservation areas. Some of these core areas have been designated as wilderness areas under the relevant US legislation. The Sky Islands

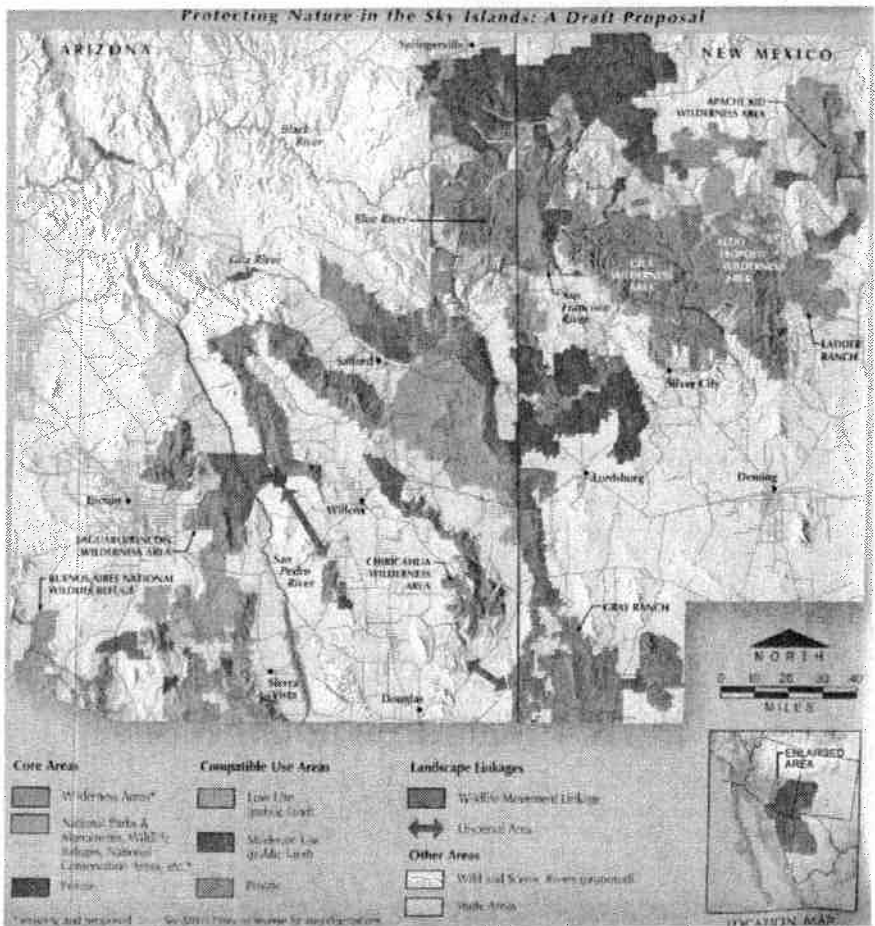


Figure 4: Sky Islands Design (Source: Wild Earth 2000).

Vision, or design, links the core areas with surrounding compatible land use areas including public and private lands subject to low to moderate grazing, recreation and other uses. Other areas are mapped as wildlife movement and dispersal areas, study areas or wild and scenic rivers.

The plan is grassroots oriented. However it depends on government support and involvement through federal, state and municipal land and water management agencies as well as through favourable tax provisions and government incentives for leases, easements, trusts and other forms of stewardship. The Sky Islands Initiative is being conducted by the Wildlands Project in co-operation with some other leading private conservation organizations such as the New Mexico Wilderness Alliance. The Sky Islands Initiative also involves interaction with relevant government agencies although they do not seem to be recognized as partners in the same sense as the NGOs. The project also involves work with landowners and land-

owner groups. Some of the ecologically most important areas are considered to be the large private ranches currently managed by their owners as core, linkage or compatible zones.

In this context the Sky Islands Project recognizes that within its region are many independent organizations and conservation initiatives. "Although embracing these many other conservation campaigns" the Project "does not propose to initiate or direct them, but rather to provide an integrated context, rationale and coordination for them. Groups and individuals whose conservation work has the effect of contributing to realization of a regional wildlands network still may not endorse the . . . plan. Nor does inclusion of such efforts imply their participation in planning" the network (Wild Earth, 2000).

Other large regional conservation projects seem to work in a similar fashion, for example the Y2Y. This project—which is rather closely allied with the Sky Islands—has like other Wildlands Project initiatives, undertaken research and inventory with substantial documentation. It is also working with a broad design or vision that is flexible to opportunities. The Y2Y leadership does not attempt to direct or control planning and implementation, which would be very difficult to do for such a large, diverse and dynamic region in any event. The Y2Y basically works through ecosystem science, shared wildland values and beliefs, and interactive, proactive and adaptive planning. Information is exchanged and communication maintained informally and formally through meetings and by technical means such as e-mail. Workshops and meetings are used to bring together an array of knowledgeable and concerned people. An example is the 1997 international rendezvous at Waterton Lakes National Park.

### ***5. Evaluating Local Greater Park Ecosystem and Extensive Regional Conservation Planning***

Greater park ecosystem and large regional conservation planning have come to the fore in the last 10 to 15 years. Numerous examples of these types of conservation planning are now underway but few detailed assessments have been undertaken on how they work in terms of social processes and institutional arrangements. The more local greater parks planning projects, although increasingly co-operative in nature, are generally initiated and led by government agencies. The more extensive landscape scale projects such as the Sky Islands, and Y2Y, also involve interaction and co-operation among various government and private organizations, but are generally initiated and led by NGOs.

The major private organizations tend to work in sometimes similar and sometimes dissimilar ways. Some of these organizations, such as the Nature Conservancy, seem to take the form of large corporations, and produce research, planning, land acquisition and other activities through rational planning and management. Other organizations, such as CPAWS, and the Wildlands Project, seem to operate in less formal and more opportunistic ways along the lines of transactive, or interactive

and adaptive planning and management (Hudson, 1979; Gunderson, Holling and Light, 1995; Lee, 1993).

The ways in which the private organizations work with government and one another, seem to vary and are not well understood. CPAWS, for example, seems to work closely with government whereas the Wildlands Project seems to focus more on private groups and individuals. The Canadian Biosphere Reserves Association (CBRA) has recently undertaken an analysis of how the various government agencies and groups have organized themselves in developing different Biosphere Reserves in this country (Ramsay, D.: personal communication). A range of responses seem to be involved and it is not clear at this stage whether certain arrangements are more successful than others.

In all types and scales of regional conservation planning, an array of government and private lands is usually involved even though these lands continue to be used in different ways, by different agencies, groups, and individuals. The finances, planning, management, and other capacities of such agencies, groups, and individuals also frequently differ. These situations, therefore, do not involve working predominantly with one or two major related agencies such as the US National Park Service and Department of Forestry in the Yellowstone National Park area: rather they involve working for stewardship with a wide range of government and private actors in a pluralist and civic context.

The concept of stewardship is seen as offering a means of “extending conservation practices beyond the boundaries of conventional protected areas, conserving heritage at the level of landscapes, and organizing local people in improving conservation practices” (Brown and Mitchell, 1997:103). Stewardship takes an overall landscape or regional view, “addressing conservation needs on land which cannot be separated from human existence and commerce. This approach can address the compatible objectives of biodiversity conservation, rural economic development, and maintaining individual and community connections to the land” (ibid: 104).

A wide range of tools has been used in the stewardship efforts of both government and non-government organizations and individuals. In recent regional conservation planning in North America the role of government is fundamental in providing the legal institutional framework, as well as tax and other incentives that allow for the development of stewardship. Figure 5 Stewardship Tools, is presented by Brown and Mitchell as a graphic summary of many relevant approaches. The Figure is largely self-explanatory and shows that stewardship builds on education, communication and awareness, and involves market, or financial, as well as technical, and other approaches to conservation and development. In another paper, Mitchell and Brown (1998) set forth their views on the major challenges to developing stewardship initiatives. Briefly, these are: creating a legal framework conducive to private initiatives; creating the climate for productive, enduring partnerships among sectors; integration into landuse planning and protected areas manage-

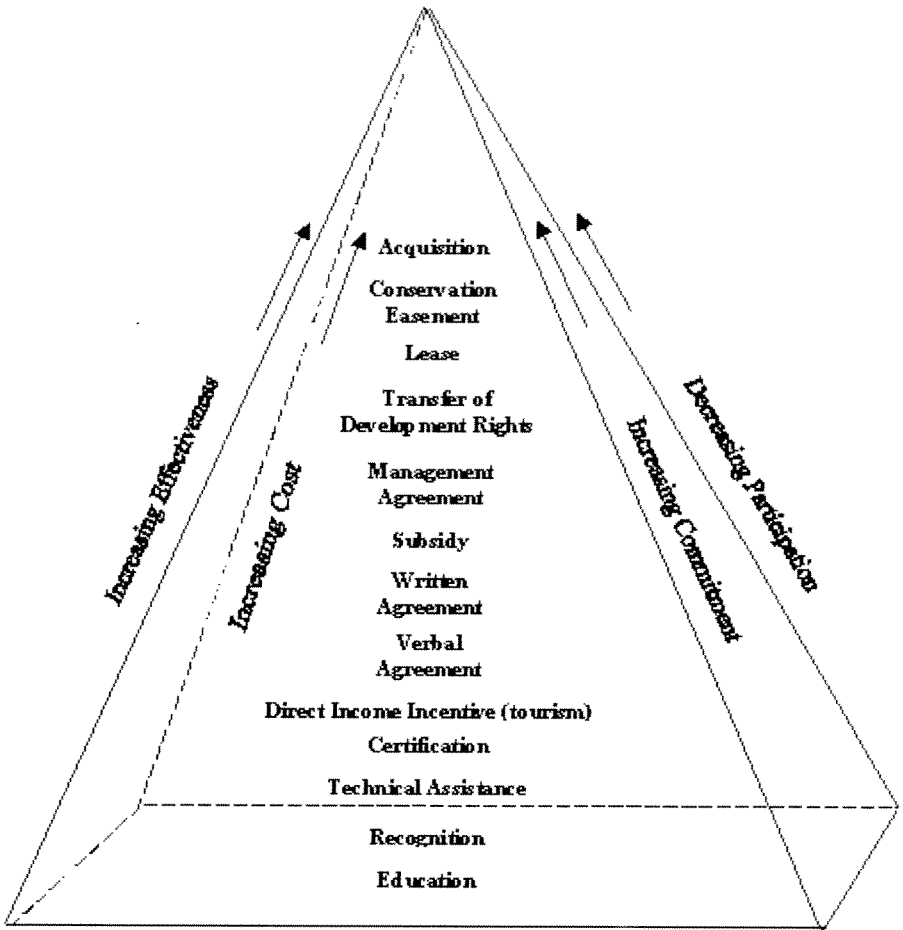


Figure 5: Stewardship Tools (Source: Brown and Mitchell 1997) <sup>1</sup>

ment; ensuring participation of all interested parties; and marshalling the necessary resources (ibid: 15-16).

What we need in the near future, is to know more about how these various stewardship tools and approaches, and the challenges associated with them, are dealt with by concerned government agencies and private groups in greater park ecosystem and extensive regional conservation planning in North America and other countries to date. Careful research and assessment of stewardship approaches by government and non-government organizations, the challenges to them, and the ways in which these are being addressed, offer many potentially useful lessons for planners, managers, and citizens everywhere in future.

Another question, which needs attention, is how effective these regional conser-

vation projects have actually been "on the ground". At this time no formal assessments are known to have been completed. Discussions with interpreters and staff at the National Monument and the National Forest within the Chiricahua Mountains of southeastern Arizona and the Sky Islands planning region, indicated little awareness of or involvement in greater ecosystem conservation planning or in the larger Sky Islands Initiative. On the other hand, conversations with staff at the San Pedro National Riparian Conservation Area between the Chiricahua and the Huachuca Mountains in Arizona revealed considerable interest in linking public and private lands along the river valley as well as in the Sky Islands Project. More than a decade ago, the San Pedro National Riparian Conservation Area was established in the southern part of the valley, as a co-operative program under the leadership of the federal Bureau of Land Reclamation. At that time, the San Pedro valley floodplain and adjoining lands had been considerably degraded by cultivation and grazing and were threatened by aggregate mining. Yet the corridor retained a more or less continuous galeria forest and was one of the few relatively undisturbed riparian areas in southern Arizona. The decision was therefore made to set up a National Riparian Conservation Area which has succeeded in conserving much of the forest and in fostering grassland restoration on the floodplain and adjoining low lying terrain.

Discussion with responsible Bureau of Land Management staff indicated that a conservation plan is in place for the lower San Pedro corridor and that federal and state agencies are cooperating in its implementation. Exploratory work is also being done with the adjoining municipality of Sierra Vista to control sprawl and create buffers around the riparian conservation lands. Bureau staff are aware of the Sky Islands Project and are working for linkages with wilderness areas in the Huachuca Mountains on the western border of the valley. Bureau staff are also working for wider linkages through the creation of conservation areas or national monuments west and north of the Huachuclas.

## Conclusions

Some general conclusions can now be made and some questions raised for further study. Since the 1980s, the trend has been to think more strongly about national parks and other protected areas as part of regional conservation planning. The main motivation and framework for this regional approach is ecosystem science where this includes landscape ecology, biological conservation, and related fields such as bioregionalism. The planning is undertaken at two basic levels. The first is outward from the national parks or protected areas, notably through local or greater park ecosystem planning. The second is through more extensive conservation planning which includes various kinds of *parks and protected areas as cores and building blocks in a large regional system*. In both cases, the protected areas are integrated with one another and surrounding lands and waters through conservation corridors, land use planning and public and private stewardship.

Greater park ecosystem planning at the park or local level tends to be driven by the



responsible government agencies. It is often goals driven, rationale and corporate in character—with a tendency to become increasingly sensitive to the need for wider civic involvement from the earliest stages of planning. In this context many park personnel see geography, psychology, sociology and other so called social sciences as of fundamental importance in assisting with the “human dimensions” of greater ecosystem park planning. The early development and implementation of wide-ranging communication strategies is seen, for example, by Canadian parks staff as of fundamental importance in identifying and working with other concerned organizations and groups. These communication strategies and the ecosystem planning process generally remain centred, however, on the goals, objectives, values, language and formal corporate and rational planning systems of the park agencies. Communication strategies and planning seem considerably less concerned with the rather different goals, objectives, values, languages and ways of working of the public agencies, businesses, groups and individuals living outside the protected areas (Nelson, Lawrence and Black, 2000).

At more extensive regional conservation scales, planning seems generally to be initiated by NGOs and private groups. This is probably in part because of the jurisdictional and other barriers that face government attempts to work across municipal, state, provincial and national boundaries as well as park, forestry, grazing and other sectors of interest. Government personnel are however, often part of regional conservation planning teams along with scientists, scholars, professionals and concerned persons from universities, businesses, and other organizations in the civic arena.

Extensive regional conservation planning involves long-term thinking which extends to the continental scale in North America as well as in Europe. This planning is sensitive to the need to work interactively at the various scales involved in the enterprise. The planning combines the rational and the corporate with the interactive and adaptive. From the standpoint of planning theory, the cases involved in this study indicate use of various combinations of rational, transactive, mixed scanning, incremental and advocacy approaches (Hudson, 1979) as well as adaptive planning and management (Gunderson, Holling and Light, 1995; Lee, 1993). The whole planning tool kit is used to some degree although apparently often on the basis of experience rather than knowledge of professional planning theory. Goals and objectives are involved in extensive regional conservation planning but these frequently seem to be part of visions, designs, frameworks or principles rather than precise targets. The goals of large-scale initiatives such as the Wildlands Project tend to be ultimate in nature. They aim at conservation, restoration, re-wilding and environmental sustainability for generations to come. The planning goal is presented in the form of a vision or design based on science and on strongly held wild, wilderness and natural values.

Some differences exist between US and Canadian approaches. The US process seems to involve considerable mixing of the scientific, the technical, the spiritual

and the political or civic. In Canada in recent years at least, considerable stress has been placed on science and on scientific and technical approaches, notably in ecology. One example is the recent provincial government *Lands for Life* exercise which involved analysis and allocation of much of Ontario's Boreal forest among park and protected areas, forestry, mining and other uses. Another example is the recent Ecological Integrity Panel review of the Canadian National Parks which placed much emphasis on the role of science in planning, management and decision-making (Parks Canada Agency, 2000). On the other hand, NGOs such as CPAWS have been pushing the importance of spiritual values and approaches in the last several years.

More research and assessment is definitely needed to understand and learn from the many changes occurring in thought and practice about protected areas, nature conservation and human development. Protected areas and regional conservation planning have emerged as *a field of fundamental importance to human society and global life generally*. The many vital ecological and socio-economic services that protected areas offer are increasingly being recognized and valued for conservation and restoration of nature and long term sustainability of human and other life on earth. More detailed research and assessments of the nature and implications of what is happening are a matter of some urgency and are in both the professional and the wider public policy interest. We need careful studies not only of the processes but implementation on the ground.

What we know now however, can motivate and contribute to new regional conservation planning projects in North America. An example of great personal interest is the area termed *The Great Arc* which follows the cliffs, ridges and slopes of the Michigan Basin through the Great Lakes Region (Figure 6). In Ontario the feature is known as the Niagara Escarpment. As a result of its outstanding geologic, scenic and natural qualities, it is being managed on a provincial scale by the Niagara Escarpment Commission. The Escarpment has many special ecological features and habitats such as ancient cliff cedar forests, alvars, caves and karst complexes. Similar features and habitats are known to occur to some degree along the path of the Great Arc through New York, Ontario, Michigan, Wisconsin and Illinois. The Great Arc is also an excellent outdoor recreational resource with many long distance trails including the 720 mile Bruce Trail from the Niagara River to Tobermory on the north end of the Bruce Peninsula in Ontario. However more needs to be known about for the Arc. Long stretches of it are forested and it very likely can be shown to be a vital yet insufficiently recognized landscape corridor or bioregion on a continental scale. As a corridor it could fill the great gap that exists in the Great Lakes area between regional conservation planning projects in the eastern and the central and southern parts of Canada and the US (Figure 7). The Great Arc like some of the other regional conservation projects, offers an opportunity for research and international civic collaboration that could be of fundamental importance to the future of life in North America.

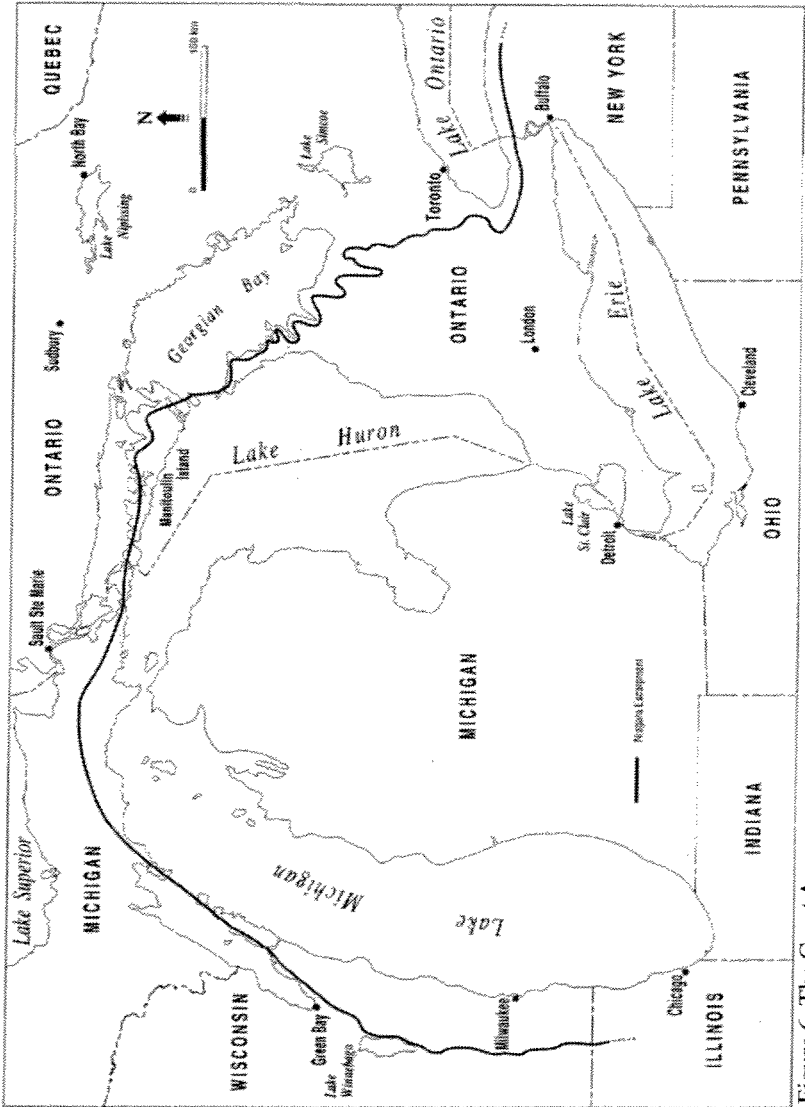


Figure 6. The Great Arc

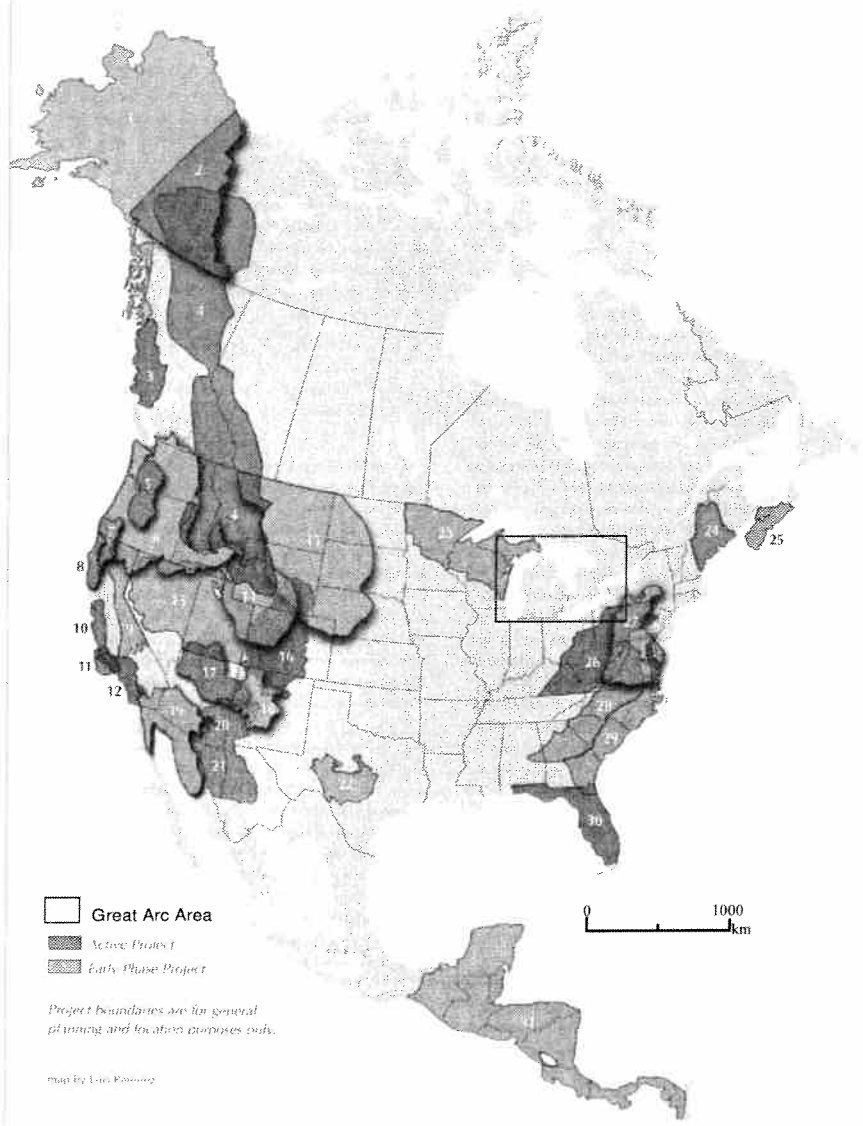


Figure 7: Wildlands Conservation Planning Efforts (The Wildlands Project 2000b).

## End Note

<sup>1</sup> This figure is an adaptation of one developed in: Van Petter, M. and Hilt, S. 1990. Natural Heritage Protection: Voluntary Stewardship or Planning Control. *Plan Canada* 30(5):20-28.

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### **Postscript**

This hitherto unpublished paper was mainly prepared as a means of summarizing the work completed as a result of a research grant to study emerging regional approaches to national parks in 1998-2000. The paper includes considerable personal research and work with students and other colleagues. The study also involved learning through a series of workshops involving scientists, academics, park professionals, members of non-government organizations and citizens. Major workshops included Krakow, Poland in August, 1996 (Nelson and Serafin, 1997), Tijuana, Mexico in March, 1999 (Nelson and Sportza, 1999) and the joint meeting of the Science and Management of Protected Areas Association (SAMPAA) and the Parks Research Forum of Ontario (PRFO) in May, 2000 at the University of Waterloo. These and other workshops and meetings were invaluable in providing wide-ranging professional and civic learning opportunities at the local, regional, national and international scales, in an interactive and comparative way.

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