

PARKS  
CANADA  
AGENCY

State of Protected  
Heritage Areas  
2001 Report

<p><b><i>Blood star and green sea urchins (Saguenay-St.Lawrence Marine Park)</i></b></p> <p><b><i>Parks Canada</i></b></p>	<p><b><i>Rock formation (monolith) on Niapiskau Island in Mingan Archipelago National Park Reserve</i></b></p> <p><b><i>Parks Canada/ A. Cornellier</i></b></p>
<p><b><i>S.S. Keno NHSC</i></b></p> <p><b><i>Parks Canada/ Michael Gates</i></b></p>	
	<p><b><i>Greenwich Interpretation Centre Prince Edward Island National Park of Canada</i></b></p> <p><b><i>Parks Canada/ J. Sylvester</i></b></p>

**Background images**

Parliament Buildings - Ottawa  
Photographer: A. Guindon - 1986

Icefields Parkway - Banff National Park of Canada  
Parks Canada

Cove Island - Fathom Five National Marine Park of Canada  
Parks Canada/F. Mercier

© Her Majesty the Queen in right of Canada (2003)

ISBN: 0-662-67337-9  
Cat: R61-15/2001E-in

*Cette publication est aussi disponible en français.*

[www.parkscanada.gc.ca](http://www.parkscanada.gc.ca)

# TABLE OF CONTENTS

Minister’s Message .....	v
Executive Summary .....	vii
Introduction .....	1
Canada’s Marine Environment .....	4

<b>1. National Parks of Canada .....</b>	<b>11</b>
Introduction .....	11
Progress Report .....	13
Highlights .....	14
Expansion of Existing National Parks and Reserves of Canada .....	16
Highlights .....	16
Establishing New National Marine Conservation Areas of Canada .....	17
Highlights .....	19
Progress Toward Establishing the Canadian Heritage Rivers System .....	20
Ecological Integrity of the National Parks of Canada .....	20
Threats to Ecological Integrity in National Parks of Canada .....	21
Reporting on Ecological Integrity .....	21
Biodiversity .....	23
Ecosystem Functions .....	25
Stressors .....	29
Recent Parks Canada Activities .....	33
Ecosystem Functions .....	43
Stressors .....	46

<b>2. National Historic Sites of Canada .....</b>	<b>51</b>
Introduction .....	51
Enhancing the System of National Historic Sites of Canada .....	52
Embracing the Family of National Historic Sites of Canada .....	57
Monitoring the State of Commemorative Integrity at the National Historic Sites of Canada .....	60
Ensuring Commemorative Integrity .....	65
Beyond the National Historic Sites of Canada .....	71
<b>3. Connecting Canadians .....</b>	<b>75</b>
Connecting Canadians to their Roots .....	75
Agency Communications .....	77
Program and Service Communications .....	79
Educational Communications .....	81
Artists in Residence .....	82
CWACs Invade Fort Rodd Hill .....	83
Telling Aboriginal Stories .....	84
A Class Act – Teaching the Teachers .....	84
Sky High Interpretation .....	85
Fostering Understanding, Appreciation and Enjoyment .....	86
<b>Appendix .....</b>	<b>88</b>



## MINISTER'S MESSAGE

Thanks to thousands and thousands of dedicated Canadians, we are making major progress in protecting our country's heritage areas. In the past few years, we have moved forward quickly on restoring the health of Canada's national parks. We have made ecological and commemorative integrity the top priorities of Parks Canada. We have placed caps on development in national parks. We have brought forward new measures on science and conservation. We have introduced new outreach programs to young Canadians. We have given new priority to the historic accomplishments of Aboriginal peoples, women and ethnocultural communities.

Parliament has acted to pass the *Parks Canada Agency Act*, the new *Canada National Parks Act* and the *Canada National Marine Conservation Areas Act*.

This report covers the period from 1999 to 2001. Since then, the recommendations from the first Minister's Round Table on Parks Canada were acted on and the second Round Table was held. Once again, we will act on its recommendations.

The Government of Canada, in partnership with other levels of government and a broad cross-section of Canadians, is currently embarked on two of the most important initiatives in the history of our country to protect heritage areas.

The first key initiative is the plan announced by the Prime Minister to establish ten new national parks and five new national marine conservation areas over the coming five years. We have already signed an agreement to establish the first of the new parks in the beautiful Gulf Islands of British Columbia.

The second key undertaking is the Historic Places Initiative. We are putting in place a comprehensive strategy to safeguard historic places, rehabilitate heritage buildings, empower Aboriginal peoples to protect their heritage areas, and make the Government of Canada a leader in heritage stewardship. Thanks to excellent cooperation from all the provincial and territorial governments, we are making solid progress on the Historic Places Initiative.

Protecting our natural spaces, historic places and cultural wonders is one of our greatest shared responsibilities as Canadians, and one of our greatest national missions. The accomplishments of the past few years demonstrate that we can rise to the challenges and fulfil our duty as trustees of Canada's heritage areas. It is imperative that we do so.

Sheila Copps  
Minister of Canadian Heritage





## EXECUTIVE SUMMARY

The two years that followed publication of the *State of Protected Heritage Areas 1999 Report* have been a time of expansion, achievement and learning. Research conducted with our university partners and others has enhanced our ability to manage, protect and preserve Canada's system of national parks.

The proclamation of the *Canada National Parks Act* on October 20, 2000 was a significant achievement. It established a framework for the management of Canada's national parks, and confirmed that maintaining their ecological integrity is the first priority for Parks Canada. The Act also formally recognized in legislation seven existing national parks and one national park reserve.

While outside the timeframes of this report, it is also noteworthy that another significant legislative initiative – the *Canada National Marine Conservation Areas Act* – has also recently been passed by Parliament.\* This Act formalizes the vision established by the 1986 National Marine Conservation Areas Policy and the 1995 Sea to Sea to Sea system plan, while establishing an appropriate and effective role for Parks Canada in protecting Canada's marine environment.

Another milestone was the publication of *Unimpaired for Future Generations?: Conserving Ecological Integrity With Canada's National Parks*. This final report of the Panel on the Ecological Integrity of Canada's National Parks concluded that the national parks of Canada are under serious threat from stresses that originate both inside and outside park borders, and that immediate action is required to prevent deterioration of ecological integrity throughout the national parks system.

Our response to the report includes the proclamation of the *Canada National Parks Act*, the delivery of an ecological integrity training program for Parks Canada staff, revised management planning procedures, and the development of a science strategy outlining our research priorities.

While Parks Canada is focused on improving ecological integrity in our national parks, it also remains committed to welcoming visitors and providing them with a learning experience. As Canadians learn about and appreciate our natural environment, we are convinced they will become engaged in helping us ensure its protection and health for future generations. The risks to our protected heritage areas remain challenging but, as this report highlights, we are making progress and there are success stories to tell.

The Minister of Canadian Heritage committed \$24 million over three years to create a Canadian Register of Historic Places, and to establish standards and guidelines for the conservation of historic places in Canada, as part of the new Historic Places Initiative launched in June 2001. To deliver on these initiatives, a Historic Places Program Branch was established within Parks Canada in the fall of 2001.

During 1999-2001, 59 sites, people and events were designated to have special historic or cultural significance to Canadians. Nineteen of these designations relate directly to the three strategic priorities identified by the Minister in 2000.

Over the next ten years, Parks Canada is committed to evaluating the commemorative integrity of the national historic sites it administers. Through this

\*Although this report is focused on key activities and results in 2000 and 2001, some exceptions have been made so that key accomplishments related to the National Marine Conservation Areas program could be highlighted in this report.

work, we will acquire a comprehensive understanding of the full site system, including the condition of site resources, the effective communication of messages at sites, and site management practices. Ensuring the commemorative integrity of our national historic sites is critical to their long-term viability. Unlike ecosystems, national historic sites cannot regenerate and serious challenges exist at many sites today.

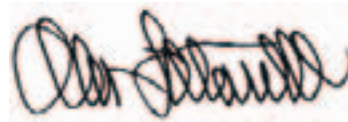
The establishment of National Marine Conservation Areas of Canada will be a priority for Parks Canada in coming years. With the proclamation of the *Canada National Marine Conservation Areas Act* in 2001, we are well-positioned to implement the Sea to Sea to Sea system plan published in 1995. Progress is being made toward the creation of conservation areas in Lake Superior, the Queen Charlotte Islands of British Columbia, and the southern Gulf Islands also of British Columbia. As is the case with national parks, however, extensive consultations with all stakeholders will be required to establish new marine conservation areas. The process can be protracted and sometimes challenging. Communications will be another key priority. With the publication of *Engaging Canadians*, Parks Canada's strategy for external communications, we gained in September 2001, a new and powerful tool to inform, influence and educate Canadians about Canada's protected heritage areas.

Since 1999, management plans for six rivers – the Rideau, Thames, St. Marys, Detroit and Humber in Ontario, and the Main in Newfoundland and Labrador – have been completed, making possible their designation as Canadian Heritage Rivers. There are currently 38 rivers in the Canadian Heritage Rivers System.

Parks Canada is also responsible for the Federal Heritage Buildings Review Office, the administration of the *Heritage Railway Stations Protection Act*, and the National Program for the Grave Sites of Canadian Prime Ministers. These programs enhance our ability to protect and preserve Canada's rich cultural and historical heritage for the benefit, enjoyment and education of Canadians.

The period covered by this report saw important progress made in understanding and managing the challenges and threats facing Canada's protected

heritage areas. We have not done these things alone. Our success in protecting and presenting Canada's national cultural and natural treasures depends critically on the support and cooperation of a network of partners and stakeholders including other levels of government, Aboriginal people and ethno cultural communities, local and regional businesses and community interests, the tourism industry, the educational community and mass media producers. We look forward to continued cooperation and support in moving toward our common goal of protecting and presenting these treasures for future generations.



Alan Latourelle  
Chief Executive Officer  
Parks Canada Agency



# INTRODUCTION

*The State of Protected Heritage Areas 2001 Report focuses on the two years that followed the 1999 Report. Considerable progress was made in several key areas during this period, and the Parks Canada Agency's mandate was strengthened through new legislation.*

The *Canada National Parks Act* and the *Canada National Marine Conservation Areas Act* enhance Parks Canada's ability to complete the national parks system, to move forward with the establishment of marine conservation areas, and to preserve, protect and present Canada's natural heritage.

The *Canada National Parks Act* provides a modern legislative framework for the management of Canada's national parks. It confirms that ecological integrity will continue to be the top priority for parks management, and streamlines the process of establishing or enlarging future national parks and national park reserves. Through the Act, seven of Canada's recently created national parks and one national park reserve were formally recognized in legislation.

## **National Marine Conservation Areas**

Creating and protecting national marine conservation areas will be a priority for Parks Canada in the future, as reflected in the feature article appearing at the beginning of this report. The *National Marine Conservation Areas Act* gives weight to the Sea to Sea to Sea system plan that was adopted for Canada's national marine conservation areas in 1995. That plan divides Canada's oceanic waters and Great Lakes

into 29 marine natural regions, two of which are currently represented in the national marine conservation area system.

## **Knowledge-based Stewardship and Management**

To manage national parks in a way that preserves their ecological integrity, it is essential for Parks Canada to understand both a given park's ecosystem and the changes that occur within it. Parks Canada does not have the resources to monitor all aspects of park ecosystems and ecosystem changes. It has therefore focused its efforts on monitoring key indicators of ecosystem integrity. Research conducted with the support and participation of external partners is also a priority. This research has provided valuable data on the stressors affecting park ecosystems.

In light of the challenges that exist to fully understanding and conveying all aspects of the ecosystems that exist in Canada's national parks, this report presents a series of "snapshots" that highlight specific ecosystem concerns, management practices, and research activities. The goal is to provide an overall perspective on the ecological health of our park system, and Parks Canada's ongoing work to maintain it.

## Completing the National Parks System

Progress toward our goal of establishing at least one new national park in the 14 natural regions that were not represented in Canada's parks system is being made, but success will depend on several factors. These include cooperation and partnership with Aboriginal organizations, governments and other stakeholders.

A final agreement on a proposed 20,000-square-kilometre national park at Wager Bay, Nunavut, is expected in the near future. Work has progressed on the development of potential park boundaries for a new national park on Bathurst Island in Nunavut, and a park feasibility study is nearing completion. Aboriginal stakeholders have also expressed an interest in the creation of a new national park along the east arm of Great Slave Lake in the Northwest Territories. In Atlantic Canada, public consultations are being undertaken on the creation of a new national park in the Mealy Mountains of Newfoundland and Labrador, and an agreement in principle has been reached to establish a park reserve in the Torngat Mountains. Work is also ongoing to expand existing parks or create new ones in Manitoba, the Yukon, British Columbia, Quebec, Alberta and the Northwest Territories.

However, opportunities to protect large, intact wilderness areas are quickly disappearing. This underlines the urgency of the work that Parks Canada undertakes on behalf of all Canadians.

## Progress in Ecological and Commemorative Integrity

Canada's national parks are under serious threat from stressors originating both within park boundaries and outside of them. This was the main conclusion reached by the Panel on the Ecological Integrity of Canada's National Parks, in its final report –

*Unimpaired for Future Generations? : Conserving Ecological Integrity With Canada's National Parks.* In response to the report, Parks Canada conducted an ecological integrity training program with its staff across Canada. It also enhanced its capacity to manage species at risk, and developed a science strategy outlining its research priorities.

Chapter One of this report describes current threats to the ecological integrity of Canada's national parks, as well as Parks Canada's national ecological integrity reporting framework. The chapter provides detailed information on biodiversity, ecosystem functions, and stressors in national parks, as well as descriptions of these terms. It also presents a series of "snapshots" to demonstrate the viability and effectiveness of the framework, and how it contributes to the effective management of Canada's national parks.

The snapshots provide graphic examples of how climate change, urbanization, human land use patterns, the introduction of exotic species and habitat fragmentation challenge the ecological integrity of Canada's national parks, as well as the management techniques – such as maintaining corridors and links from parks to other core natural areas, and cooperative efforts by national and international organizations – that are being used to maintain the ecological health of our parks.

Efforts are also ongoing to protect, preserve and enhance the commemorative integrity of Canada's national historic sites. A new system plan was approved for Canada's national historic sites in 2000 that will guide the continued enhancement of our system. It reflects our commitment to designate sites, persons and events that mark the historic achievements of Aboriginal peoples, women and ethnocultural communities.

To implement the Historic Places Initiative announced by the Minister of Canadian Heritage in 2001, Parks Canada has established a Historic Places Program Branch. This new branch will take the lead in establishing a Canadian Register of Historic Places, and guidelines and standards for the preservation of historic places in Canada. The goal is to ensure that the system of national historic sites of Canada reflects the country's evolving history and heritage. Parks Canada works with and supports the

owners and managers of sites it does not administer to achieve this goal, and to promote the commemorative integrity of Canada's national historic sites.

In addition, Parks Canada recently embarked on a project to systematically evaluate the commemorative integrity status of the 145 sites it administered directly at the end of the period covered by this report. This work will provide valuable information on the condition of site resources, the communication of messages at sites, and site management practices across the country.

These initiatives and others are described in Chapter Two, which provides examples of the threats that Canada's national historic sites face every day, as well as the challenges facing site managers. Unlike ecosystems, national historic sites cannot regenerate. Without conscious and sustained effort, they are in constant peril.

## **Communicating and Educating**

*Engaging Canadians*, Parks Canada's strategy for external communications, was adopted in September 2001. The strategy sets out a comprehensive framework for communicating with key stakeholders and target audiences, as we work together to foster public understanding, appreciation and enjoyment of Canada's protected heritage areas. Chapter Three describes how Canada's national parks, national historic sites and national marine conservation areas have helped to define Canada as a nation. They are a part of our shared sense of identity and our heritage.

This vision was reflected in the First Minister's Round Table on Parks Canada, held in April, 2001. The Round Table led to 45 recommendations to improve accountability, consultation and the celebration of Canada's special places. All of these recommendations are reflected in the *Engaging Canadians* strategy, as well as in Parks Canada's ongoing collaboration with Canada's tourism industry. The industry is ideally positioned to share information on ecological and commemorative integrity, and the need to both respect and preserve them.

# CANADA'S MARINE ENVIRONMENT

*June 13, 2002 was a memorable day for Canada's oceans. On that day, the Canada National Marine Conservation Areas Act received Royal Assent. It was the culmination of decades of hard work, consultation and planning by Parks Canada, as the Agency sought to define and fulfil an effective role in conserving the marine environment, and in presenting and interpreting that environment to Canadians.*

## **AUTHORS**

*Jon Lien, Ph.D., is an Honorary Research Professor in the Whale Research Group of the Biopsychology Program and Ocean Science Centre at Memorial University of Newfoundland and Labrador.*

*Philip Deardon, Ph.D., is a Professor and Leader of the Marine Protected Area Research Group of the Department of Geography at the University of Victoria.*

More than thirty years have elapsed since the idea of protecting representative examples of our marine environment was first discussed. Now, with the new Act in place, national marine conservation areas will make an essential contribution to our ability to understand our ocean heritage, and protect it for present and future generations of Canadians.

The legislation and the program it supports are an investment in the future of Canada, its oceans and its people.

## **A New Conservation Frontier for Parks Canada**

Canadians and their governments are actively exploring new avenues to address the myriad challenges that threaten the sustainability of our oceans. The marine environment affects the health, wealth and welfare of Canadians in many ways. The future of humankind is absolutely dependent on the state of our oceans. However, our understanding of the importance of the marine environment has not yet influenced our behaviour enough to truly protect the oceans of the planet. Nevertheless, strong public support among the Canadian public and around the world is generating progress toward the implementation of sustainable marine policies and programs.

## **The Global State of the Oceans**

The impacts of growing human populations, effects of increased human consumption, and unsustainable practices on land and at sea have all taken their toll on the oceans of the world. It is indisputable that the oceans' capacity to provide the resources and the functions on which all life on Planet Earth depends has been diminished by human activity.

The oceans have been called the aquatic heart and soul of the planet. Oceans are key components of global cycles and energy flows. They produce oxygen, sequester carbon, distribute heat, control our climate, replenish our rainfall. They are home to a vast array of organisms, and display greater diversity



Parks Canada

*Blood star and green sea urchins  
(Saguenay-St. Lawrence Marine Park)*

of taxonomic groups than their terrestrial counterparts. Not only do these organisms help feed us, they are also the source of many valuable medicinal products. A dead ocean signifies a dead planet.

Yet today, virtually all commercially important fishery resources are fully exploited or threatened. Some fish stocks may never recover from past overfishing. Fishing ever further “down the food chain,” from large predatory fish the populations of which are now depleted, to smaller invertebrates at lower trophic levels, is the current trend throughout the world. Fishing methods that put many noncommercial marine species at risk are still in use, and these jeopardize complex bottom-dwelling communities, as well as species such as whales and dolphins. Global fisheries require annual subsidies in the billions of dollars, and are not economically sustainable. Coastal communities collapse as the resources that once supported them decline.

Meanwhile, pollution from land-based human activities is pervasive. Many new chemicals have been introduced with little thought of their possible impacts on oceans or ocean species, and these substances can work their way through marine food webs. Estrogen, PCPs and PCBs have now become an ubiquitous part of ocean chemistry. Estimates by the United Nations suggest that humans in contact with ocean water in some areas of the world stand a one-in-twenty chance

of becoming ill from alien viruses and bacteria. Nutrient runoff from agricultural fertilizers and municipal waste disposal contributes to toxic blooms of algae, and befouls ocean waters with increasing frequency.

Intensified use, and increases in the number of ocean users have created new pressures for better management of human impacts. Offshore oil and gas exploration and extraction, underwater cables, tourism, waste disposal, military activities, transportation and mineral exploration all compete for space and access; all present challenges to ocean integrity.

## Saving Canada's Oceans

Canada's oceans are seamlessly connected to the other oceans of the globe, and suffer from virtually the same impacts. Once thought of as pristine areas with inexhaustible resources, our oceans are now known to be highly vulnerable to environmental stress from human activities. Moreover, at present, less than 0.1% of Canada's ocean waters are fully protected in marine conservation areas, as compared to the 2.4% of our landmass that is safeguarded in the national parks system.

Perhaps the best-known indicator of the health of Canada's ocean legacy is the state of our fisheries — and many of Canada's wild fisheries and fishing grounds have been in decline. Moratoria on catching east coast groundfish were declared in 1992, to protect stocks of northern cod, and one stock has been placed on the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) endangered species list. Part of the problem is an improved human capacity to catch fish, particularly because improved technology permits sophisticated fishing boats to seek out their prey with amazing accuracy. Fish that once found havens in remote natural sanctuaries because the technology to catch them did not exist, can now be harvested year-round at great depths and great distances from home ports.

Canada's oceans are also at risk because of human activities. Every day, Canada's oceans receive loadings of chemicals as a result of the actions of millions of individuals on land and water, as well as from chemicals and toxins that are transported through





Parks Canada/C. Harvey, Y. Boivin

***Waved whelk  
(Saguenay-St. Lawrence Marine Park)***

the atmosphere. Chemicals from industrial effluent have been found in high concentrations in beluga whales in the St. Lawrence River Estuary, and killer whales on the Pacific. People are sometimes advised to limit consumption of Arctic coast marine mammals, and pregnant and nursing women are often warned against consuming certain species of wild fish.

Human-induced changes to climate are also altering Canada's oceans. The timing of nutrient cycles has been changed and, in the north, the area of the Arctic Ocean that is permanently covered by ice is shrinking. It is predicted that, as polar ice disappears, an open Northwest Passage will be a reality within 15 years.

Moreover, there is a human dimension to ocean ecosystems which cannot be ignored. Many of Canada's coastal communities and economies are heavily dependent on fisheries, with few alternatives for earning a livelihood. In a very real sense, the sustainability of these human communities depends on the sustainability of the fisheries resource.

Canada's new system of national marine conservation areas can help address these challenges. Parks Canada's major goals in setting up this system are to conserve representative areas of the ocean and Great Lakes environments, and to foster public awareness, appreciation and understanding of our marine heritage. Given the damaged state and endangered

health of the world's oceans, the interpretation of these areas by Parks Canada will play a significant role in raising public awareness, and improving Canadians' knowledge of the marine environment.

With heightened "ocean literacy", backing by Canadians for the sustainable use and protection of Canada's marine environment will be fostered by Parks Canada and grow stronger. This could be the greatest legacy of national marine conservation areas.

## **Unique Characteristics of Oceans:**

### **Implications for Protected Areas**

In the terrestrial environment, ecological communities are often associated with areas defined by geographical features such as mountains and watersheds. However, in the marine environment such precise boundaries are rare. Geographic scales are large and biological processes are often not self-contained within a given area. The water column that provides nourishment for most ocean life is a mobile, three-dimensional medium.

These characteristics mean that surveys of the ocean environment take time and are costly. Until recently, these difficulties prevented scientists from being able to assess the effectiveness of marine protected areas, such as Canada's national marine conservation areas. However in 2001, following two and one half years of rigorous scientific review, 161 of the world's top marine scientists signed a consensus statement on the effectiveness of marine reserves. The scientists found that marine reserves:

- conserve both fisheries and biodiversity;
- are the best way to protect resident species; and,
- provide a critical benchmark for the evaluation of threats to ocean communities.

In addition, the scientists stated that networks of protected areas are required for long-term fishery and conservation benefits, and that existing scientific information justifies the immediate creation of fully protected marine reserves as a major fisheries management tool.

In short, such areas provide clear benefits, not only to conservation and tourism, but also to local fisheries.

## A Variety of Options to Protect Marine Areas

In addition to the creation of national marine conservation areas, other initiatives can also be used by the federal government to protect marine areas. Under the *Oceans Act*, Fisheries and Oceans Canada establishes “marine protected areas” for the conservation and protection of fish and other living marine resources and their habitats, including species at risk, and for the conservation and protection of unique habitats and areas of high biodiversity or biological productivity.

The Canadian Wildlife Service (CWS) of Environment Canada is responsible for several initiatives under which it is possible to designate areas for protection that may include marine elements. These include programs covering national wildlife areas and migratory bird sanctuaries. Furthermore a new Environment Canada designation has been created under which “marine wildlife areas” can be protected. At present the Scott Islands at the northern end of Vancouver Island constitute the only site being considered for inclusion in this category.

## National Marine Conservation Areas of Canada

The use of a variety of programs to address ocean conservation challenges is not unusual. The United States, for example, employs five different categories of federally protected marine areas. Parks Canada’s national marine conservation areas differ from other Canadian initiatives because their main focus is on representing the diversity of Canada’s marine environments. They complement other federal initiatives, and help provide a comprehensive array of conservation measures to protect Canada’s oceans.



Parks Canada/F. Mercier

**Right whales  
(off Nova Scotia)**

National marine conservation areas are selected to represent Canada’s natural and cultural marine heritage, and their management encompasses a specific mandate for recreational and educational activities. They will generally be larger than the marine protected areas established by Fisheries and Oceans Canada. Canadian Wildlife Service sanctuaries, while large (especially in the Arctic), are designed primarily to protect individual species rather than ecosystems, and they employ no minimum standards to control extractive activities.

Parks Canada also has a long history of area and ecosystem management, and conservation and protection activities. Similarly, Parks Canada fosters tourism where appropriate, and consults and interacts with local communities and Aboriginal peoples — all of Parks Canada’s organizational experience and expertise can be brought to bear on the creation and management of national marine conservation areas.

National marine conservation areas will contain zones where special protection measures, such as fishing “no-take” zones, can be implemented. The location and size of these zones will be decided upon through consultation among fishers, scientists, conservationists, government agencies and other stakeholders. These decisions will be crucial to the effectiveness and success of the marine conservation areas, since the preservation of small fragments of unproductive ocean will produce few benefits.



Parks Canada/F. Merriar

### ***Newfoundland Island coast***

With the exception of no-take zones, commercial, recreational and traditional fishing will continue in national marine conservation areas, and be managed on an ecologically sustainable basis. Parks Canada will work with Fisheries and Oceans Canada regarding the management of fisheries in marine conservation areas. Some activities are prohibited outright. These include exploration for, and exploitation of, hydrocarbons and minerals. Dumping is not permitted.

The management of national marine conservation areas will be based on partnership and cooperation. They will serve as models of sustainable use, and their undisturbed habitats will have significant scientific value for ecological monitoring. They will also assist in preserving biodiversity, and help restore and protect depleted species and species at risk. National marine conservation areas will become centres of knowledge and interpretation, fostering conservation, education and tourism.

## **How Will National Marine Conservation Areas of Canada be Managed?**

Participation and ongoing accountability will be key to the establishment and management of national

marine conservation areas. The Act requires that, when an area is formally established, documents spelling out the nature and extent of public consultations must be tabled in Parliament. Once an area is established, a management advisory committee will be appointed by the Minister of Canadian Heritage. The committee will provide strategic direction through input to management and business plans, and will also provide opportunities for ongoing public consultation. The management plan for each national marine conservation area will be reviewed at least every five years. Plans will be formulated via a public process, but must ultimately be approved by the Minister and tabled in Parliament, and an interim management plan must be in place before an area can be established. The Act requires the Minister to report to Parliament on the state of the national marine conservation areas every two years.

## **Where Will National Marine Conservation Areas of Canada be Located?**

The Parks Canada Agency has developed a national system plan based on 29 marine natural regions in the Atlantic, Pacific and Arctic Oceans and the Great Lakes. The Agency's goal is for each region to be represented by at least one national marine conservation area.

Parts of some regions already enjoy limited marine protection because the boundaries of several coastal national parks have been drawn to include adjoining marine waters. However, the areas so protected are generally small, and are inadequate to provide full representation of their marine regions.

Georgian Bay's Fathom Five National Marine Park of Canada was established in 1987 as Canada's first national marine park. It too is very small, and as yet does not enjoy full protection in law. In 1990, Canada and Quebec signed an agreement to jointly establish and manage the Saguenay-St Lawrence Marine Park. The *Saguenay-St. Lawrence Marine Park Act* came into effect in 1998, providing a formal



legislative framework for the marine park. At the moment, Saguenay-St. Lawrence is the only fully and formally protected marine conservation area in Canada.

Furthermore very promising developments in several other regions strongly suggest that it will soon have company. In 1995, Canada and British Columbia signed an agreement leading toward the establishment of a new national park reserve in the Southern Gulf Islands and a feasibility study for a national marine conservation area reserve in adjacent waters. More than 26 square kilometres have been acquired for the national park, which boasts many spectacular coastal sites. Public support has been exceptionally strong for not only the new national park reserve, but also for the more comprehensive protection that would be provided by the national marine conservation area reserve.

Further northern on the British Columbia coast lie the Queen Charlotte Islands, known as Haida Gwaii by their Haida inhabitants. One of the richest marine regions not only in Canada but in the entire world, the waters off the Queen Charlottes support a wide diversity of seabirds, whales, fish and invertebrates. Much of the southern portion of the archipelago is now protected in a national park reserve which is cooperatively managed by Parks Canada and the Haida. Both are in agreement that the creation of an adjacent national marine conservation area is a priority. Further public consultations, covering such things as the development of an interim management plan, will be required to bring hopes for the marine conservation area to fruition.

The northern shore of Lake Superior is another region where there is already a substantial consensus in favour of a national marine conservation area, to protect trout spawning beds, nesting sites for peregrine falcons, and a variety of cultural sites. A feasibility study was completed in 2000, and Canada and Ontario are currently working together to establish a national marine conservation area which, when realized, would be one of the largest freshwater protected areas in the world.

Other potential national marine conservation areas have been selected in several regions, and areas of interest have been identified in almost a dozen other regions.



Parks Canada/F. Mercier

**Atlantic puffin  
(Bay of Fundy)**

## Future Challenges

The Parks Canada Agency was created as the world's first parks service organization, and has accumulated almost a century's worth of experience in the management of terrestrial national parks. However, in terms of marine areas, Parks Canada has as yet barely gotten its feet wet. There is much to be learned, particularly in the area of science. As with terrestrial parks, local communities are also key to the successful creation and management of marine conservation areas. Parks Canada is therefore firmly committed to continuing its proud tradition of working effectively together with all stakeholders, including Aboriginal peoples and other government agencies. National marine conservation areas are not "national parks on the water"; they represent a fundamentally different concept. The success of the national marine conservation areas program will require the full cooperation of many partners, including other agencies both federal and provincial.

The challenges facing the creation of a system of national marine conservation areas will take time, trust and money to overcome. Unfortunately, time is short. Every day and year that passes without progress further compromises the quality of Canada's ocean environment. This means that Canadians have

to act quickly to build trust among partners, and to raise awareness of common goals. Financial resources will be required to make this happen, and to attain and maintain necessary levels of protection.

## Conclusion — A Worthy Goal

In 1970, the then Minister of Indian Affairs and Northern Development, the Right Honourable Jean Chrétien, commissioned a study to review marine park practices around the world. The purpose of this exercise was to develop a conceptual framework for the establishment of a national marine parks program in Canada. The following year, Parks Canada obtained a green light from Cabinet to go forward. In the years to come, Parks Canada was to deal with the challenge of developing comprehensive policies to guide the selection of suitable marine areas, and the management of marine ecosystems. The Agency's efforts culminated with the adoption of the first national marine parks policy in 1986, development of a system plan in 1995, and finally with the passage of the *Canada National Marine Conservation Areas Act* in 2002.

The journey has not been easy. Early efforts to establish coastal or marine parks floundered – at Ship Harbour and Cape LeHave in Nova Scotia, West Isles in the Bay of Fundy and the Bonavista area of Newfoundland and Labrador. But Parks Canada has learned from successes and setbacks alike, and continues to work vigorously toward the establishment of a system of national marine conservation areas worthy of Canada and Canadians—one that will match the splendour of our glorious terrestrial national parks.

In the fall of 2002, Prime Minister Jean Chrétien announced that five national marine conservation areas will be established within the next five years. This new challenge will further test and strengthen Parks Canada as an institution. Canadians can celebrate Parks Canada's solid beginning and anticipate an accelerated program to establish marine conservation areas that will help ensure the protection and sustainability of Canada's marine environment.



Parks Canada/F. Mercier

**Iceberg (off Newfoundland)**

# 1 | NATIONAL PARKS OF CANADA

*“National parks inspire our hope for the future, our understanding of the past, and a sense that Canadians are a people defined by the land and its condition. Parks are places where we protect that part of the Canadian mind that resonates with wilderness, space and beauty.”*

–Panel on the Ecological Integrity of Canada’s National Parks



Parks Canada/A. Cornellier

**Rock formation (monolith) on Niapiskau Island in Mingan Archipelago National Park Reserve of Canada.**

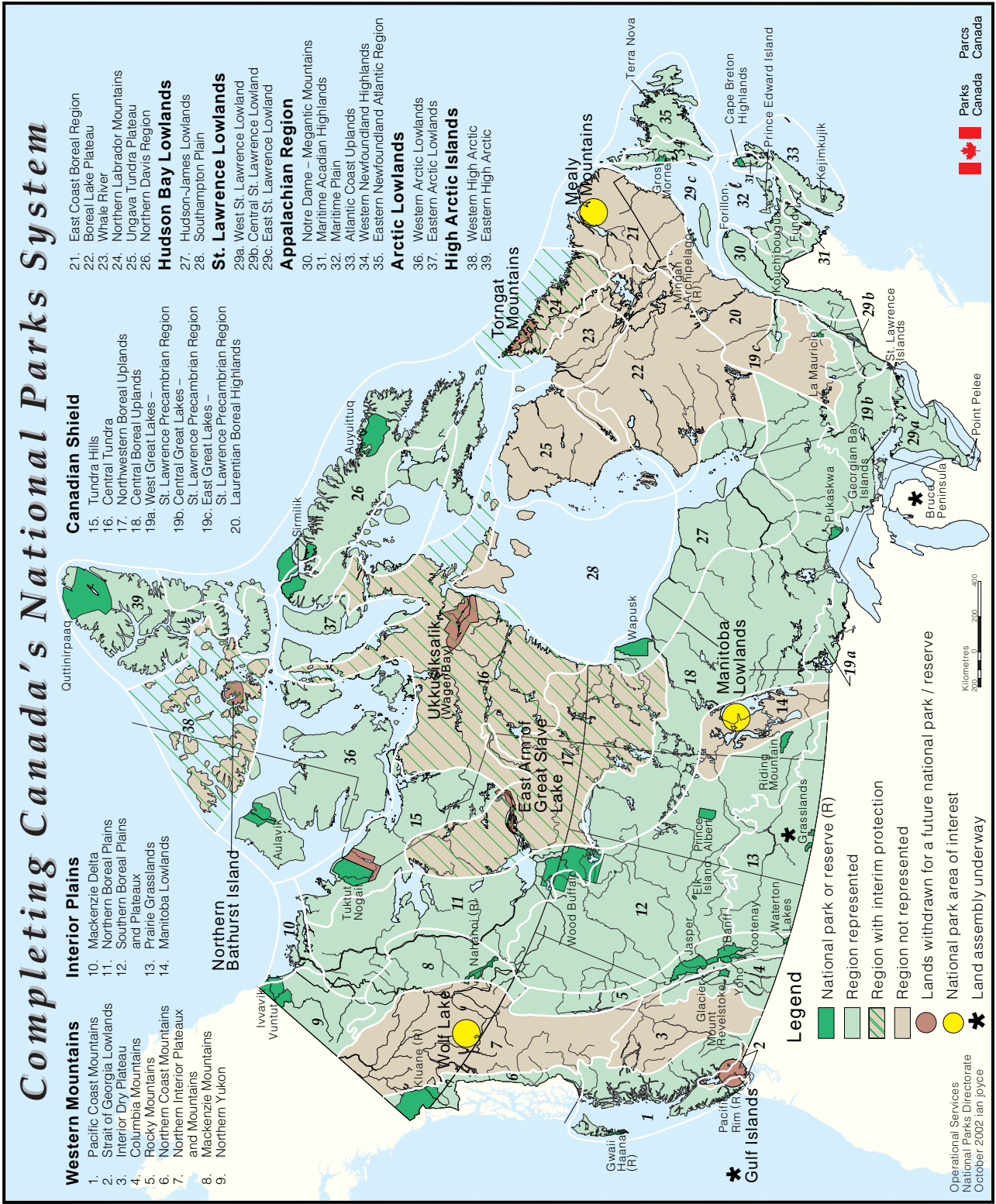
## Introduction

National parks protect representative examples of Canada’s natural landscapes and natural phenomena. Together, they tell the story of this country’s natural beginnings and ongoing processes — mountains born, lakes emerging, forests growing, rivers flowing, fires renewing, grasslands evolving, glaciers forming. Each national park has an individual character, a unique story, a distinctive voice.

Such a wide variety of parks and features is necessary for the national parks system to accurately reflect Canada’s rich and diverse landscape. At the end of the period covered by this report, Canada’s 39 national parks represent 25 of the 39 distinct terrestrial natural regions identified by Parks Canada. Each of these parks is an integral part of the larger national parks system, created to protect environments representative of Canada’s natural heritage for the benefit of present and future generations.

This system, however, is not yet complete. The Government of Canada has made a firm commitment to establish a national park or national park reserve within each natural region (See Map 1). Only when a national park has been set aside in each region will the full range of Canada’s natural splendour and diversity be protected. Yet Parks Canada’s determination

Map 1: Natural Regions and National Parks





to establish parks in each of the 14 unrepresented regions faces a considerable challenge. Opportunities to protect large intact wilderness areas are quickly disappearing.

An equally significant challenge hinders the protection of existing national parks; intense environmental stress. Tom Lee, Parks Canada's former Chief Executive Officer put it this way:

"The challenge is maintaining, and in some cases restoring, their ecological integrity. Without integrity, the very essence of the national parks — the reasons for which they are valued — will be lost. The loss of ecological integrity is occurring today. It is not only a problem in its own right, it diminishes the opportunity to provide a high quality visitor experience for future generations."

To manage national parks in ways that preserve their ecological integrity, it is essential for Parks Canada to understand both a given park's ecosystem and the changes that occur within it. Although the Agency currently lacks the capacity and resources to monitor all aspects of park ecosystems and ecosystem changes, it has strategically focused its efforts on monitoring key indicators of ecosystem integrity. This report illustrates some of those efforts, as well as some of the actions being taken to protect, maintain and restore ecological integrity in Canada's national parks.

Evaluating the integrity of all of Canada's national park ecosystems is a demanding undertaking. Change to ecosystem can be subtle, complex and slow. Furthermore, the national parks system is geographically wide-ranging, covering vast, often very remote territories. All these factors present immense challenges to producing meaningful and comprehensive short-term reports on ecosystem health.

For these reasons, this report has been designed as a collection of snapshots, as it were, chosen to illustrate different aspects of national park ecosystems. The present report is Parks Canada's fourth on the state of protected heritage areas, and builds on previous reports issued in 1994, 1997 and 1999. Parks Canada's ability to report on the state of its national parks has improved since the first report, and will continue to improve with increased knowledge of park ecosystems, advances in the science of ecology,

and improved understanding of how to manage the relationship between human activities and the environment.

## **Progress Report:**

### **Establishment of New National Parks and National Marine Conservation Areas, 2000-2001**

#### **ESTABLISHING NEW NATIONAL PARKS AND NATIONAL PARK RESERVES OF CANADA**

In 2000 and 2001, Parks Canada continued to make significant progress toward one of its main priorities, completion of the national parks system by obtaining representation from all 39 "National Park Natural Regions". A major factor in the pace of new park establishment is the degree of stakeholder cooperation and the extent of public support that exists for the creation of a proposed park.

As noted above, 25 natural regions are now represented by 39 national parks and national park reserves. In the 14 remaining unrepresented regions, opportunities to protect large, intact wilderness areas are quickly disappearing due to competing land uses such as urban development, forestry, mining and agriculture. In what is in effect a race against time, efforts are under way to preserve several major unrepresented ecosystems, including types of boreal, Arctic, grassland and marine environments.

The proclamation of the *Canada National Parks Act* on October 20, 2000 was a significant achievement. The new Act provided a modern legislative framework for the administration and control of Canada's national parks, and confirmed that ecological integrity will be the top priority for parks management. It also streamlined the process of establishing or enlarging future national parks and park reserves. The Act formally established seven national parks of Canada and one national park reserve: Gros Morne, Aulavik, Wapusk, Grasslands, Sirmilik, Auyuittuq and Quttinirpaaq national parks, and Pacific Rim National Park Reserve of Canada.

Canada's national parks cover 244,540 square kilometres, about 2.5 percent of the nation's total land area. Although no new national parks were created during the review period (the parks cited above had already been created; the new Act gave them formal recognition), solid progress toward completing the national parks system was achieved.

During the period of this report, negotiation of park establishment agreements that set out terms and conditions for new national parks in the Gulf Islands (Region 2 in British Columbia), and Ukkusiksalik (Region 16 in Nunavut Territory) were completed. Further, negotiations for a national park reserve in the Torngat Mountains (Region 24 in Newfoundland and Labrador) were significantly advanced, through discussions with both the province and the Labrador Inuit Association. Land acquisition continued at existing national parks where land assembly is incomplete, such as Grasslands and Bruce Peninsula national parks of Canada.

## Highlights

Progress varies toward establishing parks in the 14 remaining natural regions. Timing for their establishment depends on many factors, including cooperation and partnership with Aboriginal organizations and other governments.

### UKKUSIKSALIK (Wager Bay, Nunavut)

The proposed national park extends more than 150 kilometres inland from Hudson Bay. Features glacier-polished islands and shorelines, colourful cliffs and tidal flats backed by rolling tundra. Its lands received interim protection in 1996 under the *Territorial Lands Act*. In 2001, Parks Canada, the Kivalliq Inuit Association and the Government of Nunavut concluded the negotiation of an Inuit Impact and Benefit Agreement for park establishment, as required under the 1993 Nunavut Land Claim Agreement. When established, the park will protect almost 20,000 square kilometres and almost an entire watershed within the central Arctic; it is expected that the final agreement will be signed in the near future.



Parks Canada

**Bathurst Inlet**

### BATHURST ISLAND (Nunavut)

The proposed national park is representative of the harsh winters, vast expanses of bedrock and very short growing season typical of the High Arctic. A major calving area for the endangered Peary caribou is found within the area. A park feasibility study is nearing completion, to be followed by negotiations with Inuit toward an Inuit Impact and Benefit Agreement. After reviewing the results of biological, mineral and hydrocarbon inventories and field studies, work progressed on development of potential park boundaries. Lands have been withdrawn for interim protection since 1996 under the *Territorial Lands Act*.

### EAST ARM OF GREAT SLAVE LAKE (Northwest Territories)

In 1970, a spectacular area of 7,407 square kilometres along the East Arm of Great Slave Lake and Artillery Lake was withdrawn for national park purposes under the *Territorial Lands Act*. Consultations on the proposed park were suspended shortly thereafter for several years at the request of the Snowdrift (now Lutsel K'e) Dene Band and the NWT Indian Brotherhood (now the Dene Nation) because of their concerns about the possible effects of the park on their traditional use of the land.

In 2001, the community of Lutsel K'e expressed a renewed interest in the national park proposal and discussions between Parks Canada and the Lutsel K'e have recommenced. Other First Nations and Métis are also asserting interests in the area.

### **WOLF LAKE (Yukon)**

Parks Canada has identified the Wolf Lake area in the southeast Yukon as the preferred location for a national park to represent the Northern Interior Plateaux and Mountains natural region. Wolf Lake is part of the traditional territory of the Teslin Tlingit. The lakes, rivers and surrounding plateau, wetlands and forests are an unspoiled and productive habitat for caribou, moose, wolf, waterfowl and salmon.

### **SOUTHERN GULF ISLANDS (British Columbia)**

The southern Gulf Islands contain the highest concentration of ecologically significant and least disturbed lands remaining in the Strait of Georgia Lowlands Natural Region. Since the signing of the federal-provincial Pacific Marine Heritage Legacy Agreement in 1995, about 25 square kilometres have been jointly acquired for a new national park on a “willing-seller, willing-buyer” basis.

Consultations were undertaken with affected First Nations and, in 2001, a federal-provincial agreement setting out the terms and conditions for setting the area aside as a new national park reserve were successfully negotiated. Work began on resolving third-party interests in lands that would eventually form the national park reserve. When finally established, the Gulf Islands National Park Reserve of Canada will total approximately 2,500 hectares — over six times the size of Vancouver’s Stanley Park — and encompass part or all of 15 islands.

### **MANITOBA LOWLANDS (Manitoba)**

A national park in the Manitoba Lowlands Natural Region would protect a lowland boreal forest plain of black spruce forest, wetlands, large freshwater lakes and shoreline habitats, mixed-wood uplands and associated wildlife including woodland caribou, moose, waterfowl and shorebirds. The proposed national park has two components: Long Point, on the western side of Lake Winnipeg and Limestone Bay at the north western corner of Lake Winnipeg.

A feasibility study for the establishment of this national park began in 1994, and discussions continue with nearby First Nations and communities. Parks Canada is reviewing the proposed park boundaries in the hope of adjusting them to enhance the park’s ecological integrity and its representation of the natural region.

### **TORNGAT MOUNTAINS (Newfoundland and Labrador)**

The proposed Torngat Mountains National Park Reserve of Canada would protect a spectacular wilderness of mountains, scenic fiords, river valleys and rugged coastal areas. Cliffs up to 900 metres high rise abruptly from the sea. Inland, the Torngat Mountains reach elevations that are the highest in mainland Canada, east of the Rocky Mountains.



Parks Canada/R. Beardmore

*Manitoba Lowlands*



Parks Canada

*Palmer River in the Torngat mountains*

A study by Parks Canada, the Government of Newfoundland and Labrador and the Labrador Inuit Association concluded in 1996 that establishment of a national park reserve in this area was feasible. The Government of Newfoundland and Labrador has provided interim protection to the area of interest by prohibiting new mining activity and instituting a moratorium on Crown applications. Canada, Newfoundland and Labrador, and the Labrador Inuit Association have reached an agreement in principle for the establishment of this new national park reserve and, in 2001, negotiations toward a federal-provincial park agreement, and an impact and benefit agreement with the Labrador Inuit, were initiated. Parks Canada has also offered to consult with the Nunavik Inuit about the proposed national park reserve.

#### **MEALY MOUNTAINS (Newfoundland and Labrador)**

Located in southern Labrador, the Mealy Mountains rise steeply from the south of tidal Lake Melville and attain heights of over 1,100 metres. Representative of the East Coast Boreal Natural Region, the area of interest includes mountain tundra, expansive upland bogs, boreal forest, spectacular wild rivers, coastal ecosystems, and diverse wildlife. In March 2001, a feasibility study for a national park in the Mealy Mountains area began, and is expected to take approximately three years to complete. The study is also assessing public support and exploring potential park boundaries.

#### **LAURENTIAN BOREAL HIGHLANDS NATURAL REGION (Quebec)**

In 2000, Parks Canada initiated work to update its earlier studies to identify representative natural areas within the Laurentian Boreal Highlands Natural Region. This work will identify the potential representative natural area and is nearing completion.

## **Expansion of Existing National Parks and Reserves of Canada**

Parks Canada is working to add lands to several existing national parks, to improve their ecological integrity, and to enable them to better represent their natural regions. During this reporting period, work focused on three national parks: Nahanni and Tukturnogait in the Northwest Territories, and Waterton Lakes in Alberta.

### **Highlights**

#### **NAHANNI NATIONAL PARK RESERVE OF CANADA (Northwest Territories)**

Parks Canada has been on record since 1987 as wanting to expand Nahanni National Park Reserve of Canada to make it more representative of the Mackenzie Mountains Natural Region. A number of studies have confirmed the need to expand into three areas: the Tlogotsho Plateau, Ragged Range, and a karst region north of the first canyon.

The forum for these expansions is known as the Deh Cho Process. Starting in 1999, the Deh Cho First Nations and the Government of Canada began this process to settle the comprehensive land claim of the



Parks Canada/M. Beedell

*Nahanni National Park Reserve of Canada (NWT)*



Dene people in the Northwest Territories. This comprehensive land claim includes most of Nahanni National Park Reserve.

In November 2001, at the invitation of the Deh Cho Process, Parks Canada tabled information on areas of high conservation value around Nahanni National Park Reserve for possible inclusion in the reserve. These areas, along with other proposed conservation lands and development zones are currently being reviewed by the Deh Cho Land Working Group for possible inclusion within an interim land withdrawal. All proposals are subject to stakeholder consultation.

#### **TUKTUT NOGAI (Northwest Territories)**

When Tuktut Nogait National Park of Canada was created in 1998 following agreement between Canada, Inuvialuit and the Government of the Northwest Territories, the job was only partially complete. Lands had been withdrawn in two other areas to properly represent the Tundra Hills Natural Region and to ensure the ecological integrity of the national park. One of these areas is within the Sahtu Settlement Area, immediately south of the park.

In 2001, the Minister of Canadian Heritage announced that the federal government was prepared to negotiate with the Sahtu Dene and Métis regarding the addition of lands within their traditional territory to Tuktut Nogait National Park of Canada. Parks Canada immediately began negotiations with the Déline Land Corporation, on behalf of the Sahtu Dene and Métis, to complete the park in the Sahtu Settlement Area.



Parks Canada/ D. Harvey

**Hornaday Lake in Tuktut National Park of Canada (NWT)**

Approximately 1,850 square kilometers would be added to the 16,340 square kilometres of the existing park, and the parties hope to reach agreement in the near future.

#### **WATERTON LAKES NATIONAL PARK (Alberta)**

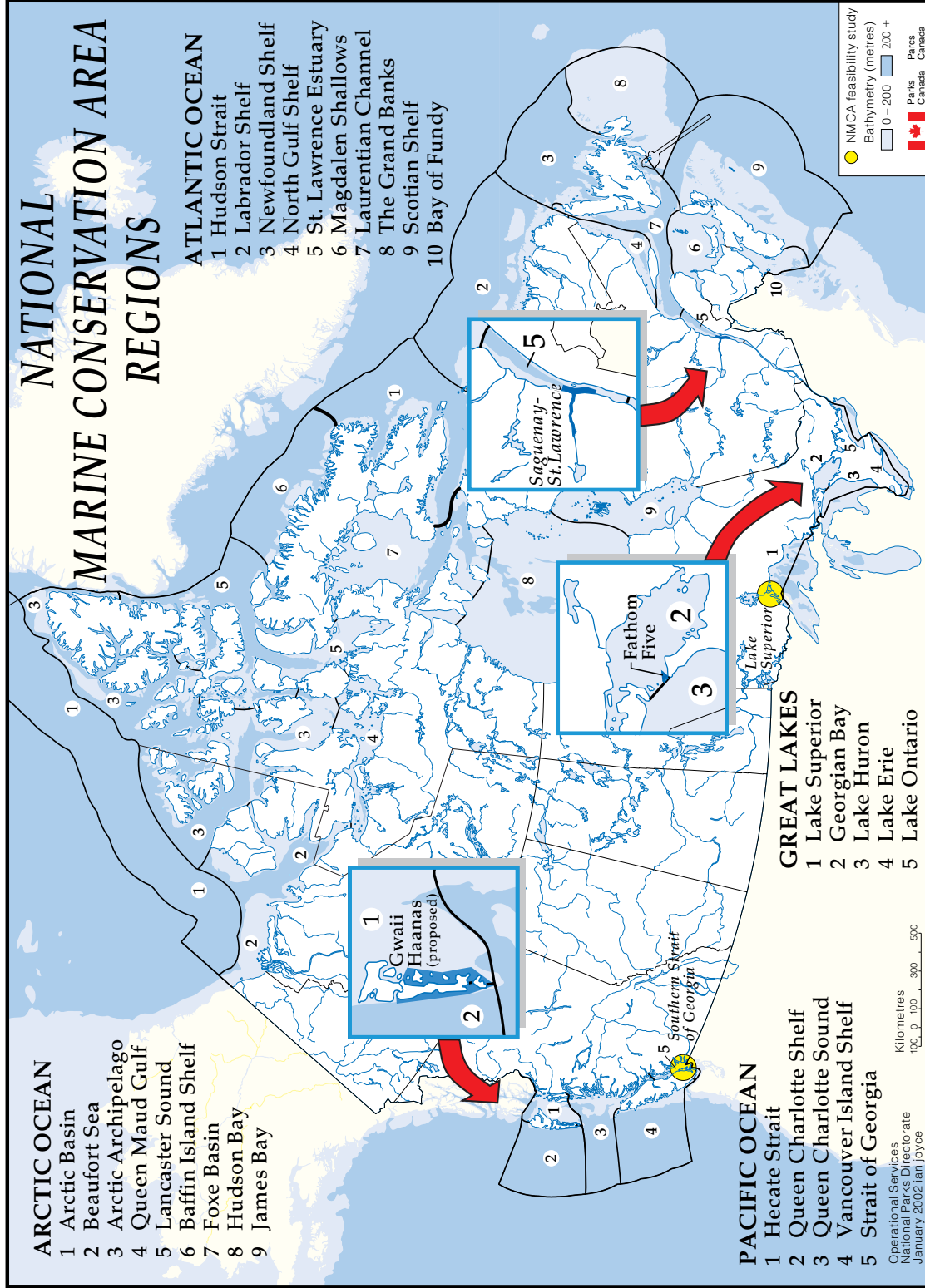
Parks Canada is working with the Government of British Columbia to assess a proposal to protect a rugged landscape in the Flathead Valley in a national park reserve, immediately west of Waterton Lakes National Park of Canada. Protection of this area would enhance the ecological integrity of the existing national park, and complete the missing corner of the International Peace Park. Should the provincial government react favourably to the proposal, and the First Nation agrees, negotiations of an agreement could commence.

## **Establishing New National Marine Conservation Areas of Canada**

The national marine conservation areas (NMCA) policy was first approved in 1986, as the basis of Parks Canada's efforts to protect and conserve a network of areas representative of Canada's marine environments. A system plan, similar to the one for national parks, published in 1995, provides guidelines for the establishment of new areas. Entitled *Sea to Sea to Sea*, the plan divides Canada's oceanic waters and great Lakes into 29 marine natural regions. The goal is to represent each of these marine regions within the NMCA system. (see map 2)

The implementation of this plan is in its early stages. Two marine regions — the St. Lawrence River Estuary and Georgian Bay — are represented by Saguenay-St. Lawrence Marine Park in Quebec and Fathom Five National Marine Park of Canada in Ontario, respectively. Some elements of a third region, the Vancouver Island Shelf, are partially represented within the marine component of Pacific Rim National Park Reserve of Canada. Work toward the establishment of the Gwaii Haanas National Marine Conservation Area Reserve in the Queen Charlotte Islands is on-going, and solid progress has been

Map 2: Marine Natural Regions and National Marine Conservation Areas



made toward realizing a proposed Lake Superior national marine conservation area. On November 27, 2001, the House of Commons passed the *Canada National Marine Conservation Areas Act*. The Act sets out the legal framework for the establishment and management of Canada's system of national marine conservation areas, and received Royal Assent in 2002.

As with the national parks system, the pace of progress in establishing new national marine conservation areas is frequently beyond the direct control of Parks Canada. The challenge of working within a context of complex regional issues and long-established resource uses must be addressed, and this process may be protracted.

## Highlights

### LAKE SUPERIOR (Ontario)

The area proposed to represent the Lake Superior marine environment is geologically and structurally diverse with steep cliffs, underwater caves, spits and raised beaches. A joint federal-provincial feasibility study, initiated in 1997, is now complete. Among other things, it found that there is strong regional support for the initiative, and recommended that establishment of a national marine conservation area for Lake Superior should proceed. After further review of local concerns, the Minister of Canadian Heritage announced in November 2001 that the way was clear for Parks Canada to open negotiations with

the Government of Ontario toward the establishment of the Lake Superior National Marine Conservation Area. A final agreement between the governments of Canada and Ontario is anticipated in the near future.

### SOUTHERN STRAIT OF GEORGIA (British Columbia)

The 1995 Pacific Marine Heritage Legacy Agreement included a commitment for Canada and British Columbia to jointly undertake a study to assess the feasibility of establishing a national marine conservation area in the southern Strait of Georgia. A feasibility study with the province was announced in November 1998. Since then, informal consultations have been under way with federal and provincial government agencies, local governments, First Nations and a wide variety of marine-based stakeholders, regarding the objectives of the study and the study process.

### GWAII HAANAS (British Columbia)

Provision for this proposed national marine conservation area was included in the 1988 federal-provincial agreement signed by Canada and British Columbia to establish Gwaii Haanas National Park Reserve of Canada. The area's boundaries were confirmed in 1993, and petroleum rights in the area were relinquished in 1997, with the assistance of the Nature Conservancy of Canada. The necessary transfer of seabed interests from British Columbia to the federal government was completed in 2001. Remaining steps to establish this proposed national marine conservation area reserve include negotiation



Parks Canada/F. Mercier

**Lake Superior shorelines**



Parks Canada/D. Hardie

**Southern Strait of Georgia**



of a cooperative management regime with Fisheries and Oceans Canada and the Council of the Haida Nation, and extensive consultation with local users.

### **QUEEN CHARLOTTE SOUND, PACIFIC REGION 3 (British Columbia)**

Four potential candidate areas to represent this marine region have been identified by Parks Canada and are being considered by Fisheries and Oceans Canada and the province of British Columbia as part of a coastal planning exercise. A specific national marine conservation area proposal may evolve through this forum.

## **Progress Toward Establishing a Canadian Heritage Rivers System**

Canada is steward of 20 percent of the planet's fresh water. In January 1984, the Canadian Heritage Rivers System (CHRS) was established by the federal, provincial and territorial Ministers responsible for parks to give national recognition to the important rivers in Canada, to conserve the best examples of Canada's river heritage and to encourage the public to learn about and appreciate Canada's rivers. Parks Canada is the lead federal agency for the system. In the 17 years since its founding, Canada's system has become the fastest-growing river conservation program in the world.

### **PROGRESS SINCE 1999**

Since 1999, management plans for six rivers have been completed, permitting their formal designation as Canadian heritage rivers by ministers. These rivers are the Rideau, Thames, St. Marys, Detroit and Humber in Ontario and the Main River in Newfoundland and Labrador.

The Hayes River in Manitoba and The Three Rivers (Montague/Valleyfield, Cardigan and Brudenell) in Prince Edward Island were nominated as candidate Canadian heritage rivers.

In total, thirty-eight rivers are currently in the system with a total length of over 9,000 kilometres.

## **THE PARKS CANADA AGENCY AND THE CANADIAN HERITAGE RIVERS SYSTEM**

Parks Canada operates a small Secretariat on behalf of the Canadian Heritage Rivers Board and provides technical and financial assistance to provincial and territorial governments for CHRS studies. Through the Secretariat, Parks Canada also provides support for a communications and marketing program that promotes the CHRS nationally and internationally.

Parks Canada is responsible for managing six Canadian Heritage Rivers: the Rideau waterway in Ontario which is also a National Historic Site of Canada, the South Nahanni in Nahanni National Park Reserve of Canada, the Alesk in Kluane National Park of Canada, and three rivers in the mountain national parks — the Kicking Horse in Yoho National Park of Canada, the Athabasca in Jasper National Park of Canada and the North Saskatchewan in Banff National Park of Canada.

For more information on the CHRS program visit our Website at [www.chrs.ca](http://www.chrs.ca).

## **Ecological Integrity of the National Parks of Canada**

### **ECOLOGICAL INTEGRITY: THE FIRST PRIORITY OF NATIONAL PARKS**

At every national park in Canada, the number one priority is the maintenance or restoration of ecological integrity. Parks Canada is committed to reducing the stresses that negatively affect park ecosystems and, when desirable and feasible, to restoring their biodiversity and natural functions.

In November 1998, the Minister of Canadian Heritage, instituted the Panel on the Ecological Integrity of Canada's National Parks. Its purpose was to identify relevant issues, examine Parks Canada's approach to maintaining ecological integrity, and provide recommendations for improvement.

In 2000, the Panel published its report entitled “Unimpaired for Future Generations?”: *Conserving Ecological Integrity with Canada’s National Parks*. The main conclusion of the report stated that Canada’s national parks are under serious threat from stresses originating both inside and outside park borders. The Panel also concluded that, unless action is taken now, deterioration will continue across the whole park system. In response to the Panel’s report, Parks Canada reaffirmed that the protection and restoration of ecological integrity is its first priority. The Agency also stressed that only by safeguarding ecological integrity can it ensure that current and future generations of Canadians and other visitors will continue to enjoy a genuine natural experience in national parks and derive the many social, environmental and economic benefits they provide.

Since the Panel’s report, Parks Canada has taken concrete steps toward fulfilling its commitments. Some of the major successes include:

- A new *Canada National Parks Act*, which clearly states that ecological integrity is the first priority in managing Canada’s national parks. This new Act, which came into effect in February 2001, improves the legislative framework for ecosystem management.
- An Accord between the Tourism Industry Association of Canada (TIAC) and Parks Canada, signed in January 2001, containing seven principles to guide efforts to protect Canada’s heritage places and foster sustainable tourism.
- An ecological integrity training program for all Parks Canada staff. The program has had a positive effect in changing attitudes, understanding, and abilities with regard to ecological integrity.
- Improved Parks Canada capacity to manage and protect species at risk.
- Development of a science strategy outlining Parks Canada’s research priorities.

Although many initiatives depend on additional funding, Parks Canada will continue to take action to meet its commitments to ecological integrity.

## Threats to Ecological Integrity in National Parks of Canada

To many Canadians, national parks represent a pristine, wild environment that is protected from the impact of human activities. In truth, national parks are threatened by numerous stresses, many of which originate beyond their boundaries. Some beyond the boundaries of our country.

The *State of the Parks 1997 Report* and the *State of Protected Heritage Areas 1999 Report* identified significant threats to virtually all of Canada’s national parks. Of the 38 parks in existence at that time, all but one reported stresses and loss of ecological integrity. Internal and external stresses are resulting in habitat loss, habitat fragmentation, a decline in large carnivore populations, an increase in pollution, the introduction of exotic species, and intensified human disturbance of wildlife.

Our national parks exist in a world characterized by environmental change, stress and degradation. Because wildlife and natural processes do not abide by political or administrative boundaries, stresses that originate outside national parks can have profound effects on park ecosystems. In such cases, the ability of Parks Canada to take effective action can be severely limited. Ecological stresses detected within national parks are a warning and wake-up call — a reminder that larger and more serious stresses already effect much of Canada.

## Reporting on Ecological Integrity:

### Parks Canada’s Framework

How are our national parks coping with the significant internal and external threats they face? A complete picture of ecological integrity is difficult to obtain, given the number and complexity of inter-relationships that can co-exist within an ecosystem.

Ecological integrity is determined by many things: the characteristics of the park environment and its natural region, its flora and fauna, and its non-biological components. The presence and abundance of native species and biological communities are also factors, as are rates of environmental change and supporting processes. All these components, and more, must be taken into account if the quality of park ecosystems is to be maintained.

In 1997, Parks Canada designed the National Ecological Integrity Reporting Framework (Table 1), to provide an objective standardized structure for reporting on the overall health of park ecosystems, and the degree to which they might be impaired by the effects of the stresses they face. The framework is comprehensive, and takes into account the interrelated nature of biodiversity, ecosystem functions, and stressors.

## THE CURRENT REPORT

The National Ecological Integrity Reporting Framework respects the variety and complexity of ecosystems. Since changes in many indicators show up only over time, and baseline data frequently does not exist, the soundest and most efficient way to proceed is to report on different elements of the framework on a periodic basis. This report will focus on the following seven components:

### Biodiversity

- Species richness
- Trophic structure

### Ecosystem Functions

- Succession and retrogression
- Productivity

### Stressors

- Human land use patterns
- Habitat fragmentation
- Climate

**Table 1** National Ecological Integrity Reporting Framework

BIODIVERSITY	ECOSYSTEM FUNCTIONS	STRESSORS
<b>SPECIES RICHNESS</b>	<b>SUCCESSION /RETROGRESSION</b>	<b>HUMAN LAND USE PATTERNS</b>
change in species richness	disturbance frequency and size (fire, insects, flooding)	land-use maps, road densities, human population densities
number and extent of exotics	vegetation age class distributions	
<b>POPULATION DYNAMICS</b>	<b>PRODUCTIVITY</b>	<b>HABITAT FRAGMENTATION</b>
mortality/natality rates of indicator species	landscape or by site	patch size, inter-patch distance, distance from interior
immigration/emigration of indicator species		
population viability of indicator species		
<b>TROPHIC STRUCTURE</b>	<b>DECOMPOSITION</b>	<b>POLLUTANTS</b>
size class distribution of all taxa	by site	sewage, petrochemical, etc.
predation levels		long range transportation of toxins
	<b>NUTRIENT RETENTION</b>	<b>CLIMATE</b>
	Ca, N by site	weather data

## Biodiversity

Biodiversity, short for “biological diversity,” is a term used to indicate the variety of life occurring at different levels. Landscape diversity means the variety of biological communities within a landscape and its various habitats. Species diversity deals with the variety of plant and animal species within a given area. Genetic diversity refers to the variation among individuals of the same species.

National parks, representative examples of Canada’s natural landscape, are created in areas which contain considerable natural diversity, including geological, physiographical, ecosystem and biological features characteristic of the region. The condition of most ecosystems within national parks is either healthy and natural or, if stressed, potentially able to be restored to a natural state capable of supporting representative biodiversity.

## SPECIES RICHNESS

“North America’s diminishing biological diversity has profound consequences. Because the loss is irreversible—species that are lost are lost forever—the potential impact on the human condition, on the fabric of the continent’s living systems, and on the process of evolution is immense.”

- North American Commission for Environmental Cooperation, 2001

Canada’s national parks cover a little over 2.5 % of the nation’s land and fresh water. Yet they are inhabited by a majority of the country’s native land and freshwater wildlife species: 70.6 percent for plants and 80.9 percent for vertebrate animal species (Table 2). This species richness is largely the result of national park distribution across the length and breadth of Canada, and the location of some parks in species-rich areas.

**Table 2** Vascular Plant and Vertebrate Species Richness in Canada’s National Parks

	Native Vascular Plant Species	Exotic Vascular Plant Species	Vascular Plant Species at Risk	Native Vertebrate Species	Exotic Vertebrate Species	Vertebrate Species at Risk	Area (km <sup>2</sup> )
Canada	4,521	1,221	109	1,061	24	190	9,900,000
National Parks	3,192	606	62	858	19	92	256,385
% of Canada's Total in National Parks	70.6	49.6	56.9	80.9	79.2	48.4	2.59

Table 3 illustrates species richness in selected national parks. See Appendix 1 for a complete list.

**Table 3** Species Richness in Selected National Parks

	Amphibians	Reptiles	Birds	Mammals	Fish	Plants
Waterton Lakes National Park of Canada	7 (0)	2 (0)	264 (5)	61 (0)	23 (5)	975 (88)
Aulavik National Park of Canada	0 (0)	0 (0)	41 (0)	11 (0)	4 (0)	157 (3)
Point Pelee National Park of Canada	12 (0)	22 (1)	367 (5)	48 (5)	34 (2)	838 (246)
Prince Edward Island National Park of Canada	9 (0)	3 (0)	259 (5)	42 (6)	12 (0)	503 (116)

## Snapshot: Park Size and Species Loss

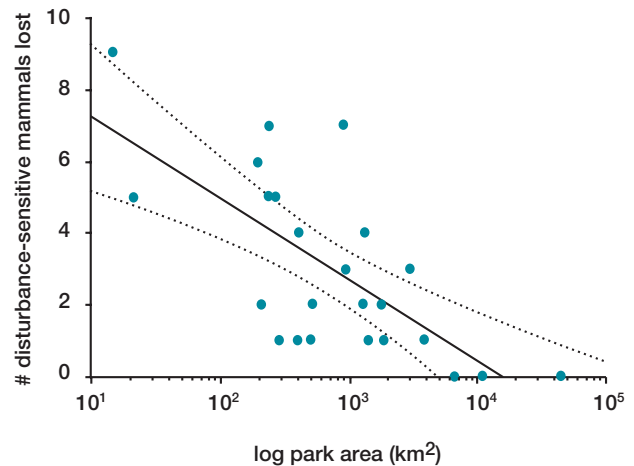
It is widely accepted that large areas are necessary to adequately conserve the historic composition of mammal populations. Yet even the largest national parks in Canada may have fewer species now than were present in the area before European settlement.

A recent University of Guelph and Parks Canada study has used geographic information systems (GIS) to document human disturbance and changes in natural habitats in and around 24 Canadian national parks. One of the study's findings showed that park size is the factor most closely related to populations of disturbance-sensitive mammals, particularly carnivores, missing from parks (Figure 1). The smaller the park, the more likely that animals previously found there will now be gone.

Another of the study's findings demonstrated a relationship between changes in national park species composition and the extent of human disturbance and habitat change outside the parks. This information will be helpful in designing and managing national parks to protect characteristic species richness and mammal composition most effectively.

Parks Canada is continually working to develop and enhance its species-related information. Databases are currently a focus of efforts to correct inadequacies, make lists as comprehensive as possible, ensure complete information on species at risk, and include invertebrate data.

Despite historic species losses from national parks, Parks Canada does not report noticeable recent declines in species richness. Appendix 1 shows the richness of species in national parks across the country.



**Figure 1: Relationship between park area and loss of disturbance-sensitive mammals**



## TROPHIC STRUCTURE

Trophic structure is a term used to describe the links between predators and prey in an ecosystem. Feeding relationships, or “who eats whom,” determine the flow of energy and materials from plants to herbivores (e.g. deer), carnivores (e.g. wolves) and scavengers (e.g. turkey vultures). The structure of these relationships, known as trophic structure, was identified in the *State of the Parks 1997 Report* as an indicator of ecological integrity.

An examination of this important ecological characteristic can help explain the connection between biodiversity and the resilience of an ecosystem, more specifically its ability to persist, or to recover from stress. An ecosystem with many possible links among species has many different food chains, which are essentially alternative pathways for food energy to flow through the system. The flexibility that comes from diverse food chains is one of the keys to the persistence and integrity of an ecosystem.

## DETERMINING TROPHIC STRUCTURE

It is very difficult to determine trophic structure. Listing all prey species for each predator in each national park would be an immense task.

A short cut for describing the trophic structure of park ecosystems is to consider the distribution of body sizes. A given animal’s size is a good indication of the size of its prey. Although there are many exceptions to the rule (e.g. parasites and pack-hunting animals), most species prey on animals or plant parts that are considerably smaller than themselves.

Body size also has an effect on the sustainability of a species population. Larger animals tend to have smaller populations, which leaves them vulnerable to extinction. All other factors being equal, an ecosystem dominated by smaller animals would offer a greater range of potential prey for large species and would have more food chains.

## Snapshot: The Park Size/Extirpation Link in the South

Historical losses of some species have been widespread particularly in the smaller, southern national parks surrounded by development. They have experienced the greatest loss of species.

Wolves, for example, are top level carnivores that used to be present in the Cape Breton Highlands, Fundy, Grasslands, Gros Morne, Kejimikujik, Kouchibouguac, Point Pelee, St. Lawrence Islands, Georgian Bay Islands, Bruce Peninsula, Elk Island and Terra Nova National Parks. They are now extirpated from these places.

Their loss is representative of a historical range shrinkage caused by loss of habitat, hunting, and urbanization, in which the major species loss occurred prior to the establishment of the parks. Yet the pattern of national parks species loss due to changes in exterior landscapes may still be repeating itself. At present, wolf populations have declined and are in danger of being extirpated from La Mauricie and Riding Mountain National Parks.

Further study on the relationships between species richness, body size distributions and numbers of food chains in park ecosystems will help Parks Canada assess the ecological integrity of national parks.

## Ecosystem Functions

Ecosystems change over time. Most can adapt to a certain type of disturbance, provided they are healthy, whole, and able to carry on their ecosystem functions.

Ecosystem functions are factors that enable an ecosystem to maintain itself and to evolve. These include rate of growth, decomposition of organic matter, nutrient retention, succession and retrogression.

## Snapshot: The Body Size/ Extirpation Link

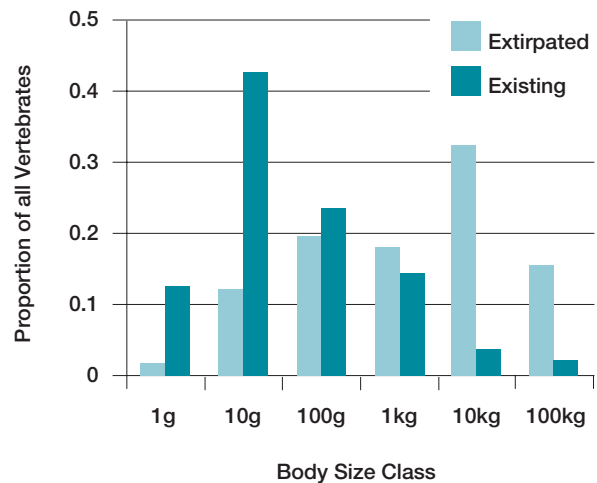
Extirpation is the term used to describe the local extinction or loss of a species. Data for vertebrates (birds, mammals, fish, reptiles and amphibians) show that within Canada’s national parks there is a far higher probability of extirpation for large-bodied animals than for small ones (Figure 2).

The most common size range for vertebrates in Canada’s national parks is between 10 and 100 grams. By contrast, the most common size range for species extirpated from national parks is 1,000 times larger — from 10 to 100 kilograms.

This bias towards the extirpation of large-bodied animals erodes the normal distribution of species in park ecosystems. Species of large vertebrates lost to particular national park ecosystems include wolves (12 parks), caribou (8 parks), and lynx (4 parks). The list of extirpations also includes a high proportion of carnivores (53 %), species higher on the food chain and dependent on larger sized prey.

Since carnivores, that are positioned at the upper trophic level, play a key role in structuring many

ecosystems, their loss can be catastrophic. The loss of all large carnivores from Elk Island National Park, for example, means that populations of herbivores must be regularly culled to ensure they do not overgraze their range beyond the “carrying capacity” of the park ecosystem.



**Figure 2: The proportion of all existing and all extirpated vertebrates found in national parks, grouped by body size class**

## SUCCESSION AND RETROGRESSION

Succession and retrogression involve disturbances caused by insect epidemics, grazing and browsing by mammals, flooding, windstorms, and fire. Though generally viewed as negative, these types of disturbances are actually important to ecological integrity. Some ecosystems would not exist without certain disturbances. The red cedar savanna in Point Pelee National Park of Canada, for instance, could not continue to exist without fire.

Disturbances normally cause one of two responses within the ecosystem. It can retrogress, meaning it returns to a previous stage/phase (e.g. a younger forest) or it can shift to a new stage/phase or succes-

sional path (e.g. forest replacing grassland). Over time, a landscape can be described as having a rate of either succession or retrogression.

One way to obtain important indicators about the state of the ecosystem is to measure the levels of disturbance and the responses of affected plant communities. The most reliable way to measure this type of change is to look at the distribution of the types and age classes of vegetation communities.

Another way to determine change is to measure the frequency and nature of the elements of change. The frequency of fire on the landscape, for example, can be measured as the area burned per unit of time.

## Snapshot: Restoring the Fire Cycle



Parks Canada/R. Grey

**Forest fire in Mount Revelstoke National Park of Canada**

Most ecosystems in Canada have evolved as a result of fire. Eliminating it from the natural cycle of an ecosystem would be as damaging as drought or the draining of a river. Fire not only renews and recycles, it also rearranges vegetation in a continual cycle of change. Over time, the naturally occurring fire cycle creates a vegetation

mosaic of different ages and types which provides a rich variety of habitats that can support many species of insects, mammals and birds. The result is biodiversity – the sign of a thriving ecosystem that is likely to persist in the future.

The suppression of fire by humans was identified in the *State of the Parks 1997 Report* and the *State of Protected Heritage Areas 1999 Report* as affecting species composition, species distribution and overall ecosystem structures in national parks. As a result, Parks Canada has been working toward restoring the historic fire cycle.

For the past 22 years, an adaptive management approach, using a combination of naturally occurring lightning-ignited wildfires and prescribed, or controlled, burns, has been implemented in national parks. At present, the average annual extent of forest fire occurrences in national parks has been restored to about 10% of the area that would have burned historically. Parks Canada’s goal is to restore fire to the level where the area burned each year is at least 20% of the historic area annually burned.

Table 4 shows the results of Parks Canada’s adaptive management approach to fire. This approach includes full fire suppression, modified response or partial suppression, and prescribed burns.

**Table 4** Annual comparison of fire management responses 1999-2001

Year	Fires				Hectares			
	Full suppression	Modified response	Prescribed	TOTAL	Full suppression	Modified response	Prescribed	TOTAL
1999	33	10	19	62	250	66,896	3,137	70,283
2000	82	28	18	128	2,907	4,632	5,469	13,007
2001	85	22	18	125	1,772	19,646	3,572	24,991

Weather is an important factor that often hinders Parks Canada’s efforts to restore fire to the landscape. The summers of 2000 and 2001 were relatively hot and dry in several parks. This limited the number of prescribed burns that could be

conducted safely to meet vegetation management objectives. Progress will only be seen over time in terms of both percentage of fire reintroduction and ecosystem response relating to restored functions.

## PRODUCTIVITY

The growth and decomposition cycle of organic matter is an important function that helps enable an ecosystem to maintain itself and evolve. The growth component of this cycle is known as primary productivity, defined as the rate at which vegetation is created per unit area during a growing season.

Primary productivity varies naturally from ecosystem to ecosystem, in response to ecological conditions. For example, the primary productivity early in the season of national parks in the Arctic is far below that of parks in dense mixed wood forests further south. Yet for both parks, primary productivity is equally important to the functioning of their ecosystems. Unusual changes in primary productivity may indicate undesirable changes in their overall ecological integrity.

Primary productivity does change over time. Annual productivity rates, for example, are higher in spring and summer, and lower in winter. Productivity can also decrease quickly in response to natural agents such as fire, flood or insect infestation. Over longer time periods, the impact of human activity – from the effects of various pollutants, to deforestation and conversion of land to buildings and roads – can lead to a sustained decrease in net primary productivity.

Fluctuations in a park’s basic primary productivity are normal. The greatest factor in determining if such changes threaten a park’s ecological integrity is whether or not the fluctuations occur within the historic productivity parameters of the park’s ecosystem. Rates of primary productivity outside this normal range may be an early warning sign that can help scientists understand how vulnerable or resilient an ecosystem might be to a range of stressors.

### Snapshot: Using Satellite Imagery to Monitor and Assess Ecosystem Productivity

*The State of Protected Heritage Areas 1999 Report* compared satellite images of vegetation within national parks to those of surrounding landscapes. In 2000, Parks Canada intensified efforts to monitor the productivity of its ecosystems. One hundred eighty-six permanent monitoring plots (at least five in each park) were established to enable Parks Canada to track productivity changes over time in all national parks.

Results of the first year’s analysis are summarized below. The most obvious differences in productivity arise from variations in climate across the length and breadth of Canada. Using statistical analysis, it becomes possible to compare how easily each park would convert sunlight into vegetation if they all had the same climate (Table 5). Other factors contributing to ecosystem productivity include nutrient availability, biodiversity, age of vegetation, and levels of pollution.

**Table 5** Climate-adjusted productivity for selected national parks in five categories

Evergreen		Mixed Broad Leaf		Northern		Grassland		Small Park	
Jasper	4.2	Prince Albert	6.8	Nahanni	5.2	Grasslands	4.1	St. Lawrence Islands	4.5
Banff	4.1	Riding Mountain	6.6	Wood Buffalo	5.0			Georgian Bay Islands	4.2
Pacific Rim	1.7	Gros Morne	4.3	Auyuittuq	1.6	Waterton Lakes	2.8	Point Pelee	1.8
Gwaii Haanas	0.9	Cape Breton	4.3	Kluane	0.1			Mingan Archipelago	0.8

In the long term, Parks Canada will be able to report on trends in growth efficiency for each national park. A sharp decline in this indicator would suggest a loss of ecological integrity and trigger further research efforts. Possible causes of such declines could be a decrease in species diversity, lower nutrient availability, poor adaptation to changing climates, or increased pollution effects.

Already Parks Canada has collected three years of data for six northern parks. This data shows an unexpected trend toward later spring thaws and longer winters. Parks Canada will also be able to use this data to conduct detailed analyses of the effects of vegetation type and topography on vegetation productivity.

## Stressors

National parks are affected by the same threats facing other natural areas – from climate change and pollution, to habitat fragmentation and intensified human land use. By their very nature, stressors affect both biodiversity and ecosystem functions. Human land-use patterns, for example, have an impact on both productivity and species richness.

Ecological stressors can originate both within the park and outside park boundaries. They include regional stresses affecting the greater ecosystem to which the park belongs, as well as global stresses such as long-range air pollutants and ground level ozone. No matter where the stressors originate, they have the potential to affect park components and values directly, compromising ecological integrity.

### HUMAN LAND-USE PATTERNS AND HABITAT FRAGMENTATION

Land use (e.g. urbanization, agriculture, forestry) and resulting habitat fragmentation are stressors that have a significant impact on natural ecosystems. Since 1996, Parks Canada has been examining the geographic distribution of national parks in light of regional land use and wilderness fragmentation, and conducting research on trends over time. Historic and current land use are being mapped using digital databases (e.g. the National Topographic Series) and satellite imagery. Landscape configuration—the spatial arrangement of land use and wilderness—is further associated with patterns and trends in biodiversity.

Over the course of the twentieth century, the practice of protected areas management and conservation has

Table 6 lists some of the most significant stressors affecting ecological integrity in national parks across Canada.

**Table 6** Significant stressors affecting ecological integrity

Stresses originating within the park	Stresses originating outside the park	Regional stresses affecting the greater ecosystem
<p><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>• visitor and tourism facilities</li> <li>• park infrastructure</li> <li>• roads, railways and utility corridors</li> </ul> <p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• park management practices</li> <li>• human disturbance of wildlife</li> <li>• sport fishing</li> <li>• vehicle/animal collisions</li> </ul>	<p><b>Pollution</b></p> <ul style="list-style-type: none"> <li>• solid waste</li> <li>• petrochemical pollution</li> <li>• pesticides</li> <li>• sewage</li> <li>• climate change</li> <li>• heavy metals</li> <li>• ground level ozone</li> <li>• acid precipitation</li> </ul> <p><b>Invasive species</b> (species not native to a given park)</p> <ul style="list-style-type: none"> <li>• vegetation</li> <li>• mammals</li> <li>• birds</li> <li>• fish</li> <li>• invertebrates</li> <li>• microorganisms</li> </ul>	<p><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>• urbanization</li> <li>• dams</li> <li>• mining</li> </ul> <p><b>Resource use</b></p> <ul style="list-style-type: none"> <li>• forestry</li> <li>• agriculture</li> <li>• hunting</li> <li>• commercial fishing</li> </ul>



evolved considerably. Parks are no longer perceived as “access points” to opportunities for outdoor recreation in limitless and continuous wilderness. Park management now focuses on protecting and preserving remnant wilderness, wildlife, and biodiversity in the face of expanding human populations and land use. It has become a major priority.

Land use inside and outside parks and other protected areas has an increasing impact on the ecological integrity of these areas. Loss of native wildlife species from North American protected areas, including Canada’s national parks, has been attributed to more intensive development and land use, and to wilderness fragmentation. This situation has resulted in the current emphasis on establishing and maintaining systems of core protected areas linked by corridors designed to conserve habitats and wildlife.

## **CLIMATE CHANGE**

National parks experience the same climate change impacts the rest of Canada faces – from increasing droughts and heat waves, to dropping water levels, to more frequent extreme weather events. Signs of climate change in national parks include melting permafrost and glaciers, loss of wetlands, more forest fires, shifting ecosystems, and more insects and pests, to name a few.

As a result of these impacts, vegetation patterns and wildlife ranges will change, ecosystems will shift, and many ecological communities will be pushed further north, or to higher elevations. Scientists predict that 45% of Canada’s habitat could be displaced by the end of this century, with species loss in vulnerable Arctic and boreal forest ecosystems as high as 20%.

Climate change is, in fact, being identified as a growing stressor for many national parks and greater park ecosystems across the country. Climate change and vegetation response models indicate that there will be widespread changes to Canada’s major vegetation types. When national park locations are superimposed on these models, depending on which models are used, we see that anywhere from 21 to 33 parks could experience changes whereby boreal forest will give way to grassland, or tundra to sub-arctic forest. Most at risk will be mountain areas in

which vegetation zones will migrate upwards. Some alpine communities that have nowhere higher to go could cease to exist.

Other projected climate change impacts include:

- more intense storms causing erosion and damage to sensitive nearshore cliff and saltmarsh vegetation in parks like Prince Edward Island and Kouchibouguac National Parks on the Atlantic coast;
- the predicted northward shift of boreal forests altering prime habitats for migratory birds like whooping cranes in Wood Buffalo National Park and white pelicans in Prince Albert National Park;
- warmer conditions in the Arctic adversely affecting animals like polar bears, ringed seals, and arctic foxes – species that depend on sea ice and snow conditions for food, shelter and camouflage;
- significant changes in water levels and temperatures reducing freshwater fish populations in national parks throughout Canada; and
- milder winters resulting in insect infestations in national park forests across the country.

In a study by Environment Canada and the University of Waterloo, commissioned for Parks Canada, the investigators recommend that:

- the connectivity of national parks and other protected areas in Canada and North America be improved to enable wild plants and animals to shift their ranges in response to climate change;
- more detailed climate change impact assessment studies be conducted in the majority of national parks;
- ecological inventorying be accelerated and monitoring for climate change detection be improved;
- collaboration with international conservation agencies on global climate change issues be improved; and
- a national or binational round table on climate change and protected areas be initiated.

Environment Canada and the University of Waterloo are currently continuing the work with newer general circulation models, new global CO<sub>2</sub> emission scenarios, and newer vegetation response models. When it is finished, more detailed seasonal and monthly climate scenario data will be available for each park.

### Snapshot: Cores, Corridors and Ecological Connectivity

Canada’s national parks system has developed in the context of the nation’s evolution. This includes Canada’s history and geography, characterized by extensive wilderness regions in the north, gradually changing to intensive land use, extensive infrastructure, and dense concentrations of human population in the south.

Land use in the south includes crop land, grazing land, and urbanized areas. Infrastructure includes roads, rail lines, power lines, buildings, etc. Many of the national parks in southern Canada are, in fact, completely surrounded by human development. This isolation (Figure 3) makes them particularly vulnerable to the impact of human activity. Southern parks also tend to be smaller than northern parks. The size difference decreases their capacity to withstand human pressure (Figure 4).

It is particularly important to link these small, isolated national parks to other core natural areas through corridors designed to protect habitats and encourage wildlife movement. Yet in southern Canada, opportunities to maintain or restore corridors among natural landscapes, including national parks, are minimal.

Since it is easier to maintain existing corridors than to re-create them once they have been lost, it has become a priority to conserve remaining natural corridors, as well as the natural areas they connect. Only by protecting and restoring larger natural core areas, and connecting them with corridors, can the ecological integrity of national parks in the south be re-established and sustained over the long term.

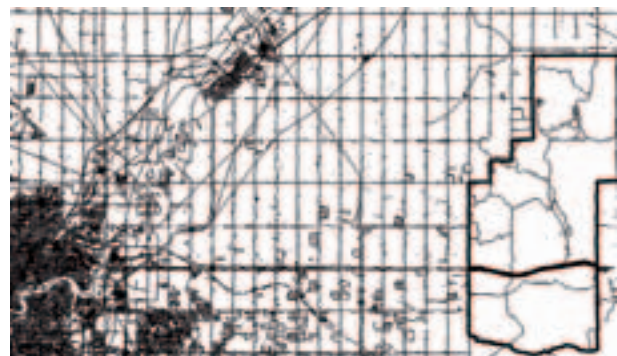


Figure 3: Elk Island National Park: a natural island surrounded by agricultural and urban land use

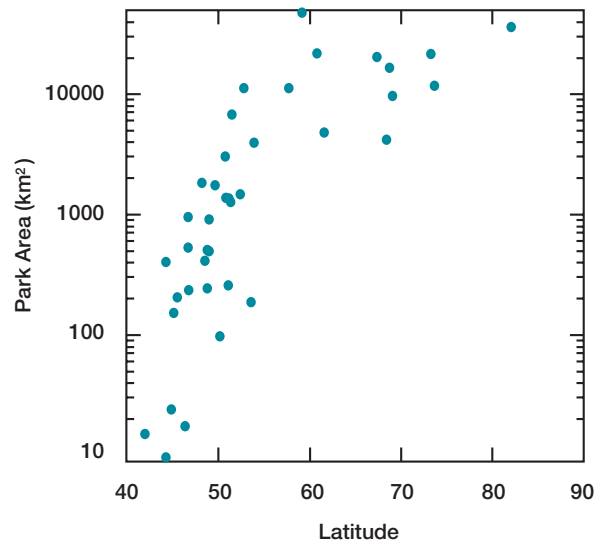


Figure 4: Latitude and area (size) of national park

## Snapshot: Caribou in the North

Yukon's Ivvavik and Vuntut National Parks of Canada, together with the US Arctic National Wildlife Refuge to the west, protect approximately 94,500 square kilometres of land. A host of Arctic wildlife inhabits this vast territory, including the Porcupine caribou herd which, at approximately 130,000 animals, is one of the largest barren ground caribou herds in North America.

The Porcupine caribou herd migrates annually from the forested valleys of north-central Yukon to calving grounds on Ivvavik National Park's Beaufort Sea coast. There, in late spring, despite harassment by mosquitoes and threats from predators like grizzlies and wolves, the female caribou give birth. Their calves are able to stand and nurse within an hour or two of being born, and they manage to follow their mothers and run for short distances within 24 hours.

Ivvavik National Park of Canada provides a refuge that, with careful management, has so far managed to sustain healthy populations of Porcupine herd caribou. Yet climate change is presenting a growing challenge: increasing temperatures.

Higher temperatures in the Arctic mean more mosquitoes. And more mosquitoes mean increased harassment of caribou, particularly pregnant females. If

temperatures continue to rise at current rates, conditions projected for 2090 will result in 20% fewer pregnancies among the Porcupine caribou herd females, and a population decline of 4% per year.

Further north, the Peary caribou is already threatened by climate change on Canada's Arctic islands – the only place this small, light-coloured caribou is found. Parks Canada is considering a national park on Bathurst Island to protect the Peary caribou habitat, including a major calving area.

This Arctic territory, though large, is covered largely with rock and icefields, which means little habitat is available to the caribou. In recent years, they have had to face an additional challenge: rising temperatures.

Higher temperatures in October have been melting the snow surface. When temperatures drop again, the melted snow re-freezes. It creates a layer of nearly impenetrable ice, sealing off the ground lichens and plants that the caribou need to survive the winter.

The numbers of Peary caribou have dropped to the point where they have been listed as threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) because of their overall low numbers. The creation of a new national park on Bathurst Island will help the Peary caribou by protecting their habitat. But it will not be able to solve the problems associated with climate change.



*Caribou in Ivvavik National Park of Canada*

Parks Canada/W. Lynch (1988)



*Mother and young caribou in Vuntut National Park of Canada*

Parks Canada/W. Lynch (1988)



## Recent Parks Canada Agency Activities - Biodiversity

### SPECIES RICHNESS

The wide variety of ecosystems protected by Canada's national parks are biologically diverse areas. They are rich in both aquatic and terrestrial species with various genetic differences. This species richness is an important element of biodiversity.

### CHANGES IN SPECIES RICHNESS – SPECIES AT RISK

Parks Canada is concerned with the status of all wildlife species occurring in the protected heritage areas it manages. Species that are considered to be at risk of extinction—listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC)—need special attention. Understanding and addressing the needs of these species will help Parks Canada reach its goals of achieving ecological integrity.

Parks Canada is one of three federal government bodies responsible for species at risk in Canada. Parks Canada is responsible for species at risk within its national parks, national historic sites and national marine conservation areas. The Department of Fisheries and Oceans Canada is responsible for species within oceans and inland waterways. Environment Canada is responsible for all other species at risk in Canada.

Parks Canada's program focuses on endangered and threatened species as listed by COSEWIC, which are distributed throughout national parks, historic sites and national marine conservation areas.

### THE PARKS CANADA SPECIES AT RISK PROGRAM

As of November 2001, 387 species and populations were listed as being at risk in Canada by the Committee on the Status of Endangered Wildlife in Canada. Of these species, more than half occur almost exclusively or predominantly within



Parks Canada/D.A. Wilkes

**Eastern prickly pear cactus (*Opuntia humifosa*) in Point Pelee National Park of Canada**



Parks Canada/M.L. Degner

**Banff Springs snail (*Physella johnsoni*) in Banff National Park of Canada**

national parks, national historic sites and national marine conservation areas. These species at risk and their habitats within Parks Canada's protected heritage areas are protected through *the Canada National Parks Act* and its regulations.

The Parks Canada Species at Risk Program commits to:

- developing recovery strategies for Parks Canada's priority species (species are distributed almost exclusively within Parks Canada's protected heritage areas) and participate in recovery strategies for species;
- implementing priority actions identified in recovery strategies for species found in Parks Canada protected heritage areas, and supporting partnerships for recovery in greater park ecosystems;

- completing a comprehensive database of species at risk occurrences in national parks, national historic sites and national marine conservation areas;
- meeting legal obligations once the Act is proclaimed; and
- building awareness and educating Canadians about species at risk.

In 2001-2002, Parks Canada funded 48 projects focusing on recovery actions for species at risk in areas within and surrounding national parks. These projects involved activities by 22 Field Units<sup>1</sup>, directed at over 35 species of plants, lichens, fish, reptiles, birds and mammals. Parks Canada also conducted biodiversity surveys, with a focus on species at risk, in 16 national historic sites and sections of the Trent-Severn Waterway and the Rideau Canal NHSC.

**PARKS CANADA PRIORITY SPECIES AND SITES**

Parks Canada is leading recovery teams that are developing and implementing recovery strategies for the priority species at risk listed in Table 7.

Although Parks Canada is concerned with the status of all species living in its protected heritage areas, Parks Canada has extra responsibility for ensuring



Parks Canada

**Juvenile blanding's turtle** (*Emydoidea blandingii*)

the recovery of species at risk found either exclusively or predominantly within its national parks and its other protected heritage areas.

Parks Canada is also developing and implementing site-specific action plans to address the conservation needs of several species by taking an ecosystem-based, multi-species approach to recovering species at risk.

The following Parks Canada protected heritage areas are currently designated as priority sites:

- the Garry Oak Ecosystems at Fort Rodd Hill and Fisgard Lighthouse National Historic Sites of Canada, British Columbia;

**Table 7** Priority Species

Species Name	National Park	COSEWIC Status
Seaside Centipede Lichen	Pacific Rim	Endangered
Eastern Prickly Pear Cactus	Point Pelee	Endangered
Pitcher's Thistle	Pukaskwa	Endangered
Banff Springs Snail	Banff	Endangered
Blanding's Turtle - Nova Scotia population	Kejimikujik	Threatened
Water-pennywort	Kejimikujik	Threatened
Eastern Massasauga Rattlesnake	Georgian Bay Islands, Bruce Peninsula, Fathom Five	Threatened
Haller's Apple Moss	Jasper	Threatened

<sup>1</sup> A Field Unit is a regionally based management unit, which generally concentrates on one or more national parks, and nearby national historic sites, historic canals and national marine conservation areas.

## Snapshot: Piping Plovers in the Maritime Provinces



Parks Canada/Simon Lunn

The piping plover is a small North American shorebird approximately 17 centimetres long and weighing around 55 grams. It breeds on light-coloured sandy beaches from North Carolina to Newfoundland along the Atlantic coast, and on lakeshores of the Northern Great Plains. In late summer the birds migrate to the Gulf of Mexico and the Caribbean, where they spend the winter.

The breeding population numbers approximately 5,500 adults, with about 2,150 breeding in Canada. In 1985, COSEWIC listed the species as endangered, due to degradation of its breeding habitat, disturbance of breeding plovers by humans and pets, and predation of eggs, chicks and adult birds by foxes, crows and other animals. The piping plover has also received at-risk designation in parts of the United States.

- Grasslands National Park of Canada, Saskatchewan;
- Kejimikujik National Park and National Historic Site of Canada, Nova Scotia; and
- Point Pelee National Park of Canada, Ontario.

Parks Canada staff collaborate with other federal, provincial and territorial agencies, as well as with universities and not-for-profit organisations, on recovery teams working on these priority species and sites, as well as on teams focusing on other species at risk. The goal is to produce strategies that will clearly direct actions needed to aid in the recovery of these species.

### NATIONAL PARK SAFE HAVENS

In Canada, piping plovers breed in only three national parks: Prince Edward Island National Park of Canada, New Brunswick's Kouchibouguac National Park of Canada, and the Seaside Adjunct to Nova Scotia's Kejimikujik National Park and National Historic Site of Canada. These parks provide the highest degree of protection and management possible.

Over the last 15 years, the highest number of plovers breeding in the three parks was 102 adults during

1987. In 2000, only 58 plovers (3% of the Canadian population) bred in the national parks. The national park breeding population has been fluctuating between 50 and 100 birds since 1987 (Figure 5).

While the birds stay in Canada's national parks, they are the focus of intense management efforts from close monitoring and public education, to enforcement of protective regulations, closure of nesting areas to the public, and protection of individual nests from predation with wire enclosures to fence predators out of immediate nest areas. These measures have been in force since 1988.

The number of plovers returning from the south is beyond the control of Parks Canada. En route during migration and at the wintering grounds, piping plovers die from accidents, disease, predation and other factors.

### INTERNATIONAL MULTI-AGENCY COOPERATION

Parks Canada is a member of the National and International Piping Plover Recovery Teams which have produced recovery plans for both Canada and the United States. A collective effort is now under way, involving many partners, to restore plover populations,

which have declined by 17% in Atlantic Canada since 1991.

The restoration activities are based on research conducted in the United States since the 1950s. They suggest that, while a very large percentage of adult plovers may return to the same beach to nest year after year, the rate of return by young to the beach where they were born is very low perhaps only 5%. It is thought that most young disperse to colonize new areas and habitat.

This conclusion has major significance for Piping plover management efforts in Prince Edward Island National Park of Canada, Kouchibouguac National Park of Canada, and the Seaside Adjunct to Kejimikujik

National Park and National Historic Site of Canada. It means that while management efforts in the national parks may pay off in the production of many young, the fate of park plover populations relies more on the success of habitat outside the park in producing the young populations necessary to replace older birds lost to disease, accident, or predation.

To address this need, the Canadian Piping Plover Recovery Plan has specified a population goal of an additional 670 adult birds for Atlantic Canada (58% increase), and a productivity goal of 1.5 chicks per breeding pair per year. Research indicates that this level of productivity is necessary to realize popula-

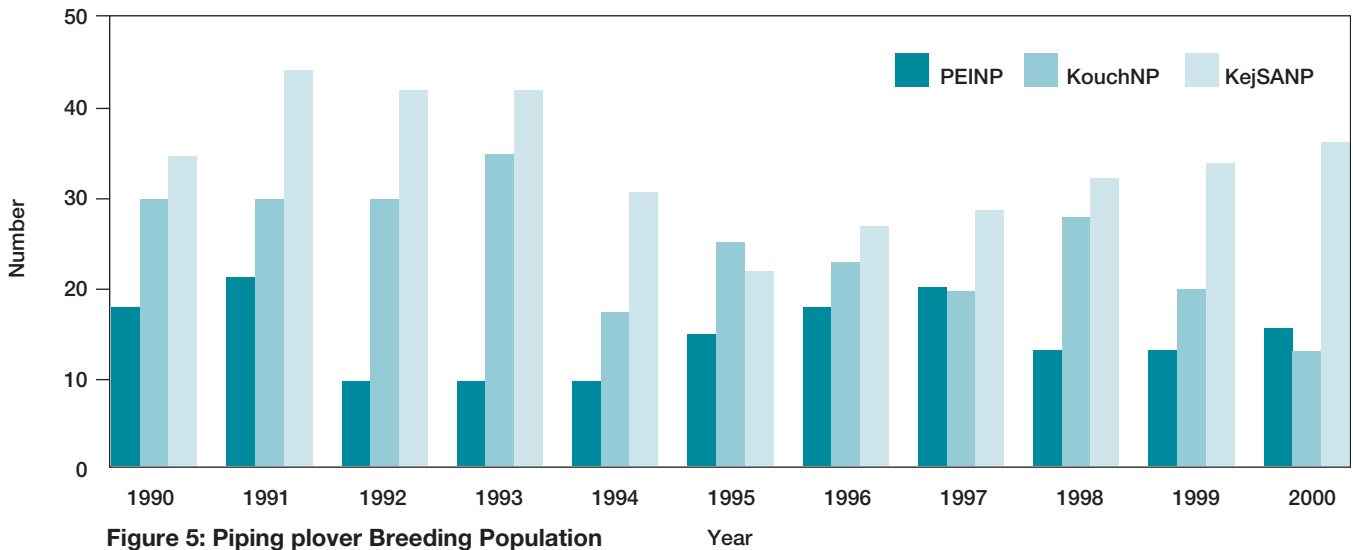


Figure 5: Piping plover Breeding Population

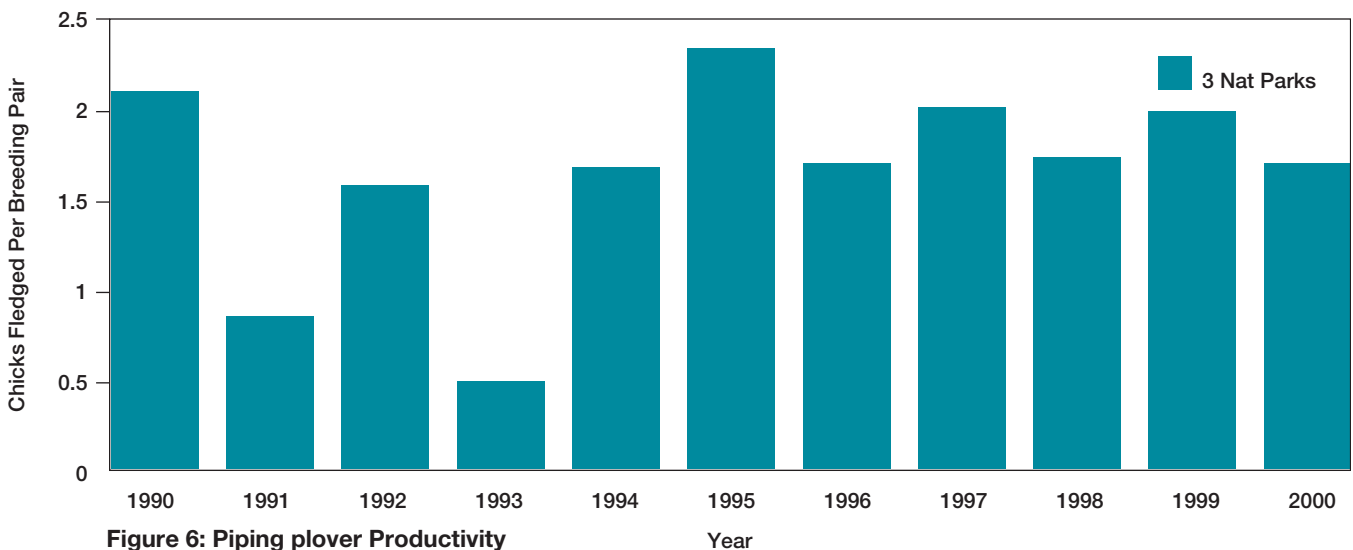


Figure 6: Piping plover Productivity



## **Snapshot:** The Vianney-Legendre Fishway at the Saint-Ours Canal National Historical Site of Canada

– a concerted effort to promote the biodiversity of the Richelieu River



Parks Canada

### ***Fish-pass in Saint-Ours Canal National Historic Site of Canada***

Known as the tenth lock on the Richelieu River in Quebec, the Saint-Ours Canal forms a final segment of the Chambly Canal. With the help of the dam of the same name, it enables watercraft to clear the final obstacle linking Lake Champlain to the St. Lawrence River.

In 1996, representatives of Parks Canada and of the Ministère de l'Environnement et de la Faune du Québec met in order to discuss the consequences of the obstacles which the Saint-Ours dam represented for several species of fish which were attempting unsuccessfully to follow the Richelieu River upstream to find feeding or spawning grounds. Following this meeting, a federal-provincial interdepartmental committee made up of biologists,

engineers and managers from Parks Canada and Fisheries and Oceans Canada as well as the Ministère de l'Environnement et de la Faune du Québec was established.

The committee was charged with examining the various options which might enable the free flow of fish to be restored. The team of specialists focused in particular on the features of four species of fish at risk (the copper redhorse, the lake sturgeon, the American shad and the American eel).

Through their combined expertise, the latter finally recommended that a multi-species fishway should be built to enable the copper redhorse, the lake sturgeon and the American shad to reach their feeding grounds. Several factors were taken into account in the design of this structure, in particular the ability of the various species to clear a vertical obstacle, the volume of water which may be present in the basins, the size of the fish (for instance, the lake sturgeon can measure up to 1.5 m, and the timing of the spawning runs for each of the various species in question.

The committee also suggested that a second structure be specifically built for the American eel, so that the latter species could reach its feeding grounds.

Owing to the help of several financial partners (Fisheries and Oceans Canada, Environment Canada, Canada Economic Development, Transport Canada, the Société de la faune et des parcs du Québec, the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, the Fondation de la faune du Québec and the partners of Projet Rescousse), the construction work for the two fishways was started in September 2000. The Vianney-Legendre fishway was officially inaugurated on August 29, 2001, at Saint-Ours Canal National Historical Site of Canada.

More than 15 species of fish have been identified since the fishway began operating in June 2001. In all, some sixty species of fish could benefit from the presence of the fishway.



tion gains, and to ensure dispersal to available habitats, including national parks.

Parks Canada has exceeded this goal since 1993, with a mean production of 1.9 young per breeding pair over the last 9 years (Figure 6). In some years production has totalled over 2 young per breeding pair.

Recovery of this endangered species will require a cooperative effort among all governments, groups and individuals having control over lands where the species breeds and winters. Protection and manage-

ment must include preservation and maintenance of habitats, minimization of human disturbance, and protection of eggs, young and adult birds from excessive predation.

## EXOTICS

The presence of exotic or non-native species in a national park can present a significant threat to its biodiversity and to the ecological integrity of the greater park region.

## VULNERABLE SEABIRDS

### **Snapshot:** Preservation of the wolf in La Mauricie National Park of Canada



Parks Canada/J. Pleau

#### ***Park Wardens Studying a Wolf in La Mauricie National Park of Canada***

La Mauricie National Park of Canada is located in the Laurentians, a mountain range along the north shore of the St. Lawrence River in Quebec. This territory, which measures 536 km<sup>2</sup>, preserves a representative sample of the southernmost part of the Canadian Shield, a vast undulating plateau of hills dotted with valleys and countless lakes.

When the region was colonized, wolves were roaming the entire province of Quebec. Nowadays, one no longer finds wolves south of the St. Lawrence where the species has been

absent for more than a century. The wolf is retreating as human activity encroaches upon its territory as a result of the cumulative effects of the change in forest habitats, intense trapping and development of resort areas. In southern Quebec, only seven protected areas provide shelter for this species.

The increasingly rare and sporadic presence of the wolf in the Park, despite an increase in the prey population (moose, beavers and white-tailed deer) has led Parks Canada to believe that the wolf is no longer fulfilling its ecological role. Indeed, the small size of existing packs (3 to 6 members at the end of winter) indicates a strong harvesting pressure exerted upon this species.

Theoretically, in the absence of hunting and trapping, these packs should be more complex and include 8 to 12 wolves. Other concerns are also apparent, namely the impact of the disturbance caused by human activity and, in particular, the presence of a road slicing through the heart of the Park's forest. The extent of the packs' movement, their use of La Mauricie territory and the number of packs were issues that needed to be addressed.

It was important to know the state and role of the wolf both in the Park and in the surrounding region. A study on the ecology of the wolf was therefore initiated in La Mauricie National Park of Canada in January 2000, in conjunction with the



Université de Sherbrooke. The acquisition of basic knowledge on population density, pack structure, use of territory and the role it plays in the natural control of the moose population is essential for charting the future course of conservation action and promoting the presence of wolves within the Park and the region.

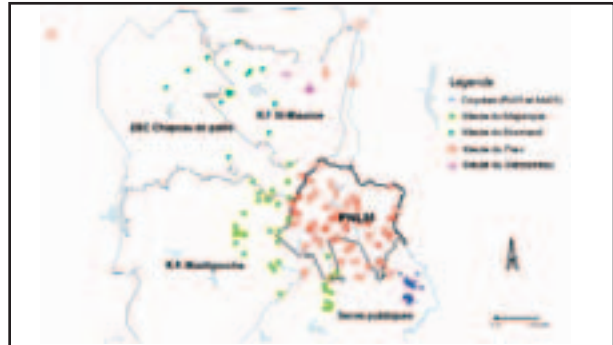
One cannot currently state to what extent La Mauricie National Park of Canada contributes to the protection of wolves throughout the greater ecosystem. Since the movements of wolves within the Park greatly exceed the limits of the protected area provided for in the Park, they are subject of trapping and hunting. Due to the small size of the park (536 km<sup>2</sup>), maintenance of a viable population of wolves cannot be guaranteed. Except for its southern part, the National Park is enclosed by forest areas, which individuals may enter.

In addition, COSEWIC, in May 2001, rated the status of a distinct subspecies of wolf in Eastern Canada (*Canis lupus lycaon*) as being of “special concern”. However, many questions remain unanswered regarding the timber wolf, including the extent to which it is different from other wolves in Quebec; how it is currently distributed throughout Quebec and elsewhere in America; and the exact size of its population. In Quebec, this subspecies appears to be present in the Mauricie region as well as in the Laurentian, Lanaudière and the southern Ouvaouais and Quebec regions.

The research project under way in La Mauricie National Park of Canada will allow for the identification of significant sites used throughout the seasons (dens, meeting places and migration corridors) and the use of the territory by coyotes, as well as the significance of the pressure exerted by trapping. Current data lead us to believe that wolves may be subject to high mortality, principally as a result of trapping.

Packs, however, have shown a certain resiliency (an ability to resist change). However, we cannot know how long these packs will be able to sustain such a level of stress. In addition, the construction of several forest roads as a result of intensive

felling and the development of resort areas represent an additional area of concern for the preservation of the species in years to come.



Undertaking this research project should enable the Park to address significant concerns, namely assessing the Park’s capacity to sustain a regional wolf population, educating the public at large about the plight of the wolf and providing leverage to efforts to preserve the species both regionally and provincially. Such conservation action will not be a achievable without a consensus-building effort directed toward our partners. A local education and awareness program has already ben initiated by one of the Park’s partner organizations.

Additional efforts will be required to ensure the maintenance of this population within the Park, and the region, as well as the ecosystem. The wolf is a species vital to the proper functioning of the food chain of the Mauricie ecosystem. In and of itself, the wolf symbolizes the wilderness in protected natural areas in Canada.

## **Snapshot: Non-native Species in Gwaii Haanas**

Gwaii Haanas (Gwaii Haanas National Park Reserve and Haida Heritage Site) lies in the southern part of the Queen Charlotte Islands, located 130 kilometres off the British Columbia coast and 640 kilometres north of Vancouver. It is a wild and remote area made up of some 138 islands stretching 90 kilometres from north to south.

The introduction of non-native species to Gwaii Haanas is one of the most significant threats to the ecological integrity of the region. These introductions may place many indigenous species or natural communities at risk.

The Gwaii Haanas archipelago (Haida Gwaii) is recognized for its high numbers of unique, isolated and rare species characteristic of an island-type ecosystem. The life histories and

habits of many island species reflect conditions of habitats which relatively little wildlife has colonized. Species introduced into these habitats tend to out-compete and displace indigenous forms. The effects are intensified because these new species often arrive without predators or competitors.

While it is difficult to trace the origins of non-native plants and birds on the islands, several alien species are known to have been introduced. These include birds like the European starling and almost one quarter of the archipelago's vascular plants. Excluding humans, the terrestrial mammals of Haida Gwaii consist of 11 indigenous species, one of which is extinct. Over the past 125 years, 10 wild species have been introduced to Haida Gwaii, along with a host of feral domestic animals. The result has been the presence on the islands of more introduced species than indigenous mammal species (see Table 8).

Haida Gwaii includes some of British Columbia's most extensive seabird nesting habitats, with internationally significant populations of certain species. Almost all of the islands' 1.5 million breeding seabirds nest in or on the ground. They have little or no natural defence against predation.

The introduction of efficient terrestrial predators has caused severe losses to even the largest colonies. Several species of seabirds have been assigned at-risk status based on threats posed by introduced predators.

Parks Canada is cooperating in various initiatives under way throughout the archipelago to both mitigate the effects of introduced species and reduce the risk of range expansions or new introductions. The following section describes some of the current efforts to manage the effects of introduced species.

### **RATS**

To restore seabird habitats, the Canadian Wildlife Service initiated a rat eradication project on Langara, Lucy, and Cox Islands, using a proven methodology

from New Zealand.

At the other end of the archipelago, Gwaii Haanas National Park Reserve staff have successfully removed rats from St. James Island, which had a large seabird colony before the rat invasion. Ten Gwaii Haanas National Park Reserve islands still have resident rats and the intent is to continue the program on islands where restoration is feasible. Ecosystem recovery will be monitored to determine the effectiveness of the restoration activities.

Since rats are notorious stowaways, people will have to be very careful not to inadvertently reintroduce them to restored islands, or to any new islands. Long-term success of the entire initiative depends not only on active restoration, but on preventive measures as well.

Gwaii Haanas National Park Reserve staff have developed a communications program to inform people about the risks of transporting rats from infected sites to clean islands. The program includes media information releases, back-country orientation programs,

and a widely distributed information pamphlet.

**RACCOONS**

Raccoons, voracious and very opportunistic feeders, are affecting a number of seabird colonies and other ecosystems from intertidal beaches to high-elevation forests.

In 1994, a working group was struck, with representatives from the British Columbia Ministry of Water, Land and Air Protection; the Canadian Wildlife Service; the Gwaii Haanas Archipelago Management Board (Parks Canada and the Council of the Haida Nations); and the Laskeek Bay Conservation Society. This group developed a raccoon monitoring and control program which appears to have had overall success.

The group also revised its protocols to reflect increased knowledge and field experience. So far, initiatives have focused on seabird colonies, yet it is

recognized that additional efforts will be required to address other ecosystem problems.

**NON-NATIVE VEGETATION**

Gwaii Haanas National Park Reserve staff have begun to document historic and current distributions of introduced plant species.

Most exotic plant introductions in Gwaii Haanas appear to be localized around sites disturbed by humans, including historic logging camps and roads, village sites, mining sites, homesteads, and lighthouses. The more aggressive species are of particular concern because they spread easily and can out-compete native species, especially where disturbance has occurred.

The spread of these high-risk species is being monitored. Where introduced species are accessible and limited in distribution, attempts will be made to remove plants before they spread.

**DEER**

**Table 8** Introduced and indigenous mammals on Haida Gwaii

Indigenous mammal species on Haida Gwaii, Queen Charlotte Islands:	Introduced mammal species on Haida Gwaii, Queen Charlotte Islands (date of first occurrence):
Black bear	Sitka black tail deer (1878)
California myotis	Rabbit (1884)
Dawson caribou (extinct)	Cattle (1893)
Dusky shrew	European red deer (1918)
Ermine	Black rat (1919)
Keen's long-eared myotis	Norway rat (1922)
Keen's mouse	Muskrat (1924)
Little brown bat	Rocky mountain elk (1929)
Marten	Beaver (1936)
River otter	Raccoon (1940)
Silver-haired bat	Red squirrel (1947)
	Goat (1976)



The seemingly innocuous Sitka black tail deer has spread throughout the archipelago. Only a handful of small offshore islets remain deer-free.

On the islands where they are thriving, Sitka black tail deer have considerable impact on vegetation along shorelines and in the forest understory. Figure 7 illustrates the effects of deer grazing on these plant communities. The grazing means less food is available for other plant-eating wildlife; it has resulted in reductions of diversity and abundance among many of these species. Loss of understory structure in the forest has a cascading effect on many other elements in the ecosystem. Over the long term, forest tree renewal, particularly overstory species, will also be affected.

A multi-disciplinary research collective known as the Research Group on Introduced Species was formed in 1995. The large contingent of collaborators includes the Laskeek Bay Conservation Society, the Gwaii Haanas Archipelago Management Board, the Canadian Wildlife Service, the Centre National de la Recherche Scientifique (France), and the British Columbia Ministry of Water, Lands and Parks.

These partners have completed over five years of research focusing on the effects of two introduced species, deer and squirrel, on the shoreline and forest ecosystems of Haida Gwaii. The results of this work will be applied to help develop long-term management, restoration and monitoring programs.

Total elimination of deer on Haida Gwaii is neither feasible nor socially desirable. Yet deer could be managed on selected islands sufficiently distant from a source population to make eradication or continued control feasible. A proposed program would provide deer-free islands as benchmarks.

To test the concept, an experimental deer cull has been undertaken on two islands. Baseline measurements of vegetation, as well as song bird numbers and diversity, have been established for the islands and adjacent control areas. Results show an obvious reestablishment of the herb and shrub layer.

Active management of introduced species in Gwaii Haanas is essential for maintaining or restoring ecological integrity in the region. The intensive, multi-agency approach used by Gwaii Haanas

National Park Reserve staff, involving long-term active management, restoration and monitoring, is beginning to show results.



Parks Canada

**Deer-affected shoreline**



Parks Canada

**Deer-free shoreline**

**Figure 7: Comparative photographs illustrating structural and compositional differences exhibiting the results of deer browsing.**



# ECOSYSTEM FUNCTIONS

## SUCCESSION AND RETROGRESSION

### Snapshot: Elk Island National Park of Canada—Two Decades of Prescribed Burning



Parks Canada/Jeff Dixon

Elk Island, located east of Edmonton Alberta, stands out in Canada’s national park system on a number of levels. As a small protected remnant of aspen parkland and boreal mixed-wood transitional forest located within an agricultural and industrial region, it is isolated physically from the surrounding Beaverhills ecosystem. As a fenced and intensively managed park, it is distinct from other parks in the national system. As a place where fire and ungulate (moose, deer, and elk) grazing has been actively managed for the past two decades, Elk Island is a leader in Parks Canada’s Fire Management Program.

Established in 1906 as a wildlife preserve, Elk Island has a long history as a managed ecosystem. Located in the transition zone between the northern boreal forest and the interior grassland plain, the park incorporates three distinct vegetation communities: the Lower Boreal Mixed Wood Forest, Closed Aspen Parkland, and Open Aspen

Parkland. These vegetation communities have short and regular fire return intervals, all the while supporting active grazing by a number of large native ungulates.

With a total area of 19,430 ha, 98% of the park historically burned at intervals of less than 25 years. Prior to European colonization, the aspen parkland would have been maintained by a combination of grazing, flooding, and human or lightning ignited fires. Historically, fire alone affected approximately 15% (1,530 hectares) of the park annually. Fire as an ecological process was actively suppressed in Elk Island until 1979, allowing fast-growing aspen stands to invade open meadows.

The 1979-2001 fire program (Figure 8) has been very successful in reintroducing a cornerstone ecological process. Prescribed restoration burns have met and surpassed the historical average area burned over the last 20 years in a number of vegetation communities. The program has been limited only by the logistical requirements for each burn and the availability of suitable conditions to meet the requirements.

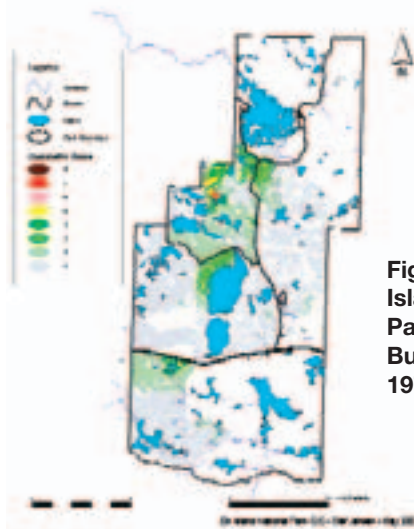


Figure 8: Elk Island National Park Cumulative Burn Map 1979-2001

The 1999 Elk Island Ecosystem Conservation Plan (ECP) which plans for restoration of ecological integrity through the appropriate re introduction of fire, grazing and flooding in the three major vegetation types mandated the reintroduction of fire as an ecological process. The park will continue prescribed burning in the restoration phase until approximately 2018, then switch to a maintenance phase emulating the historical fire regime (Table 10).

The restoration of fire has been integrated with ungulate management through a number of studies

and monitoring programs. Permanent plots have been established to determine the long-term effects of the prescribed burn program.

Other national parks are moving toward the integrated and active management of fire as exemplified by Elk Island. The size of other parks, the complexity of individual prescribed burns, the lack of public understanding concerning the role of fire as an ecosystem process, and limited resources, magnify the challenge of fire restoration throughout the national park system.

**Table 9: Fire Frequency and Vegetation Type**

Vegetation Type	Restoration Phase	Maintenance Phase
Lower boreal mixed wood	20 years	45-145 years (Random)
Closed aspen parkland	3-7 years	10-25 years (Random)
Open aspen parkland	2-3 years	5-20 years (Random)

## **Snapshot:** Grafton Lake Restoration Project, Kejimikujik National Park and National Historic Site of Canada



Parks Canada

**Grafton Lake Restoration Project, Kejimikujik National Park and National Historic Site of Canada**

Kejimikujik National Park and National Historic Site, located in southern Nova Scotia, is Canada's only inland national park in the Maritimes. It features mixed Acadian forest of old-growth hemlock and yellow birch, abundant shallow lakes and smooth rivers, and a wide variety of wildlife, including rare coastal plain plants and three species at risk: the blandings turtle, piping plover and water pennywort. It also includes historic canoe routes and significant Mi'kmaq petroglyphs.

Within this water-rich environment, Grafton Lake dam was originally constructed in 1938 to provide for the water needs of a salmon hatchery on Grafton Brook. The dam had been left intact since then, on the assumption that its removal would destabilize the lake's altered ecosystems, and possibly affect important species. Yet recent research has demonstrated how much the dam on Grafton Brook has changed the local ecosystem.



The blanding's turtle, for example, is a threatened species found in Kejimikujik National Park and National Historic Site of Canada. Radio-telemetry tracking has shown that the turtles often use streams and rivers to move to nesting beaches on Kejimikujik Lake. It is probable that the dam on Grafton Brook caused turtles seeking nesting sites to travel overland instead and nest on dangerous gravel road shoulders.

Tagging studies of brook trout revealed similar findings. They showed that this species moves throughout the Mersey River watershed, seeking out high pH or non-acid streams, like Grafton Brook, to spawn. This habitat became inaccessible when the dam was constructed.

An assessment of coastal plain flora indicated that these species use the ecological niche between high spring and low summer water levels to avoid competition with other species, and to access nutrient rich groundwater. The Grafton Lake dam was interfering with the ecosystem processes required to sustain coastal plain flora populations.

The issue of Grafton Lake management was re-opened, and a systematic assessment of the lake's ecology and water level management options was undertaken by the Grafton Lake Assessment Group, a multi-disciplinary team including scientists and educators from maritime universities and government departments. Interviews were also conducted with senior citizens who recalled the nature of Grafton Lake before the dam was constructed.

It became clear that dam removal to restore natural lake dynamics was the preferred option for addressing ecological integrity and biodiversity conservation needs. The Grafton Lake restoration issue was incorporated into the 1995 Park Management Plan, and plans were subsequently developed to remove the dam gradually over a three-year period by sequentially removing its stoplogs.

The Grafton Lake Assessment Group recognized that the removal of the dam presented a unique opportunity to document changes on the affected ecosystem. A study program was initiated to collect data before, during, and after, lake draw down. It continues to map the physical and chemical changes associated with the Grafton Lake Restoration project today.

The study program has revealed some interesting developments to date. Coastal plain vegetation, for example, has begun re-appearing along Grafton Lake shoreline, although the ecosystem is believed to still be in a transitional stage. Restoration of natural water level fluctuations has apparently created habitat that favour the occurrence of spotted pondweed, recorded for the first time in Kejimikujik National Park of Canada.

Studies have also shown various changes in the lake's yellow perch populations since the dam was removed. The changes are possible indicators of predation by fish such as larger brook trout, which can now freely enter the lake from elsewhere in the Mersey River watershed.

One of the most striking results of the Grafton Lake restoration is the dramatic increase in the number of threatened northern ribbon snake sightings along the shoreline. Over one hundred northern ribbon snakes have been observed, representing by far the largest number of this species recorded in Nova Scotia to date. Some of these snakes have been outfitted with radio transmitters, and Parks Canada is now learning about the behaviour and habitat use of this secretive species.

Surveys for the blanding's turtle have unfortunately confirmed that Grafton Lake population numbers are still significantly lower than in other habitat areas for the species. A recovery program is being developed for this turtle.

The knowledge gained from the Grafton Lake ecosystem restoration project is being applied elsewhere in Kejimikujik National Park and National Historic Site of Canada. In 1999, for example, it was determined that the water levels and stream ecology of Mountain and Cobrielle Lakes were also influenced by old logging dams. These clear and high-quality headwater lakes are consequently being assessed to determine preferred management options.

The Grafton Lake Restoration Project also served as one of the first applications of Kejimikujik's Information Management System, developed to optimize opportunities for a sophisticated analysis of data from all research and monitoring carried out at the national park and historic site.

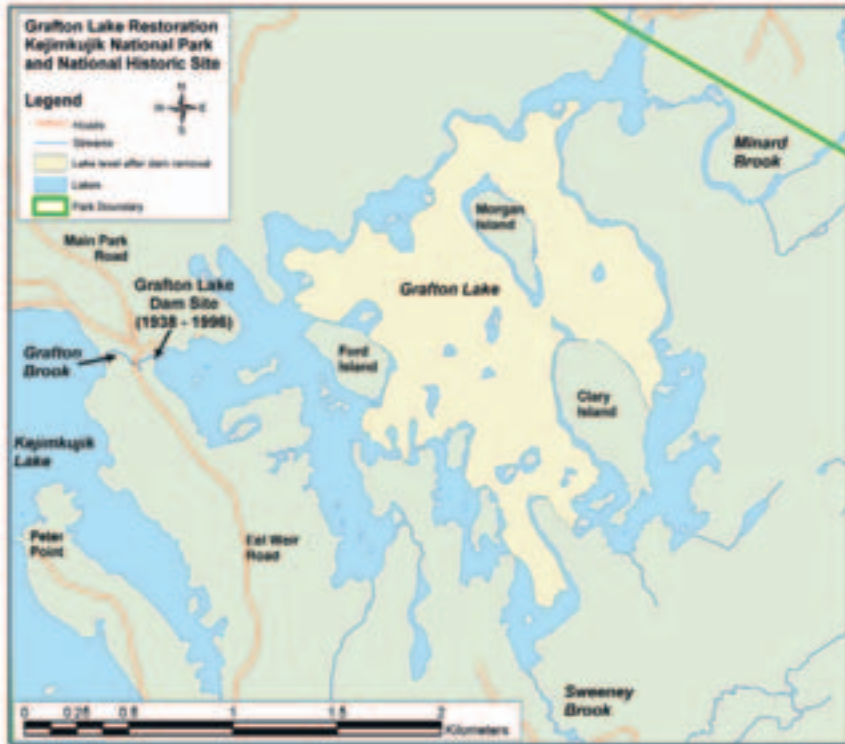


Figure 9: Grafton Lake

## STRESSORS

### HUMAN LAND USE PATTERNS

#### **Snapshot:** 70 Years of Restoration at Point Pelee National Park of Canada



Parks Canada/C. Lamiruy

*Aerial view of Point Pelee National Park of Canada*

Point Pelee National Park of Canada conjures up images of migrating birds, monarch butterflies, expansive marsh, unique flora and fauna—and the southernmost tip of Canada. But people seldom think of this southwestern Ontario park as the most “restored” national park in the country.

Yet with its last cottage poised for removal, Point Pelee has neared completion of the most ambitious restoration project in the history of Canada’s national parks, begun some 70 years ago. In a world where ecological projects can seem too daunting and difficult, Point Pelee stands as an example of how hard work and perseverance can restore our natural environment.



## BEGINNINGS

The history of Point Pelee's restoration started in 1918 when the park was established, the first national park created primarily for ecological reasons. Early bird watchers realized its importance as part of a vital bird migration route. They set up a small shed and started banding and collecting birds. These were the beginnings of Point Pelee National Park of Canada.



Parks Canada

***Overcrowded parking area at East Point Beach, Point Pelee National Park of Canada (1966)***

The original park was a small narrow spit of dry land consisting of only 200 hectares of forest and a large marsh to the east. In the early years, farmers tilled the sandy soils of the point to produce apples, asparagus and melons. The Nature Preserve, as it was called then, consisted of a fenced-in area located behind today's Visitors Centre, and competed for space with pigs and cows. Unchecked disturbance from people and animals soon caused the sandy earth of Point Pelee to lose its topsoil and became bare and un-vegetated.

During the 1950s and 1960s, more and more people arrived at Point Pelee for recreation. Cottages sprouted up like mushrooms until some 300 private cottages collected on the point. By 1968, a staggering 785,000 visitors would congregate in the park. On weekends the beach was congested with traffic. At the same time, people were noticing a serious decline in the ecological health of the park.

## RESTORATION

Something was definitely wrong. Point Pelee had lost 10 of its amphibian and reptile species. One 1960s master plan called for even more development to handle the large numbers of visitors. There was even talk of removing the park from the national park system altogether. Yet Point Pelee remained a national park, and it adopted an ambitious restoration plan to attempt to recover what had been lost.

In the 1970s, the park embarked on a policy of buying private lands. It also reduced the number of park facilities. Over the next 10 years, apple orchards, fisheries, and hundreds of cottages were purchased. By the end of the 1970s, the park had increased in size by 125 hectares, thanks to hard work on the part of the park and various partners.

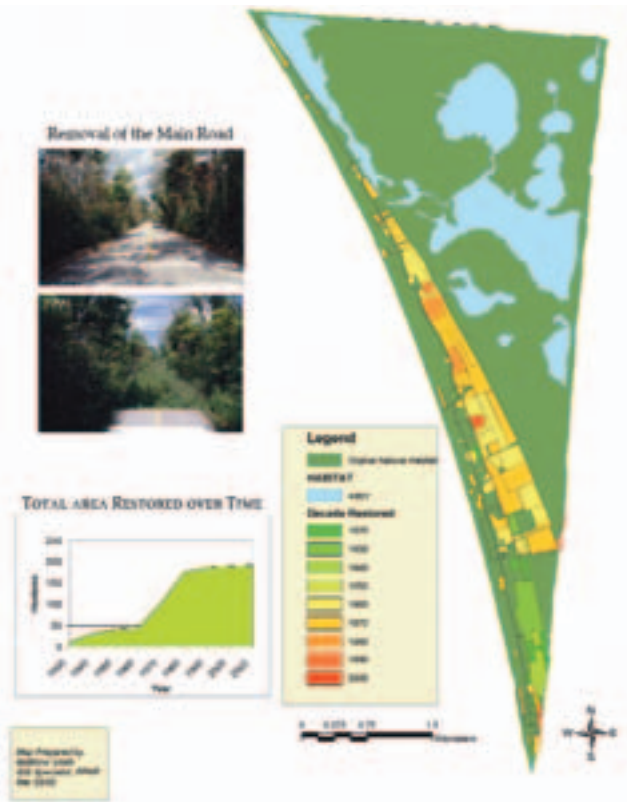
In the 1980s, the park removed a major park road, park housing and beach facilities at the tip and East Beach, thereby restoring large portions of fragile shoreline. In the 1990s, more change occurred with the removal of the main park road and the relocation of the administration and maintenance buildings outside the park. An exotic species management program was initiated to remove the ornamental flowers (tulips, daffodils, etc.) planted by cottagers. At the beginning of this century, only one private cottage remains in the park, and visitor attendance has dropped to a more reasonable 350,000 visitors.

In order to track and quantify restoration activities, Point Pelee has been using geographic information systems to digitize air photographs from 1933 to the present, and to create historic maps showing vegetation and restoration activities. The results are impressive. Over 50% of Point Pelee's dry area habitat (199 ha) has been restored since 1933, with the largest area restored (133 ha) during the 1970s. Over 400 buildings have been removed, along with 6 fisheries, 20 kilometres of roads, and 100 hectares of fields and orchards.

## THE STORY CONTINUES

Yet this is not the end of the story. In recent years Point Pelee has focused on working with others to restore areas outside park boundaries. The county that surrounds the park has the smallest remaining natural habitat of any county in Ontario, less than 6%.





**Area restored over time in Point Pelee National Park of Canada**

The park itself is isolated from other natural areas, preventing the movement of plants and animals into and out of the park. Work is needed to restore the plant and animal communities in the park and to improve its overall ecological integrity. Moreover many natural components are still missing from the system.

In 1993, Point Pelee National Park successfully reintroduced flying squirrels to the park. The latest results show that the squirrels are doing very well, and that populations have grown beyond initial expectations. The restoration process, in collaboration with other activities, will continue within and outside the park. Anyone who visits Point Pelee today will be amazed by the changes that have occurred over the past 70 years. Point Pelee National Park is a living example of how restoration projects can and must occur in our stressed national parks.

## HABITAT FRAGMENTATION

Comparisons of animal tracks counted before and after corridor restoration activities revealed a large increase in wolf and cougar movements through the corridors. Rates of carnivore passages increased by factors of 1.9 for wolves, and 4.1 for cougars.

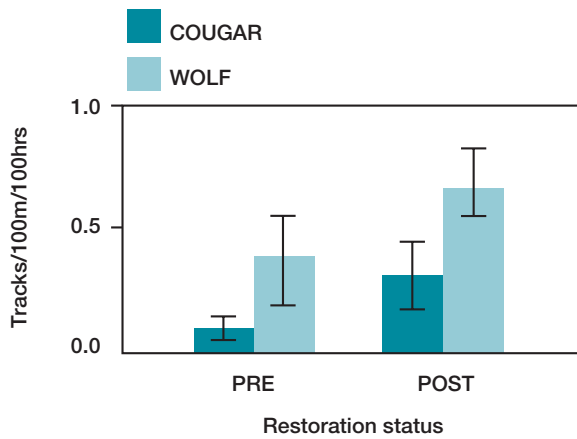
### **Snapshot:** Wildlife Corridor Restoration Efforts in Banff National Park of Canada

The town of Banff, Alberta, is situated within Banff National Park of Canada, at the meeting of the Spray and Bow river valleys. Wildlife travelling in the area must use narrow forested corridors to access habitat patches on either side of the town. In several of the corridors, the distance between the town and man-made or natural barriers like steep mountain slopes or a highway fence is less than 150 metres.

In 1993, an annual program of winter wildlife tracking demonstrated that the wildlife corridors were well-used by prey species like elk and deer, but little used by carnivores such as wolf and cougar, the latter being wary by nature and preferring to avoid human developments. From 1994 to 2001, a series of actions were taken to improve the wildlife corridors. These included facility removals, human-use restrictions, and a joint project with a local power company to bury an above-ground hydroelectric pipe and construct a bridge to enable wildlife to cross a hydroelectric canal.



**Figure 10:** Available wildlife corridors and transect locations in the town of Banff study area, Winter 1999/2000



**Figure 11: Track Comparisons**

Yet many elements contribute to spatial patterns of habitat use by carnivores. Attributing increases in corridor use to restoration actions, without considering additional factors like prey distribution, winter severity, and the carnivore population, can be misleading.

Alternative explanations were examined using several predictive and analytical approaches employing spatial modeling, prey and carnivore abundance measures, and indices of winter severity. Overall, the results suggest that restoration of local corridors was the primary factor responsible for increased carnivore activity. A greater concentration of prey and a locally increasing carnivore population also contributed to the trend.

Local corridor restoration will help ensure that ecosystem processes remain intact at multiple levels. Under the previous conditions of poor corridor function and limited predator access, over-abundant elk caused impacts on a variety of ecological processes and indicators.

In human-dominated landscapes, the facilitation of wildlife movement among habitat patches and sub-populations is essential to ensure long-term population viability. Corridor restoration has, for example, ensured that local wolf packs will have better access to prey within their home ranges. It will also help facilitate the long-range dispersal of wolves among populations as far south as Montana, U.S.A, to Jasper, Alberta.

## ENVIRONMENTAL ASSESSMENT OF HIGHWAY CROSSING

Parks Canada conducts environmental assessments to ensure that new park facilities will not result in undue environmental impacts. If such effects are likely, the environmental assessment process identifies changes or mitigation measures to reduce the impacts. One example of a mitigation measure that had a significant positive environmental effect was the installation of highway crossing structures for wildlife along the Trans-Canada Highway.

Between November 1996 and September 2001, approximately 35,000 wildlife crossings (of coyote-sized or larger animals) were recorded in association with the 22 wildlife crossing structures along 45 km of Trans-Canada Highway in Banff National Park. This figure includes 51 grizzly crossings, 609 black bear crossings, 672 cougar crossings, 2,088 wolf crossings and 19,178 elk crossings.

These crossings are likely related to a complex set of factors including learned behaviour and species-specific preferences. The information gained from these crossings has important implications for future crossing design and location choice.

## CONTINUING TO IMPROVE ECOLOGICAL INTEGRITY REPORTING

Integration of science into the decision-making process, strong conservation policies, and effective partnerships and management actions are all required to maintain or restore ecological integrity in national parks. This chapter provides some insight into the issues confronting protected heritage areas under Parks Canada management and the efforts being made to effectively monitor and communicate progress. Parks Canada is continually striving to refine and improve the way it assesses and reports on ecological integrity.

As Parks Canada builds its monitoring and reporting capacity, it has identified additional steps that will improve its ability to assess and report on key aspects of ecosystem integrity. These include:

- modifying the ecological integrity reporting framework to include abiotic factors, and also

increasing the depth of consideration given to stresses arising from human activity;

- improving Parks Canada's approach to ecosystem assessment and reporting and comparing it to the best practices of other organizations;
- establishing national protocols and indicators for reporting selected elements of the ecological integrity reporting framework; and,
- developing training material and guidelines on how to use the framework and effectively communicate science results.

Reporting must be based on sound and objective science. Parks Canada is striving to increase its capacity to measure and monitor indicators of the health of ecosystems. This is consistent with the Parks Canada action plan responding to the recommendations of the Panel Report on the Ecological Integrity of Canada's National Parks.

# 2 | NATIONAL HISTORIC SITES OF CANADA

*Canada's national historic sites mark how our past has shaped Canadian society today. Each national historic site has played a significant role in Canadian history. Collectively, our national historic sites represent thousands of years of human activity across this land. From events that shaped Canada as a nation-state to achievements in science and technology, from traditional lifestyles of Aboriginal peoples to utopian settlements, Canada's national historic sites celebrate the rich experiences that have framed our past and which will guide our future.*

## Introduction

National historic sites of Canada define and explain who we are as Canadians, contributing to our sense of national identity and our pride in this country. By valuing, protecting, and becoming more aware of our past, we celebrate, learn, and begin to form a frame of reference for the present and future.

National historic sites of Canada come in all shapes and sizes, from the immense Aboriginal cultural landscape of Edacho-Sahyoue on Great Bear Lake to the restrained perfection of the Sharon Temple. Located in over 400 communities across Canada, they include buildings, complexes, archaeological sites, historic districts, and landscapes. While some national historic sites are used as places for the public to learn about the past, others retain their traditional functions. Hotels and train stations, schools and markets, restaurants and places of worship are members of the family of national historic sites. These sites are living, tangible links between our past and present.



Parks Canada/John McCormick

***Edacho-Sahyoue NHSC is of national significance because its cultural values — as expressed through the inter-relationship between the landscape, oral histories, graves and cultural resources, such as trails and cabins — help to explain and contribute to an understanding of the origin, spiritual values, lifestyle and land use of the Sahtu Dene.***

Commemorating our national historic sites is a complex task. To help focus on what is most important, the concept of commemorative integrity was developed (see box). This chapter looks at what Parks Canada Agency is doing to ensure that these important features of our collective heritage continue to testify in meaningful ways about our history. It focuses on our efforts to create a system of designations that remains representative of the evolving breadth of Canada's people and to embrace the complete family of national historic sites, including those that are not administered by Parks Canada. This chapter will present how the Agency monitors commemorative integrity, and the actions Parks Canada is taking to ensure it. It will also touch on programs and activities beyond the system of national historic sites which support and enhance the preservation and presentation of places that speak eloquently of Canada's past.



Parks Canada/J. Butterfill

*Sharon Temple NHSC is of national historic significance because of its aesthetic qualities, symbolism and structural design, as an embodiment of the values of the Children of Peace (an early 19<sup>th</sup> century sect that broke away from the Quakers), and as an early example of conservation of a historic building in Canada.*

## COMMEMORATIVE INTEGRITY

Commemorative Integrity refers to the condition or state of a national historic site, which occurs when a site is “healthy and whole.” This is the desired state for a national historic site. A national historic site possesses commemorative integrity when:

- The resources directly related to the reasons for the site's designation as a national historic site are not impaired or under threat;
- The reasons for designation as a national historic site are effectively communicated to the public; and,
- The site's heritage values (including those not related to the reasons for designation as a national historic site) are respected in all decisions and actions affecting the site.

## Enhancing the System of National Historic Sites of Canada

### SYSTEM PLANNING

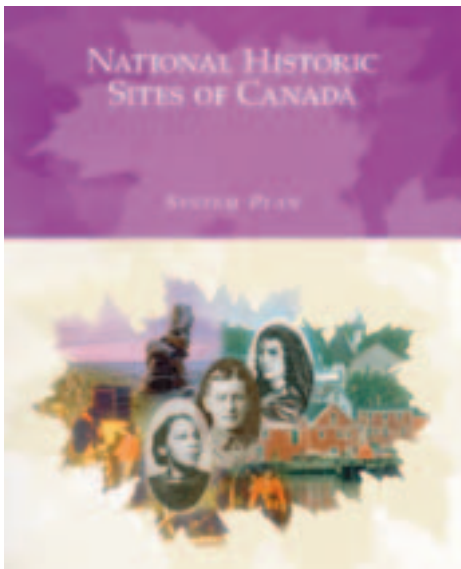
One of Parks Canada's key objectives is to ensure that the system of national historic sites of Canada reflects the country's evolving history and heritage. To this end, in 2000 the Minister of Canadian Heritage approved a new National Historic Sites of Canada System Plan, which replaced the National Historic Sites System Plan of 1981. The plan will provide guidelines enhancing Canada's system through designations of national historic sites, persons and events.

Early in the 20th century, designations tended to reflect the preoccupation of that era with the “great



**The objectives for the National Historic Site program are:**

- To foster knowledge and appreciation of Canada's past through a national program of historical commemoration;
- To ensure the commemorative integrity of national historic sites by protecting and presenting them for the benefit, education and enjoyment of this and future generations, in a manner that respects the significant and irreplaceable legacy represented by these places and their associated resources; and,
- To encourage and support owners of national historic sites in their efforts to ensure commemorative integrity



men and events” associated with the establishment of Canada. Mid-century saw a shift of focus toward political and economic history. As we enter the new millennium, an emphasis on social history has underscored the achievements and experiences of everyday Canadians from all sectors of Canadian life. The National Historic Sites of Canada System Plan will be updated on a cyclical basis in order to reflect the continuously developing interests and values of the Canadian population.

**THE THEMATIC FRAMEWORK**

The National Historic Sites of Canada System Plan is organized around a thematic framework for Canadian history. The framework takes a holistic approach, organizing Canadian history into five broad, inter-related historical themes, each of which has a number of sub-themes. Application of the framework to the system assists in the identification of subject gaps, and aids Parks Canada’s efforts to ensure diversity of representation in designations. The thematic framework provides guidance through the identification of under-represented



National Historic	Designations Reported in 1999 <sup>1</sup>	Designations 1999-2001 <sup>2</sup>	Total Designations
Sites	847	22	869
Persons	556	13	569
Events	327	24	351

<sup>1</sup> Review of the decisions of the HSMBC has resulted in changes to the reported number of designations of sites, persons and events prior to March 1999, as compared to the data reported in the *State of Protected Heritage Areas 1999 Report*.

<sup>2</sup> Figures reported for period April 1999 to March 2001.

historical themes. All 59 designations since the *State of Protected Heritage Areas 1999 Report* can be categorized under one or more of the framework's themes. Twenty-two of the 59 designations are new national historic sites. The commemorated places, persons and events encompass eight provinces and one territory, as well as Canada's presence overseas.

The thematic framework and designations by the Minister between April 1999 and March 2001 are listed below. A single designation may fall under more than one thematic area. The numbers of designations relating to Military and Defence and Canada and the World reflect the current public interest in designations relating to the Second World War.

## STRATEGIC PRIORITIES

Consultations on the review of the 1981 system plan identified the history of Aboriginal peoples, ethno cultural communities and women as insufficiently represented. These three areas cut across or overlay all historical themes. As Parks Canada's strategic priorities for enhancing the system of national historic sites, they have been the subject of further consultations and national workshops. In launching the National Historic Sites of Canada System Plan in 2000, the Minister charged the Historic Sites and Monuments Board of Canada to "do more to mark the historic achievements of Canada's Aboriginal peoples, women and ethnocultural communities."

Thematic Priority		Number of Designations 1999-2001
Peopling the Land	Canada's Earliest Inhabitants	4
	Migration and Immigration	3
	Settlement	7
Governing Canada	Politics and Political Processes	2
	Military and Defence	15
	Security and Law	1
	Canada and the World	12
Building Social and Community Life	Religious Institutions	5
	Community Organizations	1
	Education and Social Well-being	2
	Social Movements	3
Developing Economies	Technology and Engineering	2
	Trade and Commerce	2
	Communications and Transportation	2
	Extraction and Production	4
Expressing Intellectual and Cultural Life	Learning and the Arts	1
	Philosophy and Spirituality	2
	Sciences	1
	Architecture and Design	9

Historical and archaeological research and analysis support efforts to enhance the representativeness of the system of national historic sites. Since 1999, framework studies have been completed to evaluate the commemorative potential of Métis history in the Mackenzie Basin, coal mining landscapes in western Canada, and women's religious communities and health care. An approach to Aboriginal cultural landscapes has also been developed, which respects the world views, traditional knowledge and attachment to the land of Aboriginal peoples.

Since 1999, the Minister has made a total of 59 designations. Nineteen of these newly designated sites (7), persons (9) and events (3) fall under one or more of the three strategic priorities.



*The Red River Floodway was designated a national historic site in 2000 as an outstanding engineering achievement.*

**ABORIGINAL HISTORY:** this priority area includes the full record of the presence and activities of First Nations, Inuit and Métis peoples in Canada. Although the National Historic Sites of Canada system includes a number of sites, persons, events and other phenomena commemorating aspects of Aboriginal history, gaps in representation remain.

<p><b>Île aux Basques</b> National Historic Site of Canada Early commercial contact between Europeans and Aboriginal Peoples.</p>	<p>Île aux Basques, Quebec</p>
<p><b>Old Wendake Historic District</b> National Historic Site of Canada An evolving Huron cultural landscape and community.</p>	<p>Wendake, Quebec</p>
<div data-bbox="152 1253 292 1390" data-label="Image"> </div> <p><b>Jim Boss (1871-1950)</b> National Historic Person Provided guidance and inspiration to the Yukon's First Nations in their struggle for survival. Yukon Archives / E.J. Hamacher</p>	
<p><b>Louis-Hector de Callière (1648-1703)</b> National Historic Person Demonstrated exceptional diplomatic abilities in the meetings between Europeans and First Nations culminating in the Treaty of Montreal of 1701.</p>	<p>Montreal, Quebec</p>
<p><b>Kondiaronk (ca. 1625-1701)</b> National Historic Person Played a pivotal role in facilitating negotiations which culminated in the Treaty of 1701.</p>	<p>Montreal, Quebec</p>
<p><b>Ignace-Nicolas Vincent Tsawenahohi (1769-1844)</b> National Historic Person Elevated the position of Grand Chief to an unprecedented level of respectability.</p>	<p>Wendake, Quebec (recommended plaque location)</p>
<p><b>Demasduit (1796-1820)</b> National Historic Person Changed the mutually negative attitudes that prevailed between Europeans and the Beothuk.</p>	<p>Botwood, Newfoundland and Labrador (recommended plaque location)</p>
<p><b>Shanawdithit (1801-1829)</b> National Historic Person Taught her captors much of what is now known of Beothuk society and the last chapter of her people's history; last of the Beothuks.</p>	<p>St. John's, Newfoundland and Labrador (recommended plaque location)</p>
<p><b>Thanadelthur (-1717)</b> National Historic Person Played an important role in the English fur trade on western Hudson Bay in the early 18th century.</p>	<p>Churchill, Manitoba (recommended plaque location)</p>

**François Beaulieu II (1771-1872)** National Historic Person  
Founding father of the Northwest Territories Métis; pre-eminent Métis leader.

**Treaty of Montreal in 1701** National Historic Event  
Crowning achievement of French diplomacy in colonial North America; virtually ended a century of conflict between the signatories of the treaty. Montreal, Quebec

**ETHNO-CULTURAL COMMUNITIES HISTORY: a term adopted by Parks Canada to describe identifiable ethno-cultural groups that make up the Canadian social mosaic. This program definition does not include peoples of French, British or Aboriginal origins.**

**Île aux Basques** National Historic Site of Canada  
Represents the westernmost and most important concentration of French Basque occupation in the Gulf of St. Lawrence between 1584 and 1637. Île aux Basques, Quebec

**Oro African Methodist Episcopal Church** National Historic Site of Canada  
Last built remnant of a community of African Canadians whose roots are uniquely anchored in the history of the United Empire Loyalists. Edgar, Ontario

**R. Nathaniel Dett British Methodist Episcopal Church** National Historic Site of Canada  
Illustrates the early Black settlement of the Niagara area and the role of the church in assisting newly arrived Underground Railroad refugees. Niagara Falls, Ontario

**Sandwich First Baptist Church** National Historic Site of Canada  
Represents the once numerous border churches built to accommodate the growing communities created by Underground Railroad refugees. Windsor, Ontario

**St. Catharines British Methodist Episcopal Church / Salem Chapel**  
National Historic Site of Canada  
Focus of abolitionist activity and associated with famous Underground Railroad conductor Harriet Tubman. St. Catharines, Ontario

**St. George Antiochian Orthodox Church** National Historic Site of Canada  
Symbol of historic cultural traditions of the Syrian Orthodox community in Canada. Montreal, Quebec



**William Hespeler (1830-1921)** National Historic Person  
Contributed to the Mennonite immigration in Manitoba and to the settlement and development of the West. The Western Canada Pictorial Index  
Winnipeg, Manitoba  
(recommended plaque location)

**Establishment of New Iceland** National Historic Event  
Distinct experiment in democratic governance associated with settlement of Canadian West; Icelandic-Canadian cultural legacy. Gimli, Manitoba

**WOMEN'S HISTORY: women's history in Canada is now a major field of study. By identifying women's history as one of its strategic priorities, Parks Canada intends to reflect this important trend in its commemorative program.**



**Demasduit (1796-1820)** National Historic Person  
Changed the mutually negative attitudes that prevailed between Europeans and the Beothuk.  
NAC/ANC/C-87698 (Artist: Henrietta Hamilton - 1819)  
Botwood, Newfoundland and Labrador  
(recommended plaque location)

**Shanawdithit (1801-1829)** National Historic Person  
Taught her captors much of what is now known of Beothuk society and the last chapter of her people's history; last of the Beothuks. St. John's, Newfoundland and Labrador  
(recommended plaque location)

**Thanadelthur (-1717)** National Historic Person  
Played an important role in the English fur trade on western Hudson Bay in the early 18th century. Churchill, Manitoba  
(recommended plaque location)

**National Council of Women in Canada** National Historic Event  
Established a national, non-partisan, non-sectarian umbrella association of women's groups; founded in 1893. Toronto, Ontario  
(recommended plaque location)

## Embracing the Family of National Historic Sites of Canada

As of March 2001, the system consisted of 869 national historic sites across the country. These include 145 — fewer than one-sixth — which are administered by Parks Canada. Others are owned by other departments or levels of government, private citizens, corporations and not-for-profit organisations.

Guided by the *Historic Sites and Monuments Act* and the *Parks Canada Agency Act*, Parks Canada has assumed a role of support, education, cooperation and collaboration with this larger family of national historic sites. Its activities range from the provision of advice to participation in formal, long-term agreements with a variety of partners. In all cases, Parks Canada's primary interest is in ensuring commemorative integrity.

### ACTIVITIES OF THE FAMILY OF NATIONAL HISTORIC SITES OF CANADA

In 1997, a number of national historic sites joined together to form the National Historic Sites Alliance for Ontario. Its mission is to promote the commemorative integrity of national historic sites through cooperative action by site owners, managers and stakeholders. The National Historic Sites Alliance for Ontario is an unincorporated body that links the more than 240 National Historic Sites of Canada that have been designated in Ontario.

The Alliance's activities create and promote opportunities for its members to achieve a collective understanding of the meaning of designation, and a commitment to ensure the commemorative integrity of national historic sites. The Alliance produces a semi-annual newsletter, with information on training, profiles of sites, updates on recent designations and other news. It also organizes an annual workshop, including that which took place at Kingston City Hall NHSC in October 2001. Through its conference, workshops and promotion of training, marketing, and outreach activities, the Alliance plays an important role in raising the profile of national historic sites in the larger heritage community.

### Enterprise and Industry: A Parks Canada Workshop on Conserving Canada's Industrial Heritage

In March 2001, Parks Canada hosted a two-day workshop in Vancouver on the conservation and interpretation of Canada's industrial heritage. Seventy invited participants, drawn from Canada and the United States, included provincial and municipal governments, not-for-profit organizations, Parks Canada, and outside experts. The workshop was designed to have an applied rather than theoretical focus, in which broader issues were discussed in relation to case studies of specific sites. The prime objective was to create a forum for discussion and an exchange of ideas and experience among sites and experts who are all actively engaged in current projects.



Parks Canada/Katherine Kinnear

**Site tour of Britannia Mines and Concentrator NHSC during the workshop on industrial sites.**

The Ontario Alliance has inspired other regions of the country to investigate similar opportunities for cooperative action. In Nova Scotia, Parks Canada staff are working toward bringing together as many national historic sites as possible to consider the possibility of establishing an alliance in that province. In British Columbia, a workshop is planned to bring together national historic sites to consider establishing a B.C. Alliance. Also under investigation is how best to coordinate efforts in the heritage community of Manitoba. A newsletter is planned to reach all places designated municipal, provincial and federal.



Parks Canada has also organized workshops that bring together sites with shared interests. A workshop on historic districts was held in February 2000 in Winnipeg, home of the Exchange District National Historic Site of Canada. Issues common to sites commemorating aspects of industrial history were considered at a conference in Vancouver in March 2001 (see box). Workshops such as these achieve a number of valuable objectives. They strengthen communication and understanding between Parks Canada and the larger family of national historic sites. They also help to establish useful links among sites with similar interests across the country. Most importantly, the collective experiences shared at these meetings are a valuable source of knowledge that helps to inform management of all national historic sites, regardless of ownership.

Assistance has also been given to national historic sites that wish to carry out commemorative integrity exercises. In Quebec, for example, assistance has been provided for the preparation of commemorative integrity statements for ten national historic sites, including Apitipik NHSC at Pikogan, the Hôpital-Général de Québec Cemetery NHSC in Quebec City, and the George Stephen House/Mount Stephen Club NHSC in Montreal. In addition, technical and professional advice continues to be made available to sites not administered by Parks Canada.

#### **NATIONAL HISTORIC SITES OF CANADA COST-SHARING PROGRAM**

The National Historic Sites of Canada Cost-Sharing Program is one of the key tools Parks Canada uses to support partners in ensuring the commemorative integrity of Canada's national historic sites. The contribution program allows Parks Canada to assist partners in the protection and presentation of national historic sites not administered by the federal government.

New terms and conditions for the program were approved by Treasury Board in August 2000. Changes to the terms and conditions encourage both large-and small-scale projects, and put the program on an annual cycle of application, assessment and funding. Parks Canada is seeking additional funding to support this national program.

#### **Cooperating with Other Government Departments**

Parks Canada also assists national historic sites that are administered by other federal departments. The Quebec Citadel NHSC, which is still used by the Department of National Defence, dates back to 1820 and incorporates elements of earlier fortifications. In 2001, DND began repair work. In order not to lose information regarding construction techniques, DND and Parks Canada established an agreement which permitted archaeologists to observe the excavations and take notes during the work. The information garnered will permit a better understanding of historic building techniques and the evolution of defensive works in Québec, commemorated by the Fortifications of Québec NHSC.

Four new cost-sharing agreements have been established since the *State of Protected Heritage Areas 1999 Report*:

- **Mauvide-Genest Manor National Historic Site of Canada, Saint-Jean, Île-d'Orléans, Québec.**

The agreement is for conservation and presentation of this distinguished mid-eighteenth-century seigneurial manor.

- **North Pacific Cannery National Historic Site of Canada, Port Edward, British Columbia.**

The agreement is for conservation and presentation of the oldest extant West Coast salmon cannery, established in 1889.

- **Old Woodstock Town Hall National Historic Site of Canada, Woodstock, Ontario.**

The agreement is for conservation and presentation of this classically-inspired civic structure, built 1851-52.

- **L'Isle-Verte Court House National Historic Site of Canada, L'Isle-Verte, Quebec.**

The agreement is for conservation and stabilization of this courthouse, built in the local domestic architectural tradition.



Parks Canada/J.P. Jerome (1997)

***An agreement under the National Historic Sites of Canada Cost-Sharing Program is enhancing preservation and presentation at North Pacific Cannery NHSC.***

### **Claybank Brick Plant National Historic Site of Canada**

The Saskatchewan Heritage Foundation and the Claybank Historical Society have been active partners with Parks Canada in the implementation of a million dollar agreement under the National Historic Sites of Canada Cost-Sharing Program. Activity under the agreement has focused on ensuring the integrity of the variety of structures at the site, all of which are now weather-tight. Protection against fire is the next step. With the future of the structures secure, Claybank is now pursuing partnerships with corporations, and much of the effort is directed at a Visitor Centre that will be opened in 2002.



Blake Roberts/PWGSC

**Claybank Brick Plant NHSC**

Eleven cost-sharing agreements already entered into in 1999 have continued:

- **Arvia'juaq and Qikiqtaarjuk National Historic Site of Canada, Arviaq, Nunavut.**

The agreement covers conservation and presentation of this Inuit summer occupation site with its rich history and in-situ resources.

### **Fall Caribou Crossing National Historic Site of Canada**

The significance of Fall Caribou Crossing NHSC lies in its association with many caribou crossings. These areas were identified during a place-name study conducted by Parks Canada researchers, working with elders in the community of Baker Lake. The study located, identified and described cultural features along the shoreline of the Kazan River. The study resulted in the designation of Fall Caribou Crossing NHSC, supported by accurate data and maps which have been added to the Kazan River Geographic Information System (GIS).

The interest and information generated by the research project sparked the idea of the Inuit Heritage Centre. The Centre is a place where traditional knowledge can live on. For the past five years, the Inuit Heritage Centre has benefited from an agreement under the National Historic Sites of Canada Cost-Sharing Program.



Parks Canada/John McCormick

**Exhibit in the Inuit Heritage Centre at Fall Caribou Crossing NHSC.**

- Christ Church Royal Chapel National Historic Site of Canada, Tyendinaga Reserve, Ontario.

The agreement is for conservation and presentation of this historic royal chapel, which is associated with the establishment of the Mohawk peoples in Ontario in the aftermath of the American Revolution.

- Claybank Brick Plant National Historic Site of Canada, Claybank, Saskatchewan.

The agreement includes interim stabilization, conservation and presentation of this important, early 20th-century brick-making complex.

- Elizabeth Cottage National Historic Site of Canada, Kingston, Ontario.

The agreement is for conservation and presentation of this Gothic Revival villa built in 1841.

- Fall Caribou Crossing National Historic Site of Canada, Baker Lake, Nunavut.

The agreement covers conservation and presentation of this critically important fall hunting site, essential to Inuit community survival.

- Inglis Grain Elevators National Historic Site of Canada, Inglis, Manitoba.

The agreement includes conservation and presentation of a rare row of standard-plan country grain elevators typical of the "Golden Age" of Prairie agriculture from the 1920s to the 1940s.

- Old Stone Mill National Historic Site of Canada, Delta, Ontario.

The agreement is for conservation and presentation of one of the oldest surviving mills in Ontario, built in 1810.

- Parkwood National Historic Site of Canada, Oshawa, Ontario.

The agreement includes the conservation and presentation of this early 20<sup>th</sup> century grand estate with gardens.

- Ruthven Park National Historic Site of Canada, Cayuga, Ontario.

The agreement is for the conservation and presentation of this fine picturesque country estate, laid out by entrepreneur David Thompson.

- Stephen Leacock Museum/Old Brewery Bay National Historic Site of Canada, Orillia, Ontario.

The agreement includes emergency stabilization, conservation and presentation of this former home of the famous Canadian humourist.

- Stirling Agricultural Village National Historic Site of Canada, Stirling, Alberta.

The agreement provides for conservation and presentation of this site commemorating the distinctive Mormon pioneer dryland irrigation farming and settlement pattern.

## Monitoring the State of Commemorative Integrity at National Historic Sites of Canada

The *Parks Canada Agency Act* states that it is in the public interest to ensure the commemorative integrity of national historic sites. Knowing whether or not a site is in a state of commemorative integrity, and how particular a site falls short of this goal, aids in the decision-making process concerning priorities and investments, both at the site and at the national level.

The *State of the Parks 1997 Report* was the first time that commemorative integrity was used as a yardstick to report on the state of individual national historic sites. The state of eight national historic sites administered by Parks Canada was measured. These eight sites, plus four additional sites, were evaluated and reported on again in the *State of Protected Heritage Areas 1999 Report*. Beginning in 2001, Parks Canada has embarked on a project to evaluate systematically



the state of commemorative integrity at all 145 sites that it administers.

Systematic evaluation of the state of commemorative integrity at the sites administered by Parks Canada will provide, for the first time, a comprehensive view of the condition of resources and effective communication of messages, and management practices across the country. The evaluations contribute to management planning, and make planning, implementation, monitoring and reporting part of a unified management strategy.

**“Commemorative integrity assessments are a very good way of monitoring value-led planning in the long term, and of ensuring that we are sustaining sites effectively.”**

– Kate Clark in ‘Preserving What Matters: Value Led Planning for Cultural Heritage Sites’, *conservation: The Getty Institution Conservation Newsletter*, Vol. 16, No. 3, 2001, p. 12.

## MEASURING COMMEMORATIVE INTEGRITY

Commemorative integrity is defined by three elements: the resources directly related to the reasons for designation as a national historic site are not impaired or under threat; the reasons for designation are effectively communicated to the public; and, heritage values are respected in all decisions and actions affecting the site.

A commemorative integrity statement is a document which identifies what is meant by commemorative integrity at a particular national historic site. Taking as its starting point the designation of the site, it identifies the resources and their values, the reasons for significance, and outlines objectives for management of the site. The commemorative integrity statement is a critical instrument in values based planning and management.

Since they were developed in 1994, commemorative integrity statements have become a valuable planning and management tool for national historic

sites. The commemorative integrity statement also lies at the heart of any evaluation of the state of commemorative integrity for the site. It sets out in a clear and logical manner what needs to be taken into consideration to answer the question, “Is this site in a state of commemorative integrity?”

## THE EVALUATION PROGRAM

Beginning in 2001, Parks Canada committed itself to evaluate, over the next 10 years, the state of commemorative integrity of each of the 145 sites that it administers. This project will provide a clearer picture of the state of commemorative integrity at each site, as well as a more comprehensive understanding of the system as a whole.

At each site, evaluations will be undertaken by a multi-disciplinary team, which will include experts from the relevant cultural and natural resource management disciplines as well as those who are most familiar with the operations of the site, including key stakeholders. Team membership will vary from site to site, depending on the nature of the resources and the operations of the site.

The main evaluation tool is a questionnaire, composed of three sections which reflect the three elements in the definition of commemorative integrity. The first addresses



Parks Canada/Barbara J. Wilson

**At Sang Gwaay (Nan Sdins NHSC), nature slowly reclaims the wooden remains of human activity. In response, Parks Canada staff and the Haida Gwaii watchmen annually prune back vegetation and remove deer to reduce their impact. Pole straightening has also slowed deterioration, while respecting the historic value of these extraordinary resources.**

the condition of resources and is accompanied by a “threats survey”. Together, they address the question of whether the resources are “not impaired” or are “under threat.” In addition to the site itself, the resources assessed may include buildings and structures, landscapes and landscape features, archaeological sites, or objects. The second addresses the effectiveness of communication, including the effectiveness of media and the range and complexity of perspectives presented. The third considers selected management practices. These focus on cultural resource management practices as established by Parks Canada’s Cultural Resource Management Policy (1994) including an inventory of resources; evaluation of resources to determine historic value; consideration of historic value in actions affecting resources; and, monitoring and review of on going activities.

The evaluation questionnaire draws its definition of resources, values, messages and objectives from the commemorative integrity statement for the site. These are complemented by more detailed evaluation criteria, drawn directly from the Cultural Resource Management Policy. The evaluation integrates information on its sites condition from existing asset and collection management tools. The questionnaire produces data according to the same reporting categories which have been used in previous *State of Protected Heritage Areas Reports*.

Evaluating the state of commemorative integrity of a national historic site involves the site’s planning and reporting cycle. It establishes the critical step between identifying resources, their value and messages in the commemorative integrity statement and the activities stipulated in management and business plans. It provides a clear picture of where the site is today relative to Parks Canada’s obligation to ensure commemorative integrity, within a framework that considers both past actions and future threats.

### **MONITORING CULTURAL RESOURCES AND MESSAGES**

An understanding of the condition of its resources is fundamental to determining whether a national historic site is in a state of commemorative integrity. Equally fundamental is the effective communication of the reasons for the site’s designation. National historic sites vary

widely in the kinds of resources they possess, from buildings to archaeological sites and landscape features, to historic objects. The means for communicating why these places are nationally significant are equally varied and increasingly involve the media for reaching virtual visitors.

Monitoring how well the story is being told entails two key challenges. First, is the right story being told, and second, did the audiences understand it? Parks Canada has worked for more than half a decade toward ensuring that presentation focusses on the reasons each site is of national historic significance. Commemorative integrity statements have greatly improved the focus of heritage presentation programming at national historic sites.

However, telling the right story remains an on going challenge. New staff have to be trained each year and rigour, discipline and monitoring are required to ensure that programming remains focused.

At the same time, interpretation programs delivered by staff are only one means of telling a story. Many national historic sites also rely heavily on signage,



Parks Canada

**Communicating reasons for designation at Dawson Historic Complex NHSC**



exhibits, audio-visual programs and brochures to communicate national significance. The resources needed to update these various non-personal media are not always readily available when institutions face increased operating cost, or the deterioration of the very historic places they are trying to protect, and of the facilities needed to accommodate visitors safely. Parks Canada is currently able to replace less than one quarter of the exhibits, displays and other media needed to convey national significance.

The second challenge is to determine if audiences understand the significance of a national historic site. At the sites it administers, Parks Canada uses standardized “visitor survey cards” to gather feedback on the use of facilities, visitor satisfaction with the programs, and understanding. Each site is now to conduct an assessment every four years. In order to assess whether audiences have understood the national historic significance of a site, the card includes six true or false questions about the significance of the site. The questions are specific to each site.

In the year 2000, 18 national historic sites conducted visitors surveys. The number of visitors who could answer four or more of the six questions correctly varied from 43% to 92%, with a mean of 72%. Since the *State of Protected Heritage Areas 1999 Report* was published, this measurement tool has been refined, and there seems to be a trend toward greater understanding by site visitors. Future challenges, in terms of monitoring messages, include the need to set standards regarding the acceptable level of audience understanding, media effectiveness, and the need to measure the impact of heritage presentation programming delivered outside national historic sites.

Monitoring the condition of resources entails observing and recording change. Regular monitoring is critical to identify problems in their early stages, and to evaluate the effectiveness of mitigation measures. Monitoring takes place on two levels. Cultural resources are systematically inspected on a regular basis for signs of deterioration of any of their components. This takes place for buildings and structures as part of a national asset review, in addition to the regular inspection schedules established by the sites for their various types of cultural resources. For example, many sites do an inventory and condition assessment of their object collections once a year.

On a second level, known problems with the condition of resources are precisely monitored. For example, at Prince of Wales Fort, near Churchill, Manitoba, the condition of the exterior walls has been subject to some form of monitoring since 1978. In August 1997, three sections of the exterior wall were identified as unstable and in October of that year a section of wall collapsed, requiring emergency stabilization. As a result, the monitoring strategy has been improved to track changes in the fort’s structure, changes in the status of threats (for example, moisture levels) and the effectiveness of interventions. The resulting moisture-and thermal-monitoring program collects information on the drainage characteristics of the fill in the rampart in order to design an appropriate drainage plan. The monitoring protocol provides a standardized procedure which is carried out consistently. This provides reliable information on which to base decisions about how to protect the fort.



Lyne Fontaine/PWGSC

***Installing monitoring equipment in the ramparts at Prince of Wales Fort NHSC.***

Monitoring programs have been developed to assess the rate and nature of the impacts of coastal erosion on archaeological features at several national historic sites, as well as at Ivvavik and Kouchibouguac National Parks. At Louisbourg NHSC, for example, the site includes 31 km of coastline, with sea level now 80 cm higher than in the 18th century. Due to a continual need to monitor and salvage threatened archaeological sites and cemeteries, Louisbourg initiated a geological study in 1995 to investigate coastline stability and geological evolution of the harbour shoreline.

**Cultural resources in national parks** are among the most vulnerable. Parks Canada's cultural resource specialists work with national parks to help identify and protect significant cultural remains. Here are some examples.

GIS and GPS are being used to do predictive modeling of early human history in national parks. Scientific analysis of stone tool raw material sources are helping to determine movements and trading patterns of earlier human populations at sites such as Tuktut Nogait National Park of Canada. Neutron activation analysis of pre- and post-contact ceramic fragments are being used to determine sources of clay at Saguenay-St. Lawrence National Marine Park.

At Pacific Rim National Park of Canada, Parks Canada and the Tseshaht First Nation are using a team approach to combat human and natural

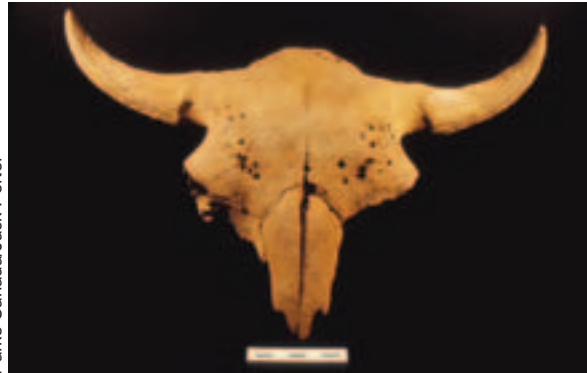


Parks Canada/Ian Sumpter

**Examining shoreline erosion in front of a village midden at Pacific Rim National Park.**

threats to burial places and sensitive village sites within the park. Since 1999, inspection teams have carried out condition reviews and assessments of 37 sacred sites. A joint working group is seeking to ensure long-term protection of these sites.

Cultural resource management techniques have also proven useful to solve ecological questions at national parks. For example, carbon isotopic analysis of archaeological samples of 3,000-to 4,000-year old bison bone from Waterton and Banff National Parks of Canada is used to reconstruct diet and migration patterns of bison. Analysis of a fragment of bearskin from a glacier in Kluane National Park of Canada provides evidence of the relationship of historic to modern grizzly populations. Pollen and ethnobotanical analysis are being used to reconstruct historic environments at several locations.



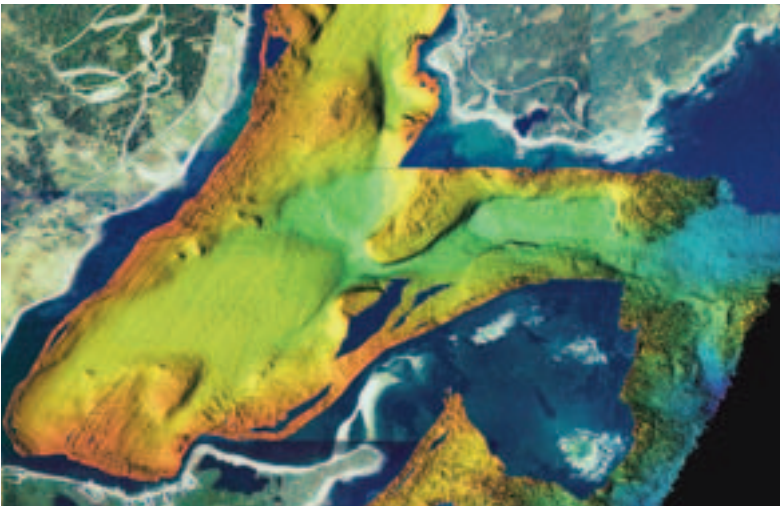
Parks Canada/Jack Porter

**Carbon isotopic analysis of bone reveals where this bison lived and what it ate thousands of years ago.**

The project, a collaboration between Parks Canada, the Canadian Hydrographic Service, and the Geological Survey of Canada, began by mapping the coastline in detail. Shoreline monitoring stations were established to record individual storm loss and develop a vulnerability map of potential shoreline change. A bathymetric swath survey combined with high resolution seismic-and magnetic-survey data provided the critical information needed to make a map of the harbour sea floor. The map identifies the best areas for sediment core collection and also illus-

trates cultural resources and activities that mark the submerged harbour landscape. In the final stage of this project, a coastal protection plan will identify current erosion areas and predict the impact and location of future wave and erosion activity, making it possible to salvage cultural resources before they are lost to the sea.

Monitoring facilitates good decision-making in cultural resource management. At Batoche National Historic Site of Canada, a monitoring program was



Geological Survey of Canada, Dartmouth, Nova Scotia, 1996

***Cultural resources management in and around Louisbourg Harbour is supported by this map of the sea floor.***



Parks Canada/Tracy Verishine

***The church at Batoche NHSC was blessed at a community ceremony prior to being moved off its foundation for stabilisation work.***

established for the church structure in 1996. On going monitoring showed that movement was consistent with seasonal freeze-thaw cycle and that the foundation and wall movement had increased to the point that intervention was necessary. In 1998, it was determined that the structure could not be stabilized with a minor intervention. Beginning in the fall of 2000, a full basement was constructed under the church and the north and south walls were braced. The church will re-open to the public in the summer of 2002. Only with information from monitoring were managers able to make sound decisions about when and what changes needed to be made.

Lunenburg at the hands of vandals in autumn 2001, or the demolition of the Capitol Theatre National Historic Site of Canada in Winnipeg, speak to the fragility of our heritage. The Ewen Barn National Historic Site of Canada was destroyed in a windstorm in early February 1999.

Sites which Parks Canada administers are not immune: nationally significant archaeological remains are eroding into the Niagara River at Navy Island National Historic Site of Canada faster than they can be salvaged. In mid-September 2000, a major slide (60-70 metres wide with debris extending 35 metres into the river channel) occurred along the east side of the South Saskatchewan River at Batoche National Historic Site of Canada. The slide took with it a portion of the North West Field Forces rifle pits, dug for the Battle of Batoche in 1885. Remaining rifle pits are still under threat from severe erosion. In June 2001, salvage archaeology was conducted.

## **Ensuring Commemorative Integrity**

Our national historic sites are under threat every day. Unlike ecosystems, national historic sites cannot regenerate. Without conscious and sustained effort, they are at constant risk of deteriorating, of suffering from inappropriate adjacent development, of being misunderstood, or of falling victim to natural or man-made disaster. The burning of St. John's Anglican Church National Historic Site of Canada in

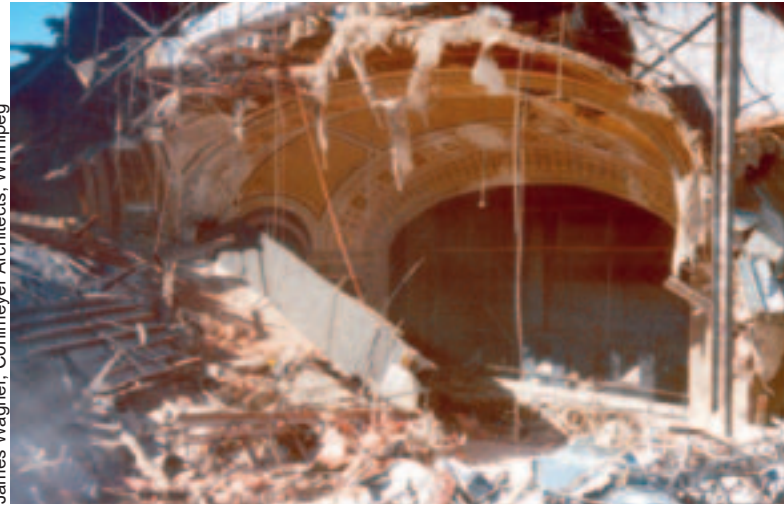
It is a constant struggle to stay ahead of decay and indifference. In the pages which follow, some of the concerted steps which Parks Canada has taken to maintain resources, communicate messages and take positive and innovative management actions are featured.





Parks Canada/P. Keil

***St. John's Anglican Church was set ablaze by vandals.***



James Wagner, Cohlmeier Architects, Winnipeg

***The Capitol Theatre NHSC was demolished to make way for new development.***



Parks Canada/Graham Turnbull

***The Ewen Barn NHSC blew down in a violent windstorm.***



Parks Canada/Ray Fidler

***Significant resources at Batoche NHSC slid into the South Saskatchewan River.***

**“It is a calamity when a heritage building disappears. An historic site is more than a piece of the constructed past. It is a storehouse of memory, and as such, it serves to keep our culture alive.”**

– Marilyn Simonds, in her keynote address to the National Historic Sites Alliance of Ontario, October 23, 2001.

**RESOURCES WHICH ARE NOT IMPAIRED OR UNDER THREAT**

Central to the idea of an historic site is that there be a physical place with some tangible relationship to an event, person or theme of historical importance.

Often the tangible relationship is made meaningful by the survival of cultural resources directly related to the reasons for which the site was designated a national historic site. Parks Canada has a mandate to keep these places intact “for future generations.”



Parks Canada/Michael Gates

**S.S. Keno NHSC.**

It is one of the Agency's fundamental goals. The following are examples of some of the many ways in which Parks Canada seeks to protect our national treasures.

The S.S. *Keno* National Historic Site of Canada is commemorated as representative of Yukon lake and river stern-wheel steamers. By the late 1980s, her condition had deteriorated badly and she was closed to the public for reasons of safety. Physical intervention commenced in 1990 and, since that time, asbestos has been removed, a new foundation built, and a sprinkler system installed. Beginning in 1995, a professional shipwright removed and meticulously replaced rotted timbers and planking, leaving sound historic fabric intact. The original paddle wheel was restored in 1999. The ship was then painted using the original paint scheme, and a security and lighting system was installed. In August 2001, the S.S. *Keno* again welcomed visitors aboard, confident of their safety and of the continued survival of the vessel.

At Manoir Papineau National Historic Site of Canada, conservators have faced the challenge of stabilizing the interior walls of the second floor of the unheated granary, which was used by the artist Napoleon Bourassa, son-in-law of Louis-Joseph Papineau, as a studio between 1858 and 1871. A



Parks Canada/Rod Won

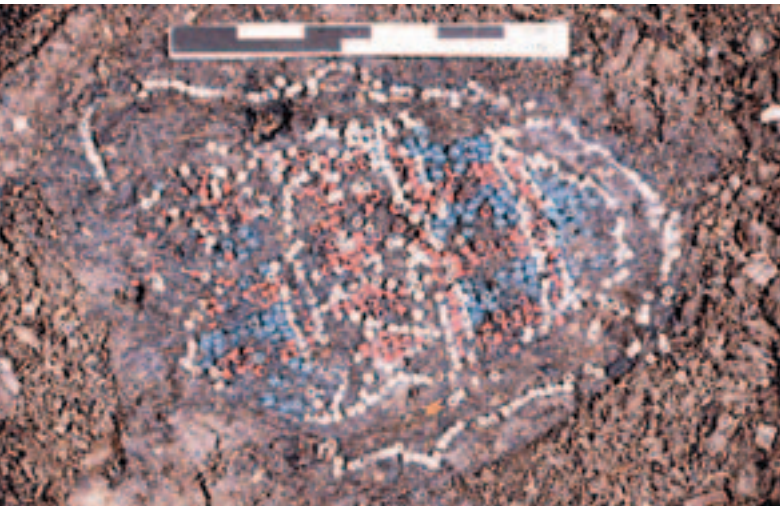
**Conserving wall paintings at Manoir Papineau NHSC.**

consolidant has been injected into spaces between the deteriorating plaster and lathe in order to preserve paintings made directly on the plaster surface by Bourassa. The wallpaper in the salon of the Manoir has also been cleaned and restored. Accumulated smoke and grime were removed, tears were repaired, and missing elements were recreated using digital photography to make acetate stencils. This work will ensure the survival of these fragile reminders of our past, and help to make them more visible and comprehensible to visitors.

At York Factory National Historic Site of Canada, the Hudson's Bay Company's principal fur trade depot from 1684 until the 1870s, a bead cluster was recovered from the depot floor. This cluster, consisting of fine white, red and blue "seed" beads arranged in a geometric pattern, provides concrete evidence of regional beadwork design during the late 18th and 19th centuries. In order to preserve the design, diluted white glue was applied on-site to consolidate the beads and surrounding matrix, which was then lifted from the ground as a single unit. The beads were left in the supporting material as removal would have compromised the integrity of the design. Study of the beads, and of what they tell us about the moccasin they once decorated, continues.

Among the material recovered from Red Bay National Historic Site of Canada in Labrador is the binnacle of a 16th century ship. The binnacle sat on





Parks Canada/John Watt

**Careful excavation and conservation preserved this bead cluster from a moccasin at York Factory NHSC.**

the bridge of a ship, near the wheel, and protected navigational instruments from inclement weather. The Red Bay binnacle is unique as the most complete and best preserved of its kind in the world from this period. The artifact, which was recovered underwater, was treated to preserve the wood and was then mounted on a plexiglass form, using the existing screw holes as points of stabilization. The binnacle is now physically secure and on display, sharing its remarkable story with the public.

A partnership between Parks Canada and Public Works and Government Services Canada, entitled *The Establishment of Life Cycle and Risk Assessment of Historic Timber Structures*, has been established to develop guidelines for conservation practitioners, regarding the inspection, analysis and repair of historic timber structures and frames. The guidelines will assist practitioners to establish optimum service life, and assess risks associated with timber structures and frames.

### **REASONS FOR THE SITE'S DESIGNATION ARE EFFECTIVELY COMMUNICATED**

For a national historic site to be in a state of commemorative integrity, the reasons why it is of national historic significance must be communicated. National historic sites of Canada play a critical role in helping us to understand who we are as Canadians and how we got here. Each site tells part of that story and is a piece of the broader narrative. The following items



Parks Canada/George Vandervlugt

**16<sup>th</sup> century binnacle recovered from Red Bay NHSC.**

illustrate some of the creative ways in which sites share their importance with Canadians.

The Fortifications of Québec National Historic Site of Canada recalls the extensive system of fortifications that once protected Québec City. While many of the defences are no longer part of the visible urban landscape, virtual reality helps visitors to “see” some of these now-buried military works. A video, based on archaeological research and computer-assisted design, shows the outer defences through the eyes of a British officer in 1815. With the assistance of computer technology, visitors understand not only what remains of the walls today, but can experience the even more daunting defences which once surrounded the city.

At Carleton Martello Tower National Historic Site of Canada, in Saint John, New Brunswick, the needs of new audiences are top of mind. The growth in visitors from cruise ships and bus tours challenged the site to deliver its key messages during the short time these large groups are on the site. To support its heritage presentation program, the site has developed a brochure that highlights the reasons why this site is nationally important, and explains its history. The brochure reinforces the messages delivered at the site, when the visitors are back on their cruise ship, or leafing through their holiday scrapbook at home.

The Gulf of Georgia Cannery National Historic Site of Canada is one of Parks Canada's newest sites and is operated by the Gulf of Georgia Cannery Society, a not-for-profit organization. Between 1992 and 2001, exhibits were developed and installed. The site is now fully interpreted, with interpretive panels and displays, audio stations and interactive elements. Like many national historic sites across the country, Gulf of Georgia Cannery National Historic Site of Canada has also developed programming for school children. Programs include segments on the physics and chemistry of the herring reduction process, as well as the social history of the fishing industry. Similarly, sites in Ontario, like Fort Malden National Historic Site of Canada and Bellevue House National Historic Site of Canada, have worked out programming to fit the province's new school curriculum. Matching reasons why a site is nationally significant with curriculum objectives makes for great learning opportunities.

"From Meeting Place to Metropolis" is a theatrical walking tour presented at The Forks NHSC in Winnipeg. Although The Forks has almost no above-ground cultural resources to interpret, the tour has brought to life The Forks' past, by giving historical glimpses of key events. Weaving French and English dialogue throughout the program, it is understandable, entertaining and enjoyable in either language. In 2001, Parks Canada entered into a partnership with two other downtown walking tours to promote the tours together, including one relating to the Exchange District National Historic Site of Canada, a recently designated historic district.

**HERITAGE VALUES ARE RESPECTED IN ALL DECISIONS AND ACTIONS**

Safeguarding resources and explaining their importance are the end results of a disciplined approach to cultural resource management. That discipline extends beyond decisions about the resources themselves. It implies that all decisions about a site are considered in light of its historic value and resources. Historic value includes not only the reasons for which a place is a national historic site but other historic, aesthetic and environmental values as well. The following are examples of this decision-making process in action, and of the role that communities play in it.



Parks Canada/Anders Galasso

**Exhibits help to tell the story at the Gulf of Georgia Cannery NHSC.**



Parks Canada/B. Morin

**School groups are an important and enthusiastic audience at many national historic sites, including Woodside NHSC.**

**Talking to Americans**

A close association has been developed between Fort George NHSC and Fort Niagara in Youngstown, New York, to deliver joint programs on the two forts. A successful pilot program in which visitors bought a pass to visit the two forts and took a ferry ride on an historic steamboat to cross the border will be expanded in 2002. This binational tourism initiative is known as the Niagara Tour de Forts.





Doug Dealey/courtesy Brian Richardson/CAEA

***“From Meeting Place to Metropolis”, a theatrical walking tour at The Forks NHSC.***



Parks Canada/B. Morin

***Linking Ottawa to Kingston through over 200 km of agricultural, recreational and urban spaces, the Rideau Canal NHSC faces many challenges to protect its historic value.***

September 2000 marked the beginning of the first management planning process for L’Anse aux Meadows National Historic Site of Canada. Traditional land and sea activities have continued since the site’s establishment. Local residents, however, initially saw the management plan as the tool by which their access to those activities would end. A team of community representatives was formed to work with Parks Canada on the management plan. Parks Canada listened to the community’s concerns. Next,

the team developed a common understanding of the heritage values of the site through the commemorative integrity statement. The resultant plan ensures the protection and presentation of the national historic site, while also supporting traditional rural activities. The representation and involvement by local residents in developing the management plan not only gave the public a voice in management, but also helped provide the plan with public endorsement.

At the Rideau Canal National Historic Site of Canada, protecting historic value is a special challenge, owing to the many jurisdictions, private landowners and competing interests which bear upon its management. Protecting the historic resources and values associated with this national historic site means working with others. Activities to reach out to this broader community have included reviewing municipal planning policies and development proposals to influence land-use decisions through an inter-agency team, support for the Rideau Waterway Land Trust, and on going liaison with municipal planners, developers and stakeholder groups. These activities have resulted in increased awareness of the cultural and natural values of the Canal and greater protection of these values.

Across the country, excavated archaeological material is being reclaimed as part of projects aimed at preserving threatened collections. Parks Canada cares for millions of artifacts which were excavated, inventoried and placed in stable storage but have never been conserved. Projects revisit collections in order to rationalize their contents and establish conservation needs, with emphasis on creating stable environmental conditions rather than object-specific conservation treatments. Material of use for research, display or staff training is identified. One such collection was excavated at Woodside National Historic Site of Canada. The threatened collection project transformed the 38 boxes, containing 36,856 specimens, into a material history archive of the late Victorian era. Remnants of the King family’s hand-painted porcelain dinnerware, statues and pen nibs testify to the life of a literate, middle-class family. The objects were cleaned and inventoried, and a limited number were selected for additional action (e.g. restoration or photography). An interpretive report makes the collection accessible to future researchers, as well as for interpretation. The knowledge gained through the analysis of threatened archaeological collections will enhance



Parks Canada/Suzanne Plousois

***Dinnerware from Woodside NHSC can now be used for research, display and staff training.***



Parks Canada/B. Townsend (2000)

***Carleton Martello Tower NHSC is nationally significant because it was built for the defence of Saint John during the War of 1812-1814 and because it represents a type of military architecture.***

the quality of heritage presentation, as well as help ensure the protection of these resources.

Parks Canada systematically evaluates proposed major interventions to protect cultural resources and dedicates the substantial funding necessary to keep them healthy and whole. Major projects under way at present include: replacement of the slate roofs on the King's Bastion at the Fortress of Louisbourg National Historic Site of Canada and Laurier House National Historic Site of Canada; reinforcement of the structure and reinstallation of the gantry on the bow of Dredge No. 4 National Historic Site of Canada; improvements to the water system at Grosse Île and the Irish Memorial National Historic Site of Canada; and, the protection of archeological resources from erosion through the installation of a protective barrier at Fort Rodd Hill National Historic Site of Canada.

Notwithstanding the work being done across the country to ensure the commemorative integrity of our national historic sites, many challenges remain. The results of commemorative integrity evaluations carried out in 1997 and 1999 pointed to these deficiencies, and evaluations undertaken in 2001 confirm that they have not gone away. Serious problems with respect to condition and communication exist at many of our national historic sites.

At the Jasper Park Information Centre National Historic Site of Canada, for example, the second storey structure, compromised by renovations in the early 1970s to create an open space on the main level for park visitors, remains unaddressed. At Cape Spear National Historic Site of Canada, the interpretive program does not address the reasons why this place is a national historic site, while the site is constantly challenged to compete with its popular image as the easternmost point in North America. At Butler's Barracks National Historic Site of Canada, no messages are communicated at all. At Kitwanga Fort National Historic Site of Canada, there is no monitoring or review system for cultural resources. At the Saint-Ours Canal National Historic Site of Canada, historic structures are highly threatened by rot in the timbers at waterline level, and by the effect of the seasonal freeze-thaw cycle on historic masonry. At the Carleton Martello Tower National Historic Site of Canada, the addition of a fire command post during the Second World War has caused persistent problems with water infiltration into the early 19th-century structure — problems so extreme at one point that stalactites were growing inside the building. Recent efforts have greatly slowed the rate of water penetration, but the long-term effects of the persistent wetness will need to be assessed carefully over the coming years.

The cultural resources at our national historic sites cannot fix themselves. Nor, for the majority of visitors, can they speak for themselves. Our commitment to preserve, protect and present these places requires constant application and renewal. Once lost, a cultural resource is gone forever — an absolute that inspires the best in sound cultural resource management, but also underscores the tragedy that occurs when the standard is not met.

## Beyond the National Historic Sites of Canada

In addition to the system of national historic sites, Parks Canada is responsible for a number of other heritage protection programs and initiatives. These programs support and enhance the protection of a range of historically important heritage resources.

### HISTORIC PLACES INITIATIVE

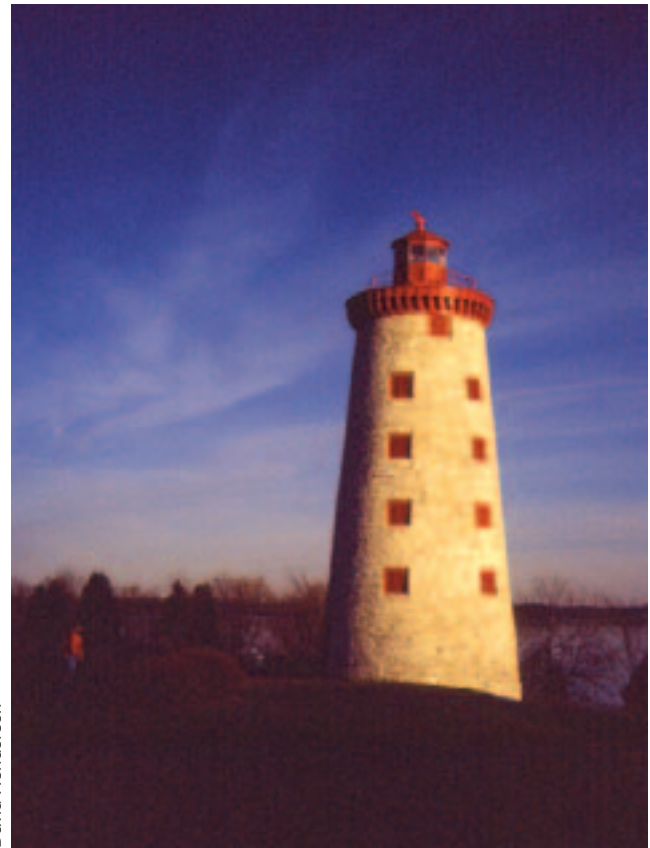
Noting that Canada has lost over a fifth of its built heritage in the last 30 years, the Prime Minister and the Minister of Canadian Heritage in May 2001 announced a federal commitment of \$24 million over three years to engage Canadian partners from other levels of government and the private and voluntary sectors to work to preserve Canada's historic places, including national historic sites, buildings and monuments, and archaeological sites on land and under water. "We owe it to future generations of young Canadians to act now," the Minister said.

The following month, the Minister launched the Historic Places Initiative by announcing that the \$24 million would be used to create a Canadian Register of Historic Places, establish Standards and Guidelines for the conservation of historic places in Canada, and develop a certification process to determine what expenses will be eligible for future financial incentives. At that time, the Minister stated: "This is the first phase of a broader strategy aimed at safeguarding our historic places and encouraging the rehabilitation of historic buildings to protect our built heritage."

To deliver on these commitments, the Historic Places Program Branch was established within Parks Canada in the fall of 2001. Discussions have taken place with provinces and territories, and work is well advanced on achieving the government objectives. At the same time, Parks Canada has been working closely with the Department of Canadian Heritage and other federal custodians to develop legislation to celebrate and protect Canada's historic places.

### FEDERAL HERITAGE BUILDINGS

As the largest property owner in Canada, the federal government plays a key role in ensuring the on going protection of the country's architectural heritage. In recognition of its responsibility, the government adopted the Federal Heritage Buildings Policy in 1982, which was issued as a real property administrative policy by Treasury Board in 1987. Under this policy, federal departments must acquire, use and dispose of buildings in a way that protects their heritage character.



David Henderson

***Battle of the Windmill NHSC, a "classified" Federal heritage building.***



Federally Owned Buildings	Total Reported 1982-1999 <sup>3</sup>	Total Reported 1999-2002	TOTAL <sup>4</sup>
Number Evaluated	6,332	13,725	19,538
Designated Classified	277 (4%)	12 (0.1%)	266 (1%)
Designated Recognized	1,138 (18%)	65 (0.5%)	1,100 (6%)
Not Designated	4,917 (78%)	13,648 (99.4%)	18,172 (93%)

Parks Canada is responsible for the Federal Heritage Buildings Review Office (FHBRO), the office that helps federal departments determine the heritage status of the buildings they administer. With the assistance of an interdepartmental committee made up of representatives of the custodial departments, the Office evaluates a building's heritage value through the application of internationally recognized criteria. Depending on the final assessment, the building may be designated (either "classified," the higher level of significance, or "recognized") by the Minister, or not designated. Since the inception of the policy in 1982, almost 20,000 federal buildings have been evaluated. The number of buildings evaluated and designated since the *State of Protected Heritage Areas 1999 Report* are listed in the table above.

At present, the federal heritage buildings inventory comprises 266 structures that are designated "classified," and 1,100 that are "recognized." To put these numbers in context, the federal government administers a total of 47,181 buildings; designated structures thus represent approximately 2.8% of the government's holdings.

To date, more than 40% of the federal inventory of buildings has been evaluated. Not all buildings will be evaluated under the policy. Buildings less than 40 years of age are exempt, as are those owned by Crown corporations, except for the National Capital Commission. Federal heritage buildings are located in 321 communities across Canada. They include the Coffin Island Light Tower in Nova Scotia, the Grande-Allée Drill Hall in Québec City, the Parliament Buildings in Ottawa, the Yorktown Armoury in Saskatchewan, the Banff Park Museum in Banff National Park of Canada and the Customs Building in Osoyoos, British Columbia. In addition to contributing to the

heritage fabric of their communities, federal heritage buildings ensure a continued federal presence in large and small centres across Canada.

Responsibility for the continued care of federal heritage buildings is shared among 21 departments, Crown corporations and agencies. Parks Canada administers the largest number of federal heritage buildings: 126 classified and 381 recognized. Other important custodians of federal heritage buildings include the Department of National Defence (50 classified, 247 recognized), of Public Works and Government Services Canada (36 classified, 146 recognized), of Fisheries and Oceans Canada (20 classified, 115 recognized) and the National Capital Commission (13 classified, 62 recognized).

## HERITAGE RAILWAY STATIONS

The *Heritage Railway Stations Protection Act*, proclaimed in 1990, affirms the federal government's commitment to the preservation of this facet of the country's built heritage. Parks Canada is responsible for administering the Act.

Under the Act, a heritage railway station is designated by the Minister of Canadian Heritage on the recommendation of the Historic Sites and Monuments Board of Canada. Thus far, the Minister has designated 176 stations. The Act requires federally regulated railway companies to obtain authorization before removing, destroying, altering or disposing of a heritage railway station. It also allows for public involvement in opposing those interventions that are seen as potentially deleterious to a heritage railway station or its heritage features. The Act provides for fines of up to \$1 million.

<sup>3</sup> Review of FHBRO records has resulted in changes to the reported number of designations of buildings prior to March compared to the data reported in the *State of Protected Heritage Areas 1999 Report*.

<sup>4</sup> Totals reported are as of March 31, 2002.

Between December 1999 and October 2001, the Governor in Council, in accordance with the Act, approved the sale of 13 railway stations and an emphyteutic lease for one station. Alterations conforming to their heritage character were approved for two stations. Parks Canada acquired the Jasper and Churchill heritage railway stations to meet operational needs (park administration offices and visitor reception centre). An innovative heritage conservation initiative was approved by Order in Council in June 2000, whereby Parks Canada received the heritage conservation easement for the protection of Union Station in Toronto, a national historic site and heritage railway station.



Parks Canada/B. Morin

**Toronto Union Station is both a national historic site of Canada and heritage railway station.**

Since 1994, Parks Canada has monitored compliance with regulations under the Act, reviewed proposed interventions and ensured that work is carried out in conformity with terms and conditions authorized by the Governor in Council. When a designated railway station is sold to a party not subject to the Act, Parks Canada has worked successfully with the province or territory within which the station is situated to apply its historic resource protection legislation to the station. Parks Canada is currently developing a more formal process for monitoring the heritage condition of designated stations.

## **NATIONAL PROGRAM FOR THE GRAVE SITES OF CANADIAN PRIME MINISTERS**

Concern for the long-term care and conservation of the grave sites of the country's prime ministers led the Government of Canada to introduce a program designed to protect and honour the final resting places of Canada's past leaders. The *National Program for the Grave Sites of Canadian Prime Ministers* was launched in February 1999. Parks Canada is responsible for the program.

The program's primary objective is to ensure that the grave sites of Canada's former prime ministers are preserved in a respectful way. A second objective is to provide Canadians with information on the lives and accomplishments of our past prime ministers and to make Canadians aware of their burial places. The program involves:

- developing conservation plans, implementing landscape improvements, mounting an information plaque and installing a Canadian flag at the grave sites;
- organizing dedication ceremonies at each cemetery to commemorate the prime minister buried there;
- producing a booklet highlighting the contributions of each prime minister; and,
- developing a program website that provides relevant information and links to other related sites.

Parks Canada has consulted with family representatives and cemetery officials to ensure that all aspects of the program are supported and implemented in a sensitive way. The public response has been positive: demand for the booklet has led to the production of a new, colour brochure, released by the Minister of Canadian Heritage on July 1, 2001. Individual ceremonies have been well attended, the program has generated extensive media coverage and the website has received numerous visits.

To date, eleven dedication ceremonies have been held. Since 1999, ceremonies were held for Sir Wilfrid Laurier, John George Diefenbaker, and Lester Bowles Pearson. With the demise of Pierre Elliott Trudeau on September 28, 2000, four dedication ceremonies remain to be held. Ceremonies for Sir John Joseph Caldwell

Abbott, Louis Stephen St-Laurent, and Richard Bedford Bennett are scheduled for 2002-2003.

## **FEDERAL ARCHAEOLOGY PROGRAM**

The Federal Archaeology Program provides expert advice to federal land and real property managers on the protection and management of archaeological sites and archaeological objects found on federal lands and federal lands underwater. Parks Canada is responsible for the program. The authority for this role is the Government of Canada's *Archaeological Heritage Policy Framework*. The Federal Archaeology Program has published a guide to archaeological legislation in Canada, *Unearthing the Law* and, in cooperation with the Department of National Defence, a *Contracting Manual for Land Archaeology*.



***The Grave sites of Canadian Prime Ministers Program protects and honours the final resting places of Canada's past leaders.***

# 3 | CONNECTING CANADIANS

*Canadians learn about one another in many ways. When it comes to forging a stronger sense of common identity, our shared sense of ownership of national parks, national historic sites and national marine conservation areas constitutes one of the strongest bonds among us. These are special places that we formally recognize as part of our national heritage, and we have created national systems to designate, preserve and maintain them. These heritage places and systems help define Canada, and represent who we are to ourselves and to the world.*



Parks Canada/J. Pleau

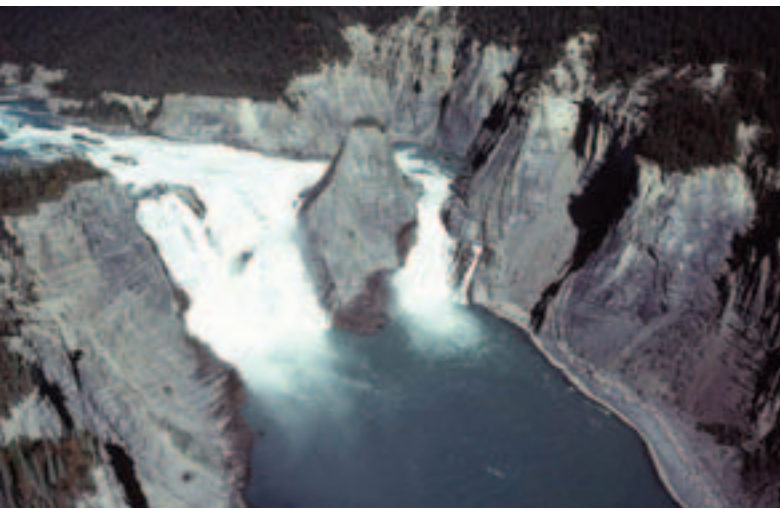
***La Mauricie National Park of Canada - By learning more about these special places, visitors become partners in their stewardship, helping protect fragile, precious and irreplaceable natural and cultural resources.***

## **Connecting the Roots of Our Past to the Promises of Our Future and All Canadians to Each Other**

By safeguarding for all time — and celebrating — these heritage areas, Canadians demonstrate something of the values we share, of the trust we have in one another, and of our confidence in our future together. These places embody our commitment: to our past, to honour and respect our natural and cultural heritage in all its breadth and diversity; to our present, by providing ourselves and visitors to Canada with unparalleled experiences; and to our future, by protecting our heritage for future generations.

Few Canadians can look out from the Icefields Parkway in the Rocky Mountains and not feel pride in the magnificent view or see Nahanni's Virginia Falls or Cape Breton's Cabot Trail and not be moved. Thanks to our system of national parks, Canadians have almost limitless opportunities for similar experiences. Yet, knowing the many environmental challenges we face, few can fail to sense the awesome responsibility we have to ensure that these places remain as pristine as possible for future generations.





Parks Canada/M. Beedell

**Virginia Falls – Nahanni National Park Reserve of Canada**

Most visitors to one of Canada’s more than 860 national historic sites take away with them something they did not know before they arrived. They also leave with a richer and more personal sense of the individual sacrifices and achievements that have helped build Canada. As we become a more complex and globally oriented society, the urgency to preserve these special sites increases. So too does our desire to ensure that our children will always have somewhere to go to experience our stories, to witness what those who came before us had to overcome, and to be reminded of what distinguishes us today, as Canadians.



Parks Canada/J. Pleau

**Parks Canada’s communications activities generate understanding and respect for ecological and commemorative integrity**

To ensure their long-term health and sustainability, it is crucial that Canadians know why these heritage places matter. This is the main purpose of Parks Canada’s communications activities: to foster public understanding, appreciation and enjoyment of Canada’s nation-wide networks of national parks, national historic sites and national marine conservation areas, as well as respect for ecological and commemorative integrity. The more Canadians know about these special places, the more likely they will be to appreciate their significance, become involved in helping preserve them, and support the measures necessary to sustain them. The more that visitors know, the more likely they will be to use our parks and sites responsibly, and learn all they can during their visits. In this way, they will become partners in stewardship, helping protect fragile precious and irreplaceable natural and cultural resources.

From 1999 to 2001, Parks Canada focused its communications activities on furthering these aims and objectives. *Engaging Canadians*, Parks Canada’s external communications strategy, identifies the three areas of external communication activities:

- *Agency Communications* focus on explaining and reporting what Parks Canada does as a government agency, and helps fulfil the Agency’s responsibility to be accountable to Parliament and to Canadians.
- *Program and Service Communications* include communicating with visitors, interested Canadians and the travel trade and tourism industry.
- *Education Communications* involve providing high quality, informative interpretation and outreach educational resources to visitors, educators and the public at large.

Work in all three of these areas is undertaken throughout the organization. The importance of communication to the Agency is evident in its Charter. This document identifies Parks Canada and its personnel as guardians, guides, partners and storytellers. Parks Canada is deeply committed to presenting the values and wonders of nature, and to chronicling the remarkable examples of human determination, pride and ingenuity that have shaped our nation.



In the years 1999-2001, Parks Canada strove to improve its ability to project consistent and coherent messages to Canadians in every area. The projects highlighted below are examples of the strategic approach Parks Canada is taking across all three types of communications activity. The ultimate goal is to engage more Canadians more fully in its' mission, and to advance public understanding of, and support for, its mandate.

## Agency Communications



*The first Minister's Round Table on Parks Canada, April 1-4, 2001*

The creation of the Parks Canada Agency in 1999 involved many innovations. One of the most important was the formal requirement to undertake consultations every two years, so that Canadians who are concerned about protecting Canada's natural and cultural heritage can directly advise the Minister responsible for Parks Canada on the performance of the Agency in fulfilling its mandate. These consultations increase the Agency's accountability to Canadians, particularly those who devote their energy and time, often as volunteers, to historic and ecological preservation and protection. It also facilitates the ability of Parks Canada to tap into their expertise.

The inaugural Round Table was held in Hamilton Ontario, in April 2001. It provided an opportunity to increase awareness of Canada's network of national heritage places, to celebrate them, and to explore strategic directions for the future.

Ninety Canadian stakeholders were invited to participate, representing a broad cross-section of the organizations and communities that have an interest in Canada's networks of national heritage places.



B. Stevens

*The Honourable Sheila Copps, Minister of Canadian Heritage met Stefanie Arrand and Alexandra Crowder, students of the Canadian Academy of Travel and Tourism, at the Minister's Round Table on Parks Canada in April 2001*

Participants reported the Round Table to have been an interesting, informative and worthwhile experience. They left with an understanding that while Parks Canada is open to change, ecological and commemorative integrity are and will remain the main priorities. They also noted the clear message that partnerships, alliances and a shared vision are crucial for the successful long-term management of parks and sites.

The Round Table produced a total of 45 recommendations to improve accountability, and consultation, and to celebrate Canada's special places, several of which focused on the need to inform, influence and involve the public. In October 2001, Parks Canada formally responded to the recommendations. The response included commitments to encourage new voices to be heard at parks and sites; to reach out to Aboriginal, youth and ethno cultural communities; to influence and involve the tourism industry in fostering the sensitive and responsible use of parks and sites; to deliver more consistent messages; to strengthen learning experiences; and to better engage the communities neighbouring parks and sites. The commitments made in response to the Round Table deliberations are being fulfilled through the implementation of Parks Canada's external communication strategy *Engaging Canadians*. This strategy sets out specific objectives and desired outcomes to guide communications efforts at all levels across the organization.

Two students attended the Minister's Round Table on Parks Canada through a partnership agreement with the Canadian Academy of Travel and Tourism. The Academy's mission is to introduce and promote careers in the tourism industry. In 2001, 600 students from 20 Canadian high schools participated.

The Academy students presented the Round Table with the results of a survey they conducted of 90 fellow students. It showed that youth think that advertising and involving students directly in boards and committees are the best ways to involve them in Parks Canada's work. The survey also showed that the students think the best ways to reach out to more youth with messages about their heritage are through advertising, field trips and involvement in school programs at parks and historic sites.

The students at the Round Table saw a strong connection between the work of Parks Canada and the Canadian identity. Of her experience, Alexandra Crowder said, "the words that struck me most were about the diversity and beauty of our land and what defines us as Canadians. Our history is found in it, as well as in creatures and water, and all together this is what reminds us of who and what we are."

Her colleague, Stephanie Arrand, recognized the importance of involving youth in discussions of the issues facing Parks Canada, and in setting priorities. "Overall this conference was an eye-opener on the importance of ecological integrity. I did not know half of the information before I came, but now I see how important it is for kids to know their past and present so they can help make decisions for the future."

### **COLLABORATING WITH NATIONAL PARTNERS: THE TOURISM INDUSTRY ASSOCIATION OF CANADA – PARKS CANADA COLLABORATIVE ACCORD**

In order to promote and encourage sustainable tourism, Parks Canada works to engage and strengthen its working relationships with the tourism sector. Canada's natural and historic places are potent assets for the tourism industry. The sector estimates that natural and cultural heritage places constitute 75% of

Canada's tourist attractions. The conservation of these places helps protect the long-term viability of the industry, together with the hundreds of thousands of jobs and millions of investment dollars that depend on it. Parks Canada recognizes that the tourism sector interacts with hundreds of thousands of Canadians and countless international visitors. Thus, it is an ideal partner for transmitting information about the importance of respecting the value of ecological and commemorative integrity. Parks Canada is also aware that the visitor experience itself can be significantly enriched by strengthening the tourism industry's knowledge of our national parks, marine conservation areas and historic sites, so that information can be imparted to visitors *before* they arrive at a site.

In the fall of 2000, the Tourism Industry Association of Canada (TIAC) and Parks Canada began formal discussions to develop new approaches to sustainable tourism in or near national parks and national historic sites, which focused on planning, development and management. On January 4, 2001, the parties signed an Accord containing seven principles to guide their efforts to protect Canada's heritage places and foster sustainable tourism.

The Accord envisions numerous key outcomes. These include: an increase in sustainable tourism practices; growth in heritage-based learning travel (an emerging market with tremendous untapped potential in Canada); the proactive involvement of industry support in the expansion of the national



Parks Canada/W. Lynch

**Prince of Whales Hotel National Historic Site of Canada  
located in Watertown Lakes National Park of Canada**

parcs and national historic sites systems; industry support for the maintenance and enhancement of ecological and commemorative integrity; enhanced service delivery; better informed travellers; reduced negative impacts by travellers on natural and cultural resources; and, greater sharing of information and knowledge between Parks Canada and the industry.

### **TIAC – Parks Canada Collaborative Accord: The Partnership Principles**

- Foster sustainable tourism
- Support systems enhancement
- Maintain ecological and commemorative integrity
- Innovations in managing demand and influencing expectations
- Innovations in reducing impacts
- Enhance visitor programming
- Accurate information for planning and management

In April 2001, a committee was struck to oversee the implementation of the Accord, and to identify specific opportunities for collaboration. It consists of representatives of TIAC and Parks Canada, together with strategic thinkers from the tourism industry, natural and cultural conservation groups, and the magazine and film sector. At its inaugural meeting in May 2001, the committee identified a need to get the Accord's messages across to the tourism industry, park communities and other stakeholders. A communication strategy was developed in September of the same year. It includes approaches to promote the Accord and its principles via tourism industry publications and conferences, as well as across the Parks Canada network and through major Agency communication media, such as its Web site. Parks Canada and TIAC representatives are working on several joint projects: these include a youth ambassador program and the exploration of accreditation mechanisms to identify members of the tourism industry who actively apply and abide by the principles of sustainable tourism.



Parks Canada/B. Townsend

***Parks Canada staff provide information to visitors in the Visitor Reception Centre at Kejimikujik National Park and National Historic Site of Canada. The more visitors know about these special places, the more likely they will be to appreciate their significance, become involved in helping to preserve them, and support the measures necessary to sustain them.***

## **Program and Service Communications**

### **BRINGING THE PARKS AND SITES EXPERIENCE TO PEOPLE: PARKS CANADA'S DISCOVERY CENTRES**

Not everyone with an interest in national parks, national marine conservation areas and national historic sites has the opportunity to explore these special places in person. Sometimes, these protected areas are simply too fragile to accommodate visitors. Furthermore, Canada's population is increasingly concentrated in urban areas, far from many of our parks and historic sites, which tend to be located in rural and remote areas of the country.

To increase Canadians' appreciation and understanding of our vast systems of protected heritage places, and support for their sustainable use, Parks Canada is developing the concept of a network of "discovery centres," that could eventually be located in urban areas throughout Canada. These would be multimedia centres, reaching out to Canadians through informative, engaging and educational experiences which would



allow guests to take virtual journeys across Canada's systems of national heritage places and feel closer to the shared heritage of Canadians, in all its breadth and diversity. Furthermore, at national historic sites or national parks that already have interpretive and visitor centres, discovery centre components could be used to augment existing programming and tell the national story of the heritage system that the site or park belongs to.

In 2001, Parks Canada launched a successful pilot of the national discovery centre concept at Prince Edward Island National Park's Greenwich Interpretation Centre. The discovery centre components feature three information zones. These explain about: the systems of national parks, national historic sites and national marine conversation areas; the connections among the systems; and the unique natural and cultural contribution that Greenwich represents as well as the relationship between Greenwich and other local and regional heritage places.

In April 2001, the Minister of Canadian Heritage announced that Parks Canada's first urban Discovery Centre will be located in Hamilton, Ontario. This centre is scheduled to open in fall 2004, on a site near Hamilton Harbour. The centre will play an important role in interpreting Canada's marine heritage and will help efforts under way by various levels of government and the private sector to make Hamilton's waterfront a dynamic, ecologically friendly place for people to visit and enjoy.



Parks Canada/J. Sylvester

*The pilot project for the national discovery centre concept was launched in 2001 at Prince Edward Island National Park of Canada's Greenwich Interpretation Centre*

## **CONNECTING OUR LANDSCAPES AND OUR HISTORY: ON-SITE HERITAGE CELEBRATIONS — THE YEAR OF THE GREAT BEAR**

Mountain parks and neighbouring communities in Alberta, British Columbia and Montana designated 2001 the Year of the Great Bear. The mountain regions of western Canada and the northwestern United States hosts millions of recreational visitors each year. Their rapid growth represents an unprecedented rate of development, which puts increasing pressure on the habitat that black and grizzly bears depend on for survival. The Year of the Great Bear initiative was aimed at raising awareness of the bear as a symbol of North American wilderness, and an indicator of ecosystem health. Hundreds of activities and events were organized by more than 70 partners, who together undertook the largest joint public and private sector education project in the history of the mountain parks.

The geographical range of the project extended from Jasper National Park of Canada in the north, to Mount Robson Provincial Park and Mount Revelstoke National Park of Canada on the west, to Kananskis Country and Peter Lougheed Provincial Park on the east, and to Waterton-Glacier International Peace Park on the south. It included the communities of Jasper, Lake Louise, Field, Golden, Revelstoke, Banff, Canmore, Pincher Creek and Waterton, together with communities in Crowsnest Pass. Parks Canada supported the project as part of its commitment to protect ecological integrity and promote sustainable heritage tourism.



Parks Canada/W. Lynch

*Grizzly bear and cub in Kluane National Park of Canada*



A Web site was established to distribute information about the initiative, including its goals and objectives, a full calendar of events, and a 1-800 number. To raise awareness, posters, tent cards, postcards, billboards, brochures, portable displays and street banners were produced for use in the parks system and communities, and by tourism operators throughout the area. Major destination marketing organizations promoted the Year of the Great Bear in their marketing materials; these included Travel Alberta, Brewster, Rocky Mountaineer Railtours, Canadian Mountain Holidays and Fairmont Hotels. Special edition travel packages were offered and promoted by tourism industry partners, and Brewster and Laidlaw bus coaches even sported special commemorative license plates.

Throughout the year, interpretive hikes, back country research trips, informative exhibits, campground programs and theatre presentations provided visitors and residents with a wide range of diverse experiences for learning and enjoyment. Videos were also produced to provide specific information aimed at reducing human-bear encounters. For example, the Safety in Bear Country Society, in cooperation with the International Association for Bear Research and Education, released two videos: *Staying Safe in Bear Country* and *Working Safe in Bear Country*.

Special training sessions were also provided for staff and industry employees in all mountain communities, through partnership among the Year of the Great Bear Steering Committee, the Mountain Parks Heritage Interpretation Association, Parks Canada and the Whyte Museum.

The initiative generated considerable media coverage. Print articles appeared in local papers, major Canadian dailies and newspapers in the United States, including the *New York Times*. Tourism publications such as *Where Magazine*, and general interest publications such as *Chatelaine*, featured articles on the initiative. Local and national broadcast media reported on programs and events, and the story was aired on BBC World News. The success of the multiple-partnership venture has led to continued collaboration: "The Legacy of the Great Bear."

## Educational Communications

### YOUNG REPORTERS OF CANADA

One of Parks Canada's key outreach education priorities is to communicate to youth and ethnocultural communities who may be unfamiliar with Canada's national parks and national historic sites. To achieve this objective, the Western Quebec Field Unit of Parks Canada created a unique initiative: the Young Reporters of Canada. The program was designed to reach the Haitian, Vietnamese and Lebanese communities in Montréal, and "Young Reporters" — seven communications students — were hired from the target communities. During 10 week periods in the summers of 2000 and 2001, they had the opportunity to travel and immerse themselves in a number of Parks Canada sites in Quebec and the Atlantic Provinces.

As they learned, they told their stories to local news media and, more importantly, to their own communities. For them, Parks Canada became a reality that they willingly shared with others. Local newspapers, Radio-Gaspé, Radio-Canada Charlottetown, RDI television, Radio Canada and TVA Gaspésie all carried "Young Reporter stories." The students also created the Young Reporters of Canada Web site, hosted by Parks Canada, and they produced a video record of their journey.



Parks Canada/I. Tremblay

**The Young Reporters 2001 (left to right: Tu Ahn Nguyen, Marie-Berline Deschênes, Rana Atie, Marie-Erika Gutt, Micheline Nguyen, Alan Sahran, Bianca Brandt-Rousseau)**

## A REPORT FROM THE YOUNG REPORTERS

### **A Journey Between Two Ages**

by Rana Atie

As the blue horizon confused sky and sea, the sun radiated over the Appalachian Mountains. They stood there proudly dominating the deep green landscapes. I was speechless before such an overwhelming sight. Yet I had to leave it behind, for the National Historic Site of the Restigouche Battle awaited us. On our way we made a quick stop to admire the Rocher Percé.

Restigouche, there we were: the video team. We encountered a few technical problems with the sound and the lighting, but we stood strong. We were placed in a compromising position as we were to film inside a dark museum. However, this remote site boasted a beautiful collection of artifacts found during marine-archaeological searches. It seemed as though each object had a secret to tell. The secret of someone's life, it could have been a captain's life or a soldier's, or a sailor's. Perhaps it was the secrets of a people who still hold on to their traditions and their hopes.

I felt lost between past and present. And both periods of time were as gay as they were melancholic. The turning point was 1970, a year that marked the meeting of the two eras. Yet we do have proof of these stories, because fragments of hats or socks were found, and an axe that seems to be consumed by time. And what should one make of the many shotguns and the Chinese porcelain? Who did they belong to?

Days pass by, my thoughts are disrupted, there is no more time left. We barely arrived in Restigouche, already we must leave. As we depart, we leave behind the Acadians, the Mi'kmaq and a French soldier whose spirit still whirls around the museum...

Complete story on the Parks Canada Web site:  
[www.parkscanada.gc.ca](http://www.parkscanada.gc.ca)

## Artists in Residence

One of the unexpected benefits of Gros Morne National Park's Artists in Residence program has been the interest it has sparked in local communities. Area residents had tended to think of the park's interpretation programs as being solely for visitors. However, when the artists' works were exhibited, they came out in droves to see how their landscape and coastal vistas had been captured on canvas or in photography, multimedia and sculpture.



Parks Canada/S. Stone

### **Artist in Residence participant Bill Ritchie in Gros Morne National Park of Canada**

The Artists in Residence program is the result of a partnership between the Art Gallery of Newfoundland and Labrador and Gros Morne National Park. Founded in 1998, it now invites participation from artists across Canada and around the world. The gallery, which funds its participation in the program through a Canada Council for the Arts operations grant, administers the artist selection process and provides artists' honoraria. The park provides living and working space, and contact with park staff and research scientists studying the park ecosystem.

In 2001, more than 27,000 people attended the summer exhibition at the park's discovery centre at Woody Point, and the program's popularity has necessitated creation of a permanent gallery at the centre. Through this Parks Canada program, local residents have found a new way to appreciate the place they call home.

Participating artists spend three to six weeks in the park. Once a week, they engage in the park's public programs through activities such as slide talks, workshops, projects with local schools, and open studio afternoons. The program's impact has far exceeded expectations. The compelling perspectives furnished by the artists offer new ways for all to appreciate the park. In 2000 and 2001, artwork emanating from this partnership was featured in more than nine exhibitions in Canada, the United States, Ireland and England.

In 2001, the Artists in Residence program expanded to Terra Nova National Park, on Newfoundland's east coast. Two artists spent several weeks working outdoors and living in a small cabin in the park. Two more have been invited to participate in 2002.

## BILL RITCHIE

### **Painting on the Long Range Mountains, Gros Morne**

Attended program in 1998

*I sat by the brook in front of the cabin for long days and painted; the water explaining itself to me, the trees unravelling themselves and the rocks becoming as individuals, each with enormous character. A long time alone strips away the many chattering voices and demands of the modern world, and what is left is who you are, whether you like it or not. It is rare these days to be given the opportunity to experience the world in such an elemental way. It is important that these wild places are protected because as time goes on, there will be less of them just when we'll need them the most.*

## BARB DANIELL

### **Working in Her Studio in Woody Point, Newfoundland**

Attended program in 1999

*Gros Morne is a place where you really can hear the earth speaking. This language is so complex, mysterious and satisfying I feel it will inform my work for years to come, and in ways that I may never fully understand.*

## CWACs Invade Fort Rodd Hill

Fort Rodd Hill National Historic Site of Canada commemorates the defence of Victoria, the Esquimalt Naval Base and the west coast of Canada from the 1870s until 1956. In 2001, a new interpretive program was introduced at the site which features a significant but previously neglected story from the dangerous days of the Second World War.

As Canada's war effort expanded and drew more men into combat ranks, shortfalls in support personnel were keenly felt. Despite concerns about introducing women into a non-traditional role, the federal government authorized formation of the Canadian Women's Army Corps (CWAC) to answer the need. In August 1941, the first CWAC office was established in Esquimalt. In addition to administrative positions, Canada's female soldiers filled a variety of other jobs as telegraphers, radio operators, mechanics, technicians and more. During its five-year existence, 21,624 women served in the CWAC, at Fort Rodd Hill, across Canada, and overseas.



Parks Canada/B. Campbell

**Interpreters in reproduction of Canadian Women's Army Corps uniforms explain their restored 1942 jeep to visitors at Fort Rodd Hill National Historic Site of Canada. Many CWAC's served as drivers, among numerous other important roles during the Second World War**



In the summer of 2001, two female interpreters were outfitted with reproduction Corps uniforms. Their training included presentations by veteran CWACs living in the area, who regaled them with tales of the experience they still remember as the great adventure of their lives. Site technical staff had reconditioned a 1942 jeep during the winter months, restoring it to full operating condition. Many CWACs served as drivers, and Fort Rodd Hill's new recruits soon mastered the historic vehicle's tricky three-speed transmission. As in the past, the jeep afforded mobility to the CWACs over the sprawling grounds of the fort. Visitors of all ages, male as well as female, have been intrigued by the story of the CWACs and their distinguished service to Canada.

## Telling Aboriginal Stories

Since publication of the *State of the Protected Heritage Areas 1999 Report*, augmenting the quality and quantity of the Aboriginal stories commemorated at national historic sites and national parks has assumed higher priority for Parks Canada. To this end, three national Aboriginal heritage presentation workshops have been held. Each of these involved Aboriginal interpreters, respected elders, and Parks Canada staff. The result has been a great harvest of success stories throughout the parks and sites administered by Parks Canada.

Fort Témiscamingue National Historic Site of Canada is just one example. This 200-year-old Hudson Bay post is in the traditional territory of the Algonquin First Nation, and human habitation in the area dates back some 6,000 years. "Mini Pijawok" is a new program sponsored by Parks Canada's Aboriginal Heritage Presentation Innovation Fund. Beginning on National Aboriginal Day 2001, the program gave visitors first-hand experience in watching the step-by-step construction of a traditional five-metre birchbark canoe by members of the local Algonquin First Nation.

Fort Témiscamingue has also opened a new exhibit and reprinted some of the site's literature to better tell Aboriginal stories.

## A Class Act—Teaching the Teachers

Parks Canada has literally thousands of stories to tell ... stories of the nature, culture and history of Canada and its people. At the same time, teachers across the country are constantly seeking out Canadian content to help them illustrate their subjects. As a result, there is considerable potential for Parks Canada to reach youth by working hand-in-hand with teachers. Realizing this potential has been a priority for Parks Canada, and many successes throughout the country can be cited.

### AN EDUCATOR'S APPRAISAL

*"I would like to thank you and your staff for the best professional development that I have ever participated in during my twenty-eight years of teaching. As President of the Newfoundland and Labrador Humanities Council, I have attended and created many in-service activities and Annual General Meetings. The Travelling Teachers Institute was by far the best and most memorable one in my career."*

Mr. Gerald C. Butt  
Homeroom Teacher

Take the work of Dorothy Parsons, for example. In August 2001, Parks Canada's Western Newfoundland and Labrador Field Unit provided 28 social studies and science teachers from across the province with an unparalleled professional development experience. Through an initiative called the Travelling Institute for Teachers—Science and Social Studies on Location, the teachers toured regional national parks and national historic sites, for six days of immersion in Newfoundland and Labrador's diverse cultural and natural heritage. Heritage presentation and ecosystem science staff from the Agency worked together, conducting group discussions on how to make better connections to elementary and high school curricula, and enrich lesson plans used in classrooms across the province. Dorothy, the outreach education specialist who orchestrated the event, says



that on going objectives are to “bring the wonder of the rich heritage that exists in our own back yard into classrooms, and to bring history and science to life in new and meaningful ways for students.”

Partners in the program include Newfoundland and Labrador’s Department of Education, School Districts 2 and 3, the Newfoundland and Labrador Teachers’ Association, the Red Ochre Regional Economic Development Board, the Gros Morne Cooperating Association, and the Atlantic Canada Opportunities Agency.

## CREATIVE LEARNING

Justin Kovacs, of Ms. Beckett’s Grade 9 Geography Class at Mayfield Secondary School in Brampton Ontario, created this poster of Point Pelee National Park to illustrate the concept of ecological integrity. Justin’s poster was judged first out of an amazingly high total of 145 entries.

The poster contest is just one of the many creative ideas that Parks Canada staff in Ontario have come up with to reach school-aged children through curricula, work with teacher associations, and cooperation with university education faculties. For example, Canada’s national parks and the activities of Parks Canada constitute a key component of the Ontario Grade 9 geography curriculum—thus enabling some 200,000 students each year to learn more about their heritage.



Parks Canada/H. Oxman

*Teachers participating in the Travelling Institute for Teachers – Science and Social Studies on Location visits Gros Morne National Park of Canada*

## Sky High Interpretation

Hikers on the popular Skyline Trail in Cape Breton Highlands National Park of Canada are once again meeting park interpreters. The interpreters are helping trail users discover first-hand more of the area’s secrets, see more wildlife, and learn how they can help protect the area.

The impetus for this new programming came from the Ecological Integrity Orientation Training Course that virtually all Parks Canada staff have taken. The park’s interpreters wanted their work to better contribute to the goal of achieving ecological integrity. That meant targeting programming at those audiences who have the greatest impacts on the environment. While the programming focuses on the wonders of the area, interpreters can also point to evidence of human impact, and describe the extraordinary lengths the park has to go to correct damage once it occurs. For trail users, the lessons are often profound.

An unexpected consequence of this shift in programming was that the staff themselves acquired a more intimate knowledge of the park’s ecosystem and its workings. The interpreters also gathered data on how users interacted with the environment, observed



Parks Canada/P. St-Jacques

***Skyline Trail - Cape Breton Highlands  
National Park of Canada***

together with impacts on the ecosystem or the facilities. These observations were then mapped using a geographical information system (GIS) system, and provided a significantly more detailed record of area use and impact than the park had ever had before. The park was also enabled to respond more quickly to changing situations, and address impacts before they become major problems.

This type of successful programming will be continued by Parks Canada.

## **Fostering Understanding, Appreciation and Enjoyment**

Parks Canada's communications activities — from on-site information materials for visitors, to programs broadcast on national television — ensure that the people of Canada benefit from the resources Parks Canada manages on their behalf. These activities also reach out to, and meet the needs of, Parks Canada partners or people who may never actually visit a national park or national historic site in person.

It is through a very broad range of communications activities, targeted at multiple audience needs, that Parks Canada enriches Canadians' understanding and appreciation of our great natural and cultural legacy. It is anticipated that the cumulative result of these activities will be increased understanding and support for the mandate and work of Parks Canada. As well, Parks Canada's communications with Canadians should, in a profound way, help to realize Parks Canada's goal of shared — and actualized — responsibility for the protection and presentation of Canada's national parks, national historic sites and national marine conservation areas.

# APPENDIX

**Appendix 1** Number of Species in Each National Park  
(numbers in parentheses are the number of exotic species;  
numbers not in parentheses are the total number of Indigenous and exotic species)

	Amphibians	Reptiles	Birds	Mammals	Fish	Plants
AULA	0 (0)	0 (0)	41 (0)	11 (0)	4 (0)	157 (3)
AUYU	0 (0)	0 (0)	40 (0)	21 (0)	13 (0)	119 (0)
BANF	4 (0)	1 (0)	262 (5)	55 (1)	25 (11)	904 (77)
BRUC	16 (0)	14 (0)	276 (5)	43 (2)	40 (4)	891 (188)
CBHI	12 (0)	6 (2)	193 (4)	51 (2)	12 (2)	692 (112)
ELKI	4 (0)	1 (0)	222 (5)	41 (1)	4 (0)	426 (61)
FIVE	16 (0)	13 (0)	277 (5)	43 (2)	58 (6)	
FORI	11 (0)	1 (0)	244 (3)	41 (2)	47 (0)	635 (125)
FUND	13 (0)	4 (1)	256 (5)	29 (2)	6 (1)	617 (128)
GBIS	16 (0)	18 (0)	233 (3)	54 (3)	9 (0)	880 (158)
GLAC	3 (0)	2 (0)	169 (2)	50 (0)	6 (3)	550(65)
GRAS	5 (0)	10 (0)	200 (5)	54 (5)	19 (1)	410 (62)
GROS	0 (0)	0 (0)	227 (0)	23 (8)	11 (0)	739 (96)
GWAI	2 (0)	1 (0)	232 (4)	42 (3)	303 (5)	726 (135)
IVVA	0 (0)	0 (0)	142 (0)	39 (0)	46 (0)	246 (4)
JASP	6 (0)	1 (0)	233 (4)	53 (1)	28 (9)	879 (113)
KEJI	12 (0)	8 (0)	165 (3)	45 (2)	15 (3)	570 (96)
KEJA	9 (0)	3 (0)	140 (1)	28 (0)	13 (0)	
KLUA	3 (0)	1 (0)	165 (1)	45 (0)	18 (1)	877 (53)
KOOT	4 (0)	3 (0)	189 (1)	54 (0)	11 (5)	702 (61)
KOUC	14 (0)	7 (0)	222 (4)	53 (2)	27 (0)	663 (144)
MAUR	13 (0)	5 (0)	187 (3)	50 (0)	31 (18)	464 (36)
MING	7 (0)	2 (0)	217 (1)	38 (0)	4 (0)	453 (43)
REVE	4 (0)	3 (0)	147 (2)	52 (0)	6 (4)	401 (53)
NAHA	2 (0)	0 (0)	181 (1)	42 (0)	18 (0)	620 (23)
PRIM	8 (0)	6 (0)	255 (3)	56 (5)	262 (1)	436 (100)
PELE	12 (0)	22 (1)	367 (5)	48 (5)	34 (2)	838 (246)

**Appendix 1: cont.**

	<b>Amphibians</b>	<b>Reptiles</b>	<b>Birds</b>	<b>Mammals</b>	<b>Fish</b>	<b>Plants</b>
PALB	5 (0)	1 (0)	236 (2)	60 (2)	21 (0)	622 (58)
PEIS	9 (0)	3 (0)	259 (5)	42 (6)	12 (0)	503 (116)
PUKA	11 (0)	4 (0)	237 (4)	50 (2)	55 (5)	527 (45)
QUTT	0 (0)	0 (0)	45 (0)	16 (0)	16 (0)	134 (0)
RIDM	6 (0)	6 (0)	231 (4)	58 (2)	27 (1)	728 (106)
SAGU	0 (0)	0 (0)	84 (0)	14 (0)	90 (1)	35 (4)
SIRM	0 (0)	0 (0)	60 (0)	20 (0)	19 (0)	123 (0)
SLIS	17 (0)	17 (0)	239 (5)	53 (3)	98 (8)	814 (191)
NOVA	1 (1)	8 (0)	186 (5)	46 (8)	8 (0)	518 (86)
TUKT	0 (0)	0 (0)	78 (0)	33 (0)	21 (0)	229 (1)
UKKU	0 (0)	0 (0)	69 (0)	25 (0)	16 (0)	110 (0)
VUNT	0 (0)	0 (0)	59 (0)	35 (0)	13 (0)	350 (12)
WAPU	2 (0)	0 (0)	167 (3)	48 (0)	21 (0)	638 (84)
WATE	7 (0)	2 (0)	264 (5)	61 (0)	23 (5)	975 (88)
WOOD	4 (0)	1 (0)	224 (3)	44 (0)	32 (3)	600 (68)
YOHO	5 (0)	2 (0)	208 (3)	57 (2)	13 (6)	674 (87)