



# MOUNT REVELSTOKE

NATIONAL PARK OF CANADA AND

# GLACIER

NATIONAL PARK OF CANADA AND

# ROGERS PASS

NATIONAL HISTORIC SITE OF CANADA

*Management Plan*





Mount Revelstoke National Park  
of Canada and  
Glacier National Park of Canada  
and Rogers Pass National  
Historic Site of Canada  
*Management Plan*

November, 2005

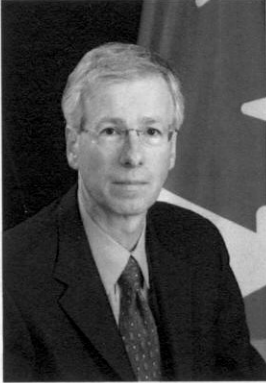
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*Cover photo: Transportation corridor through Rogers Pass, Glacier National Park*

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## Foreword



Canada's national historic sites, national parks and national marine conservation areas represent the soul of our country. They are a central part of who we are and what we are. They are places of beauty and wonder and heritage. Each tells its own story. Together, they connect Canadians to our roots, to our future and to each other.

We see a future in which each of the national historic sites of Canada, whether federally owned or not, enjoys sound commemorative health, and in which our system of sites evolves as our country evolves. Our national historic sites will be places for all Canadians to experience and learn from. They will help our communities to be vibrant and creative, and contribute to our efforts to revitalize Canada's cities. Together, we will hold these places in trust for this and future generations, while ensuring they contribute to Canada's sustainable economy and environmental health.

Our vision is also for each of Canada's unique terrestrial and marine regions to be represented by at least one national park or national marine conservation area, for all national parks to be in sound ecological health, for all national marine conservation areas to promote the ecologically sustainable use of our marine resources in a way that harmonizes conservation practices with human activities, and for both national parks and national marine conservation areas to be places for all Canadians to experience and enjoy.

These principles form the foundation of the new management plan for Mount Revelstoke National Park of Canada, Glacier National Park of Canada and Rogers Pass National Historic Site of Canada. May I offer my appreciation to the vast range of thoughtful Canadians who helped develop this plan. I am especially grateful to our very dedicated team from Parks Canada and to all those local organizations and individuals who have demonstrated such good will, hard work, spirit of co-operation and extraordinary sense of stewardship.

In that same spirit of partnership and responsibility, I am pleased to approve the Mount Revelstoke National Park of Canada, Glacier National Park of Canada and Rogers Pass National Historic Site of Canada Management Plan.

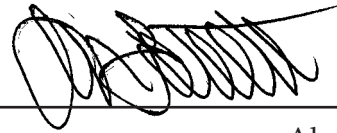
A handwritten signature in black ink, which appears to read 'Stéphane Dion'. The signature is fluid and cursive, written in a professional style.

Stéphane Dion  
*Minister of the Environment*



# Mount Revelstoke National Park of Canada and Glacier National Park of Canada and Rogers Pass National Historic Site of Canada Management Plan

This plan has been recommended for approval by:



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Alan Latourelle  
Chief Executive Officer  
Parks Canada



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Pam Doyle  
Superintendent  
Mount Revelstoke National Park of Canada  
Glacier National Park of Canada  
Rogers Pass National Historic Site of Canada

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## Executive Summary

This management plan is a review of the 1995 Mount Revelstoke and Glacier National Parks Management Plan and includes management considerations for Rogers Pass National Historic Site of Canada.

The management plan was prepared with public consultation and includes a vision for the parks and site and chapters for each aspect of park and site operations and administration. The strategic direction, objectives and actions are outlined for each area of parks and site management and operations. Some of the major issues addressed in the plan include threats to natural habitat and processes, impact of the transportation corridor, the protection, preservation and presentation of Rogers Pass National Historic Site and providing a range of appropriate opportunities to engage Canadians.

The idea of maintaining intact habitats and natural processes is outlined in the plan and will be approached by:

- working with neighbours;
- protecting old-growth forests;
- protecting valley bottom wetlands; and
- developing fire management objectives in consultation with stakeholders.

The importance of ecological integrity, cultural resource management and public safety in the operation of the transportation corridor is stated throughout the plan. This will be accomplished by:

- forming a Transportation Advisory Committee to identify planning, operation and maintenance opportunities along the corridor.

The significance and irreplaceable legacy of Rogers Pass National Historic Site is a cornerstone of the plan and will be addressed by:

- protecting important resources from erosion and vegetation succession.

The relevance of national parks and national historic sites to Canadian society is a major theme of the plan. The idea is to engage Canadians and foster understanding, enjoyment and stewardship by:

- building relationships with nearby First Nations;
- offering new opportunities for consultation and participation with regular progress reports on the implementation of the management plan;
- working with the local communities to produce a Heritage Tourism Strategy;
- renewing heritage presentation by working with partners to present messages not included in existing media; and
- improving visitor opportunities, facilities and services from a regional perspective.

The plan also includes a section entitled Landscape Management Units which balances ecological, cultural and visitor use considerations and provides an opportunity to implement human use management strategies. The Parks Canada system of zoning and declared wilderness is also described in the document.

The management plan describes the nature of the parks and site and sets a course of action for management and operations steered by the vision.

# Introduction



## 1.0 INTRODUCTION

*On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations.*

– Parks Canada's mandate

Management plans are the cornerstone of Parks Canada's commitment to the future. Prepared in consultation with the public, they describe a vision for Canada's national parks and national historic sites and set out a strategy to transform the vision into reality. This plan for Mount Revelstoke, Glacier and Rogers Pass will guide these protected areas as they pursue ecological and commemorative integrity while at the same time inviting Canadians and international guests to explore our heritage and identity.

The *Canada National Parks Act* (2000) defines ecological integrity as "a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes."

The *Parks Canada Agency Act* (1998) states that commemorative integrity of national historic sites must be ensured. A national historic site possesses commemorative integrity when:

- *the resources directly related to the reasons for 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.*

The *Canada National Parks Act* requires Parks Canada, in consultation with Canadians, to review each national park's management plan every five years. The *Parks Canada Agency Act* states that management plans will be prepared for each national historic site administered by Parks Canada. The federal minister responsible for Parks Canada approved the previous plan for Mount Revelstoke and Glacier in 1995. This is the first management plan for Rogers Pass National Historic Site.

Management plan implementation is the responsibility of the Superintendent. The actions stated in the plan will be monitored and reported on through public reporting opportunities such as the State of Protected Heritage Areas Report.

Parks Canada is responsible to Canadians for the administration of their national parks, national historic sites, national historic canals, and national marine conservation areas. Together, these national treasures protect representative elements of Canada's natural and cultural heritage.

## **Role in a National Park System**

First created with the establishment of Banff more than a century ago, the goal of the national park system is to represent each of Canada's 39 natural regions. There are currently more than 40 national parks and national park reserves in Canada, located in every province and territory, and ranging in size from 9 km<sup>2</sup> to 45,000 km<sup>2</sup>. Glacier National Park and Mount Revelstoke National Park protect a portion of the Columbia Mountains Natural Region.

## **Role in the National Historic Sites System**

Parks Canada is working to ensure the system of national historic sites adequately represents the diversity of Canada's history. On the advice of the Historic Sites and Monuments Board of Canada, Ministers responsible for Parks Canada have designated over 900 nationally significant places as national historic sites, 149 of which are administered directly by Parks Canada. Rogers Pass National Historic Site commemorates the role of the pass in the construction and development of the main line of the Canadian Pacific Railway into a major national transportation route. Within the thematic framework of Canada's system of national historic sites, Rogers Pass helps Canadians

understand and value one aspect in the development of the Canadian economy, particularly in the transportation and communication sector. In addition to the national historic sites, over 950 persons and events in Canadian history have been commemorated, usually by way of a plaque erected at a suitable location.

## **Places for Nature**

Wilderness and biodiversity define the essential character of Glacier and Mount Revelstoke's natural environment. These national parks protect part of the only non-coastal temperate old-growth rainforest in Canada. Thunderous avalanches hurtle down steep precipitous mountains, depositing rocks, trees, ice and snow on the valley floors. Species-at-risk, such as the grizzly bear, wolverine and mountain caribou, roam throughout their natural habitat, a habitat increasingly threatened outside protected areas. Recognized for their scenic and unspoiled nature, these areas have remained primitive and wild for more than a century.

The Columbia Mountains Natural Region in southeastern B.C. is tucked between the Rocky Mountains to the east and the Interior Plateau to the west. Running from south to north, it extends from the American border north to Wells Gray Provincial Park. Four ranges make up the Columbia Mountains: the Purcells, Selkirks, Monashees, and Cariboos. Glacier's 1350 km<sup>2</sup> encompass parts of the Selkirks and the Purcells. Mount Revelstoke protects 260 km<sup>2</sup> of the Selkirks, including the face and summit of Mount Revelstoke. The mountains were formed 160-180 million years ago, primarily of ancient metamorphic rock.

## **Historic Places**

The story of Glacier and Rogers Pass starts with the construction of the Canadian Pacific Railway. CP Railway was a keen supporter of the idea of national parks along the rail line, and it encouraged the federal government to establish Glacier National Park in 1886. Magnificent views of the rugged alpine wonderland and fine mountain-climbing opportunities soon attracted European and American visitors to the park. At the heart of the park, Rogers Pass National Historic Site commemorates the original role of the CPR main line. In nearby Revelstoke, residents believed a road to the summit of Mount Revelstoke was a premier tourist opportunity. They successfully lobbied the federal government and, in 1914, Mount Revelstoke National Park was established.

Glacier National Park of Canada, Mount Revelstoke National Park of Canada, Rogers Pass National Historic Site of Canada - these are places where nature and culture evolve together, symbols of Canada where Canadians and international visitors discover the wonder of the natural environment and appreciate the richness of their heritage. Avalanche slopes, old-growth rainforest, exceptional visitor opportunities, and the history of the Canadian Pacific Railway and the Trans-Canada Highway reflect the unique heritage character of the Columbia Mountains Natural Region of British Columbia.

## **Places for People**

Since the opening of the Trans-Canada Highway in 1962, these heritage areas have witnessed a dramatic increase in the number of visitors. In 2002, more than 588,000 people visited the parks and the historic site. This growth can be attributed to more highway traffic and marketing efforts by international travel companies, motorcoach tour companies and recreational vehicle rental firms.

Facilities and services at Glacier and Rogers Pass include campgrounds, picnic areas, interpretive viewpoints, self-guiding interpretive trails, and 140 km of backcountry trails. Commercial operators offer a variety of guided opportunities such as mountaineering, hiking, and skiing. With the

exception of a few hiking trails and alpine huts in the backcountry, most facilities are concentrated in the narrow frontcountry corridor, adjacent to the Trans-Canada Highway. During the summer park staff offer short evening programs and campfire talks frequented by campground visitors. Glacier Park Lodge operates a year-round hotel, restaurant, gas bar and convenience store. The Rogers Pass Discovery Centre is the park's primary visitor facility for information, orientation and interpretation services.

In Mount Revelstoke, facilities and services along the Trans-Canada Highway and the Meadows-in-the-Sky Parkway include picnic areas, roadside pull-offs, self-guiding trails, backcountry shelters, and 40 km of trails. During the summer park staff offer a shuttle service from Balsam Lake to the summit of Mount Revelstoke. Visitors obtain information at the park headquarters in Revelstoke and the Meadows-in-the-Sky welcome station.

Throughout the year regular issue-based educational articles highlighting aspects of ecological integrity and cultural resources are published in local papers.

### **Places for the Future**

This management plan review is part of Parks Canada's continuing effort to fulfill its obligation to future generations. The *Canada National Parks Act* requires Parks Canada, in consultation with Canadians, to review each national park's management plan every five years.

A state of the park report will be completed during the life of the plan and will provide a clear, measured understanding of the current state of the parks' ecological integrity and visitor experience opportunity. Annual business plans will take their direction from the management plan's key actions; implementation will depend on operational requirements and available resources.

### **Management Plan Objectives**

- Describe a vision for the future.
- Preserve and strengthen the ecological integrity of the national parks and the commemorative integrity of the national historic site.
- Promote high quality visitor experiences.
- Establish clear limits to development for appropriate park and site activities.
- Improve visitor understanding of national parks and national historic sites.
- Involve others in protecting the shared ecosystem.



# Planning Context



## 2.0 PLANNING CONTEXT

### 2.1 Regional Setting

Immediately north of the confluence of the Illecillewaet and the Columbia Rivers, Mount Revelstoke National Park lies adjacent to the community of Revelstoke, with its population of 8,200. Approximately 48 km to the east of Revelstoke and 56 km west of Golden (population 4,300), Glacier National Park encompasses Rogers Pass National Historic Site. The historic site occupies a 25 km corridor along the Trans-Canada Highway and extends from the floor of the pass to the top of the ridge of the flanking mountains. It includes the Avalanche Crest where A.B. Rogers led his exploration party in 1881.

Ecological and socio-economic ties bind these areas to their greater ecosystem. Forestry companies lease much of the timber that surrounds the parks. Mount Revelstoke is adjacent to a hydro-electric dam. Skiing and snowmobiling are popular recreational activities outside the parks. Recognizing their place as part of a larger ecosystem, the parks place a high priority on working with neighbouring land managers. Old-growth rainforest valley bottom habitat in the region has been largely altered by the transportation corridor, hydro-electric dams and urban development.

The Trans-Canada Highway bisects Glacier National Park and Rogers Pass National Historic Site and runs through the southeast portion of Mount Revelstoke National Park. More than four million people drove through the parks and site in 2001; almost 15% of these travellers stopped to experience the parks. Most visitors use frontcountry facilities along the Trans-Canada. A much smaller percentage venture into the backcountry. An average of 11,000 trains pass through Glacier National Park each year.

Located close to the center of Glacier National Park, Rogers Pass provides a staging and operational area for park and highway maintenance, Figure 1. Adjacent to the Parks Canada operational area the Glacier Park Lodge operates a year round hotel, restaurant, gas bar and convenience store. The Rogers Pass Discovery Centre is the park's primary visitor facility and provides information, orientation and interpretation services.

Parks Canada acknowledges the interests of First Nations, in particular the Ktunaxa-Kinbasket, Secwepemc and Okanagan First Nations, in the planning and operation of these two national parks and the national historic site and welcomes the potential for increasing their involvement. The Ktunaxa-Kinbasket Treaty Council (KKTC) represents the Ktunaxa-Kinbasket peoples in the B.C. Treaty Commission Process and is currently in the Agreement in Principle negotiation stage with the governments of B.C. and Canada. Negotiations are ongoing with the KKTC to more formally determine the nature and extent of their involvement in these parks, as well as in Kootenay and Yoho National Parks. Other First Nations with overlapping interests in these four national parks are not presently participating in the treaty process.

## 2.2 Public Consultation

The management planning process began during the fall of 2001. Announcements in local and regional papers, on the Internet and mail-outs to interested individuals, stakeholders, First Nations and staff invited people to participate in planning the future of their national parks and historic site. Staff prepared issue papers for discussion at stakeholder meetings. Open houses were held to gather comments and concerns and identify additional issues. All comments were recorded and a response document was circulated. In February 2001 all stakeholders, interested public, First Nations and staff received a plan concept. The final management plan incorporates the thoughts and concerns of a wide range of individuals and interests.

## 2.3 Planning in a Changing Environment

Many changes have taken place since the previous management plan was approved in 1995. It is now time to re-evaluate the issues and revise the plan accordingly. The following examples illustrate some of the changes in legislation, policies, plans and studies that have strengthened Parks Canada's commitment to preserving park resources in a way that integrates ecological, social and economic values:

- *Canadian Environmental Assessment Act* (1995);
- *Canada National Parks Act* (2000);

- *Species-at-Risk Act (2002);*
- *Parks Canada Agency Act (1998);*
- *Action Plan on Ecological Integrity (2000);*
- *Parks Canada Guide to Management Planning (2000);*
- *Banff National Park Management Plan (1997); and*
- *Jasper, Waterton, Kootenay, and Yoho National Parks of Canada Management Plans (2000)*



**Figure 1: Aerial view of Rogers Pass with its Discovery Centre, Lodge, and staging area for park and highway maintenance.**

## 2.4 Ecosystem-based Management

One of the biggest questions for national parks is how to maintain a healthy environment and protect important cultural resources while at the same time supporting quality visitor experiences and contributing to social and economic needs. To address this challenge, Parks Canada has adopted a system known as “ecosystem-based management.”

Ecosystem-based management is a holistic approach that involves working with others to achieve common goals. Productive, positive, long-term relationships are the key to its success. Multi-disciplinary in nature, it seeks to integrate biological, physical and social information. The goal—a healthy park, environmentally, economically and socially within a broader regional landscape.

The following key components are the foundation for ecosystem-based management.

- Ecosystems extend beyond park boundaries. Activities on neighbouring lands affect the parks’ wildlife, water and vegetation. By the same token, park activities affect our neighbours. Integrated management is essential.
- People are a fundamental part of the ecosystem. Addressing peoples’ social and economic needs makes it possible for them to contribute to a healthy environment. Inside the park, these needs must be considered in the context of protecting ecological and cultural heritage. Outside the park, Parks Canada will encourage activities that incorporate heritage values.
- Understanding the relationship between people and the environment is the foundation of good decisions. In pursuit of this, we derive inspiration and understanding from the human-land relationship of Canada’s First Nations.
- Visitor use respects the importance of protecting ecological and cultural resources. Parks Canada must carefully manage visitor use and development, setting limits where necessary.
- Decisions are based on sound information (ecological, cultural and social). Benchmarks and parameters help us understand the parks’ health.
- Consulting with visitors, residents, businesses and other government agencies is a key component in improving ecological integrity and the protection of our cultural heritage.
- Educational programs for visitors, residents, and businesses, inside and outside the park, create awareness of ecosystems, the challenges involved in protecting them, and the role people can play.
- Natural processes and, where appropriate, technology are important in maintaining and restoring ecosystems.

The management plan is founded on these ecosystem management components. While individual chapters address different issues, the actions in each are linked.

## 2.5 Management Principles

The following principles will guide decision-making.

1. The parks and site are core protected areas within the Columbia Mountains Natural Region.
2. Cooperation and collaboration with neighbouring land management agencies and stakeholders (such as private and non-profit organizations, education and government agencies) help protect ecological and commemorative integrity.
3. The parks and site use scientifically-based research methods and monitoring, including traditional and local knowledge, in decision-making and work towards ecological and commemorative integrity.
4.
  - a) Each park management action considers the values of both ecological integrity and Cultural Resource Management principles and practices.
  - b) Each national historic site management action is based on commemorative integrity requirements, including the protection of identified natural values.
5. Protection of ecological and commemorative integrity takes precedence over use and facility development. New facility development or redevelopment of existing facilities will occur only if it improves ecological or commemorative integrity or improves public safety.
6. No new or expanded commercial or private roofed accommodation will be permitted in the parks or site.
7. Parks Canada's Appropriate Use Criteria (Appendix C) will be used to evaluate any new recreational or educational activities and requests for increases or changes to existing visitor services.
8. Opportunities for safe, quality visitor experiences are in keeping with the wilderness character of these heritage areas.
9. Messages and opportunities are directed at increasing understanding, appreciation and care for the environment and our cultural heritage.
10. Regional leadership in education and outreach programs fosters stewardship in the community and promotes public support for commemorative and ecological integrity.
11. Parks Canada is active in influencing marketing and promotion that affect visitor demand within the regional ecosystem.
12. Management of the national transportation corridor serves as a model for ecologically-sensitive and safe operations.
13. Management activities, including planning, operations and maintenance apply technologies, ethics and practices sensitive to ecological and cultural resource management requirements.



# Vision



## 3.0 VISION

### Looking to the Future

Management planning invites all Canadians to think about the future of their national parks and historic sites, to envision what kind of places they should be, and to participate in identifying the actions that will make that vision a reality.

## **A Vision for Rogers Pass National Historic Site**

Cultural resources in the national historic site are known, protected, presented and monitored on a regular basis. Many important features are intact such as the Cascade Creek bridge, Glacier Station and some of the Loop Brook trestle piers. Intervention has minimized deterioration of these and other cultural resources, and the remaining features and artifacts have been ruins for almost a century.

The Rogers Pass story is well understood. Site visitors experience a strong sense of place. Key historic themes are easily learned by visitors, through-travellers and those who experience Rogers Pass through off-site programs. The artifacts and ruins tell a human story of achievement that spans a century.

The site is presented in context, as an important part of Glacier National Park, a part of Canada's national dream, a part of the Canadian Pacific Railway story, and of the opening of the Columbia Mountains' frontier.

People are aware of the site. It is a prominent part of a visitor's national park experience. People appreciate the site enough to become engaged in protection and presentation opportunities. Dedicated and passionate staff and volunteers protect and present the site. Contemporary facilities associated with the site, such as the Rogers Pass Discovery Centre and self-guiding trails, are of high quality.



## **A Vision for Mount Revelstoke National Park and Glacier National Park**

Mount Revelstoke National Park and Glacier National Park are symbols of Canadian wilderness. The parks harbour a natural abundance and diversity of native plants and animals. Intact landscapes and natural processes support a self-sustaining biological community representative of the Columbia Mountains. The most significant natural resources of the national parks are known and monitored on a regular basis.

The most significant cultural resources in the national parks are known, stable, preserved, presented and monitored on a regular basis. The stories of the Columbia Mountains Natural Region are well understood by target audiences. Key natural themes are easily learned by visitors, through-travellers and those who experience the parks off-site. Park visitors experience a strong sense of place.

The parks are presented in context, as part of a larger ecological region and as part of Canada's national legacy. High quality visitor opportunities are offered through a modest number of rustic, well-maintained ecologically sensitive facilities. Dedicated and passionate staff, volunteers and commercial operations protect and present the parks and serve the public. There has been no new facility development in the parks since 2002, except for those changes that contributed to the improvement of ecological and commemorative integrity or public safety.

Visitors, through-travellers, and those who experience the parks off-site know the beauty of the parks and are inspired to live in accord with and learn from their environment. The parks are places where ecological processes evolve in harmony with surrounding provincial lands. The parks are an integral part of the social and economic fabric of the region.

The transportation corridor is safe, well-maintained, ecologically sensitive and offers an enjoyable national park experience.



# *A Place for Nature: Managing for Ecological Integrity*



## **4.0 A PLACE FOR NATURE: MANAGING FOR ECOLOGICAL INTEGRITY**

*“The maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks.”*

*Canada National Parks Act, 2000*

## 4.1 Ecological Context

Glacier and Mount Revelstoke are part of an interior rainforest with relatively mild winter temperatures, warm summers and abundant rain and snow. The vegetation is broadly determined by elevation. On lower slopes, the ecologically-important western red cedar and western hemlock forests occupy less than 20% of the parks. Engelmann spruce, sub-alpine fir, and mountain hemlock on mid to upper slopes open into parkland meadows and then alpine tundra at the highest elevations. Areas at or above the treeline provide year-round or seasonal habitat for such wildlife as grizzly bear, mountain goat, white-tailed ptarmigan, hoary marmot, golden-mantled ground squirrel, mountain caribou and pika.

More than half of Glacier National Park is alpine tundra, rock and glaciers; riparian areas in the valley bottoms occupy less than 0.6% of the total park area. Containing some of the oldest forest stands and rare sensitive species, these low elevation wetlands are critical to long-term ecological integrity. Forest harvesting outside the parks threaten this ecosystem.

The parks protect critical habitat for wildlife species designated by COSEWIC such as mountain caribou (threatened), grizzly bear (a species of special concern), western toad (a species of special concern) and wolverine (a species of special concern). During the winter, when other food sources are buried under two or more metres of snow, caribou eat lichens, which grow on trees in old-growth forests. Preliminary data show some old-growth stands support new species of lichen not recorded in other habitats. The caribou population that uses the parks has decreased from 362 animals reported in 1994 to 187 in 2002. Similar reductions have been noted throughout the entire mountain caribou range.

Avalanches, forest fires and insects, such as the western hemlock looper, are the major disturbances that shape the landscape. Avalanche paths are important to wildlife such as grizzly bear, Columbia ground squirrel and Wilson's warbler. Forest fires provide a diversity of habitat for cavity-nesting birds and grizzly bears, primarily on mid and upper elevation slopes. Limited wetlands of cattail, sedge, water hemlock and skunk cabbage are found in the Illecillewaet River valley, while unique calcarious fens support biodiversity in the Beaver River Valley. These wetlands are as valuable as they are rare. The Beaver Valley fen, which supports 22 dragonfly species, one quarter of the total species found in British Columbia, clearly illustrates the importance of the wetlands to biodiversity.

## 4.2 Managing for Ecological Integrity

A national park has ecological integrity if all the plants and animals that should be in the park still thrive there, and people use the park and its surroundings in ways that respect the needs of those plants and animals and allow fires, floods, weather and other natural processes to create natural habitat.

Ecological integrity is measured in terms of:

- ecosystem health, including the ability to evolve and adapt to change;
- biological diversity, including the ecological and evolutionary processes that keep species functioning;
- the ability of plant and animal communities to resist or adapt to stresses and change;
- the ability of plants and animals to sustain healthy populations; and
- the integration of people into the environment in ways that sustain both human quality of life and biological diversity.

Parks Canada approaches ecological integrity through the integration of science, adaptive management, the precautionary principle and ecosystem-based management. Science helps marshal the facts and establish a framework for measuring the parks' ecological integrity in a credible manner. Adaptive management allows flexibility. As information becomes available, management decisions can be revisited, re-evaluated and shifted. Decision-making about natural ecosystems is a risky business given the vast complexity among and between species, the wide swings in the weather from year-to-year, and the possibility of chance events. Therefore, management will proceed with caution, using the precautionary principle and making reversible, limited-impact decisions. Ecosystem management involves working with others to maintain regional ecosystems. The parks cannot survive as islands, and ecosystem sustainability can only come from the informed involvement of everyone in conserving biological diversity.

The desired result is maintenance or restoration of ecological integrity while providing opportunities for understanding, appreciation and enjoyment.

### 4.3 Threats to Ecological Integrity

Local, regional and international factors all influence the ecological integrity of Mount Revelstoke National Park and Glacier National Park.

#### *Local Threats*

Local impacts include the transportation corridor, the invasion of non-native plants, loss of valley bottom habitat, and visitor facilities and use. The Trans-Canada Highway and the Canadian Pacific Railway affect ecological integrity in many ways, including wildlife mortality through collisions, changing water flow patterns in riparian and wetland habitats, and habitat fragmentation. Highway traffic, maintenance activities and visitor facilities have all introduced non-native weeds to the parks. Many facilities, including bridges and culverts, cross riparian zones and road maintenance and construction in these areas exposes potential sites for weeds to establish. Although many non-native plants occur in the parks, only a few, such as spotted knapweed, are considered invasive (Parks Canada, 1997).

Valley bottoms are the areas most affected by development. Cedar-hemlock forests are critical habitat for old-growth dependent species. Although the parks contain valley bottom old-growth and wetland habitats, these may be insufficient to attain ecological integrity at a regional scale.

In the 1997 *State of the Parks Report*, significant external and internal ecological stressors were recorded for Mount Revelstoke and Glacier. External stressors included such things as forestry and loss of the Columbia River valley bottom from dams. Significant internal stressors included transportation/utility corridors and human disturbance. The introduction of exotic vegetation is an effect of the significant internal stressors and has been outlined here as a local threat.

Analysis of the impact of visitor facilities and use on ecological integrity is hampered by the general lack of medium to long term human use data for trails, picnic areas, viewpoints, and off-trail activities (e.g., ski-touring) and specific research into the effect of these activities on wildlife and vegetation. This information is necessary to establish sustainable levels of use. For example large numbers of visitors to the Illecillewaet and Meadows-in-the-Sky Parkway area may already be reducing habitat use by sensitive species (caribou, grizzly bear and wolverine). The transportation corridor and its facilities have the potential to create movement barriers for sensitive wildlife and to reduce habitat effectiveness.

## ***Regional Threats***

Regional impacts include forestry, hydro-electric dams, and recreational activities and facilities. Forestry operations, including access roads and fire suppression, can stress ecological integrity by changing the age structure of the forest and impairing natural processes. Dams on the Columbia River eliminated much of the productive valley bottom habitat within the greater ecosystem. The lack of this habitat within the parks is aggravated by the loss of low-elevation riparian and wetland areas in the surrounding region. Another regional threat to ecological integrity is related to the potential for human disturbance of wildlife (displacement, mortality, removal) due to increased numbers of people recreating in areas adjacent to the parks. As well, communities and rural hinterlands within the greater ecosystem attract grizzly and black bears with garbage, fruit trees and livestock. These bears can become habituated to human foods, leave their natural habitat and sometimes must be destroyed to protect people.

## ***International Threats to Ecological Integrity***

International impacts include hydro-electric dams, climate change and transport of long-range pollutants. The Columbia is an international river and dams in the United States and Canada block the migration of fish between the Pacific Ocean and the parks. The altered water flow is also having a serious impact on the ability of white sturgeon (federally listed as a species of special concern by COSEWIC) to reproduce. Climate change involving a warming trend may lead to the acceleration of glacier melt in the parks. Long-range atmospheric transport of pollutants also affects the greater ecosystem.

## **4.4 Awareness and Support for Ecological Integrity**

To practice effective stewardship, people and organizations need accurate, up-to-date information about environmental issues. As part of a system of national and international protected areas, national parks play an important role in educating the public about ecological integrity. Parks Canada has made communication an integral component of every goal in this management plan. This section highlights specific actions to help people understand ecological integrity and its implications.

### **4.4.1 Strategic Goal**

*Park visitors, regional citizens and Canadians understand, value and actively support ecological integrity.*

### **4.4.2 Objective**

1. To increase awareness, understanding, appreciation and support for the conservation of the parks and the Columbia Mountains Natural Region.

### **4.4.3 Key Actions**

1. Establish a Transportation Advisory Committee with the aim of improving understanding and mitigation of the ecological impact of the Trans-Canada Highway and the railway.

- include information about actions that address the environmental impact of the highway and railway and improve public safety
2. Implement a comprehensive program for visitors, regional residents, park staff, researchers, park businesses and stakeholders, to communicate:
    - the parks' natural and cultural values of national significance;
    - regional and local environmental issues affecting the ecological sustainability of the greater ecosystem;
    - the role of protected areas in preserving biodiversity in the parks and the larger ecosystem; and
    - the need for ecologically compatible and sustainable management on adjacent lands.
  3. Cooperate with others to deliver information through:
    - interpretation programs;
    - on-site exhibits;
    - local school programs;
    - opportunities for participation in ecological integrity research and monitoring;
    - articles in local newspapers;
    - a speakers program to communicate research results to the public, staff and stakeholders; and
    - targeted programs on specific ecological issues.
  4. Involve the public in ecological and species-at-risk research through education programs and communications.

## 4.5 Shared Regional Ecosystems

Mount Revelstoke National Park and Glacier National Park are involved in several programs designed to exchange information and ideas and participate in integrated land use planning in the Columbia Mountains Natural Region. This type of communication allows individuals and organizations to contribute to regional sustainable land use.

### 4.5.1 Strategic Goal

*Using an integrated approach, Parks Canada and other land managers in the Columbia Mountains Natural Region improve the health of the larger ecosystem through their protection and use of the landscape.*

#### 4.5.2 Objectives

1. To exchange information about the issues parks face in achieving ecological integrity and the importance of the parks in the context of the larger ecosystem.
2. To influence and participate in integrated land use and wildlife management practices within the regional ecosystem.
3. To research, monitor, and manage federally and provincially identified species-at-risk on a cooperative basis.

#### 4.5.3 Key Actions

1. Complete joint research projects to assess the viability of mountain caribou, grizzly and black bear, wolverine, lichen and other sensitive indicator species.
2. Make research and monitoring information available for decision-making (e.g., workshops and website information offered by the Columbia Mountains Institute of Applied Ecology).
3. Broaden the base of partnerships with Aboriginal people, environmental organizations, other protected areas, industry, government agencies, regional recreation clubs and ecotourism groups (e.g., Kootenay Environmental Society, Revelstoke Snowmobile Club and the Revelstoke Bear Aware Committee).
4. Work with others who manage lands and natural resources within the Columbia Mountains (e.g., Ministry of Forests, Ministry of Water, Land and Air Protection).
5. Work with other land managers to ensure that access to sensitive wildlife habitat and winter range respects wildlife objectives (e.g., to reduce female grizzly mortality and increase wolverine reproduction).
6. Promote wider awareness of Parks Canada's management practices (e.g., campground water treatment and initiatives to minimize bear/human conflicts).
7. Work with the inter-agency species-at-risk recovery teams (e.g., mountain caribou).
8. Participate on pertinent inter-agency provincial committees; advocate integrated land and wildlife management practices concerning:
  - old-growth, low-elevation cedar hemlock forests;
  - riparian restoration efforts, including sturgeon recovery;
  - maintenance of resident fish populations; and
  - enhancement of reservoir productivity.

### 4.6 Biological Diversity and Ecosystem Processes

The best way to protect ecological integrity is by maintaining natural biodiversity and ecosystem processes. Biodiversity is linked to ecosystem processes, such as fire, flood, avalanche, predation, erosion and disease. These processes and the physical environment that produces and supports the diversity of life must also be maintained. However, the role of forest fire, insects and disease in the maintenance of low-elevation old-growth cedar/hemlock biodiversity is uncertain. Human induced climate change may affect these processes, resulting in a negative impact on regional biodiversity.



#### **4.6.1 Strategic Goal**

*Intact habitats and natural processes support a self-sustaining biological community.*

#### **4.6.2 Objectives**

1. To maintain old-growth dependent species.
2. To minimize the impact of visitors, operations and facilities on ecological integrity.
3. To interfere as little as possible in natural disturbances such as landslides, avalanches, flooding, disease and fire.
4. To mitigate fragmentation and loss of valley bottom habitat.
5. To maintain, where feasible, valley bottom processes adjacent to the highway and railway that create riparian habitat and wetlands and restore alienated habitat.

#### **4.6.3 Key Actions**

1. Map environmentally sensitive sites, especially old-growth forests and low-elevation wetlands; prepare management strategies for these areas.
2. Maintain an ongoing human use data base to track the number of visitors in summer and winter and determine trends.
3. Identify a range of parameters of acceptable change or sociological and biological carrying capacity for the summer and winter seasons.
4. Monitor trail tread conditions and impact on vegetation and soils. Resolve impacts through adaptive management and public consultation (e.g., rerouting trails, temporary closures). Consider experimental limits to use (season-long closures or quotas) if required.
5. Evaluate the status of forest insects and diseases annually.
6. In consultation with stakeholders, set fire management objectives for each fire management zone to maintain natural disturbances without threatening the unique features of environmentally sensitive sites.
7. Intervene, where necessary, in the management of cultural resources to prevent loss of or damage to significant ecological resources (e.g., when plans to develop or maintain a historic trail conflict with the interests of a species-at-risk).
8. Place priority on inventories, research, monitoring and management for old-growth and riparian communities.
9. When making changes to transportation facilities, consider designs that reduce the need to cross or manipulate streams and that make it easier for wildlife to cross the corridor.

## **4.7 Ecological Integrity in the Transportation Corridor**

The transportation corridor is the most significant internal threat to the ecological integrity of the parks. The highway and railway are located in scarce valley bottom habitat and influence the movement of wildlife and water. Chapter 8 describes this threat in detail and sets out objectives and actions to address it.

## **4.8 Indicators of Ecological Integrity**

To measure progress towards the goal of maintaining or restoring ecological integrity, Parks Canada will use indicators of ecological integrity that represent components of the ecosystem that are either sensitive to change, or that reflect overall ecosystem health. By comparing the health of an indicator to a target or desired level, progress in achieving the parks' goals for ecological integrity can be assessed. Individual indicators are determined based on a number of measures.

Indicators and targets, and the associated research and monitoring, will also help Mount Revelstoke National Park and Glacier National Park fulfill their obligations to assess and report on the state of ecological integrity within the parks.

The ecological integrity indicators that have been adopted in this plan have been chosen in association with the other mountain national parks. Together, these parks constitute the Montane Cordillera Bioregion within Parks Canada national ecological integrity monitoring program.

Some of the actions in this section relate directly to establishing targets or comparing the status of indicators with their targets. Some actions are well underway and others are more of a challenge.

In the future, additional indicators will be added (e.g.: atmosphere and climate, geology and landforms) to establish a suite of indicators of ecological integrity to be used in bio-regional monitoring, consistent with other national parks in the bio-region. Additional measures will assess different spatial and temporal scales. Parks Canada's goal will be to maintain existing levels of ecological integrity and to work towards improvements, where specific threats exist and restoration of ecological integrity is possible.

**Table 1. Indicators of Ecological Integrity**

<b>BIOREGIONAL INDICATOR</b>	<b>MEASURE</b>	<b>TARGET</b>	<b>SCALE</b>
Native Biodiversity	Caribou population size	Positive trend <sup>1</sup>	Regional Ecosystem
	Number of non-indigenous plant species; abundance of non-indigenous plant species	Reduction in number and abundance	Transportation Corridor
	Wolverine, grizzly bear and mountain goat population size	Obtain information to determine current trend in population size and establish targets	Regional Ecosystem
	Number of actions and spatial extent of management interference with natural ecosystem processes	Negative trend in interference in natural processes <sup>2</sup>	National Park
Terrestrial Ecosystem Health	Area of old-growth and riparian forests	No reduction in area due to park practices and decision-making <sup>3</sup>	National Park
	Residual soil contamination from substance spills along highway and railway	Contaminants cleaned up within 24 hours and contamination at background levels after clean-up	Transportation Corridor
	Number of wildlife attractant spills; time between spill and clean-up	Negative trend in number of spills and clean-up response time	Transportation Corridor
Aquatic Ecosystem Health	Water quality	Water quality meets or exceeds all applicable national or provincial standards for aquatic life and human health	National Park
	Area of functioning wetland with stable beaver and/or amphibian populations	No net loss of wetland habitat	National Park
	Residual sediment and water contamination from substance spills along highway and railway	Toxic spills, and other contaminants cleaned up within 24 hours and contamination at background levels after clean-up	Transportation Corridor

<sup>1</sup>A target population size will be determined following completion of the North Kootenay regional recovery plan for this population

<sup>2</sup>Except where:

- i) there will be serious adverse effects on neighbouring lands or
- ii) major park facilities, public health or safety will be threatened
- iii) the objectives of a park management plan prescribing how certain natural features or cultural resources are to be maintained cannot be achieved.

<sup>3</sup>Except if restoring natural process

**Table 1. Indicators of Ecological Integrity (continued)**

BIOREGIONAL INDICATOR	MEASURE	TARGET	SCALE
Stewardship	Number of collaborative arrangements for planning, assessment, research, monitoring, data-sharing and management	Increased participation in collaborative management initiatives	Regional Ecosystem
	Number of recovery plans implemented	Recovery plans in place and implemented for all COSEWIC listed species	Regional Ecosystem
	Number of human-caused wildlife mortalities; problem wildlife removals	Negative trend in mortalities and removals	National Park
Awareness and Support for Ecological Integrity	Ecological integrity content in heritage presentation services	All in-park heritage presentation services and outreach programs provide this content Collect information to establish baseline for third party programs. (Interim target) All heritage presentation programs and services offered by third parties provide this content	Regional Ecosystem

As Parks Canada works toward the preceding goals and objectives and when the actions have been implemented, Glacier National Park and Mount Revelstoke National Park will retain their rugged, wild character. The parks’ natural and cultural legacy will be enjoyed by visitors and preserved for future generations. The parks will harbour a natural abundance and diversity of native plants and animals. Species-at-risk such as mountain caribou, grizzly bear, wolverine and western toad will have stable or increasing populations and no additional species or habitat will become at risk. Intact landscapes and natural processes will support a self-sustaining biological community representative of the Columbia Mountains Natural Region.

Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority when considering all aspects of the management of the parks. The highway, the railway, and park facilities will operate in a manner that does not threaten ecological integrity and demonstrates leadership in ecologically sensitive operations and management. All people that work in the parks will understand the importance of ecological integrity and support the concept through their actions.

Because the parks represent a small portion of the Columbia Mountains Natural Region, park staff will work with managers of adjacent lands to enhance the health of the larger ecosystem. Park staff will exchange information with park visitors, First Nations, regional residents, and stakeholders and work towards a common understanding of and value for ecological integrity in the parks and the regional ecosystem.

# *A Place of Historical and Cultural Significance: Protection of Cultural Resources*



## **5.0 A PLACE OF HISTORICAL AND CULTURAL SIGNIFICANCE: PROTECTION OF CULTURAL RESOURCES**

Rogers Pass National Historic Site, along with the cultural resources of the two national parks, tells a human story of more than 100 years. Railway construction, mountaineering, logging, mining, the Nakimu caves, a work camp for conscientious objectors in WW I, an internment camp in WWII and even the first competitive ski jump in Canada are all part of the legacy held in trust here for Canadians.

## Glacier National Park

Glacier National Park was established in 1886. The Canadian Pacific Railway had just completed its transcontinental line, linking the scattered settlements of the young nation of Canada. The spectacular scenery along the rail line suggested the potential for tourism, and lodges and hotels were built to entice travellers to what had been uncharted wilderness only a few years before. The Illecillewaet Glacier became a popular attraction. The railway company built the park's first visitor facilities to cater to the needs of its passengers, including the Glacier House hotel, hiking and horse trails and tea houses in the Rogers Pass area. Rogers Pass National Historic Site now commemorates the area's importance to the transcontinental railway (see section 6.2). The first technical mountain climbing for recreation in North America occurred in these mountains. Today's mountaineers still follow the trails laid out by early climbers, hotel employees and Swiss guides more than a century ago. The opening of the Trans-Canada Highway in 1962 brought additional facilities for new automobile-based visitors, including campgrounds, picnic areas, and viewpoints.

## Mount Revelstoke National Park

In 1908, the City of Revelstoke broke a trail to the top of the mountain of the same name. Local citizens then began to lobby the provincial and federal governments for construction of a road to the summit. The park was established in 1914 and construction of the Meadows-in-the-Sky Parkway was completed in 1927.

Before the railway, the confluence of the Columbia and Illecillewaet Rivers, just outside the park, was used as an encampment by fur traders and explorers on the Columbia and as a supply point for mining operations. The site later became a divisional point for the CPR.

The history of Mount Revelstoke National Park includes a First World War internment camp and the first competitive ski jump in Canada. Named for Nels Nelsen, a local skier who set an amateur world record by jumping 240 feet, the ski jump was located at the base of the mountain. Artifacts from the jumps as well as early park buildings remain as tangible links with the area's varied past.

## First Nations

Little is known about the use of the area by First Nations. Long winters, frequent deadly avalanches, thick tangled underbrush, and poor hunting and fishing likely made the area largely inhospitable. While archaeological surveys and research have yet to find indications of First Nations use within the parks, the surrounding area was used for thousands of years. Additional traditional use studies, in partnership with First Nations, will expand our understanding of the parks' human history.

### 5.1 Protecting Cultural Resources

By linking past and present, cultural resources help us appreciate the human experience and understand who we are as Canadians. Parks Canada defines a cultural resource as "a human work, or a place that gives evidence of human activity or has spiritual or cultural meaning, and that has been determined to be of historic value." It applies this definition to a wide range of resources, sites, structures, engineering works, artifacts and associated records.

Parks Canada is committed to the identification, protection and presentation of a wide range of cultural resources. This commitment is supported by the new *Canada National Parks Act* (2000), *Heritage Railway Stations Protection Act* (1988), *National Archives Act* (1987), and *National Parks Regulations*. *Parks Canada's Cultural Resource Management Policy* (1994) sets out five principles for the management of cultural resources: value, public benefit, understanding, respect and integrity.

The 1997 *State of the Parks Report* indicated that the artifact collection required data management and condition evaluation. Since that time a Resource Description and Analysis has been completed and archaeological surveys continue to be conducted as indicated in section 5.1.3. Better research will improve cultural resource protection and support Parks Canada's efforts to reflect the parks' history in presentation programs and heritage tourism initiatives.

### **5.1.1 Strategic Goals**

*Cultural resources are preserved, protected and presented.*

*Parks Canada and First Nation communities work together to build relationships and develop opportunities for First Nations' people to present their heritage.*

### **5.1.2 Objectives**

1. To work toward a fuller understanding of community histories as they relate to the national parks and historic site
2. To strengthen links between the parks and local communities.
3. To continue archaeological research.
4. To manage all park cultural resources in accordance with the Parks Canada *Cultural Resource Management Policy*.

### **5.1.3 Key Actions**

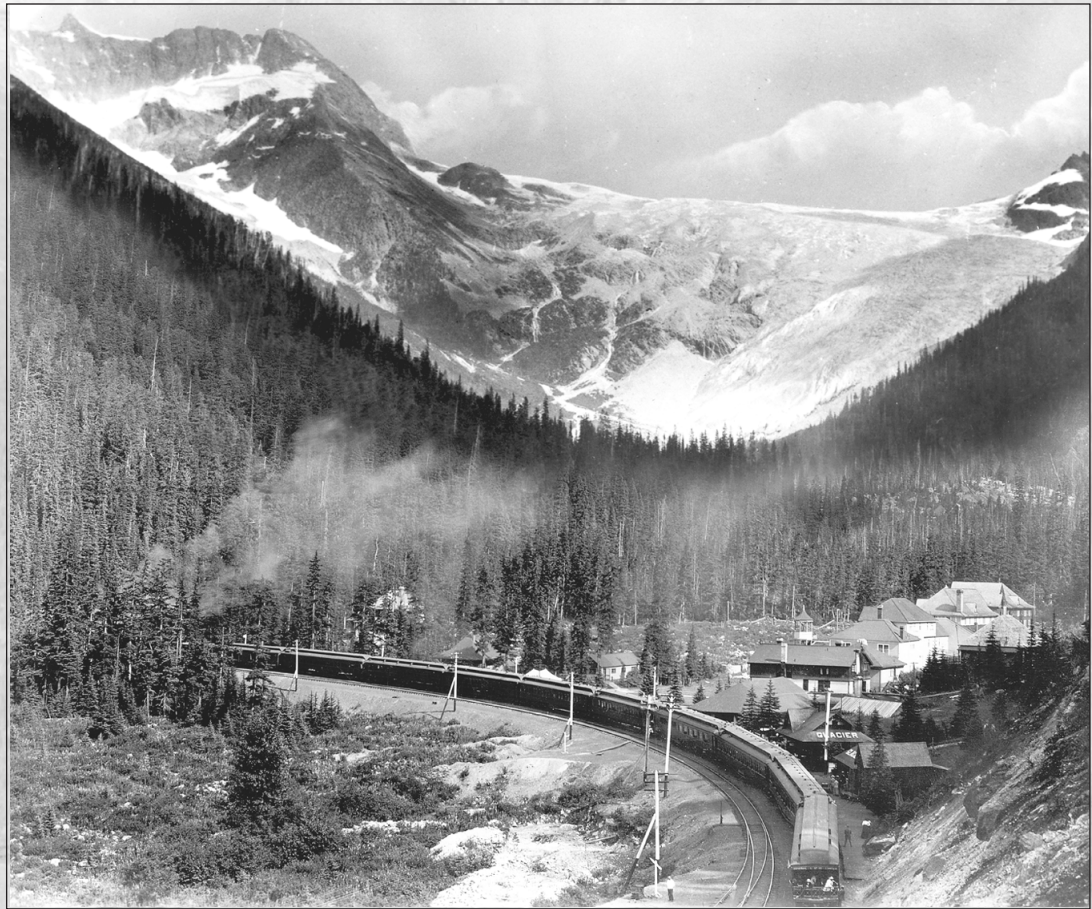
1. Form partnerships and work with volunteers to share information, fund research and record the oral history of mining, highways, trails, avalanche control, Glacier Siding townsite, backcountry cabins, mountaineering, internment camps, Aboriginal traditional use, trapping, etc.; incorporate the information into heritage presentation programs.
2. Develop a heritage building conservation plan for Eva Lake shelter, Glacier Circle cabin and the Mount Revelstoke fire tower.
3. Work with local First Nations to undertake archaeological research, including a high altitude survey, on Aboriginal use of the parks.
4. Conduct archaeological research on post-contact history, such as mining activities.
5. Identify priorities and develop a program to appropriately manage vegetation in ways that protect cultural resources.
6. Intervene in the parks' natural processes where necessary to prevent the loss of or damage to significant cultural resources (e.g., the stabilization of a railway bridge involves changes in streamflow, but also reflects consideration of bull trout spawning requirements).





# *Rogers Pass*

## *National Historic Site of Canada*



### **6.0 ROGERS PASS NATIONAL HISTORIC SITE OF CANADA**

The Selkirk range of the Columbia Mountains was the last obstacle in realizing Canada's "National Dream" – completing the transcontinental railway linking east to west. Finding a pass through the mountains, then building and operating a railway, is a story of hardship and determination. The Canadian Pacific Railway hired Major A. B. Rogers, an experienced American railway engineer, to help lay out a rail line to the Pacific Ocean. In 1881 Rogers began his trek through the difficult and largely unexplored terrain of the Selkirks. He returned the following year through the Beaver River Valley and confirmed the route over Rogers Pass was

practical. Practical, but not easy at an elevation of 1,300 m where annual average snowfalls of 9.6 m are common. The CPR prevailed and the first transcontinental train from Montreal arrived in Port Moody, B.C. in 1886. The route through Rogers Pass connected east to west and maintained Canadian sovereignty of British Columbia.

If building a railway through Rogers Pass was tough, operating it turned out to be worse. Steep grades and the severe climate continued to challenge the railway. Deep snow and frequent avalanches required immediate investment in snowsheds and other defences. After an exceptionally severe avalanche in 1910, the company decided to stop fighting the pass and build a tunnel. The Connaught Tunnel opened in 1917 and the CPR abandoned the old route over the summit.

To avoid the effort of hauling heavy dining cars over the pass, the CPR set up a dining room at Glacier Station where passengers took their meals. This facility grew into a large hotel, known as Glacier House. The Connaught Tunnel eliminated the need for Glacier House and the hotel closed in 1925. The buildings were demolished a few years later.

Many tangible reminders of the era remain. Visitors can still trace sections of the original railbed. Masonry piers at Loop Brook are a testament to the technical achievement involved in overcoming the steep gradients when approaching the pass from the west. Stone arch bridges at Cascade Creek and Illecillewaet River are fine examples of masonry used to replace the original timber bridges. Timber snow sheds illustrate early construction techniques used to manage the continual threat of avalanches. Parks Canada and the Revelstoke Railway Museum have collections of historic objects, artifacts and documents. The challenge is to preserve and protect these resources, while at the same time presenting the artifacts and their story locally and to visitors.

The federal government recognized the national significance of Rogers Pass by declaring it a national historic site in 1971. Rogers Pass was designated a national historic site because of the role of the pass in the construction and development of the main line of the Canadian Pacific Railway into a major national transportation route, 1881-1917. In particular the designation incorporates the following components:

- The search for a route through the Selkirk mountain range following the decision of the Canadian Pacific Railway in 1881 to adopt the southern route for its main line;
- The role of A.B. Rogers in exploring and identifying the pass as a suitable route;
- Overcoming of the obstacles in constructing the railway through this difficult terrain; and
- The role of the pass as part of the CPR main line, 1886-1917, in a formative era of Canada's national transportation system.

## 6.1 Current Situation

Rogers Pass National Historic Site of Canada lies entirely within the boundary of Glacier National Park. The site is a prominent part of the parks' and site heritage presentation program. The Rogers Pass Discovery Centre was built in 1984 as a result of a Historic Sites and Monuments Board of Canada recommendation and presents a balance of national historic site and national park messages. The Discovery Centre national historic site interpretive exhibits have been upgraded, and the national historic site plaque is now prominently displayed. In addition, a new self-guided trail has been established on the 1885 rail bed.

Rogers Pass National Historic Site is in an area subject to major snow and rock avalanches as well as flash floods and rapid vegetation growth. These factors were major obstacles during construction and operation of the original rail line through the pass and eventually caused the CPR to abandon the line. These same conditions remain the greatest challenge in protecting and preserving site resources. Vegetation removal programs are regularly conducted on the 1885 rail bed, snow shed remains, and around significant features and views. Water erosion problems are addressed through the removal of debris and culvert installation. Moist conditions have led to rot in some cultural resources, including snowsheds, culverts and Hermit Hut. The significant resources of the site, Cascade Creek bridge, Loop Brook pillars, Glacier House ruins, Illecillewaet stone culvert and Glacier Station have undergone extensive stabilization. Heritage recording has been undertaken on many of these resources and will continue until completed.

The 1997 *State of the Parks Report*, the recently completed Archaeological Resource Description and Analysis and the 2002 Commemorative Integrity Evaluation outline the site's cultural resources and indicate where work is required. As a result, the objectives and actions listed in sections 6.2.2 and 6.2.3 were formulated.

## 6.2 Commemorative Integrity

The *Parks Canada Agency Act* states that it is in the nation's interest to ensure the commemorative integrity of national historic sites. It is Parks Canada's policy to "ensure the commemorative integrity of national historic sites administered by Parks Canada 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."

Commemorative integrity reflects the health or wholeness of a site, ensuring that its protection and presentation respect the reasons it became a national historic site. A site possesses commemorative integrity when:

- the resources directly related to the reasons for 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.

### 6.2.1 Strategic Goal

*Rogers Pass National Historic Site's cultural resources are protected, preserved and presented.*

### 6.2.2 Objectives

1. To complete an archaeological inventory of the site and its resources.
2. To maintain cultural landscapes, such as Glacier House and the 1885 Trail.
3. To record and stabilize significant artifacts.
4. To respond to the findings of the commemorative integrity evaluation, including protection, presentation.

### 6.2.3 Key Actions

1. Remove vegetation and control water around important railway structures to prevent erosion and loss of resources.
2. Evaluate the condition of all objects and collections that have been moved from the site; identify priorities for conservation.
3. Record and stabilize significant artifacts, such as the Loop Brook pillars, Cascade Creek bridge, Glacier Station and the Illecillewaet stone culvert.
4. Cooperate with the Revelstoke Museum and the Revelstoke Railway Museum to communicate messages of national historic significance.
5. Prepare a conservation strategy for Glacier Station and work with the CPR to implement it.
6. Develop exhibits for the Glacier House ruins and off-site exhibits for Glacier Station in partnership with others.
7. Intervene in natural processes where necessary to prevent the loss of or damage to significant cultural resources (e.g., the stabilization of a railway bridge involves changes in streamflow, but also reflects consideration of bull trout spawning requirements).

# *Engaging Canadians and International Visitors*



## **7.0 ENGAGING CANADIANS AND INTERNATIONAL VISITORS**

Communication is essential in sustaining national parks and historic sites as protected areas. Interpretation and outreach connect Canadians to their heritage and promote stewardship. The more Canadians know about national parks and national historic sites, the more likely they are to support and participate in their management and protection.

## **7.1 Communication**

Parks Canada is responsible for ensuring all visitors have the opportunity to learn about and appreciate the area's natural and cultural history. In addition, it is important for community residents and regional land management agencies to understand national park and national historic site conservation issues, especially as they relate to ecological and commemorative integrity.

Because Parks Canada cannot reach everyone through its own programs, the Agency works with others to reach as many people as possible. People learn about national parks and historic sites in many different ways, through many different media. Visiting protected areas is no longer the only way to experience their richness. People who are unable to visit the parks must also have opportunities to connect to their landscape, history and purpose through outreach programs. The advent of new technologies, coupled with traditional means of communicating, has opened new doors for engaging Canadians and international guests of all ages.

The communication program includes messages about the family of national parks and historic sites, the natural history of Mount Revelstoke National Park and Glacier National Park, the cultural history of the parks and Rogers Pass National Historic Site and the integrity of the larger regional ecosystem.

## *Messages - Mount Revelstoke and Glacier*

### 1. A System of Protected Heritage Areas

- National Parks, National Historic Sites, Historic Canals, and National Marine Conservation Areas

### 2. Human Use of the Columbia Mountains

- History of Human Occupation of the Columbia Mountains Region
- Role of Protected Areas in the Columbia Mountains Region
- The National Transportation Corridor
- Public Safety Around Wildlife

### 3. A Sense of Place

- The Special Character and Unique Features of the Columbia Mountains
- An Enduring Wilderness Legacy
- Geology, Geomorphology and Natural Disturbances
- Nakimu Caves
- Glaciers and Climate Change

### 4. Ecological Integrity

#### *Environments at Risk*

- Aquatic and Riparian Habitats
- Old-Growth Forests
- Wildlife Corridors

#### *Species-at-Risk*

- Mountain Caribou
- Grizzly Bear
- Wolverine
- Neotropical Migrant Birds
- Western Toad

## ***Messages - Rogers Pass National Historic Site***

The Rogers Pass has been designated a national historic site because of the role of the pass in the construction and development of the main line of the Canadian Pacific Railway into a major national transportation route, 1881-1917. In particular the designation incorporates the following components:

1. The search for a route through the Selkirk Mountains following the decision of the Canadian Pacific Railway in 1881 to adopt the southern route for its main line.
2. The role of A.B. Rogers in exploring and identifying the pass as a suitable route.
3. The overcoming of the obstacles in constructing the railway through this difficult terrain.
4. The role of the pass as part of the CPR main line, 1886-1917, in a formative era of Canada's national transportation system.

### **7.1.1 Strategic Goals**

*All visitors understand the national ecological and cultural significance of the parks and the national historic significance of Rogers Pass.*

*Information is available to help visitors make informed choices.*

*Educational opportunities are a significant element of every visitor experience.*

*The Canadian public actively supports and engages in heritage conservation.*

### **7.1.2 Objectives**

1. To engage Canadians and international visitors with a renewed program of heritage presentation.
2. To increase the number of visitors contacted through communication programs and media.
3. To increase awareness through outreach programs.
4. To coordinate communications with other mountain national parks, and seek additional partners for program development and delivery.
5. To offer opportunities for First Nations in southeastern British Columbia to present their heritage.
6. To develop and implement a heritage tourism strategy.
7. To use the messages outlined in the Rogers Pass Commemorative Integrity Statement and complementary messages relevant to the national historic site for site presentation programs.
8. To communicate the historic values of park and site cultural resources to visitors and stakeholders.



### **7.1.3 Key Actions**

1. Develop additional issue-based heritage presentation, outreach and education programming, in collaboration with resource managers, scientists and the management team.
2. Replace outdated media at high visitor use areas.
3. Work with partners to present messages not included in existing media (See the Landscape Management Units section for specific details).
4. Monitor the effectiveness of communications through regular evaluation of programs, exhibits and other media.
5. Build relationships and identify opportunities to collaborate with First Nations to present their heritage in the national parks and the neighbouring Columbia, Okanagan, and Shuswap regions.
6. Offer outreach, education and extension programs (e.g., local school programs) in regional communities. As a first step, prepare a community relations strategy.
7. Participate in provincial curriculum development where appropriate.
8. Participate in appropriate learning travel initiatives with local community groups and businesses.
9. Take advantage of regularly scheduled community events to communicate with the public in Revelstoke and Golden.
10. Use mass media and new technologies to improve information and educational services.
11. Identify opportunities to share communications initiatives with other mountain parks including development, delivery, funding, partnerships and sponsorships.
12. Maintain relationships with key partners such as the Friends of Mount Revelstoke and Glacier, the Columbia Mountains Institute, the Kootenay Lake Historical Society, local Chambers of Commerce, operators of local accommodation, the Knowledge Network, the Bear Aware Program, the Canadian Avalanche Association, etc.; pursue opportunities to offer communication programs with these partners.
13. Increase visitor awareness and participation by promoting programs, exhibits and media.
14. Cooperate with the Revelstoke Museum and the Revelstoke Railway Museum to communicate messages of national historic significance.
15. Develop exhibits for the Glacier House ruins and off-site exhibits for Glacier Station in partnership with others.
16. Continue to advance development of a Rogers Pass National Historic Site web site.

**Table 2. Indicators of Engaging Canadians and International Visitors**

The engagement of all visitors to Mount Revelstoke and Glacier national parks is a key element of Parks Canada’s mandate. To help measure Parks Canada’s performance in fulfilling this part of our mandate, the indicators in the table below will be periodically measured against the targets. In some cases, insufficient information exists to determine a suitable target; in these cases, the first step is to understand the current status of the target by collecting baseline information.

Performance on these indicators will be available in regular progress reports on the implementation of this management plan.

<b>INDICATOR</b> specific elements tracked over time provide information on trends in the condition of the system	<b>TARGET</b> a specific benchmark against which the indicator is assessed
Level of engagement of visitors who use in-park heritage presentation services (e.g.: personal programs, displays, exhibits and audio-visual media) Engagement is measured on a spectrum: awareness → knowledge & understanding → support → leadership	Engagement of visitors who use in-park heritage presentation services is increased after their visit
Level of engagement of local and regional residents who participate in outreach programs	Collect information to establish baseline. (Interim target) Engagement of residents who participate in outreach programs is increased after participation
Ecological and/or Commemorative Integrity content in heritage presentation services	All in-park heritage presentation services and outreach programs provide this content Collect information to establish baseline for third party programs. (Interim target) All heritage presentation programs and services offered by third parties provide this content
Number of people contacted through personal communications. - by Parks Canada staff - by 3rd Parties	Increased number of contacts by Parks Canada staff. Collect information to establish baseline for third party programs. (Interim target).
Number of people contacted through non-personal services (website, publications, on-site exhibits, a/v programs)	Collect information to establish baseline for publications, exhibits and a/v programs. (Interim target) Increased number of contacts through website

# A Place for People



## 8.0 A PLACE FOR PEOPLE

### Welcoming Visitors to the Columbia Mountains Natural Region

Visitors to Glacier, Mount Revelstoke and Rogers Pass discover a variety of opportunities to enjoy the Columbia Mountains. Many experience the wilderness on rustic trails, climbing routes and a scenic parkway that remain much the same as when they were built in the late 19th and early 20th centuries. The Rogers Pass Discovery Centre and other locations within the national historic site recount the dramatic story of 30 years of rail travel through one of Canada's most challenging

climates and rugged mountain environments.

Until the completion of the Trans-Canada Highway in 1962, Glacier and most of Mount Revelstoke were only accessible by rail, horseback or on foot. Today, four million people travel through the parks each year. About 15% stop at one or more park facilities or take a trip up the Meadows-in-the-Sky Parkway. A small number of these visitors stay for more than a day to camp, ski or backpack.

During the snow-free season, the backcountry is a relatively quiet place in all but the busy Illecillewaet/Asulkan and Eva Lake hiking areas. By contrast, winter recreation in Glacier has grown dramatically since 1995. The park has become a premier deep powder ski touring destination. Backcountry cabins are maintained by Parks Canada for public use. Glacier Park Lodge operates a year round hotel, restaurant, gas bar and convenience store at Rogers Pass. The Wheeler Hut, adjacent to the Illecillewaet Campground, is operated by the Alpine Club of Canada.

In the surrounding region, visitors have a choice of frontcountry and backcountry accommodation. In particular, the City of Revelstoke and the Town of Golden offer a range of tourist attractions and services. Recreation has also increased on neighbouring provincial land. Golden now has a commercial ski hill and the popularity of snowmobiling and heli-skiing continues to grow.

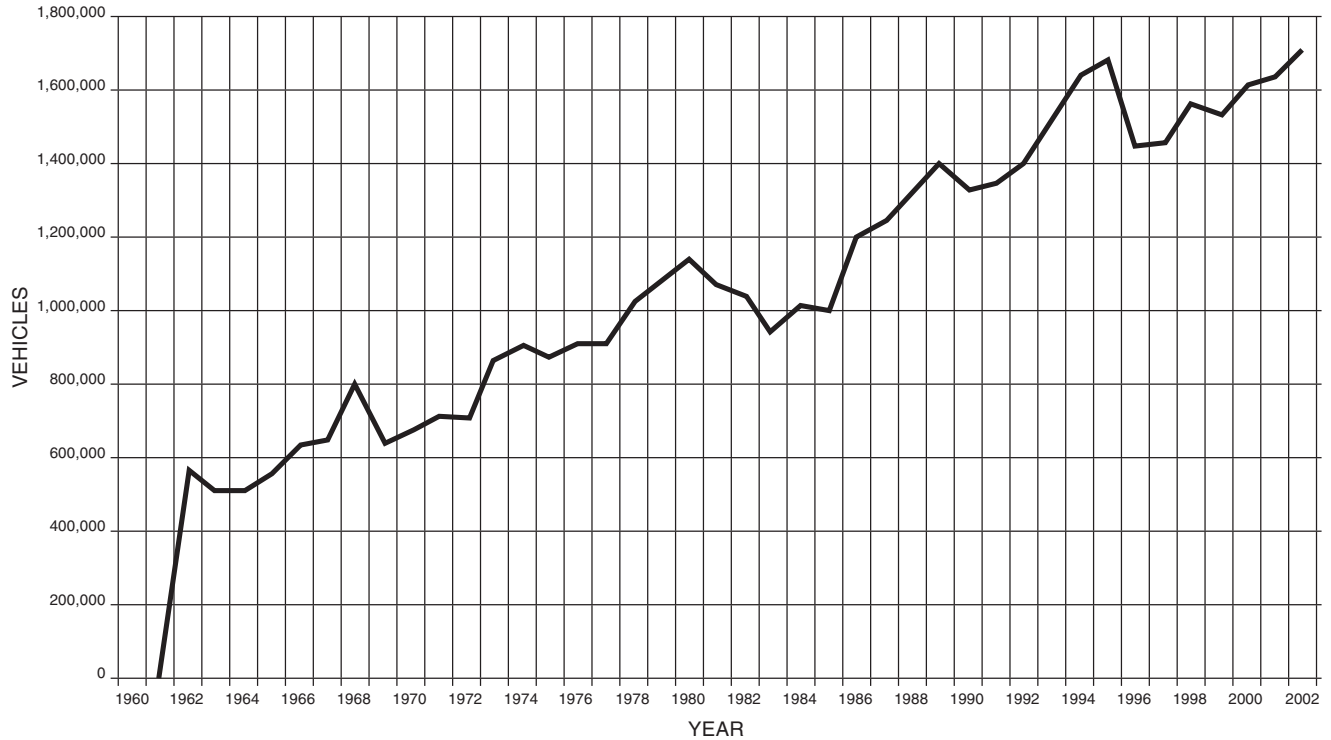
## 8.1 Providing Visitor Opportunities

Visitors have been a part of Mount Revelstoke, Glacier and Rogers Pass since they were established as protected areas. Visitors have an important role to play in protecting the parks and site. Through their behaviour and involvement in the parks and their action and support at home, members of the public can help to foster a sense of stewardship for national parks and historic sites.

As the number of visitors to the area increases, Parks Canada's challenge becomes complex - maintaining ecological and commemorative integrity while offering visitors an opportunity for a rewarding, enjoyable experience. During the past decade, through traffic has grown by 1% to 2% annually and the number of visitors is expected to continue to grow in proportion (figure 2). High numbers of visitors and crowding can affect ecological and commemorative integrity, and can have an impact on the quality of the experience for visitors. Demand already exceeds capacity at some facilities during the peak season - the Illecillewaet/Asulkan winter trailhead, the Illecillewaet summer trailhead, Giant Cedars boardwalk and the Balsam Lake parking lot.

To meet the challenges of increasing demand, Parks Canada will encourage appropriate activities, carefully plan and manage facilities and use, consult with users prior to closing any facilities, work with other agencies, monitor ecological and commemorative integrity, and engage Canadians through a renewed program of heritage presentation.

In mountainous areas such as Mount Revelstoke, Glacier and Rogers Pass, public safety is of paramount concern. Public safety is a shared responsibility. Visitors must take precautions that reflect the risk involved in their chosen activity. This involves knowledge of natural hazards, proper equipment and provisions, adequate skill and fitness, self-reliance and the ability to cope with emergencies. Parks Canada focuses on incident prevention through the provision of information that allows visitors to make informed decisions. Parks Canada staff gather information through field research, which is then communicated to potential visitors through media such as the daily avalanche bulletin in winter and trail reports in summer. Parks Canada will continue to work in partnership with others to communicate potential hazards to users and encourage them to be appropriately prepared. Parks Canada also maintains a readiness to respond to public safety incidents with park staff and other agencies.



**Figure 2: Trans-Canada Highway Vehicular Traffic through Glacier National Park, 1960 - 2001.**

## Principles of Human Use Management

Human use management is the direction and guidance of visitors and their use of the parks and site - their numbers, their behaviour, their activities - and the infrastructure they require. The objective of human use management is to provide opportunities for use and enjoyment of the parks that are appropriate and consistent with the needs of visitors and the long term maintenance of ecological and commemorative integrity.

### 8.1.1 Encouraging Appropriate Activities

Parks Canada will use Appropriate Use Criteria (Appendix C) to evaluate any new recreational and educational activities and requests for increases or changes to existing visitor services. The criteria require the parks to consider what services and activities are available in the region (appropriate activities are listed in Appendix D). The Landscape Management Units chapter outlines locations where specific activities are most suitable and balances the enjoyment and benefit of recreation with ecological and cultural considerations.

All commercial facilities will be located in the Rogers Pass area. Parks Canada will encourage existing commercial facilities to upgrade, without increasing their building footprint, floor space

ratio, density, structure size, or leasehold size. Redevelopment will be consistent with the area's rustic character, but will not be detailed in such a way as to be mistaken for historic structures. No new or expanded commercial or private roofed accommodation will be allowed.

Park staff will encourage visitors to seek out less-crowded alternatives to the most popular locations and promote activities that do not require additional facilities, such as bird-watching, hiking, skiing and picnicking. Information services and promotional activities will highlight the advantages of visiting in early autumn and late spring, provided that this shoulder season use does not have an impact on wildlife, habitat or movement corridors.

### **8.1.2 Working with Others**

National parks are a cornerstone of Canada's tourism industry - an integral part of the social and economic fabric of the region. To fulfill this role, and at the same time protect the resources on which tourism depends, requires the cooperation of a number of people and organizations.

Parks Canada works with neighbouring communities and commercial frontcountry operators to help ensure the accuracy of information provided to visitors. Parks Canada has also established relationships with backcountry lodges and other operators near park boundaries. Parks Canada will continue to work with others and participate in regional land use decision-making to integrate the planning for visitor services and recreation at a broader ecosystem level.

By working with the tourism sector and other levels of government, Mount Revelstoke, Glacier and Rogers Pass improve their ability to offer visitors a quality experience that reflects the long term goals of the people of Canada for their national parks and historic sites.

### **8.1.3 Planning and Managing Services and Use**

National parks and historic sites cannot offer all things to all people, but the provision of opportunities to appreciate, understand and enjoy our heritage is a very important part of Parks Canada's mandate. Parks Canada carries out research to understand visitor needs and expectations, and provides services designed to meet those needs and expectations, while monitoring public satisfaction and dealing with concerns. Parks Canada manages public demand by attracting visitors to the right heritage places, at the right time, in the right numbers and with the right expectations. Demand management is a recognition that national parks cannot continuously add to the supply of visitor opportunities in response to growing demand. Through the development of a Heritage Tourism Strategy, Parks Canada will work to match the growing demand for new recreational facilities and visitor services with regional opportunities and services.

Newer park facilities have been designed to minimize the impact of crowding. More visitors mean more "wear and tear" on park facilities. Revenue from those facilities will be reinvested in their maintenance or improvement. Managing the impact of visitor activities also requires ecologically sustainable techniques, for example in the treatment and disposal of waste water. Parks Canada is examining its infrastructure to determine if some unnecessary operational facilities can be closed. Parks Canada is committed to consultation with users before closing any visitor facilities.

## Principles

- Human use management will integrate ecological and social objectives.
- Landscape Management Units will be used to analyze ecological concerns while allowing human use.
- People affected by changes in services and facilities will be consulted before management decisions are made.
- Decisions about human use in one area may have implications for other areas. This relationship will be considered in the decision-making process.
- Human use decisions will be based on the best available scientific, traditional and local information available. Monitoring and review will occur.

### 8.1.4 Strategic Goals

*Park visitors enjoy a range of appropriate opportunities that reflect the wilderness character and rustic, natural setting of the Columbia Mountains.*

*Rogers Pass National Historic Site offers a range of opportunities focussed on its history, sense of place and heritage artifacts.*

*Parks and site opportunities, facilities and services complement those within the regional ecosystem.*

### 8.1.5 Objectives

1. To offer the existing range of safe, well-maintained, low-key, unobtrusive visitor facilities.
2. To manage appropriate visitor activities and minimize the effects of more human use on visitor experience, public safety and commemorative and ecological integrity.
3. To base the offer of visitor services, facilities and recreational opportunities on landscape management units and regional complement.

### 8.1.6 Key Actions

1. Base decisions about appropriate activities, the supply and improvement of facilities and opportunities on social science research, ecosystem science, visitor data, environmental assessments and monitoring information.
2. Consider additional facilities if they improve ecological or commemorative integrity, public safety or visitor services.
3. Monitor potable water quality and ensure standards are met and complete a water management plan.

4. Encourage visitors to explore under-used facilities and to participate in activities that do not require more infrastructure by improving pre-trip and on-site information and promoting alternatives.
5. Integrate planning for visitor services by participating in regional land use planning processes.
6. Work with the Alpine Club of Canada and neighbouring commercial backcountry operators to maintain quality recreational opportunities with a wilderness character.
7. Investigate the possibility of the Alpine Club of Canada maintaining and operating the backcountry cabins in Glacier National Park.
8. Update and implement the parks' public safety plan. This includes continuing to place a high priority on prevention and visitor self-reliance.

### Table 3. Indicators of Quality Visitor Experience

It is important that visitor opportunities, facilities and services facilitate a better understanding of cultural and natural history and contribute to an enjoyable and safe experience. It is equally important that visitors to Mount Revelstoke and Glacier national parks experience these areas in ways that leave them unimpaired for future generations.

The indicators of quality visitor experiences listed below will be measured periodically to determine how well Parks Canada is managing visitor opportunities, services and facilities. In some cases, insufficient information exists to determine a suitable target; in these cases, the first step is to understand the current status of the target by collecting baseline information.

Performance on these indicators will be available in regular progress reports on the implementation of this management plan.

INDICATOR	TARGET
Growth in annual visitation	Increases in visitor growth from 2004/05 levels are directed to facilities that can sustain additional use, considering ecological and commemorative integrity, and visitor experience quality.
Level of satisfaction with experience	95% of visitors rate their experience as satisfying or very satisfying
Quality of potable water at park facilities	Adherence to Canadian Drinking Water Quality standards
Quality of wilderness experience (visitor perceptions such as crowding and security, and management attributes such as level of facility development and information services)	Collect information to establish baseline. (Interim target) Visitor perceptions of experience quality match LMU visitor opportunity objectives
Security of visitors (from crime e.g. vehicle break-ins)	Increased visitor security, expressed as a ratio of property crimes to visitor numbers



**Table 3 continued**

INDICATOR	TARGET
Accurate, timely, clear information available for visitor risk decision making	Collect information to establish baseline for summer users (Interim target) Increased visitor use of the winter risk decision-making information available to them, with a subsequent decrease in the frequency and severity of public safety incidents, expressed as a ratio of accidents to visitor numbers

## 8.2 Heritage Tourism

As primary destinations for domestic and international travellers, national parks and historic sites are important elements of Canada’s tourism industry.

The World Tourism Organization defines heritage tourism as “an immersion in the natural history, human heritage, arts, philosophy and institutions of a region or country.” For the purposes of the national parks, this definition had been expanded to include environmental stewardship.

What does this mean for Mount Revelstoke, Glacier and Rogers Pass? These are places where people find a range of opportunities to enjoy themselves and to understand and participate in the preservation of natural, cultural and scenic features. These experiences are an important foundation for a heritage tourism industry in the Columbia Mountains.

What does this mean for the tourism sector? A tourism industry that respects the integrity of the natural environment and its importance to long-term economic viability will remain competitive in a marketplace that demands quality and authenticity. Parks Canada will work with area tourism operators to prepare a heritage tourism strategy. The strategy will help address human use issues by, among other initiatives, promoting appropriate experiences at the right places and the right times.

## Market Position

Mount Revelstoke and Glacier are known for their 3,000 m mountains, steep narrow valleys, glaciers, deep snow, avalanches, old-growth rainforests, alpine meadows, and diverse Columbia Mountains wildlife. Rogers Pass National Historic Site tells the story of building a railway and a nation with a transcontinental railway through the Selkirk Mountains. Glacier National Park is also recognized as the birthplace of North American mountaineering and Mount Revelstoke National Park was the site of some of Canada's earliest ski jumping and skiing.

Mount Revelstoke, Glacier and Rogers Pass offer discovery learning, adventure and leisure opportunities of the highest quality, making them a frequent stop along the Calgary/Banff - Okanagan/Vancouver corridor and a highlight of any visit to the mountains of western Canada.

These protected areas fill a specific market niche by providing opportunities to experience a rustic and primitive wildland area, and an authentic slice of Canadian mountain and transportation history. Opportunities for wilderness experiences complement recreational opportunities in the region. Winter snow accumulations create premier backcountry skiing opportunities in the parks and surrounding area and the activity increases in popularity each year. The close proximity of the communities of Golden and Revelstoke enables visitors to enjoy a wide range of experiences from rustic and primitive wilderness in the national parks, to highly developed recreational sites and services outside the parks.

### 8.2.1 A Code of Ethics for Sustainable Tourism

Without appropriate environmental practices to protect the integrity of the natural environment, heritage tourism cannot survive. Parks Canada will encourage the local tourism industry to adopt a code of ethics and guidelines for sustainable tourism (1996) based on a code used by the Tourism Industry Association of Canada and the National Round Table on the Environment and Economy. This will ensure everyone places the same high value on sustainable tourism practices and will encourage the tourism industry and its partners to commit to constant improvement in stewardship, including the management of waste, water and energy.

### 8.2.2 Strategic Goals

*Visitors and residents are aware they are in a national park or national historic site.*

*A well informed, sustainable tourism industry respects the ecological and social values of the parks and the historic site.*

*Canadians and their international guests enjoy high quality, authentic learning and travel experiences.*

*First Nations heritage tourism initiatives are presented in information about the parks and the historic site.*

### **8.2.3 Objectives**

1. To implement a Heritage Tourism Strategy with Revelstoke and Golden that promotes sustainable tourism, environmental stewardship and appropriate visitor experiences.
2. To help industry employees share an understanding of the area's natural and cultural heritage with visitors.

### **8.2.4 Key Actions**

1. Work with tourism businesses, First Nations, the cooperating association, the communities of Golden and Revelstoke and other groups to develop a heritage tourism strategy.
2. Recognize businesses that incorporate heritage tourism principles, environmental stewardship initiatives and a code of ethics for sustainable tourism.
3. Encourage opportunities, products and services that are consistent with heritage and environmental protection.
4. Work with the tourism industry to foster realistic expectations on the part of visitors.
5. Work with industry employees to create an understanding of the parks' natural and cultural heritage by improving orientation, training and accreditation programs.
6. Participate in major regional tourism initiatives such as the *International Year of Fresh Water*.



# *Transportation*



## **9.0 TRANSPORTATION**

In national parks and national historic sites, road and rail transportation is more than just moving people between destinations. Transportation provides travellers with the opportunity to sightsee and explore the mountain environment. In fact, almost all visitors see and experience these areas from roads and roadside facilities.

Unfortunately, these same roads and the railway have a considerable impact. The transportation corridor and secondary roads, and associated vehicular traffic, affect wildlife movement, create noise, affect air quality, impact cultural resources, alter the natural flow of streams, and introduce

noxious weeds and chemicals. At the same time the corridor and secondary roads provide access for visitors and serve as a vital link in a national transportation route with approximately 1.5 million vehicles a year on the Trans-Canada Highway and up to 40 trains a day on the CPR rail line. Highway safety is an ongoing concern. Better lighting in the snowsheds will help address specific problems. As traffic increases, additional passing lanes or possible twinning may be required.

## 9.1 Avalanche Control

Extreme weather conditions, an annual snowfall of up to 15 m and 130 avalanche paths add to the challenge of maintaining the Trans-Canada Highway through Glacier National Park. This section of road has the highest avalanche rating of any highway in North America. Many avalanches are large enough to pose a danger to road and rail traffic. Several high use visitor facilities are near avalanche paths.

Parks Canada operates the world's largest mobile avalanche control program. Designed to maintain an acceptable standard of public safety and minimize delays, the program relies mainly on avalanche warnings, temporary closures, and artillery to stabilize avalanche slopes. Employees of the Department of National Defence, stationed in Rogers Pass during the winter, operate 105 mm howitzers for this purpose.

In addition to active artillery control, static defenses such as concrete avalanche sheds protect highway traffic. Two railway tunnels, completed in 1914 and 1988, permit the railway to avoid the most active avalanche areas in Rogers Pass. The tunnels have the additional advantage of mitigating the environmental impact of the railway over the pass.

When roads are closed, motorists wait in areas not exposed to avalanches. As traffic increases, additional passing lanes or possible twinning can be anticipated.

## 9.2 Reducing Environmental Impact

Given their economic and social significance, and the lack of viable alternatives, the highway and the railway will remain in the parks. The parks will manage natural processes such as avalanches and forest fires to reduce the risk to facilities and travellers. Parks Canada must, however, look at ways to reduce the environmental impact of the corridor, particularly on wildlife, vegetation and aquatic ecosystems. All proposals will undergo appropriate environmental assessment as well as a review of materials available regionally. Sound pollution from CPR operations is also a concern in wilderness areas of the Beaver Valley.

### *Wildlife*

Both the railway and the highway cut through prime valley-bottom wildlife habitat and may affect wildlife movement through these areas. As well, wildlife attracted to the railway by grain spills are sometimes struck and killed.

### *Vegetation*

Trains and vehicles introduce non-native plants into the parks. The spread of invasive non-native plants is a significant threat to native biodiversity and natural wildlife habitats.

## *Air Quality*

Diesel exhaust from the MacDonald railway tunnel is vented without filtration.

## *Aquatic Ecosystems*

The highway and the railway change the natural water flow in some areas. Abrasives and salt used in road maintenance can affect the health of riparian areas. This is of particular concern in the unique Beaver Valley fen between the highway and the rail line.

### **9.2.1 Strategic Goal**

*The national transportation corridor and secondary roads are managed in a way that supports Parks Canada's commitment to ecological and commemorative integrity and enables travellers to experience the park safely.*

### **9.2.2 Objectives**

1. To meet or exceed all environmental standards in the operation of the Trans-Canada Highway.
2. To reduce the environmental impact of the railway and its operations.
3. To maintain the Trans-Canada Highway in a safe, reliable manner that minimizes both highway closures and the ecological impacts of interventions.
4. To maintain the Meadows-in-the-Sky Parkway in a safe and environmentally sensitive manner.
5. To consider developments that improve ecological or commemorative integrity and public safety.
6. To mitigate fragmentation and loss of valley bottom habitat.
7. To reduce or eliminate human-caused mortality of wildlife and toxic spills.
8. To maintain, where feasible, valley bottom processes adjacent to the highway and railway that create riparian habitat and wetlands and restore alienated habitat.
9. To minimize the introduction of new species of invasive plants and reduce existing invasive weeds that threaten ecological integrity.
10. To maintain existing wetland ecosystems and manage the Beaver Valley fen as an environmentally sensitive site.

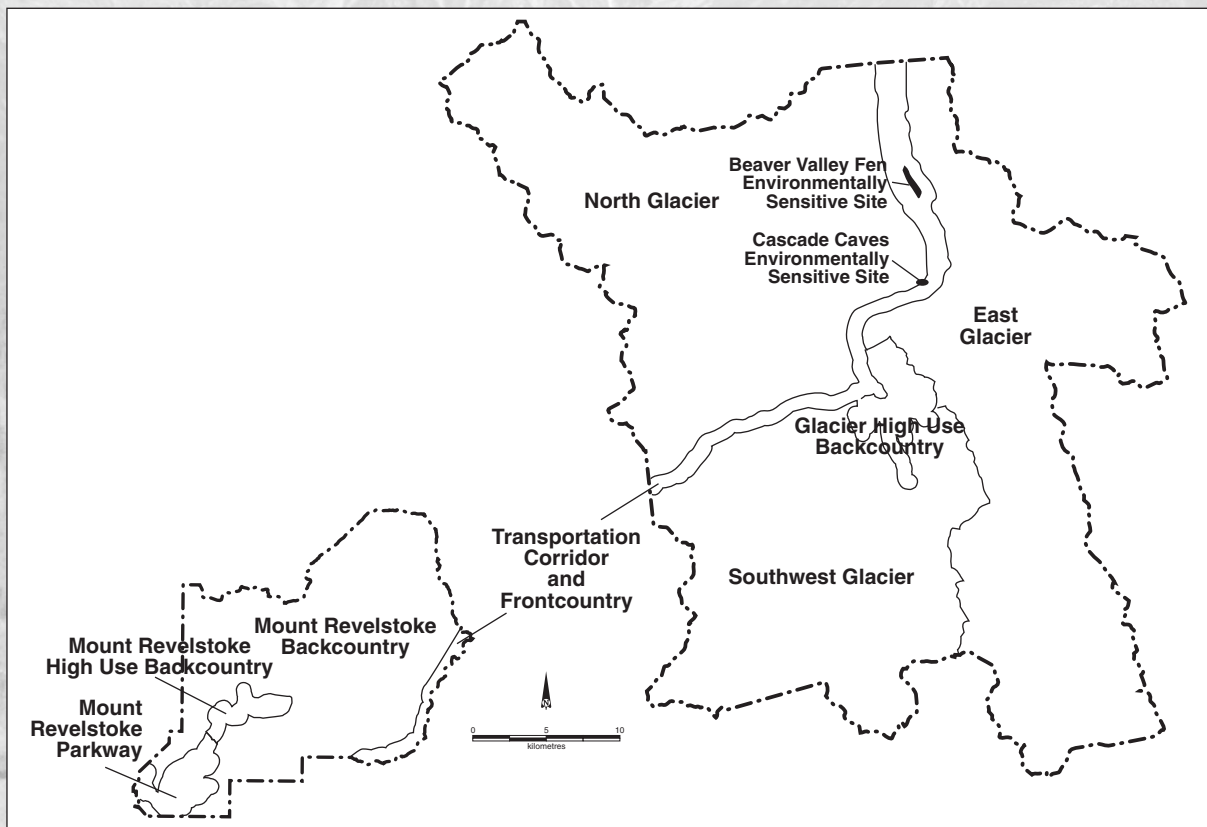
### **9.2.3 Key Actions**

1. Establish an inter-agency Transportation Advisory Committee to identify planning, operation and maintenance opportunities to decrease the environmental impact of the transportation corridor.
2. With the help of the committee, identify a set of best practices to deal with concerns about mortality, wildlife connectivity, salt and abrasive use, toxic spills, run-off, railway tunnel noise, air pollution, cultural resource management and improvements to visitor services.

3. Undertake long-term transportation corridor planning and design. This will allow for appropriate environmental assessment and mitigation of any improvement or expansion of the highway and promote ongoing dialogue on practices, problems and opportunities.
4. When making changes to transportation facilities, consider designs that reduce the need to cross or manipulate streams and that make it easier for wildlife to cross the corridor.
5. Work closely with the Canadian Pacific Railway to develop and implement operational plans and practices.
6. Monitor parking during road closures for avalanche stabilization; consider alternatives if necessary.
7. Control and, where possible, eliminate invasive weed sites and disturbances to native plant communities, by adopting an integrated pest management program.
8. Prepare restoration plans for significant disturbed sites; replant disturbed areas where appropriate with native ground cover.



# Landscape Management Units



## 10.0 LANDSCAPE MANAGEMENT UNITS

Previous chapters set out a strategy for protection, visitor services and decision-making for Mount Revelstoke and Glacier as a whole. Managing these large and diverse natural areas also requires an attention to detail not possible on such a large scale. To allow for more detailed planning and management, Parks Canada has divided the parks into seven smaller areas called *Landscape Management Units* (LMUs). Objectives and actions for each LMU are specific to that area and are consistent with the overall goals and objectives of the management plan.

Mount Revelstoke and Glacier have seven LMUs. Their boundaries reflect a variety of factors – ecological similarity, connectivity, infrastructure, and the type and amount of human use.

**Southwest Glacier, East Glacier, North Glacier, Mount Revelstoke Backcountry** – are the largest LMUs. Their wilderness nature is characterized by low levels of human use, no motorized access and few facilities. Where facilities exist, they are rustic, low-key and compatible with their natural surroundings. Visitors are self-reliant and seek solitude.

**High Use Backcountry** – these wilderness areas are more accessible and have more visitors and facilities. Facilities are still rustic and very primitive.

**Transportation Corridor and Frontcountry, Mount Revelstoke Parkway** – these are much busier units with vehicle access and more facilities. The design of facilities and services still reflect the rustic and natural wilderness character of the parks.

## 10.1 Ecological, Cultural, and Visitor Experience Objectives

In managing the LMUs, Parks Canada integrates ecological, cultural, and visitor experience objectives.

- Ecological objectives include considerations about current and potential stresses and wildlife use (e.g., movement corridors, significant or rare habitats and the potential for human-caused wildlife displacement).
- Cultural objectives reflect considerations about maintaining and presenting historic features such as bridges, culverts and cultural landscapes.
- Visitor experience objectives improve Parks Canada’s ability to satisfy visitors by matching expectations with the available opportunities for experiences. They address benefits and opportunities including facilities, natural and cultural settings, services, and interaction with other visitors. They are based on visitor expectations, opportunities for solitude and self-reliance, interpretation, infrastructure, cultural resources and appropriate activities.

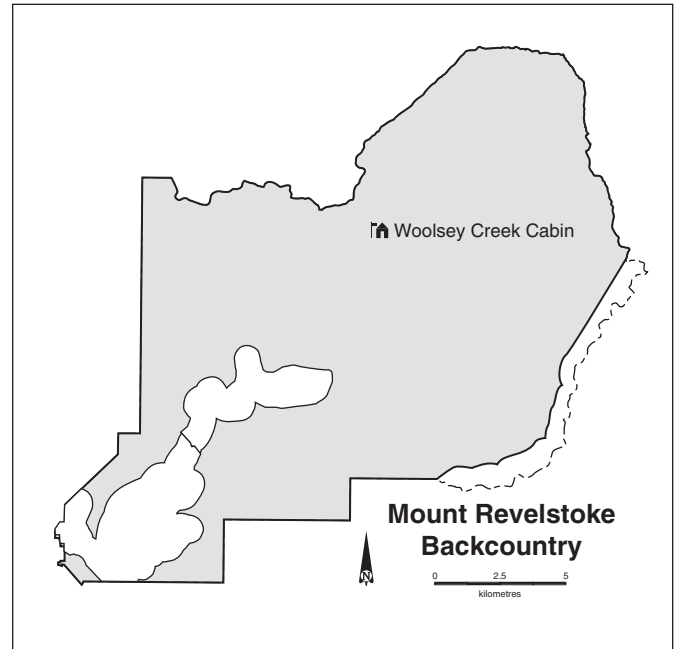
## 10.2 Human Use

Concern about ecological integrity has implications for human use in each of the LMUs. The type, timing, and frequency of visitor activities must be consistent with ecological and cultural objectives. Monitoring and cumulative effects assessment will be used to determine appropriate techniques to manage the effects of human use. Some LMUs may require limits. In these units visitors can expect a wildland experience with few or no facilities or services. The parks will maintain the current system of trails and continue to offer appropriate visitor opportunities. Some visitor activities are more consistent with the intent of protecting wary wildlife species.

## 10.2.1 Mount Revelstoke Backcountry LMU

### Key Considerations

The Clachnacudainn Icefield occupies the centre of this rugged mountainous area. Both mountain caribou and wolverine use the area; in fact, this unit contains the most important habitat for these species in the parks, particularly in the winter. Facilities are minimal – the Woolsey mountaineering hut and some helicopter landing sites used to maintain remote weather stations. The park will not provide bridges and backcountry campsites or maintain trails in this unit. The few visitors can expect to feel a sense of solitude and to rely on themselves. Snowmobiling and heli-skiing occur on provincial land along the boundary, particularly where logging roads and the highway approach the park.



### Objectives

#### *Ecological and Cultural*

- To maintain mountain caribou habitat and suitable denning areas for wolverine.
- To allow natural processes such as fire to continue in areas where risks to the public, environmentally sensitive sites and adjacent lands are minimal.

#### *Visitor Opportunities*

- To offer a remote, backcountry opportunity where visitors can experience solitude while minimizing impact on mountain caribou and wolverine.

#### *Actions*

- Work with partners and neighbours to minimize impacts on ecological integrity generally and on mountain caribou, wolverine and grizzly bears specifically.
- Consider reducing the amount of fuel that could feed a forest fire in certain areas by removing trees; base decision on a risk analysis, human use and park management practices.
- Monitor mountain caribou, wolverine and human use over the next five years and determine the impact of human use and park management on mountain caribou and wolverine.
- Inventory and monitor mountain goat and western toad populations.
- Keep helicopter over-flights and landings to a minimum; avoid sensitive species and habitat and respect the expectations of visitors.

## 10.2.2 High Use Backcountry LMU

### Key Considerations

This unit consists of two separate areas, one in Glacier National Park near the Illecillewaet Glacier and the other at the top of Mount Revelstoke in the Eva Lake area. Here summer day visitors enjoy world-class hiking in an alpine environment that was the birthplace of Canadian mountaineering. Ski touring has increased over the past five to ten years, especially in Glacier National Park. Glacier’s Asulkan cabin, open year-round to the public, has become increasingly popular with backcountry skiers. The Eva Lake shelter, built in 1928, is a federal heritage building and is open to the public in the summer.

The parks will maintain the current system of trails; no new trails will be added. There are 38 km of trails in the Illecillewaet area (Glacier) and 15 km in the Eva Lake area (Mount Revelstoke). These well-used, signed and maintained trails offer access to a limited number of opportunities that involve risk and self-reliance. All trails, bridges, campsites and shelters will remain primitive. Trails in the Mount Revelstoke unit offer access to backcountry lake fishing.

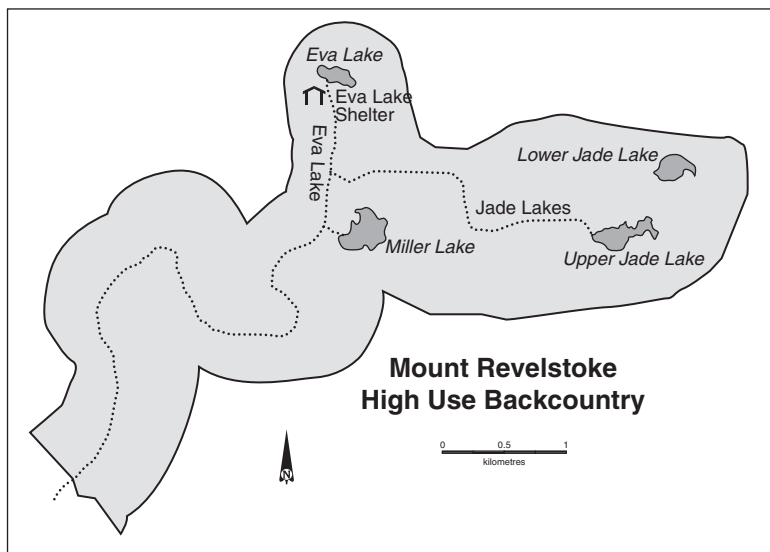
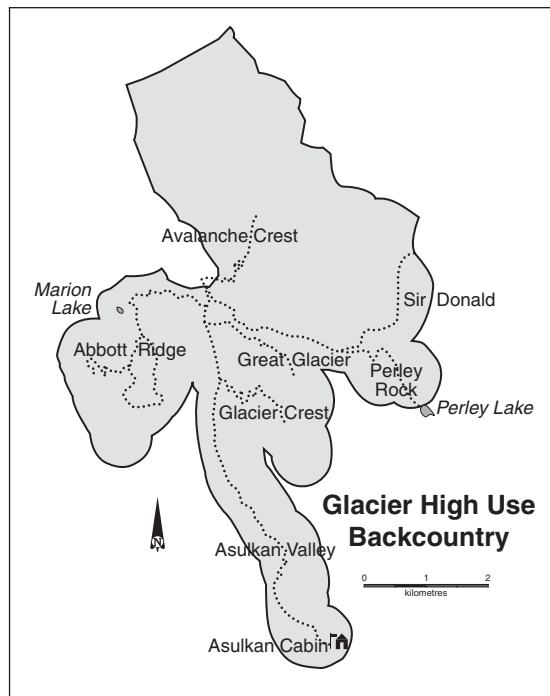
### Objectives

#### *Ecological and Cultural*

- To minimize the impact of human use on identified wildlife species (e.g., mountain caribou, wolverine and grizzly bear).
- To minimize the impact of trail use on flora and soils.
- To minimize the impact of airborne pollution on alpine ecology.
- To determine the impact of backcountry cabin use on caribou.
- To maintain the Eva Lake backcountry shelter as a federal heritage building.

#### *Visitor Opportunities*

- To offer premier hiking and overnight backpacking opportunities, with primitive facilities.



### Actions

- Improve trails and facilities where necessary to enhance ecological integrity, visitor services or public safety.
- Using international protocols, monitor airborne pollution of alpine lakes and its impact on fish; share data and design appropriate management actions, including communications.
- Maintain the Eva Lake backcountry shelter in keeping with the Federal Heritage Buildings Review Policy and the building's heritage character statement.
- Work with helicopter companies to reduce the number of low elevation flights in sensitive areas.

## 10.2.3 Mount Revelstoke Parkway LMU

### Key Considerations

This unit contains important mountain caribou habitat. A busy destination during the short snow-free season, the area is popular with families looking for a day of rest and relaxation in a mountain environment. The 26 km Meadows-in-the-Sky Parkway takes visitors to the summit of Mount Revelstoke with its alpine landscape and scenic views.

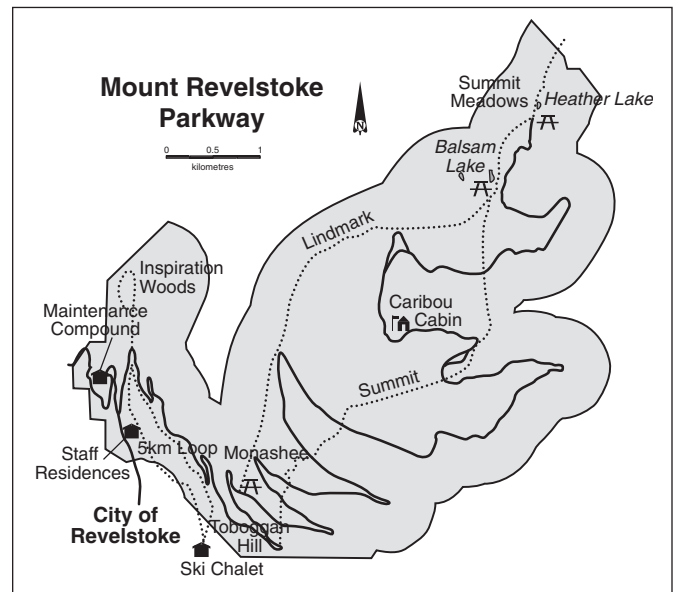
Area facilities include 22 km of hiking trails, five kilometres of mountain biking trails, a ski chalet and a toboggan hill. A shuttle bus transports visitors to the summit meadows from a parking area at Balsam Lake. During the winter, the first eight kilometres of the parkway are groomed for cross-country skiing. The unit also includes a maintenance compound and staff residences.

Parks Canada has undertaken a number of initiatives over the years to accommodate vehicles, deal with conflict between users, reduce the impact of visitors on vegetation and soil, and provide opportunities to learn about the park and its environment. In 1992, the park began a long-term monitoring program to measure the success of various re-vegetation strategies. Recent studies indicate that fire suppression has changed the composition of the forest, increasing the risk of intense fires, which may threaten visitors on the parkway.

### Objectives

#### *Ecological and Cultural*

- To maintain the area as mountain caribou habitat.
- To implement practices that minimize or mitigate the impacts of visitor use.
- To work with the regional community to foster ecological awareness and sensitivity.
- To maintain the historic Mount Revelstoke fire tower as a federal heritage building.
- To fill gaps in information about cultural resources.
- To monitor parking at Balsam Lake; introduce actions to manage traffic if necessary.



### Visitor Opportunities

- To offer premier interpretive and day use opportunities.
- To allow motorized access and provide semi-serviced facilities in the summer.
- To provide fire management information and develop forest fire public safety programs.

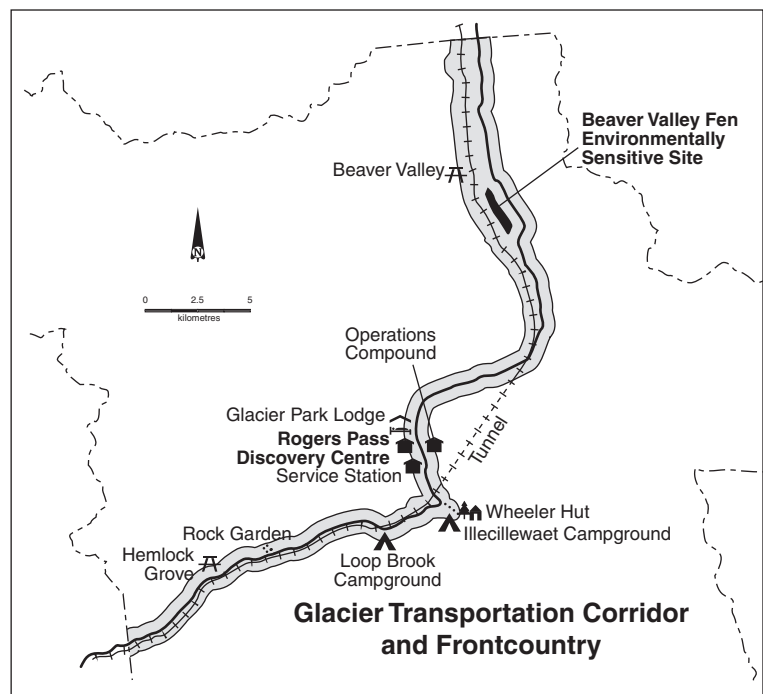
### Actions

- Consider the addition or expansion of facilities if it improves ecological or commemorative integrity, public safety or visitor services.
- Close operational infrastructure that is no longer required.
- Assess the need to manage use based on social and ecological considerations.
- In partnership with others, develop exhibits for the Nels Nelsen historic area.
- Replace out-dated exhibits along the Meadows-in-the-Sky Parkway; incorporate national messages and the results of natural and cultural research.
- Maintain the Mount Revelstoke fire tower in keeping with the Federal Heritage Buildings Review Policy and the building's heritage character statement.
- Undertake archaeological research at the site of the Revelstoke internment camp.
- Assess all winter park operations and public use of Caribou Cabin with a view to reducing impact on mountain caribou habitat.
- Assess the risks associated with a forest fire; prepare a strategy to protect the public.
- Continue to participate in community programs that foster ecological sensitivity and awareness (e.g., the Revelstoke Bear Aware program to reduce mortality and habituation).

## 10.2.4 Transportation Corridor and Frontcountry LMU

### Key Considerations

This unit includes a 53 km corridor through Glacier National Park and 12 km through Mount Revelstoke National Park. A variety of major visitor facilities includes the Trans-Canada Highway, the Canadian Pacific Railway, a hotel and service station, five view points, nine picnic areas, seven self-guiding trails and backcountry trailheads, two campgrounds, one overflow campground, and the Rogers Pass Discovery Centre. Park



facilities include a maintenance compound and staff residences. This LMU is the busiest area in the parks. Visitors to the frontcountry experience an authentic historic setting and a Columbia Mountains wilderness vista.

The Beaver River has an important influence on the transportation corridor. A debris flow in the valley interrupts traffic during the spring snowmelt. Natural processes, such as landslides,

have shaped the Beaver Valley for thousands of years and may play a role in maintaining biodiversity. The Beaver Valley fen, a unique calcareous wetland precariously located between the highway and the railway, is an environmentally sensitive site.

In both parks, bare soil along the transportation corridor provides an opportunity for non-native plants to become established. The provincially rare and endangered bull trout inhabit both the Illecillewaet and Beaver River drainages.

All but a small portion of the Rogers Pass National Historic Site is in this LMU. Chapter 6 describes specific objectives and actions for this site.

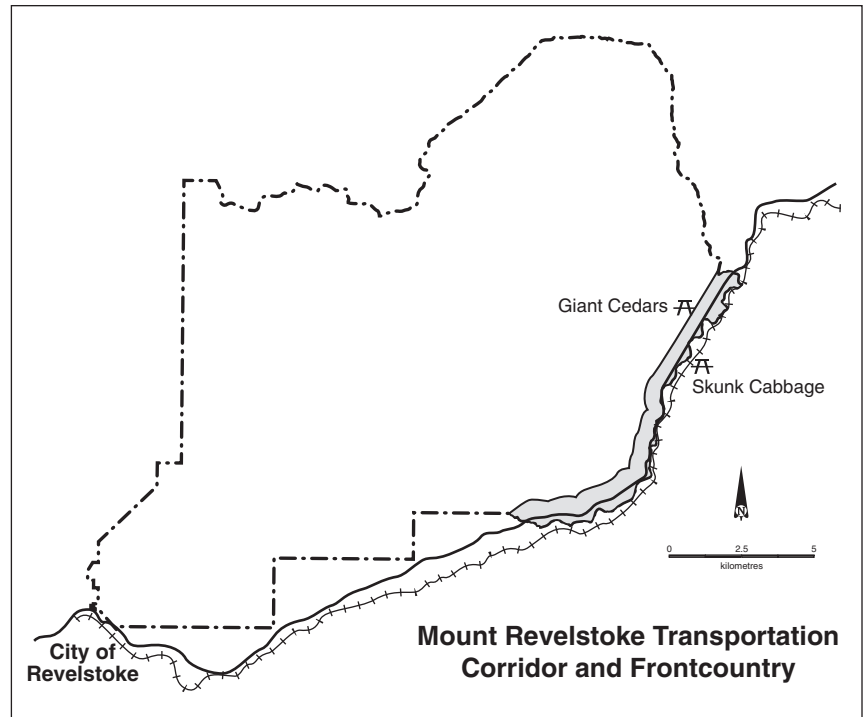
## Objectives

### *Ecological and Cultural*

- To manage the transportation corridor in an environmentally sensitive manner, ensuring developments improve ecological and commemorative integrity and public safety.
- To maintain existing wetland ecosystems and manage the Beaver Valley fen as an environmentally sensitive national historic site.
- To control the spread of non-native plants.
- To manage cultural resources.

### *Visitor Opportunities*

- To communicate park and site messages to through travellers and visitors.
- To offer premier interpretive, day use and overnight opportunities.
- To allow motorized access and provide semi-serviced facilities.



### Actions

- Establish a Transportation Advisory Committee to recommend and implement improvements to ecological and commemorative integrity, highway capacity, operational practices and public safety (e.g., ongoing maintenance, mortality, wildlife movement).
- Increase the awareness of the national parks and historic site on the part of through travellers, truckers and CPR staff.
- Work with the transportation industry to address issues such as commercial truck parking at Rogers Pass.
- Implement the Integrated Pest Management Plan.
- Protect bull trout habitat and maintain the closure of stream fishing.
- Monitor and research resource issues (e.g., wildlife connectivity and mortality).
- Renew heritage presentation media at high visitor-use picnic areas, view points, campgrounds, self-guiding trails (e.g., Giant Cedars and Skunk Cabbage) and Rogers Pass National Historic Site.
- Take advantage of opportunities along the highway to present messages about the parks and historic site (e.g., information about the impact of the transportation corridor and existing and proposed mitigations).
- Monitor and control some natural processes (e.g., landslides and avalanches) in the interests of public safety.
- Record and stabilize cultural resources.
- Remove vegetation and control water around railway artifacts.
- Develop Glacier House exhibits.
- Develop off-site interpretation for Glacier Station.

## 10.2.5 North Glacier LMU

### Key Considerations

This is a wild, rugged area with old-growth forests, mountain caribou, grizzly bear, mountain goats and wolverine. Grizzly bear, found throughout the area, are especially prevalent in the Cougar Valley. Visitors in most parts of the unit experience solitude, face challenges, undertake risks and must be self-reliant.

Mountain Creek, a large wilderness valley, will remain completely undeveloped.





Exceptions to the unit's large tracts of undisturbed terrain include the Hermit, Balu and Bostock Trails. These trails provide access to high elevation areas adjacent to the highway. Commercial groups led by a guide are relatively common on the Hermit Trail, a climbing and mountaineering destination. These groups have a variety of impacts – trampling the meadow, widening the trail, and creating the perception of crowding. In winter, ski touring has increased over the past five to ten years, especially in the Bostock drainage.

The Nakimu Caves and the Cougar Valley are classified as Zone 1 (Special Preservation). Access to the area requires a permit and is limited to a route over Balu Pass. In addition to increasing the safety of hikers, these measures protect the natural features of the caves and important grizzly habitat in Cougar Valley. To protect bear habitat, access through the lower Cougar Valley is not permitted in summer. During the winter, the area is closed for avalanche control. The Balu watershed, upstream of Rogers Pass, is the water supply for this high visitor use area. The Mount Tupper cave system (Cascade Caves) is also located in this LMU. It is classified as an environmentally sensitive site because of its karst formations and heavy use of the surrounding area by grizzly bears.

The park uses helicopters for operational purposes such as maintaining remote weather stations.

## **Objectives**

### *Ecological and Cultural*

- To maintain an appropriate natural fire cycle and allow other natural processes to continue where risks to the public, environmentally sensitive sites and adjacent lands are minimal.
- To protect the special natural features and processes of the Nakimu and Cascade Caves.
- To provide special protection to the lower Cougar Valley for grizzly bears.
- To protect the Balu watershed as a potable water source for the Rogers Pass area.
- To manage the unit's trails so they have the least possible impact on ecological integrity.

### *Visitor Opportunities*

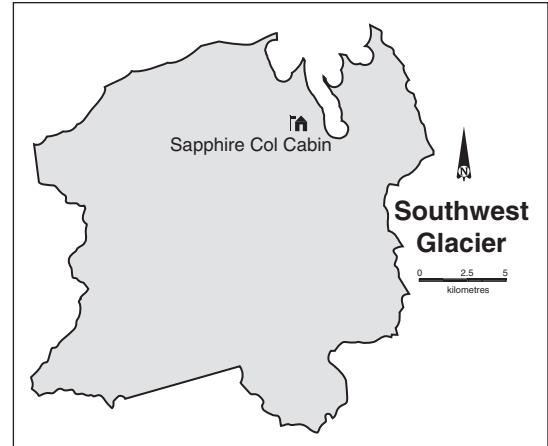
- To offer a backcountry opportunity where visitors are self-reliant and experience solitude.
- To provide a wildland opportunity in the Mountain and Casualty Creek areas.
- To provide primitive facilities on the Bostock, Balu and Hermit trails.

### *Actions*

- Monitor visitor use on the Hermit, Balu and Bostock trails; base management actions on maintaining ecological integrity.
- Determine the impact of visitor use on grizzly bear in the Balu, Bostock and Hermit trail areas and the Cougar Valley.
- Monitor downstream water quality; take necessary action to protect the water source.
- Limit the size of groups on the Hermit Trail to the number of designated camping sites.
- Use a permit system to protect and control access to the Cougar Valley and Nakimu

Caves.

- Identify management actions, including a permit system, to control access to and protect the Cascade Caves.
- Manage the Nakimu Caves as a level II cultural resource.



## 10.2.6 Southwest Glacier LMU

### Key Considerations

This rugged and wild area has the most extensive glaciers and the highest mountain peaks in the parks. Grizzly bear, mountain goat and wolverine use the area extensively. There are no maintained trails; one backcountry hut, Sapphire Col, is available for year round use. This LMU was the location of historic trails used for mining exploration. Visitors can expect physical challenges, solitude, risks, and a sense of personal achievement.

### Objectives

#### *Ecological and Cultural*

- To maintain an appropriate natural fire cycle and allow other natural processes to continue where risks to the public, environmentally sensitive sites and adjacent lands are minimal.
- To fill gaps in information about cultural resources.

#### *Visitor Opportunities*

- To provide opportunities to explore a wildland area with no trails and to experience solitude and self-reliance.

#### *Actions*

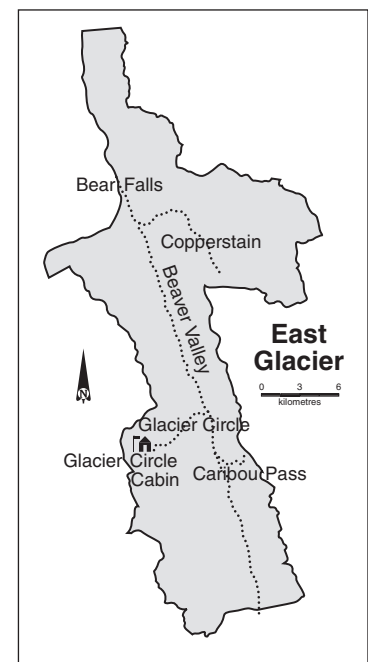
- Retain the area as wildland without trails, bridges, campsites or shelters.
- Research the history of the area and consider options for off-site presentation.

## 10.2.7 East Glacier LMU

### Key Considerations

This unit includes the Beaver Valley, the most productive, diverse habitat in the parks. The Beaver Valley includes large areas of old-growth cedar-hemlock forest including significant special features such as a variety of bats and rare lichens. Mountain caribou, wolverine and grizzly bear exist throughout the area. Mountain goats frequent the eastern boundary of this LMU.

More than 60 km of maintained trails lead to many notable mountaineering destinations. A circuit of trails links valley bottom and alpine terrain, and provides extended day and



overnight backpacking opportunities. Designated campsites offer security and reduce the impact of overnight use.

Glacier Circle cabin is a federal heritage building and is available for year round public use. This is the only area in the parks where wardens patrol on horseback. Public horse use is not permitted. In some areas of the valley, noise from the rail line through the Macdonald tunnel is audible. Extensive recreational use on provincial land along the eastern boundary includes snowmobiling and skiing.

## **Objectives**

### *Ecological and Cultural*

- To minimize the impact of human use on ecological integrity and on habitat for mountain caribou, mountain goats, wolverine and grizzly bear.
- To maintain an appropriate natural fire cycle and allow other natural processes to continue where risks to the public, environmentally sensitive sites and adjacent lands are minimal.
- To work with the regional community to foster ecological awareness and sensitivity.
- To maintain the Glacier Circle cabin as a federal heritage building.

### *Visitor Opportunities*

- To offer premier multi-day backcountry opportunities with primitive facilities.

### *Actions*

- With park neighbours and partners, monitor recreational use along the unit's eastern boundary.
- Build relationships with neighbours and recreational users to address topics on an ecosystem basis, including park messages, visitor experiences and sensitive wildlife issues (e.g., mountain goat disturbance along the eastern boundary).
- Continue to participate in community programs that foster ecological sensitivity and awareness (e.g., the Golden Bear Aware program to reduce mortality and habituation).
- Protect adjacent lands from fire escapement, consider methods such as creating fire breaks to reduce the risk of fire spreading beyond the park.
- Seek a solution to noise from the exhaust fans at the east portal of the MacDonald tunnel.
- Prepare a heritage character statement for the Glacier Circle cabin. Maintain the cabin in keeping with the Federal Heritage Buildings Review Policy.
- Inform backpackers about commercial recreational activity adjacent to the park boundary.



# *A Place for Open Management: Partnerships, Public Involvement and Regional Coordination*



## **11.0 A PLACE FOR OPEN MANAGEMENT: PARTNERSHIPS, PUBLIC INVOLVEMENT, AND REGIONAL COORDINATION**

As part of a national family of protected areas, Glacier, Mount Revelstoke and Rogers Pass belong to the people of Canada. All citizens should feel they have an opportunity to participate in key decisions. Parks Canada is committed to effective public involvement in planning and management through sharing information and holding meaningful local, regional and national consultations.

The sustainability of the regional ecosystem depends on cooperative solutions and common goals. Research, restoration, information, interpretation, tourism and stewardship initiatives are more successful when they are based on a common understanding of the regional ecosystem and the role of protected areas. Parks Canada and adjacent jurisdictions have worked together on issues of common concern for many years. Park staff are involved in regional planning programs with such agencies as B.C. Hydro, B.C. Ministries, Canadian Wildlife Service, Friends of Mount Revelstoke and Glacier, Columbia Basin Fish and Wildlife Compensation Program, Columbia Mountains Institute of Applied Ecology and the Geological Survey of Canada. Parks Canada remains committed to this type of regional coordination.

The following values and principles will guide governance and decision-making in Mount Revelstoke National Park of Canada, Glacier National Park of Canada and Rogers Pass National Historic Site of Canada.

## 11.1 Values and Principles

### *Values*

- restraint and self-discipline today, for the sake of future generations
- open participatory communications
- equal opportunity for a sense of wilderness and a range of quality park experiences
- predictable, consistent and fair regulation
- competent, accountable management
- respect for others

### *Principles*

All actions, initiatives and programs to realize the vision are implemented in full accordance with the spirit and requirements of the *Canada National Parks Act*, *Parks Canada Guiding Principles and Operational Policies*, *Parks Canada Agency Act* and this management plan.

Standards are defined, communicated, enforced, and reviewed to ensure the maintenance of ecological and commemorative integrity.

Regulation and decision-making are responsive, open, participatory, consistent and equitable.

There is individual and shared responsibility to protect and preserve heritage resources (e.g., working with provincial ministries and other agencies on the caribou recovery committee).

Proactive, adaptive, and precautionary management take into account cumulative effects and limits to growth in recognition of the finite nature of the parks and site.

Stewardship, based on sound science, is practised through environmentally sensitive management, mitigation and restoration.

Changes in visitor use will be evaluated using the Appropriate Use Criteria (Appendix 1).

Integrity and common sense underlie all decision-making.

Planning and decision-making are coordinated on a regional basis (e.g., transportation planning).

Partnerships are encouraged, subject to appropriate checks and balances.

Parks Canada, through its operations and programs, contributes to the ecological, social, cultural and economic sustainability of the region.

The following fundamental practices guide public participation in decision-making:

- access to clear, timely, relevant, objective and accurate information;
- adequate notice and time for public review;
- careful consideration of public input;
- feedback on comments and Parks Canada's response;
- respect for all interested parties and individual viewpoints.

### **11.1.1 Strategic Goals**

*Ecological, social, cultural and economic systems in the greater ecosystem benefit from integrated management.*

*Key policy, land-use and planning decisions are timely, fair and consistent, and are arrived at in an open and participatory manner.*

### **11.1.2 Objectives**

1. To commit to a philosophy of open management.
2. To report on management plan implementation and obtain staff and public input annually.
3. To enhance working relations with Aboriginal peoples and local communities.
4. To form committees to provide advice as needed.
5. To enhance communications between park management, stakeholders and interest groups.
6. To increase the number of partnerships (e.g., for planning, research and program delivery).

### **11.1.3 Key Actions**

1. Organize opportunities to meet, share concerns and improve working relationships with First Nations. Begin by meeting with the people closest to the parks.
2. Consult with the cooperating association and regional neighbours on areas of mutual concern, including ecological and cultural management, interpretation, heritage tourism, and visitor use.
3. Provide regular progress reports on the implementation of the management plan and invite feedback.
4. Prepare a State of the Park Report as input to the next management plan review.
5. Consult with the public on operational plans and issues as appropriate.





# *A Place for Environmental Stewardship: Administration and Operations*



## **12.0 A PLACE FOR ENVIRONMENTAL STEWARDSHIP: ADMINISTRATION AND OPERATIONS**

Environmental stewardship reduces the impact of our daily activities on the environment. The idea of stewardship includes a range of issues from water quality and energy consumption, to chemical use and contaminated sites. It also includes a wide variety of activities from recycling and reducing consumption to restoring disturbed landscapes.

An environmental management system (EMS) applies environmental stewardship to park management and operations. It ensures the greatest environmental risks receive the highest priority. Mount Revelstoke National Park and Glacier National Park and Rogers Pass National Historic Site have prepared an EMS and have undertaken recycling programs, fuel efficiency initiatives, and the clean up of contaminated sites. While Parks Canada is responsible for providing leadership in environmental stewardship, effective action requires broadly-based support from businesses and visitors.

The Government of Canada is committed to environmental stewardship. It requires every department or agency to meet or exceed environmental legislation, follow the best environmental practices, and implement a sound environmental management system. Many of the government's commitments to the greening of government operations have been formalized through amendments to the *Auditor General's Act* and the appointment of the Commissioner of the Environment and Sustainable Development. As a result, Parks Canada now reports to Parliament on its progress in fulfilling its environmental responsibilities.

## 12.1 Strategic Goals

*Parks Canada demonstrates sound environmental and culturally sensitive practices and minimizes the impact of its operations on ecological and commemorative integrity.*

*Environmental stewardship is fundamental to the operation of all businesses and institutions.*

*Visitors and residents contribute to environmental stewardship and sustainability.*

## 12.2 Objectives

1. To optimize the use and utility of existing infrastructure and reduce the operational footprint where possible.
2. To rank projects in terms of their contribution to ecological integrity, commemorative integrity and public safety.
3. To reduce the intrusiveness of park operations.
4. To achieve maximum durability, lifespan and efficiency in the design and construction of all retrofits and new structures.
5. To adopt best practices for maintenance.

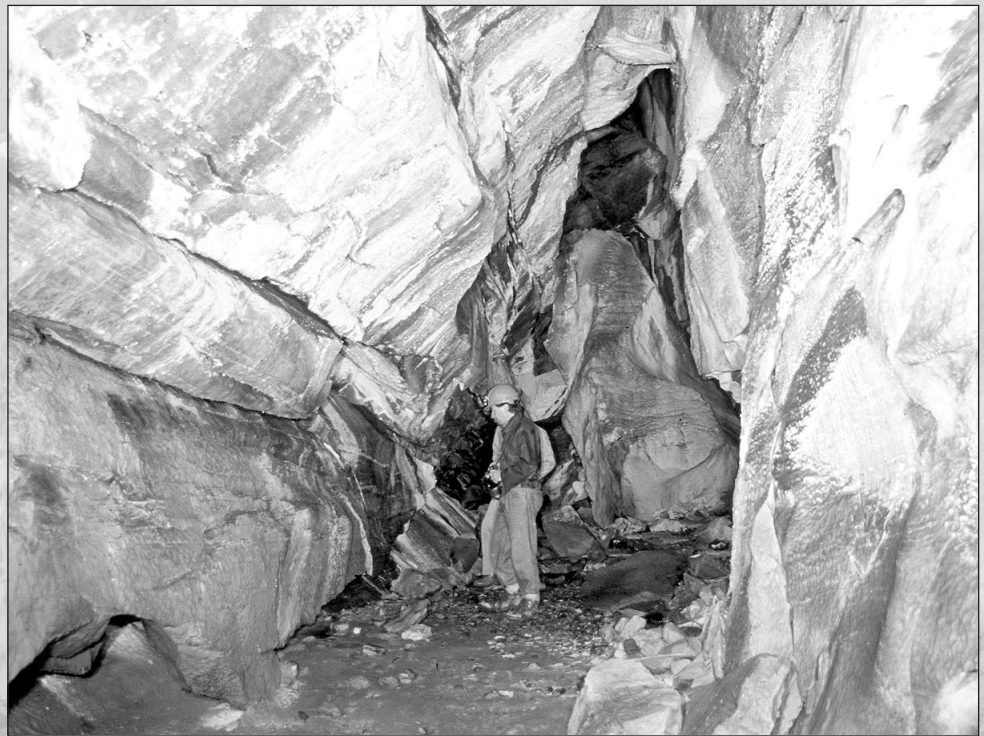
## 12.3 Key Actions

1. Remove any infrastructure that is no longer required or of no significant cultural heritage value, and rehabilitate the site.
2. Upgrade aging infrastructure based on improving ecological integrity, commemorative integrity and public safety.

3. Upgrade the wastewater treatment plant at Rogers Pass to meet current standards.
4. Evaluate ways to reduce the impact of park operations (e.g., the use of helicopters and snowmobiles and the care and handling of animals).
5. Complete a water management plan; monitor potable water to ensure standards are met; protect the backcountry watersheds that serve Parks Canada drinking water supply systems.
6. Implement the parks' environmental management system.



# *Park Zoning and Wilderness Area Declaration*



## **13.0 PARK ZONING AND WILDERNESS AREA DECLARATION**

Parks Canada's zoning system classifies areas in national parks according to their need for protection. The suitability of these areas for visitor activities is a consideration in zoning decisions. The zoning system has five categories: special preservation, wilderness, natural environment, outdoor recreation and park services. In addition, certain areas that require special attention can be designated as Environmentally Sensitive Sites. Their identification complements the zoning system and is important to the protection of a full range of valued resources.

Figure 3 outlines the zones and environmentally sensitive sites for Mount Revelstoke National Park and Glacier National Park.

### ***Declared Wilderness***

The *Canada National Parks Act* provides for areas of a national park to be declared, by regulation, as wilderness areas. The intent of this legislation is to enhance protection and maintain a high level of ecological integrity. In these declared wilderness areas, the legislation only permits development and activities required for essential services and resource protection. Wilderness designation is one of a range of tools to ensure the preservation of wilderness values and will not change current visitor use of the area. Zoning and landscape management unit objectives will determine levels of use in declared wilderness areas.

Declared wilderness areas will generally be consistent with land now classified as Zone II. Exceptions will include utility and service corridors that cut through Zone II areas, and small Zone II areas between transportation corridors. Appropriate Zone I and II areas identified in this plan, covering some 90% of the park, will become declared wilderness within one year of the plan's approval. A map of the wilderness areas will be available to the public before the declaration occurs.

### ***Zone I - Special Preservation***

Zone I lands deserve special preservation because they contain or support unique, threatened or endangered natural or cultural features, or are among the best examples of the features that represent a natural region. Preservation is the key consideration. Motorized access and circulation are not permitted. In Glacier National Park the Nakimu Caves and the lower Cougar Valley are Zone I due to their significant karst features and important grizzly bear habitat. The caves include over five kilometres of passages and are one of the most extensive cave systems known in British Columbia. The cave system consists of three small upstream caves and a main cave. Sinkholes, springs, an unroofed cavern and a dry valley are visible at the surface. Features inside the caves include waterfalls, plunge pools, stalactite grottoes, moonmilk and seasonal and permanent ice deposits. Surface vegetation near the caves is also of special interest due to the presence of calcicole plant species. Calcicoles are rare in the Selkirk Mountains due to the limited amount of limestone and calcareous soils.

Access to the Zone I area will require a permit.

### ***Zone II - Wilderness***

These extensive areas represent and conserve the natural region in a wilderness state. Protecting ecosystems where there is minimal human interference is the key consideration. Zone II areas offer opportunities for visitors to experience the parks' ecological characteristics firsthand with few, if any, rudimentary services and facilities. Facilities are restricted to trails, backcountry campgrounds, alpine huts, trail shelters, and warden patrol facilities. Motorized access is not permitted. Ninety-three percent of the parks will be managed as Zone II.

### ***Zone III - Natural Environment***

In Zone III areas, visitors discover the parks' natural and cultural heritage through recreational activities that require few rustic services and facilities. No motorized access is permitted. Zone III applies to areas where visitor use and facilities exceed the acceptable standards for Zone II. The Zone III area in Mount Revelstoke National Park includes the Eva Lake-Miller Lake trail corridor. This is the most heavily-used alpine area in the park. The Natural Environment zone also includes the hiking trails along the Meadows-in-the-Sky Parkway. Zone III trails are used primarily by day-

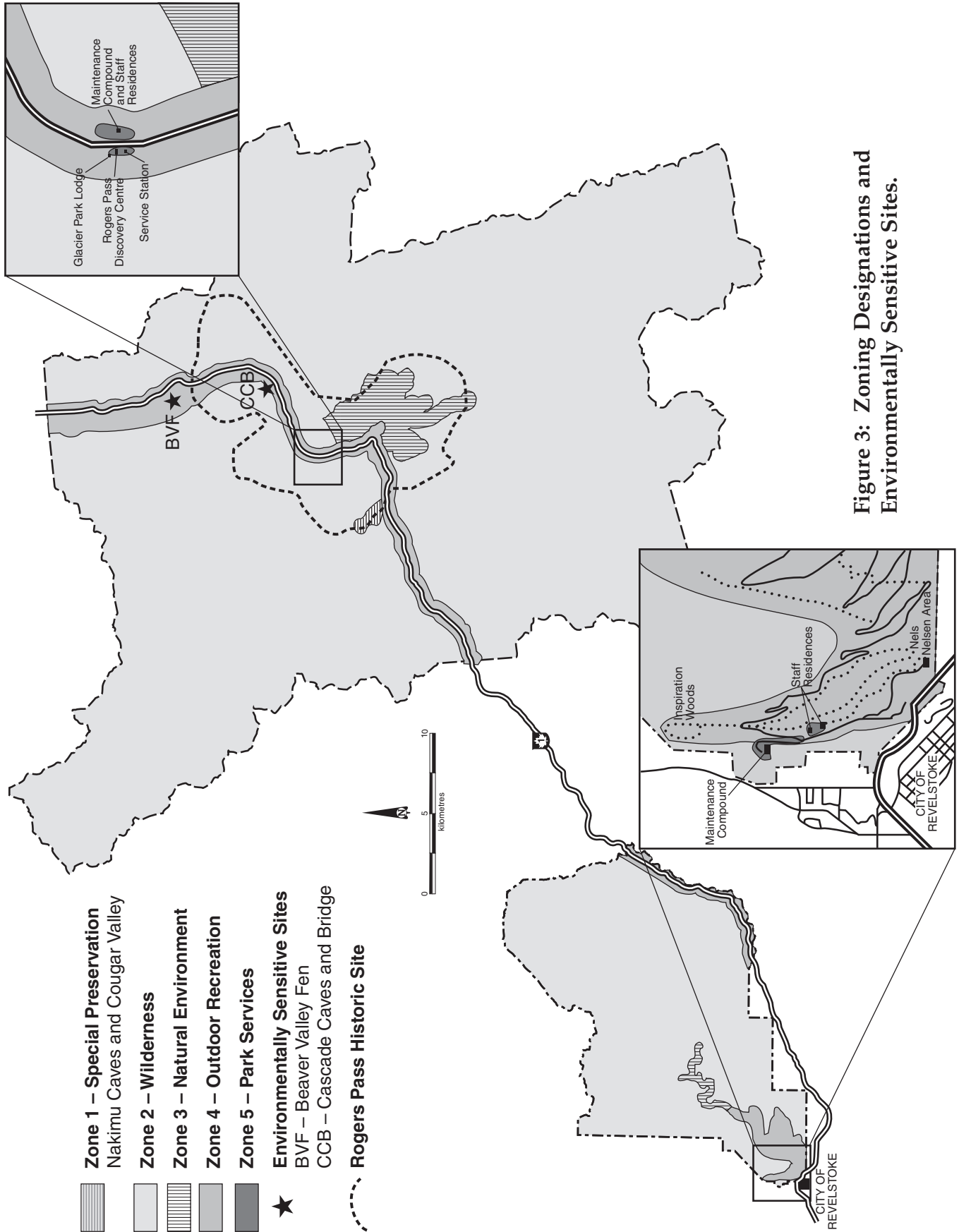


Figure 3: Zoning Designations and Environmentally Sensitive Sites.

hikers, although overnight use does occur in this zone. Zone III areas in Glacier National Park include the series of hiking trails in the Illecillewaet and Asulkan areas.

#### ***Zone IV - Outdoor Recreation***

Outdoor recreation zones are limited areas capable of accommodating a broad range of opportunities for understanding, appreciating and respecting the parks' heritage value. Appropriate opportunities and related essential services and facilities are provided in ways that impact the ecological integrity of the park to the smallest extent possible. Direct access by motorized vehicles is permitted. In Mount Revelstoke National Park the Meadows-in-the-Sky-Parkway is a Zone IV area. The transportation corridor, including many trailheads, picnic areas and viewpoints, through Mount Revelstoke National Park and Glacier National Park is a Zone IV area.

#### ***Zone V - Park Services***

Park operations and administration, visitor services, and support facilities are concentrated in park service zones. In Glacier National Park the Zone V area includes the Rogers Pass compound, the Rogers Pass Discovery Centre, and the Glacier Park Lodge and service station. In Mount Revelstoke National Park the Zone V area includes the One Mile compound and residential area.

#### ***Environmentally Sensitive Sites***

This designation applies to naturally or culturally significant or sensitive features or areas that require special protection. Visitor use will be managed to protect resources. Low elevation wetland and old-growth forests will be researched and mapped over the next five years. Some of these forest areas are habitat corridors with rare or endangered species that contribute to and require special protection. The following areas have been designated as Environmentally Sensitive Sites:

##### **1. The Cascade Caves and Bridge**

- sensitive cave formations
- frequently used grizzly bear habitat
- culturally significant bridge
- access to area is a public safety concern

##### **2. Beaver Valley Fen**

- significant spring-fed wetland
- only calcareous fen known in the park
- extremely high invertebrate biodiversity (eg. hosts 25% of all British Columbia's dragonfly species)



# Summary of the Environmental Assessment



## 14.0 SUMMARY OF THE ENVIRONMENTAL ASSESSMENT

The following summarizes the highlights of a separate report *Environmental Assessment - Mount Revelstoke National Park of Canada, Glacier National Park of Canada and Rogers Pass National Historic Site of Canada Management Plan Draft 2002*.

## 14.1 Background

In keeping with the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* (Canadian Environmental Assessment Agency, 1999), an environmental assessment was prepared to evaluate the effect of policies, programs, and proposed actions in this management plan. This assessment ensures that the plan is understood, that it complies with the *Canada National Parks Act* and Parks Canada's policies, and that it improves ecological and commemorative integrity.

The management plan addresses issues at the local, regional and international level. The issues of greatest concern are:

Local:

1. The Canadian Pacific Railway and the Trans-Canada Highway
2. Valley bottom habitat loss and adequate old-growth forest
3. Visitor facilities and use

Regional:

4. Forestry operations, including access roads and fire suppression in the greater ecosystem
5. Hydro-electric dams on the Columbia River
6. Recreational access and facilities adjacent to the parks
7. Species-at-risk

International:

8. Dams on the US stretch of the Columbia River
9. Climate change
10. Long-range transport of air pollutants

## 14.2 Cultural Resources

*Given the requirement to carry out environmental assessments of individual projects, the cumulative effects of the plan's proposals and external stressors on cultural resources are not likely to be significant, provided Parks Canada's cultural resource management policy is respected.*

The plan includes a number of actions that respect the integrity of cultural resources by improving understanding and protection:

- Assessment of impacts on archaeological resources, before projects begin, will ensure proper identification and protection of buried cultural resources and will provide guidance for appropriate mitigation measures.
- Interpretive displays will increase the public's awareness of the importance of cultural heritage.
- Project specific environmental assessments, including recommended mitigations, are required before permits are issued to conduct archaeological inventories. This will keep the impact of these activities, on both natural and cultural resources, to a minimum.
- The parks are committed to compiling an inventory of built heritage resources.
- Maintenance of heritage buildings and structures, including stabilization, will respect Federal Heritage Building Review Office policies.

- Restoring cultural landscapes and improving trails will offer opportunities to enhance presentation.

Some proposals (e.g., licenses of occupation for backcountry cabins and the transportation corridor) could have an impact on cultural resources. It is imperative to ascertain the existence of these resources before projects begin. The parks must also educate backcountry visitors about the importance of not disturbing cultural resources exposed by erosion and other processes.

It will not be possible to mitigate all the consequences of expanding the transportation corridor. Although the project will be subject to CEAA, the potential damage to cultural resources may be irreversible. Adequate research, recording and investigation are essential.

### 14.3 Contaminant Spills

*Although more traffic may result in more spills of hazardous materials, with proper planning and prompt action including emergency response and clean-up, the effects are not likely to be significant.*

The plan recommends the creation of a Transportation Advisory Committee to reduce the ecological impact of the Trans-Canada Highway and the railway. The Committee can identify mitigation for trucking/railway practices, including accidental spills of contaminants.

It is unlikely mitigation will eliminate spills, especially given an increase in traffic. With appropriate stakeholders, the parks must prepare and test Emergency Response Plans to ensure a prompt and efficient response minimizes the environmental effects of accidents. In addition, any spills that may attract wildlife must be cleaned up quickly to reduce mortality.

### 14.4 Water Quality

*With proper mitigation and substantial cooperation among partners at the ecosystem level, the cumulative effect of the plan on water quality should not be significant.*

The plan contains a variety of proposals to improve water quality:

- upgrading the wastewater treatment plant;
- research and monitoring;
- a Transportation Advisory Committee;
- facility improvements (e.g., drainage);
- improving trails and infrastructure; and
- water conservation.

Proposals allowing increased use of the backcountry may lead to contamination from the improper disposal of human waste. Educating visitors and establishing buffer zones could reduce the effect of these activities. Project-specific environmental assessments would identify appropriate mitigation.

The cumulative effects of the transportation corridor (bridges, run-off, pesticides, de-icers), forestry operations (siltation), dams and recreation adjacent to parks and the long-range transport of pollutants have a greater potential to affect water quality.

The Transportation Advisory Committee can play a key role in improving water quality by developing a set of best practices for the transportation corridor. Parks Canada must also collaborate with forestry companies to ensure adequate buffers around harvested areas protect surface waters flowing into the parks. Continued monitoring of pollutants in alpine lakes is required.

## 14.5 Wetlands

*Research and monitoring are required to determine the extent of wetland habitat to be restored and to guide future management decisions.*

The management plan states that the parks' wetland habitats may not be sufficient to support ecological integrity at a regional scale. Valley bottoms, and therefore wetland habitats, are the areas most affected by visitor facilities and the transportation corridor. Global warming may also influence the extent of wetlands.

Expanding the footprint of the transportation corridor may require measures to avoid wetlands. The management plan also recognizes the critical need to restore valley bottoms and ecological diversity along the Columbia River. In partnership with B.C. Hydro and other stakeholders, Parks Canada must be actively involved in wetland restoration.

## 14.6 Habitat Connectivity for Species-at-Risk

*Certain of the plan's proposals and external stressors may decrease habitat connectivity for species-at-risk.*

Parks Canada will work with governments, adjacent communities, the public and organizations, including forestry companies, to research, monitor and influence the management of habitat for species-at-risk.

The Transportation Advisory Committee can help minimize habitat fragmentation. Expanding the footprint of the transportation corridor also has the potential to impact significantly on habitat connectivity for species-at-risk. Mitigation to reduce the impacts could include the construction of wildlife crossing structures, signage at wildlife crossing areas, speed reduction, and fencing for certain species. Parks Canada, as a responsible authority under the *Canadian Environmental Assessment Act*, would have to ensure that appropriate mitigation is considered and implemented to minimize the impacts of an expanded footprint for the Trans-Canada Highway.

## 14.7 Natural Disturbances

*The plan's proposals concerning natural disturbances will contribute to maintaining habitat and promoting diversity.*

Many natural disturbances, at a variety of scales, affect vegetation in the Columbia Mountains – forest fires, avalanches, insect infestations, fungal diseases, wind and snow creep. A complex structure consisting of trees of various ages, dead trees still standing, fallen trees, and vegetative ground cover is frequently the result. This complexity supports diverse species, some of which depend almost exclusively on ancient old-growth forests.

Management decisions about fires can have long term results. Research in the Pacific Northwest and in the area around the parks indicates that the natural fire cycle is several hundred years. Fire suppression and forest management around the parks result in forests markedly different than those natural processes would create. In addition, forest management eliminates as much as 90% of snags, vital habitat for cavity nesting birds. Managed stands are also poor habitat for grizzly bears and other species that rely on a diverse ground cover.

The management plan allows fire to shape the landscape, where risks to the public and adjacent lands are minimal. This will have a positive effect on diversity within forest stands and on habitat for bears, woodpeckers and other species. In the long term, burned areas may serve as barriers in case of catastrophic fires. A risk analysis is required; the analysis should address loss of old-growth forest in the region, and the protection of rare or threatened habitats and species.

## 14.8 Habitat

*While habitat loss from park activities is likely to be minimal, the effect of external stressors will need to be monitored.*

Habitat loss is mainly due to past practices and external stressors. Habitat loss from archaeological inventories would likely be very minor (e.g., test excavations). While trail improvements could cause some loss of habitat, restoration of unused trail sections will compensate for any impact of relocation.

To address external threats to habitat, the parks are committed to working with others in the Columbia Mountains Natural Region on integrated approaches to protecting and using the landscape. Monitoring will be used to measure the success of this approach.

## 14.9 Old-Growth Species

*Thanks to Parks Canada's commitment to maintaining species that depend on old-growth forests, there will be no human-caused reduction in the parks' ancient forests. An evaluation of any proposal is required to ensure it will not affect these unique old-growth stands.*

Expanding the transportation corridor and forestry operations outside the parks could threaten old-growth species. As stated previously, the parks are committed to collaborating with others to address concerns.

Climate change may also affect old-growth forest; long-term monitoring is required to identify trends.

## 14.10 Species-at-Risk

*Proposals to work with others in the Columbia Mountains Natural Region will mitigate impacts on species-at-risk.*

Parks Canada recognizes the importance of cooperation in researching, monitoring and managing species-at-risk. Although some proposals have the potential to affect species-at-risk, environmental assessments would identify mitigation to minimize and/or eliminate impacts. Possible significant impacts of external stressors will again require a cooperative approach. The plan includes a series of actions related to the protection of old-growth and riparian dependent species.

## 14.11 Wildlife Mortality

*Education, research and monitoring, combined with proposals for the transportation corridor, may reduce human-caused wildlife mortality.*

Human use, the transportation corridor and forestry operations all contribute to wildlife mortality. Several existing or proposed research programs will determine population levels of certain species. Combined with other initiatives - "best practices" for the highway and railway, wildlife crossing structures, speed reductions, fencing, education, and initiatives to reduce habituation of wildlife - these programs may reduce wildlife mortality.

More traffic and increased speed associated with expanding the transportation corridor could significantly increase the number of wildlife/vehicle collisions. The environmental assessment of twinning the highway would require specific mitigation to address this issue.

It is important for Parks Canada to continue its participation in joint research and monitoring and to collaborate in developing land use and wildlife management practices in the regional ecosystem. Parks Canada must also participate in environmental assessments for regional projects, to mitigate their effect on the parks.

### **14.12 Residual Effects**

*With proper mitigation, identified through project-specific environmental assessments, residual effects should be insignificant.*

Many of the proposals will reduce the impact of past activities, improving the ecological and commemorative integrity of the parks and historic site. Where data to determine levels of acceptable use are not available, research and monitoring will provide the information required to implement changes.

The parks will continue to experience stress from external sources including forestry operations, dams, communities and recreation in the surrounding area. While Parks Canada will work with others to reduce the environmental impact of these activities, certain residual effects will remain (e.g., habitat fragmentation and access issues). The long-term implications of these residual effects are unclear, in part due to uncertainty over levels of human use and access, and the possible upgrades to the Trans-Canada Highway.

### **14.13 Public Input**

In March 2002, Parks Canada distributed a management plan concept to stakeholders, First Nations, staff, and the public for review. The document discussed the management plan's proposals and the resulting environmental effects.

Parks Canada has analysed the comments it received and incorporated suggestions as appropriate. Once the management plan is approved and proposals are brought forward for implementation, specific projects will be subject to further environmental assessment and public review.

### **14.14 Conclusion**

*The cumulative effect of the plan's proposals will clearly help enhance ecological and commemorative integrity. Potentially adverse effects of proposals in the management plan can be mitigated so they are insignificant.*

The management plan for Mount Revelstoke, Glacier and Rogers Pass is consistent with Parks Canada's legislation and policies. Satisfactory peer review and public input have taken place. The management plan proposes actions to address the ecological threats identified in the parks' Ecological Integrity Statement. Further research and project-specific environmental assessments will guide future decision-making. Parks Canada recognizes the importance of co-operating with neighbouring land management agencies and stakeholders to protect ecological and commemorative integrity. This approach will help to address cumulative effects, since decisions and direction will be based on the scale at which environmental effects occur.

# Appendix A

## List of Contributors/Planning Team

Bill Browne	Warden Services/Ecosystem Manager
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Roger Eddy	Environmental Assessment/ Cultural Resource Management Coordinator
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## Appendix B

### Glossary of Terms

**Adaptive Management** - allows flexibility, as information becomes available management decisions are revisited, re-evaluated and shifted if necessary.

**Appropriate Activities** - An activity which:

- is consistent with *Parks Canada Guiding Principles and Operational Policies* (1994) and the protection of ecological and/or commemorative integrity of protected heritage areas;
- is especially suited to the particular conditions of a specific protected heritage area; and
- provides the means to appreciate, understand and enjoy protected heritage area themes, messages and stories.

**Biodiversity** - The total genetic, species, and landscape variation within a given ecosystem.

**Commemorative Integrity** - A national historic site possesses commemorative integrity when:

- the resources directly related to the reasons for 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.

**Commemorative Integrity Statement** - was prepared for Rogers Pass National Historic Site and defines the intent of the commemoration of this nationally-significant site. It identifies a range of heritage values pertaining to the site's protection and presentation, as well as objectives for the achievement of these values. Produced in 1998 by Parks Canada.

**Cooperating Association** - A registered, non-government, non-profit corporation which provides services to the public at national parks, national historic sites, and historic canals. The cooperating association and their national umbrella organization, the Canadian Parks Partnerships (CPP), are partners with Parks Canada in achieving its mandate for heritage protection and education.

**COSEWIC** - The Committee on the Status of Endangered Wildlife in Canada is a group of experts that assesses and designates which wild species are in some danger of disappearing from Canada.

**Cultural Landscape** - Any geographical area that has been modified, influenced, or given special cultural meaning by people.

**Cultural Resource** - A human work or place which gives evidence of human activity or has spiritual or cultural meaning, and which has been determined to have historic value.

**Cultural Resource Management (CRM)** - Generally accepted practices for the conservation and presentation of cultural resources. In Parks Canada, Cultural Resource Management encompasses the presentation and use, as well as the conservation of cultural resources.

**Cumulative Effects** - The combined impact of human-caused stressors, that is greater than the sum of individual impacts due to their interaction.

**Ecological Integrity** - With respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes.



**Ecological Integrity Statement** - Document that provides an understanding of the state of the ecological integrity in a park and what needs to be done to maintain or restore it.

**Ecology** - The study of the relationships between living organisms (micro-organisms, plants and animals, including humans), and the relationships between the organisms and their physical environment.

**Ecosystem** - An ecosystem is a community of organisms, including humans, and its non-living environment interacting with one another and intimately linked by a variety of biological, chemical and physical processes. Ecosystems are often embedded within other, larger ecosystems.

**Ecosystem Processes** - The engines that drive ecosystems. They are usually associated with natural events that are needed to sustain ecosystems. Biological diversity, landscape patterns and changes in the state of an ecosystem are the result of ecosystem processes.

**Environmental Impact** - The effects of human interaction on natural and cultural resources.

**Environmental Management System (EMS)** - provides an overall system for the management of an organization's environmental issues. It includes organization structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving and reviewing an organization's environmental management goals. An EMS also provides an auditable system for documenting, tracking, managing and improving environmental performance.

**Federal Heritage Building** - Any federally owned building that has been designated by the Minister of Canadian Heritage under the Federal Heritage Building Policy.

**Federal Heritage Buildings Review Office (FHBRO)** - An interdepartmental advisory body responsible for identifying federal buildings that merit designation as heritage buildings, and for monitoring the conservation and continued use of these buildings.

**Field Unit** - An administrative division developed by Parks Canada, combining the management and administration of one or more national park(s), national historic site(s) or historic canal(s).

**Fire Cycle** - refers to the number of years required to burn over an area equal to the entire area of interest.

**Flora** - Plant life; the plant species of a particular area.

**Heritage Tourism** - An immersion in the natural history, human heritage, the arts and philosophy, and the institutions of another region or country that creates understanding, awareness and support for the nation's heritage.

**Historic Sites and Monument Board of Canada (HSMBC)** - Advises the minister on the commemoration of those persons, events, sites, structures and places that represent nationally significant aspects of Canadian history.

**Level I Cultural Resources** - Cultural Resources that are of national significance and are directly linked to the commemorative intent of the National Historic Site. This is the highest level assigned to cultural resources in the custody of Parks Canada.

**Level II Cultural Resources** - Cultural Resources not directly linked with commemorative intent of the National Historic Site, but document important historical aspects.

**Mitigation** - The elimination, reduction or control of the adverse environmental effects of a project, use or activity.

**Monitoring** - To gather information consistently over time on one or a group of living organisms or

non-living elements to determine their status, abundance, distribution and/or interactions with other organisms or the environment.

**Native Species** - Organisms that occur naturally in a particular area instead of being introduced, directly or indirectly, by human activity.

**Non-Native Species** - Species that did not occur naturally within the local ecosystem until relatively modern times. Their arrival within the ecosystem was facilitated by modern human activities and/or development.

**Old-growth forest** - In British Columbia, these are ecosystems dominated by large conifers over 220 years old where there is a mix of large living trees, large standing and fallen dead trees, and a multi-layered canopy of younger trees.

**Outreach Program** - An off-site interpretation program that encourages public understanding and appreciation of Canada's natural and cultural heritage.

**Parks Canada Agency** - The Parks Canada Agency is a public agency created by the *Parks Canada Agency Act* in December 1998. The agency has the mandate to conserve, protect, and present nationally significant natural and cultural heritage.

**Precautionary Principle** - Where uncertainty exists in the absence of good information regarding the potential impact of an action or inaction, prudence dictates that an approach be applied that has the least likelihood of negative consequences.

**Restoration** - The process of restoring an area, a natural resource, or an ecosystem to a specified state or condition. This can be accomplished passively through natural processes or actively by human manipulation.

**Riparian** - areas of land immediately adjacent to streams and rivers. Riparian also describes plants and animals associated with these areas.

**Stakeholders** - A person or organization with an interest in Glacier National Park, Mount Revelstoke National Park or Rogers Pass National Historic Site. Organizations may include both government and non-government organizations, commercial, and for profit or non-profit organizations.

**Stewardship** - Management of heritage resources in such a way that they can be passed on with integrity to future generations.

## Appendix C

### Appropriate Use Criteria

Parks Canada is responsible for making decisions about the type of use that is appropriate in a national park. In cases where the *Canada National Parks Act*, *Parks Canada Guiding Principles and Operational Policies* (1994) and the Park Management Plan are not clear on appropriate use, Parks Canada must rely on other, clearly defined criteria in coming to a decision. The following criteria will be used to evaluate the merits of a new use, a change in an existing use, or a significant change in the level of intensity of use. Adjustments may be necessary at times and the review process must be flexible enough to accommodate changing public values and perspectives.

#### Impact on the Environment

- seeks to assess the extent to which the proposed change impacts the ecological integrity of the region. The assessment will include the effect of participation in the activity as well as the facilities and services required to support the activity.

#### Effects on Culture and Heritage

- seeks to assess the qualitative dimension and preservation of a use that contributes to the region's heritage and cultural integrity. The assessment will reflect an understanding, appreciation of, and respect for the region's culture and heritage, and evolving cultural identity including Aboriginal people.

#### Quality of Experience

- investigates the extent to which the participant's and other's quality of experience is enhanced or diminished as a result of the proposed change. Its application recognizes that different visitors seek a broad range of different experiences, and that they value different resources, facilities and services in different ways.

#### Economic Effects

- attempts to understand the economic effects of the proposed change. Issues that would be considered include: cost for visitors to the park, cost and revenues to Parks Canada, and effect on local, regional and national economies and market conditions.

#### Public Safety

- used to determine the extent to which the proposed change imposes risks or dangers to participants or others.

#### Equity and Access

- seeks to ensure that all citizens have a fair, reasonable, and equitable opportunity to participate in, and benefit from, the range of appropriate activities and experiences available in Mount Revelstoke National Park, Glacier National Park and Rogers Pass National Historic Site. It will consider such factors as economic status, physical capabilities, and place of residence of the visitor.

#### Social Effects/Quality of Life

- examines the social implications of the proposed change. Questions applied here would speak to: level of change to the region's existing social patterns and needs, effects on the social service structure, effects on social indicators (e.g., income distribution, housing costs, levels of crime, etc).

#### Education and Awareness

- focuses on the extent to which the proposed change contributes to better understanding and appreciation of natural and cultural heritage, Mount Revelstoke National Park, Glacier National Park and Rogers Pass National Historic Site, their role within the Canadian national park system and in the larger ecosystem.

#### Level of Use: Frequency, Timing, and Quantity

- would involve questions such as: How often does a proposed activity occur? When does it occur (e.g., season)? How many individuals are involved? What is the level of support required?

#### Physical Setting Related

- has two components. The first focuses on whether the proposed change is well-suited to the physical setting of Mount Revelstoke National Park, Glacier National Park and Rogers Pass National Historic Site. The second considers to what extent the proposed change is dependent upon a national park setting.

#### Heritage Tourism

- focuses on the extent to which the proposed change contributes to the parks' Heritage Tourism goals.

#### Environmental Stewardship

- focuses on the extent to which the proposed change contributes to the parks' Environmental Stewardship goals.

## **Appendix D**

### **Appropriate Activities for Mount Revelstoke National Park and Glacier National Park**

- a. frontcountry and backcountry hiking
- b. frontcountry camping in Glacier National Park (Illecillewaet, Loop Brook and Sir Donald campgrounds)
- c. random backcountry camping (except within 5 km of the nearest road or the Miller Lake area) and designated backcountry camping
- d. picnicking
- e. road bicycling
- f. mountain bicycling (on designated trails) in Mount Revelstoke National Park
- g. cross-country and backcountry skiing
- h. snowshoeing
- i. climbing and mountaineering
- j. caving
- k. kayaking, canoeing, rafting
- l. lake fishing
- m. pleasure driving