



JASPER

NATIONAL PARK OF CANADA

State of the Park Report



August 2008



Parks Canada
Parcs Canada

Canada

STATE OF THE PARK REPORT
JASPER NATIONAL PARK OF CANADA

August 2008

Approved by:

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Executive Summary

STATE OF THE PARK REPORT - JASPER NATIONAL PARK

Jasper National Park of Canada is an irreplaceable piece of world heritage, managed under an approved management plan (2000) developed and implemented with the active involvement of Canadians. The management plan provides direction for safeguarding park resources and ensuring people are connecting with the park through meaningful personal experiences and learning opportunities. A State of the Park Report (SoPR) is prepared every five years¹ to evaluate the condition of the park, report on key results, and to prepare for a management plan review.

The 2008 SoPR for Jasper National Park is based on available research and monitoring programs conducted by Parks Canada and others. Long-term monitoring programs are under development, particularly in areas of visitor experience and learning. Some information gaps exist and are most apparent in areas of social science. Condition ratings are based on the judgment of Parks Canada specialists and expert advice.

A. Key findings

Ecological integrity is, overall, rated in fair condition with a stable trend.

- The ecological matters of most concern are the status of Woodland caribou and the regional grizzly bear population, and forest health. Other issues of concern include highway and rail-caused wildlife mortalities, impacts of non-native fish and culverts on aquatic systems, and invasive non-native plants.
- There has been steady success in the use of prescribed fire to restore natural disturbance, and with interventions to slow the spread of mountain pine beetle. Significant steps have been taken to protect the community and park facilities from wildfire risk by managing forest fuels and thinning forest structure.
- Measures to manage wildlife-human conflicts have been successful in reducing incidents, although elk-human conflicts have recently begun to increase again.
- Progress has been made to restore wildlife movement corridors - by modifying or moving park operational facilities, and engaging trail users in restoration work to adjust trail networks for ecological benefit and to improve the quality of trail experiences.
- The impact of climate change is noticeable in measures such as increasing temperatures, lower winter precipitation and glacier recession; the long term specific ecological impacts are unknown.

¹ A State of the Park Report and management plan review for Jasper National Park was completed as scheduled in 2005. No plan amendments were called for, with the expectation that the next SoPR and management plan review would be conducted concurrently with the other mountain national parks in order to re-align their planning cycles in 2008.

- Rapid regional land use changes have occurred, particularly in Alberta. Road access construction and population growth are contributing to habitat change and mortality risk for wide-ranging wildlife – particularly grizzly bears and caribou.

Cultural Resources are rated in *fair* condition, with stable to improving trends.

- Separate management plans were prepared for the four national historic sites in Jasper National Park to enhance their profile and management.
- Appropriate measures are in place or in development to protect and manage the park's 600+ documented archaeological sites, 109,000+ archaeological artifacts, over 250 historic objects, numerous historic structures including two classified and 35 recognized federal heritage buildings, several Métis homesteads, a Heritage Railway Station, and a Canadian Heritage River.
- Further work needs to be done to revise the Cultural Resource Management Strategy, catalogue collections, fill in data gaps, and complete evaluations.
- A new Parks Canada *Cultural Resources Advisory Board* for the mountain national parks is in place to help set priorities and raise the profile and practice for cultural resource management.

Park Visitor Experiences and Learning Opportunities are rated *fair*, with improving trends.

- Indicators and measures are in development. Visitor satisfaction scores have consistently returned high satisfaction scores for Parks Canada services.
- Total visitor numbers continue to slowly increase, though camping has declined by about 6% in the last five years. There has been a noticeable shift in markets, with a decline in international visitor numbers replaced by growth in regional visits.
- Investments in park visitor infrastructure are informed by feedback from visitors through surveys and planning forums, social science, engineering and environmental studies.
- New initiatives including school curriculum programs have extended the reach and relevance of public education programs, with a particular focus on engaging youth. Significant opportunities exist to reach a broader cross-section of urban Canadians with education and awareness programs.
- Further research is needed to understand and monitor how park experiences, learning, and involvement opportunities contribute to establish "Connection to Place" for visitors and area residents, and to determine how these factors influence support for heritage and participation in park stewardship.

Aboriginal Involvement is reported on but not rated:

- Aboriginal perspectives are not well represented in the current management plan and decision-making processes; opportunities to learn about and experience Aboriginal culture are not well represented in the suite of park visitor experiences.
- The Council of Elders of the Descendants of Jasper have met six times since their inception in July 2004, and are focused on priorities related to the assessment, protection and maintenance of grave sites, and telling the story of the Métis descendants of Jasper.
- An Aboriginal Forum was established in October 2006 to address deficiencies in Aboriginal involvement. The Aboriginal Forum has met six times and is engaged with 24

Aboriginal groups. In February 2008, participants developed a draft action plan to focus on priorities areas of: cultural programming; formalizing working relationships with Parks Canada; access to the park for medicines, ceremonies and reconnection; and traditional land use studies.

The Community of Jasper is briefly reported on but not rated:

- The first State of the Community Report was prepared in November 2006 to assess achievements and challenges to implementation of the Jasper Community Land Use Plan; implementation is 90% complete through the combined efforts of Parks Canada and the Municipality of Jasper.
- Areas of notable progress are implementation of the Minister's planning framework for national park communities for *no net negative environmental impact*, appropriate use, responsible growth management, leadership in environmental stewardship and heritage conservation, and enabling affordable housing through offering to release residential lands at reduced market value to non-equity housing projects.
- The community has achieved local governance that assists in achieving the community vision, and subsequent activities in partnership with the Municipality of Jasper have contributed to deliver key plan results.
- Given that implementation of the plan is substantially complete and important circumstances including governance have changed since the plan was approved, there is a need for a new Jasper community plan. Parks Canada and the Municipality of Jasper are conducting a joint planning program to prepare one community plan that will meet the requirements of the Parks Canada Agency and the Municipality of Jasper.






Environmental Stewardship is briefly reported on but not rated:



- A community Environmental Stewardship Advisory Committee was formed in July 2006, with initial emphasis on building awareness and influencing the community and visitors through communications and special events.
- Significant gains have been made in wastewater management and solid waste diversion due to new facilities and programming. Further effort is required to improve waste stream sorting and diversion of recyclable and compost-able material from the solid waste stream. Concern exists over the life expectancy of the waste transfer station, the handling of trade waste, and addressing site contamination. Gravel extraction linked with the current waste transfer station operations and other active and inactive pits needs to be reviewed to consider long-term supply requirements together with economic, environmental, and ecological factors.
- More work is needed in the broad areas of energy conservation (e.g., building renovation and construction), storm water management, restoration of disturbed sites, contaminated site remediation, and empowerment of residents and visitors to influence and adopt environmentally sound practices.





B. Condition and Trend of Indicators for Jasper National Park


A system of indicators and measures is being developed to support long term monitoring and reporting. A summary of ratings for the ecological integrity, cultural resource management, and



visitor experience and public education indicators is presented in the following table. In the table a red square indicates poor condition, a yellow triangle fair condition, and a green circle good condition. Arrows indicate the trend (increasing, stable or decreasing) for the particular indicator as it relates to ecological integrity, cultural resource management, visitor experience or public education. A grey diamond indicates insufficient information to assign condition and trend.

Heritage Resources		
Ecological Integrity (EI)		
Native Biodiversity		Wildlife mortality rates caused by highway and rail collisions are an ongoing challenge, but the trend remains stable. The current elk population may be enhancing wolf numbers and indirectly contributing to predation on caribou. Woodland caribou recovery is a priority and requires regional collaboration and area planning to meet park objectives for EI.
Climate		Changes in climate are most apparent in the ongoing retreat of prominent glaciers. Weather and climate data indicate trends of rising temperatures and declining winter precipitation. A condition rating will be assigned once the appropriate reference condition is identified.
Aquatic Ecosystems		Water quality in the Athabasca River has improved as a result of upgraded sewage treatment facilities. Several dam and culvert modification projects have improved connectivity. Chronic, perhaps irreversible changes have occurred in fish community structure of park watersheds due to the historic introduction of non-native fish.
Terrestrial Ecosystems		Fire program targets are successfully being met, although the majority of burning was concentrated in one area of the park. Despite aggressive control measures, the persistence and spread of non-native plants is a problem in the montane valley bottom. Mountain pine beetle populations require ongoing control work and in the subalpine, and white pine blister rust infection is increasing. Wildlife-human conflicts have declined in the park overall, and while elk-human conflicts declined substantially over the past 10 years; they are recently gradually increasing.
Regional Landscape		Outside of the park and adjacent protected areas, land use change (eg. increasing regional motorized access density) is contributing to pressures on the shared grizzly bear and caribou populations. Regional partnerships, such as the Foothills Model Forest, contribute to positively influencing landscape management practices.

Cultural Resource Management (CRM)		
Resource Condition		Diverse cultural resources exist throughout the park with a high level of protection. Mitigative actions have been taken to reduce and manage threats; preventative measures are in place through environmental assessment protocols.
Selected Management Practices		Comprehensive inventories give a good indication of existing cultural resources. Further work is needed to keep inventories current. A revised CRM Plan will help to identify priorities and provide evaluation criteria.

Visitor Experience (VE)		
Understanding Visitors		A fair knowledge of visitors exists, updated regularly through targeted surveys of visitors including the 2003 Patterns of Visitor Use Study. Visitor information informs investment priorities. Visitation is slowly increasing and is almost 2 million per year. 62% are from Canada and 42% are from Alberta. 61% are repeat visitors. More social science information is needed to improve understanding of visitors.
Providing Opportunities		Wide ranges of visitor opportunities exist from personal group interpretation to solitude wilderness experiences; and opportunities vary by season. Recent and ongoing investments in park infrastructure are improving opportunities.
Quality Service		Satisfaction scores consistently exceed the national target. 82% of visitors surveyed in 2003 rated their park experiences as "extremely enjoyable". There is generally high satisfaction with park visits, except for aspects of "value for money".
Connecting with Place		A small proportion of visitors take advantage of interpretive programs. The park draws people back – many are repeat visitors.

Public Education (PE)		
Understanding Audiences		Local and regional audiences comprise a high percentage of park users, but they are perceived to have a low participation rate in park learning activities; accordingly, they are the target audience for the new <i>EcoIntegrity</i> communications project.

Extending our Reach		Training is provided to commercial sector employees so that they can provide useful and accurate information to visitors. Messages have been integrated into Alberta school curriculums, and resources have been developed for teachers. An online discussion panel enables continuing discussion with visitors.
Facilitating Understanding		A wide variety of quality personal and non-personal methods are used, such as interpretive programs, certification of commercial guides and World Heritage Interpretive Theatre
Influencing Attitudes		Studies indicate that continued public education might be an effective strategy for changing perceptions and gaining public acceptance of park management actions. More social science research is required at the park and national levels.

C. Summary of Issues from the SoPR to Consider in the Management Plan Review:

- Strategies to recover species at risk that engage visitors and stakeholders.
- Effective regional collaboration to maintain secure habitat for grizzly bears and caribou.
- Recognition of the perspectives and aspirations of Aboriginal people for reconnecting with the park to support their cultural values, contributing to park management, and offering authentic Aboriginal cultural experiences for visitors.
- Improved integration of visitor experience and protection elements as infrastructure and programs are updated.
- Revision of fire targets and mountain pine beetle strategies to improve ecosystem health.
- Increased emphasis on public education, as a key element of meaningful visitor experiences and protection of ecological integrity and cultural heritage.
- Strategies for adapting to the impacts of climate change.
- Development of measures, targets and thresholds for visitor experience and public education indicators; confirmation and/or refinement of measures, target and thresholds for ecological integrity indicators.
- Gravel extraction for long term park needs, and determining the future of the transfer station landfill operations.
- Updating changes in local community governance, role of the community as a visitor center, and the unique role available to residents in stewardship of Jasper National Park.

1.0 INTRODUCTION

The Parks Canada Agency is pleased to report to Canadians on the current condition of Jasper National Park of Canada. The State of the Park Report (SoPR) provides an assessment of the key areas of Parks Canada's mandate: protection (ecological integrity and commemorative integrity), visitor experience, and public education. It is the second such report for the park².

State of the park reporting is completed every five years in conjunction with the review of the park management plan, which is a legislated requirement³. The Jasper National Park management plan was approved in 2000 as a fifteen-year plan and was reviewed in 2005. The next review is scheduled for 2008 in order to coordinate the management-planning cycles for the mountain national parks (Banff, Kootenay, Revelstoke-Glacier, Waterton Lakes, and Yoho). There is also a national policy requirement for annual reporting on performance to implement the park management plan. Jasper National Park has prepared annual reports to report progress on implementing the management plan since 2002.

The purposes of the State of the Park Report are to:

- Provide an objective summary of what is known of the condition of the park's resources and of visitors' enjoyment of the park
- Contribute to the identification of issues of concern that may need to be addressed during the next Management Plan review

The process for state of the park reporting is relatively new and evolving. Monitoring programs are being developed for each key area of the mandate. Ecological integrity monitoring is the furthest advanced and new programs are being developed to measure the condition of cultural resources, visitor experience and public education. By 2008, the park will have established a long-term suit of indicators and measures. In the interim there are a number of information gaps that exist. These gaps will be filled in subsequent reports as the Parks Canada's and Jasper National Park's monitoring programs develop.

The selection of the current measures and indicators was based on management plan objectives and the requirements of the national monitoring programs. The findings in the report are important for evaluating the effectiveness of management actions and for identifying deficiencies and adaptive and integrated strategies to be addressed during the review of the management plan.

1.1 Achieving the Vision for Jasper National Park

The management plan for Jasper National Park (2000) establishes a vision that integrates protection, experience and education in ways that are mutually supportive and inter-

² The first State of the Park Report for Jasper National Park was completed in 2005.

³ The Canada National Parks Act Subsection 11(2) requires that "The Minister shall review the management plan for each park every five years, and any amendments to a plan shall be tabled with the plan in each House of Parliament."

dependent. Figure 1 illustrates how the vision elements contribute to achieve Parks Canada’s integrated mandate. Without public appreciation and understanding of the value of Jasper’s natural and human history, stewardship and protection of the park’s ecological and cultural resources will not occur. Without protection and presentation of Jasper’s natural beauty, functioning ecosystems and heritage values, Canadians will be unable to feel a connection with this place, and its irreplaceable values would be jeopardized.

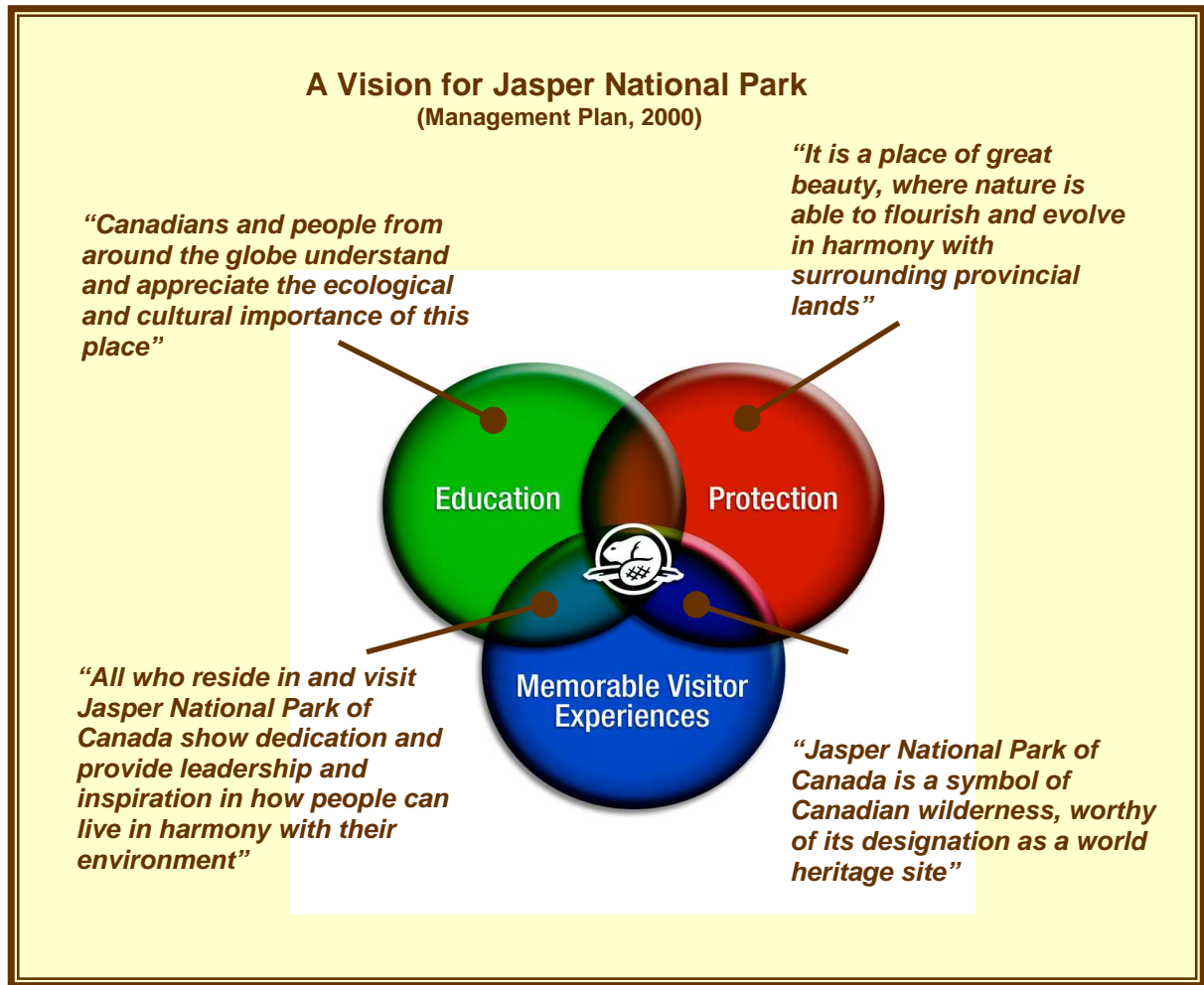


Figure 1: The Park Vision (2000) for achieving Parks Canada’s integrated mandate.

The management plan sets out key strategies to achieve the vision by:

- Connecting Canadians to Jasper National Park through meaningful first-hand experiences and learning opportunities;
- Managing use of park without impairing its ecological and commemorative integrity;
- Setting limits to growth of the Town of Jasper and outlying commercial facilities;
- Retaining extensive areas of wilderness with low human use;
- Restoring terrestrial and aquatic ecosystems;
- Protecting and presenting cultural resources;

- Collaborating with Aboriginal people on the protection and presentation of Aboriginal heritage in the park;
- Partnering with regional land managers to conserve shared grizzly bear and caribou populations and to collaborate on forest health issues;
- Practicing open management through effective public participation;
- Advancing the role of the Community of Jasper as a model environmental community and a centre for visitor services and heritage presentation;
- Fostering environmental stewardship.

The state of the park report will provide tangible measures of how well the vision for Jasper National Park is being achieved.

1.2 Park Setting

Jasper National Park celebrated its 100th birthday in 2007, and is the largest (11,228 km²) and most northerly Canadian Rocky Mountain national park. It shares boundaries with Banff National Park, Mount Robson Provincial Park, Hamber Provincial Park, Wilmore Wilderness Park, Rock Lake – Solomon Creek Wildland, Whitehorse Wildland, Brazeau Canyon Wildland and White Goat Wilderness Area. It is a place of national and international significance with overlapping designations – a national park that encompasses four national historic sites of Canada (two of which are shared with the Province of British Columbia), a Canadian Heritage River, and a shared designation with adjacent protected areas as a World Heritage Site (1984)⁴. Nearly two million visitors from Canada and around the world experience Jasper National Park every year.

Since long ago, this area – the upper Athabasca Watershed - has been a crossroads for people and cultures, for travel and trade over the mountain passes that connect the plains and foothills of Alberta with the interior plateau of British Columbia. Evidence of human use dates back approximately 9,000 years, yet the relative scarcity of archaeological sites from the pre-Contact period in the area suggests that it was much less used than nearby plains and parklands regions or the interior plateau west of the Rockies. In the post-contact period, illuminated in part by fur trade records, the area was used and shared by Aboriginal groups from both sides of the continental divide.



Figure 2. The valleys of Jasper National Park have been important corridors for wildlife and people for thousands of years. Shawn Cardiff photo.

⁴ The Canadian Rocky Mountains World Heritage Site designation is based on on-going geological processes, exceptional natural beauty and habitats for rare and endangered species.

European-Canadian influences came relatively late to the Upper Athabasca, along with fur trade expansion and establishment of commercial trade routes through Athabasca and Yellowhead passes in the early to mid-1800s. Later, a continental Yellowhead rail route and highways were established on the axis of old trail networks. Creation of the Jasper Park Forest Reserve in 1907 invoked forest and watershed protection, and with arrival of rail access (ca. 1911), enabled development and promotion of the area also as a place for tourism.

Aboriginal groups that historically used the area were affected by designation of the Jasper Park Forest Reserve, and later, National Park. Six Métis families resident in the Athabasca valley⁵ received some compensation and departed in 1910 under circumstances that remain contentious for descendants of those affected. Today over twenty different Aboriginal communities in the region share an interest in Jasper National Park and are participating in the Jasper Aboriginal Forum, and/or the Elders Council of Descendants of Jasper; both venues include a healing and reconnection process.

Mountain geology, variable topography, climate and water bodies contribute to the park's diversity of terrain, vegetation and habitats, and taken together with wildlife viewing opportunities, are the foundation of its appeal. The park can be divided into three ecological zones – the montane, subalpine and alpine ecoregions. The montane ecoregion occurs at lower elevations in the foothills and major valleys of the Rocky Mountains, and is the most biologically productive area. Most of the intensely used park visitor infrastructure is located in ecologically valuable valley bottom montane. A major national transportation corridor bisects the park, involving the routes of the Yellowhead Highway, the Canadian National railroad and the Kinder-Morgan Canada (the former TransMountain) pipeline.

The community of Jasper is located near the centre of the park and provides a service base for visitors and home for approximately 5,000 residents. Together with nearby campgrounds and commercial accommodations, the greater townsite area has an overnight summer capacity of nearly 20,000 people. Local residents share in the diverse park experience opportunities enjoyed by visitors, and residents voice a strong sense of identity with mountain heritage and lifestyles⁶.

Outside the park, intensive land uses, including forestry, mining, oil and gas extraction and recreation in both Alberta and British Columbia contribute to pressures affecting the park's ecosystems. Recent rapid increases in regional road access development and infrastructure have intensified the effects of fragmentation and habitat loss, particularly to wide-ranging species such as grizzly bear and caribou. Regional outbreaks of mountain pine beetle present new challenges to integrate regional ecosystem management goals for multiple values, including effects on habitat for wildlife populations of concern.

⁵ P. Murphy, R.W. Udell, R.E. Stevenson, T. Peterson. 2007. *A Hard Road to Travel*. Foothills Model Forest.

⁶ See the Vision statement, *Jasper Community Land Use Plan* (2001).

2.0 ASSESSMENT AND EVALUATION METHODS

Parks Canada is developing a monitoring program to assess the performance of national parks in protecting ecological and commemorative integrity, undertaking public education and providing memorable visitor experiences. Within each of these three broad areas, several indicators have been identified to provide a broad representation of key factors influencing the national parks. Each indicator is an index supported by several measures that are based on data gathered through a variety of sources. In the absence of sufficient data, professional judgment is used to assess condition. Discussion in this report focuses on the condition of indicators, rather than the considerable background material (measures, data and professional judgment) used to inform the indicators. This approach is depicted in the 'iceberg model' shown in Figure 3.

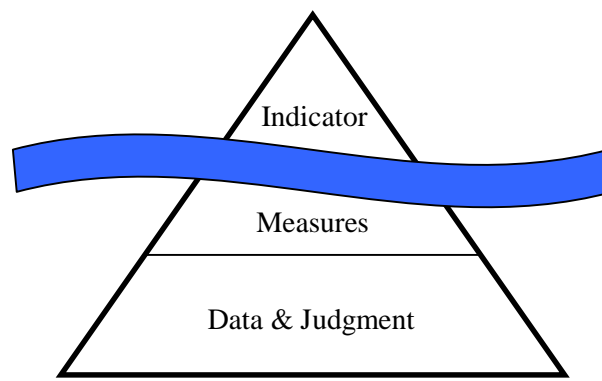


Figure 3. The 'iceberg model' of indicators and measures includes an *above the water* component giving a clear and simple statement about the state and overall trend of EI indicators. A *below the water* component includes the EI measures, field measurements, analyses, and models used to generate the status and trend for each indicator.





At the time of preparation of this state of the park report, this monitoring program is evolving. Some indicators and measures are based on existing long-term monitoring programs and can be readily assessed and reported on now. Other indicators and measures are more recently established and monitoring programs provide more limited data on which to base evaluations and ratings. In some cases indicators and measures continue to be refined and information gaps exist.

Where possible, this state of the park report is based on the results of existing monitoring and research programs for ecological and commemorative integrity, public education and visitor experience. Sources include programs undertaken by Parks Canada and external agencies. In some cases where limited data is available, the professional judgment of Parks Canada experts is used to supplement data analysis. As the long-term monitoring program develops, existing gaps will be filled and future state of the park reports will be based on increasingly more comprehensive, rigorous and statistically powerful data.

In addition to providing an assessment of the state of Jasper National Park, this report will provide a framework for this new monitoring program against which future state of the park reports can be compared.

The indicators used to assess resource protection, visitor experience and public education are rated based on their condition and trend as it relates each of these three areas. The condition and trend ratings are *italicized and bolded* throughout the document to emphasize the use of these concepts. For quick reference, symbols and colours are used to represent the condition and trend of the indicators and measures, as shown in Table 1.

Table 1. Symbols used for indicator evaluation

Condition		Trend	
<i>Good</i> : the condition of the indicator/measure is satisfactory		<i>Improving</i> : the condition of the indicator/measure is improving since the last assessment	↑
<i>Fair</i> : there is concern regarding the state of this indicator/measure		<i>Stable</i> : the condition of the indicator/measure is unchanged since the last assessment	↔
<i>Poor</i> : the condition of the indicator/measure is poor or low		<i>Declining</i> : the condition of the indicator/measure is declining since the last assessment period	↓
<i>Not rated</i> : there is insufficient information to determine condition		<i>Not rated</i> : there is insufficient information to determine trend	NR

2.1 Resource Protection Indicators

Measures are rated by comparing the actual state of the measure with its desired state, or target. For some measures, targets are established in existing park management plans. In other cases, targets established by agencies other than Parks Canada can be used. Where adequate information is not yet available to set a specific target, the professional judgment of Parks Canada experts is used to determine the rating. Alternatively, some indicators and measures are not rated due to lack of information

A similar approach is used to assess and rate indicators related to cultural resources. The primary difference is that condition and trend ratings relate to cultural resource condition and management rather than ecological integrity. Due to data limitations, including lack of recent inventories and evaluation, trends will not be reported for cultural resource measures and indicators.

In order for measure condition and trend ratings to be rolled into indicator ratings in a consistent manner, a simple mathematical averaging process is applied, generally resulting

in an indicator rating consistent with the measure rating in the majority. In cases where there is no majority among measure ratings, the indicator was rated as *fair* to reflect uncertainty as well as concern.

A distinction is necessary between the trend rating assigned to an ecological indicator or measure and the characteristics of the measure. For example, a wildlife population may increase or decrease, but the trend rating and associated arrow symbol refer to whether ecological integrity is *improving* or *declining*, not to the size of the population.

2.2 Connection to Place: Visitor Experience and Public Education Indicators

The indicators used to assess visitor experience and public education are relatively new in the Parks Canada monitoring program. Few specific measures and monitoring programs are in place. As a result, ratings for these indicators are mostly based on an analysis of existing survey data, primarily from a 2003 park-wide visitor survey, supplemented by site specific survey information and the professional opinion of Parks Canada experts. With one exception, targets, or desired states of the indicators, have not been established – Parks Canada does have targets for visitor satisfaction. The visitor experience and public education indicators are rated based on the judgment of Parks Canada staff in Jasper National Park.

3.0 ASSESSMENT OF THE STATE OF RESOURCE PROTECTION, VISITOR EXPERIENCE AND PUBLIC EDUCATION

3.1 Ecological Integrity

Overview

Ecological Integrity (EI) is defined 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. In other words, ecosystems have integrity when their native components (plants, animals and other organisms) and processes (such as fire, succession and predation) are intact.

Determining whether or not a park is successful in maintaining EI requires information from a comprehensive set of indicators and measures that reflect trends in a broad array of species, communities, and ecological processes. These indicators are meant to act as early warning bells to stimulate management actions necessary to maintain EI.

The evaluation of EI in Jasper National Park of Canada is determined using five indicators of 1) Native Biodiversity, 2) Aquatic Ecosystems, 3) Terrestrial Ecosystems, 4) Landscapes & Geology and 5) Climate & Atmosphere. These are consistent with evaluation categories selected for the montane cordillera bioregion⁷ in Parks Canada's EI Monitoring and Reporting Program. An assessment of condition and trend is assigned to the indicator where

⁷ The montane cordillera bioregion consists of the seven mountain parks (Waterton Lakes, Banff, Jasper, Kootenay, Yoho, Mt. Revelstoke, Glacier).

possible, based on quantitative and qualitative data, expert opinion, and traditional knowledge related to a suite of measures.







The bioregional and park specific measures for Jasper National Park selected for this report have yet to be formalized and may or may not be included in future State of the Park reports. Due to the summary nature of this report, only brief conditions for each measure are addressed. However, detailed write-ups on all measures are available in the State of the Park Report Technical Compendium.

Ecological Integrity in Jasper National Park of Canada is assessed to be in fair condition, with a stable trend. Two of the five indicators – Native Biodiversity and Terrestrial Ecosystems are rated as having fair and stable EI. Aquatic Ecosystems are in fair condition and the trend is improving. The Regional Landscape has not been rated because the monitoring program for this indicator is not developed sufficiently to support a rating; however rapid road development regionally is a concern for potential effects on EI. The Climate and Atmosphere indicator trend is declining, however the condition is not rated at this time because of the challenge in establishing a reference condition.

 **Indicator: Native Biodiversity**

Native biodiversity is the variety of life in a place and the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems. The Jasper National Park Management Plan (2000) identifies the need to maintain biological diversity at all levels within the park. The current state of native biodiversity is rated as fair overall, with a stable trend.

The measures used to inform the Native Biodiversity indicator include:

Measure	Condition/Trend	Measure	Condition/Trend
Caribou Population		Elk Population	
Grizzly Bears		Carnivore Monitoring	
Bird Diversity		Wildlife Mortality	

Species at Risk: Woodland Caribou Population Status

Habitat loss and fragmentation, climate change, disturbance by humans, and an altered predator/prey dynamic have all contributed to the decline of woodland caribou in Alberta. The woodland caribou Boreal and Southern Mountain populations are listed as “Threatened” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2002), and are protected under Schedule I of Canada’s *Species at Risk Act* (SARA).

The current population estimate for the *south Jasper* caribou population is 130 animals compared to 175 caribou estimated in 1988. This indicates the *south Jasper* population has declined by over 26% over 20 years (130/175), supporting a poor rating overall for condition. While the population has declined over the long term, the trend over the past five years has remained stable for the *south Jasper* herd. Based on survival and recruitment values, the more northerly *A la Peche* herd has maintained population stability.

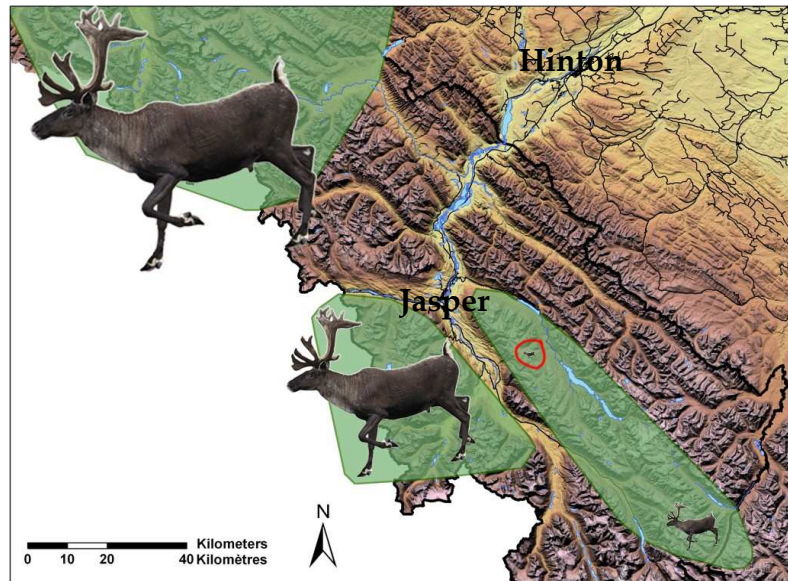


Figure 4: Relative condition of the A la Peche herd (northern herd), and the subgroups of the South Jasper Herd: the Tonquin sub-group (southwestern herd), Brazeau sub-group and Maligne sub-group (circled).

An initial suite of management actions have been undertaken that together contribute to habitat protection and caribou recovery. A SARA-compliant recovery strategy is in development.

Grizzly Bear Monitoring

Seventy-five per cent of land management units (LMU) described in the Jasper National Park management plan are rated as having good habitat security for grizzly bears (Figure 6). In secure habitat, grizzly bears can feed with little human-caused disturbance and maintain their wary behavior, a desirable trait for survival. An LMU is rated as “good” if security is greater than 78%, “fair” if between 68% and 78%, and “poor” if habitat security is less than 68%.



Figure 5. Grizzly bear - Jasper National Park. Gord Dubois Photo.

Habitat Security for Jasper National Park

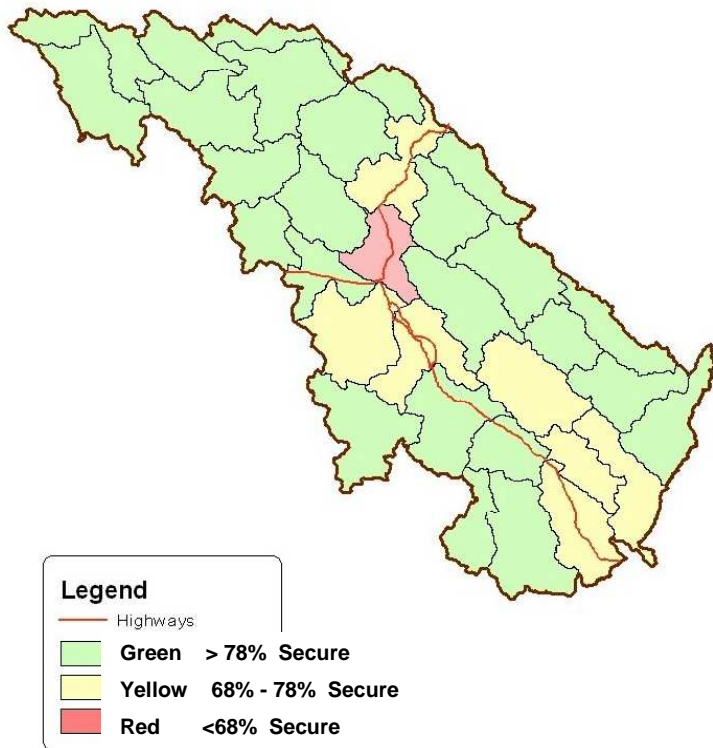


Figure 6: Grizzly Bear habitat security ratings for land management units in Jasper National Park.

1% threshold identified for population stability. Human-caused independent female grizzly bear mortality has stayed well below the 1.2% limit required to maintain the population's reproductive capacity (Gibeau 2007). *The condition and trend with respect to grizzly bear mortality in the park is rated as good and stable.*

Bird Monitoring

Two measures are used to track the condition of songbirds in the park. In cooperation with the Friends of Jasper National Park, we use specially designed nets to mark and recapture birds to track productivity (proportion of young born) and adult survival at a site near Pyramid Lake. Following 3 years of monitoring, capture rates of both adults and young. The reproductive index are high relative to three other locations in the Canadian Rockies where similar monitoring is happening. *The condition and trend with respect to bird productivity and survival is rated as good and the trend is stable at all four sites in the mountain parks.*

In 2007, we began to monitor changes in species diversity and abundance of a wide range of breeding songbirds in all three ecoregions in the park using a series of point-count stations along park trails. Results are not available at this time.

Habitat security is calculated as the percentage of each LMU made up of secure habitat. *The condition of this measure is rated as fair* because twenty-five percent of LMUs are still unable to guarantee grizzly bear security. *The trend is stable*, as the distribution of human activity throughout Jasper National Park has not changed markedly. Note: the scientific method of calculating habitat security is slightly different than the "security area" measure reported in page 41 of the Jasper National Park management plan; accordingly the values are not directly comparable.

A second aspect of grizzly bear monitoring is the annual rate of human-caused mortality within the park. Average human-caused mortality over the past 10 years was 0.5% of the estimated population (based on 100 bears), well below the

Elk Population Monitoring

An unnaturally high population of elk has the potential to negatively impact important habitat, affecting other species and causing lower vegetation diversity. An elevated elk population may float a higher predator population, thereby increasing predation pressure on Woodland caribou. Monitoring the condition of the elk population trend is achieved through aerial surveys, which were begun in 2008, and will be repeated every three years. We currently monitor elk recruitment (calf:cow ratio), and also report on elk in the context of other measures: wildlife conflicts and wildlife mortality.

Elk using the townsite area have higher calf recruitment than those in non-townsite areas like Devona in the Jasper Lake area. High recruitment rates imply the townsite area is a refuge from predators and/or that better browse in human-impacted areas may be ameliorating elk health (Figure 7). The Jasper townsite elk population *may* be hyperabundant. Townsite calf recruitment is frequently over twice as high than historical levels at Devona. *The condition of ecological integrity with respect to townsite elk recruitment is of concern (fair) and the trend is stable for ecological integrity.*

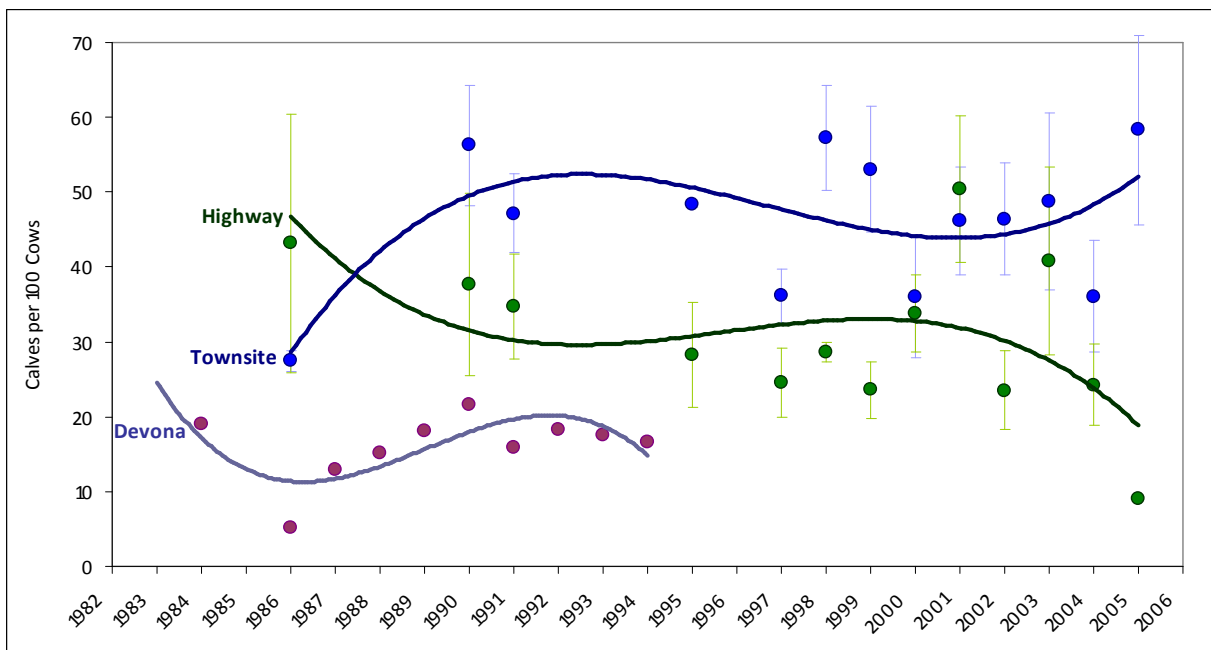


Figure 7. Elk calf : cow ratios (CCR) among different herds in Jasper National Park.

Carnivore Monitoring

A program is being tested in 2008 to monitor carnivores in the park using snow tracking. By surveying cross-valley transects on the benchlands in the Athabasca Valley near the town of Jasper, we can measure the frequency of use by carnivores. We can detect if rare species are still present (lynx, cougar, wolverine, fisher), and track the relative abundance of more common species (wolves, marten, coyote). It is particularly important to track pack sizes and ranges for wolves as they play a pivotal role in the ecosystem. *A status and trend is unavailable at this time.*

Wildlife Mortality

Over the past 15 years, an average of 170 animals per year have been killed on the highway and railway in JNP. The Yellowhead Highway (Highway 16) accounts for 80 % of these mortalities. Species such as mountain caribou, elk and bighorn sheep are attracted to road salt, and therefore at increased risk of being hit by vehicles. Wildlife mortality from vehicle collisions has remained stable or decreased for most species, even though we are seeing an increase in traffic volumes (Figure 8). *The condition of wildlife mortality is of concern (fair) with a stable trend.*

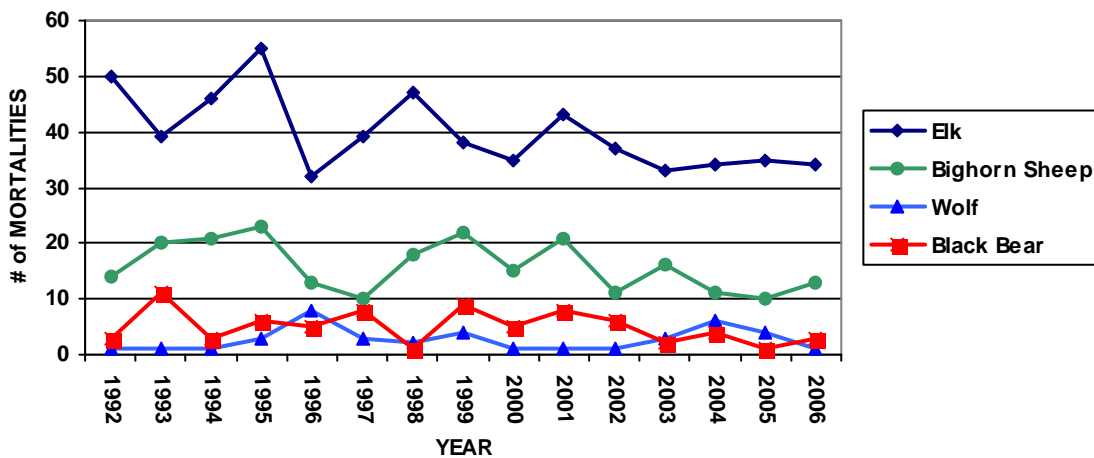


Figure 8. Highway \ Road Mortality Trend for All Species (with Whitetail deer removed) in JNP – 1992 to 2006 (15 years)







Jasper National Park possesses a diversity of aquatic ecosystems, including wetlands, thermal springs, lakes, rivers and streams. Factors that adversely affect aquatic ecosystems within the park include fish stocking, dams and culverts that limit connectivity, recreational activities, water usage and the addition of nutrients and chemicals into the water through

wastewater and other means. The park aims to restore natural flow regimes, water levels, connectivity, biodiversity and water quality to its damaged aquatic ecosystems that will mimic as closely as possible the naturally occurring waters of the park.

The current state of aquatic ecosystems is rated as fair overall, with an improving trend.

The measures used to inform the Aquatic Ecosystems indicator include:

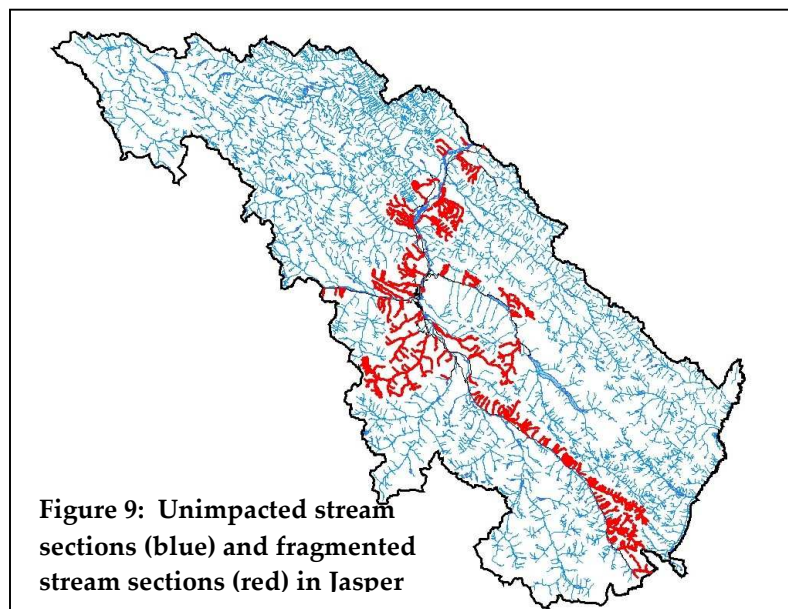
Measure	Condition/Trend	Measure	Condition/Trend
Water Quality		Fish Community Integrity	
Aquatic Connectivity		Amphibian Abundance	

Water Quality

Monitoring focuses on two measures of water quality: 1) chemical and physical properties of water in the Athabasca River and 2) status of benthic invertebrates. Chemical and physical measurements have been taken above and below the community of Jasper since 1973. Environment Canada analysis revealed that since the early 1990s, effluent inputs have had only a minimal effect on water quality. Values have remained in the normal range since the 1980s. Benthic invertebrate and chemical sampling has been conducted above and below the Wastewater Treatment Plant since 1999 and sampling was extended to cover a set of representative sites in the park in 2007. Results downstream of the wastewater treatment plant indicate water quality is in good condition. Given recent upgrades to the wastewater treatment plant this trend is expected to continue. Results are not yet available from other park sites. *Therefore, water quality condition is good and the status is improving.*

Aquatic Connectivity

Aquatic connectivity is the degree to which all naturally connected streams in an area are unaffected by human-created barriers such as culverts and dams. To measure connectivity, we consider a range of aquatic and semi-aquatic species including fish, invertebrates, amphibians and species such as beaver, muskrat and otter.



The current aquatic connectivity condition for Jasper National Park is 87%, which means that of all naturally connected streams in the park, 87% are un-impacted by water crossing structures (Figure 9). Connectivity problems are limited to a relatively small, but biologically diverse portion of the park and there remain a number of ecologically significant barriers to movement.

The condition of ecological integrity relative to aquatic connectivity is rated as fair and the trend is one of gradual improvement.

Fish Community Integrity

Brook trout are a non-native species in the park and pose a serious threat to native populations of Bull trout and Rainbow trout where they have invaded. We measure the present abundances, relative to undisturbed abundances, of three species of fish (bull trout, rainbow trout, and brook trout) in the Athabasca River watershed. Based on sampling during 2004, the fish community in the upper Athabasca watershed appears to have low densities (relative to an undisturbed state) of native fishes and low, but significant densities of an invader species (brook trout). *Fish community integrity condition has been assessed as concern (fair), while the trend cannot be determined until sampling is repeated.*

Amphibian Monitoring

Many species of amphibians around the world are experiencing population declines that have led to international initiatives to monitor and catalogue amphibian biodiversity. Jasper National Park has five species of amphibians: two are listed in Alberta as “secure”, three are listed as “sensitive”, one of which is also listed under Canada’s *Species at Risk Act* as a species of “special concern”. Parks Canada tested a long term monitoring program in 2007 using surveys of a fixed number of amphibian breeding sites to track the status of amphibians over time. *Condition and trend are not known at this time.*

Indicator: Terrestrial Ecosystem Condition

The terrestrial ecosystems indicator examines impacts to native vegetation in Jasper National Park. *The current state of terrestrial ecosystems is rated as fair overall, with a stable trend.*

Measure	Condition/Trend	Measure	Condition/Trend
Non-Native Plant Species		Insect Disturbance	
Area of Disturbance by Fire		Whitebark Pine Community	
Wildlife-Human Conflict			



Prescribed burns like the May 2008 “Henry House” fire (photo, left) contribute to achieving management plan objectives for re-establishing natural fire cycles, and restoring native vegetation communities and wildlife habitat.

Highway, railway, and pipeline corridors seen in the photo are chronic vectors for aggressive non-native plant species that undermine ecological integrity and are difficult to eradicate.

Figure 10. Henry House prescribed burn, May 2008. Parks Canada photo.

Area of Disturbance by Fire

Wildfire suppression has led to a gradual aging of forests, a loss of important wildlife habitat, and an increase in the incidence of forest insects and disease. In some areas, large homogeneous forests have encroached on areas historically occupied by grassland and shrub communities, reducing rare habitats and important niches for bird and mammal species.

A fire cycle is defined as the number of years required for a specified area of interest to be entirely burned by fire (Parks Canada 2005). The approved management plan calls for Parks

Table 2: Estimate of area burned over ten year period as % of area predicted to burn during a historic fire cycle and actual area burned

Ecoregion	50% Target	Actual Area Burned in ha (% of fire cycle)
Montane	8800	9 515 (54%)
Lower Subalpine	7100	18 528 (130%)
Upper Subalpine	3100	355 (6%)
Total	19 000	28 398 (75 %)

Canada’s to burn an area in Jasper National Park of Canada equivalent to 50% of the estimated area that would burn under a natural fire cycle.

Parks Canada is currently meeting the burn target in the montane and lower subalpine (Table 2).

An overall rating of “fair” with an improving trend is given to this

measure because a majority of the burning was concentrated in one area or ecosystem of the park.

Non-Native Plant Species

Non-native plant species can have profound negative impacts on native species, on important habitats, and the ecosystem as a whole. These species may move into an ecological

niche and thrive because they are not held back by natural predators, parasites, disease, or competition in the way that native species are. Jasper National Park is prone to non-native species introductions because of major transportation corridors.

The Jasper National Park Non-Native Vegetation Control Program has been in place since 1990 to prevent new infestations and limit the spread of established species. High priority

Table 3: Comparison of non-native plant detections between surveys in 1993/94 and 2005/06.

Measure	1993/94	2005/06
<i>Number NNP species detected</i>	68	72
<i>Number NNP priority species detected</i>	9	15
<i>Total number of NNP patches</i>	1156	3068
<i>Total number of priority plant patches</i>	505	744

species continue to expand in disturbed sites and remote locations where control actions cannot be easily applied (Table 3). Lower priority species also continue to invade, become established and spread to an increasing number of sites.

While this increase in species richness and abundance indicates a worsening condition, invasion is limited to disturbed sites along travel

corridors and areas of high human use, which represent a relatively small area of the park.

Therefore, the condition of ecological integrity in Jasper National Park with respect to non-native plants is rated as fair while the trend is declining.

Insect Disturbance

The increase in mountain pine beetle (MPB) populations in Jasper National Park is regarded as a forest health issue. Maintaining a fire cycle that mimics the historic fire cycle should result in forest structure and age class distributions, and insect populations, that reflect natural ranges of variability. The *condition is rated as fair* because of the low incidence of fire in valley bottom lodge pole pine forests over the past 80-100 years. The uniformity of older age class forests is at risk for MPB to expand its historic range of infestation, which may have negative long-term effects on forest structure and biodiversity, and is of economic concern for commercial forests neighboring the park. The *trend is rated as stable* because Jasper National Park has not yet seen the dramatic increases in MPB infestation occurring at other locations along the continental divide and north of the park in Alberta.

Whitebark Pine Community

Whitebark pine plays a crucial role in colonizing harsh sub-alpine environments where it stabilizes soil and moisture to create habitats that support a wide diversity of plants and animals. It is also rapidly declining in the southern distribution of its range due to infection from white pine blister rust, fire suppression and resulting competitive replacement by more shade-tolerant trees, mountain pine beetle infestation, and global climate change. A survey in the Canadian mountain national parks in 2003/2004 found blister rust infection was highest in the southern Canadian – USA border area, decreasing to a low in the northern region of Banff National Park, and then moderately rising in the northern end of the study

area in Jasper National Park. Blister rust had infected 43 % of live trees whereas a 1998 research project found that only 17% of trees sampled in Jasper National Park and Mount Robson Provincial Park were diseased. *Therefore, the condition of ecological integrity with respect to Whitebark Blister Rust is rated as fair with a declining trend.*

Wildlife-Human Conflict

Visitation is concentrated in the valley bottom, which is also critical and preferred habitat for a wide range of wildlife species. Wildlife –human conflicts have remained stable or decreased for most species, even with an increase in visitation during the shoulder seasons. Serious bear- human conflicts (bluff charges and contact encounters) are showing a stable trend. Black bear mortalities peak during years when there is a natural food source (buffalo berries) failure. Management removals (bears destroyed) have decreased in the last 5 years.


A key action of the Jasper National Park Management Plan was to implement the approved recommendations of the 1999-2001 Jasper Elk Action Working Group. The recommendations included reducing elk/human conflicts by 75% from the 1998 level (97 conflicts) by April 2003. JNP has maintained elk/human conflicts below this target of 24 conflicts/year for 2000 to 2006; however, during this period conflicts have gradually increased. In 2006 and 2007, there were 23 and 26 conflicts respectively. While substantially below 1998 levels, the conflict target is no longer being met.

The rating for ecological integrity relative to human-wildlife conflicts is rated as fair with a stable trend.



Indicator: Regional Landscapes

The Regional Landscapes measure considers influences on EI occurring on a broad landscape level, some of which extend beyond park boundaries. The measures for this indicator are being refined. *The condition and trend for the regional landscapes indicator cannot be determined* until more measures have been developed. However, rapid road and access development surrounding the park indicates a concern that condition of the regional landscape with respect to ecological integrity could be declining. The measure used to inform the Regional Landscapes indicator is:

Measure	Condition/Trend
Road and Access Density	

Regional Road and Access Density

Regional road and access density is increasing, with the ongoing expansion of the forestry and oil and gas industries adjacent to the park. Current access is mapped in Figure 11. Changes in access, forest cover and land use can directly and indirectly impact shared

wildlife populations, of which, caribou and grizzly bears are of specific concern. Access developments (roads, pipelines, powerlines, and seismic) affect wildlife movement patterns, displacement distances, predation rates and human-caused mortality rates. For the Alberta portion of the study area, access density has been calculated and over half of the landscape management units have road densities higher than 0.6 km/km². This threshold is based on the relationship between survival rates for grizzly bears and linear feature density. The condition of ecological integrity with respect to road density in the JNP region is rated as poor and the trend is declining due to the rate of development and small portion of new roads that are reclaimed or gated.

The condition of ecological integrity in Jasper National Park with respect to regional road and access density is rated as poor and the trend is declining.

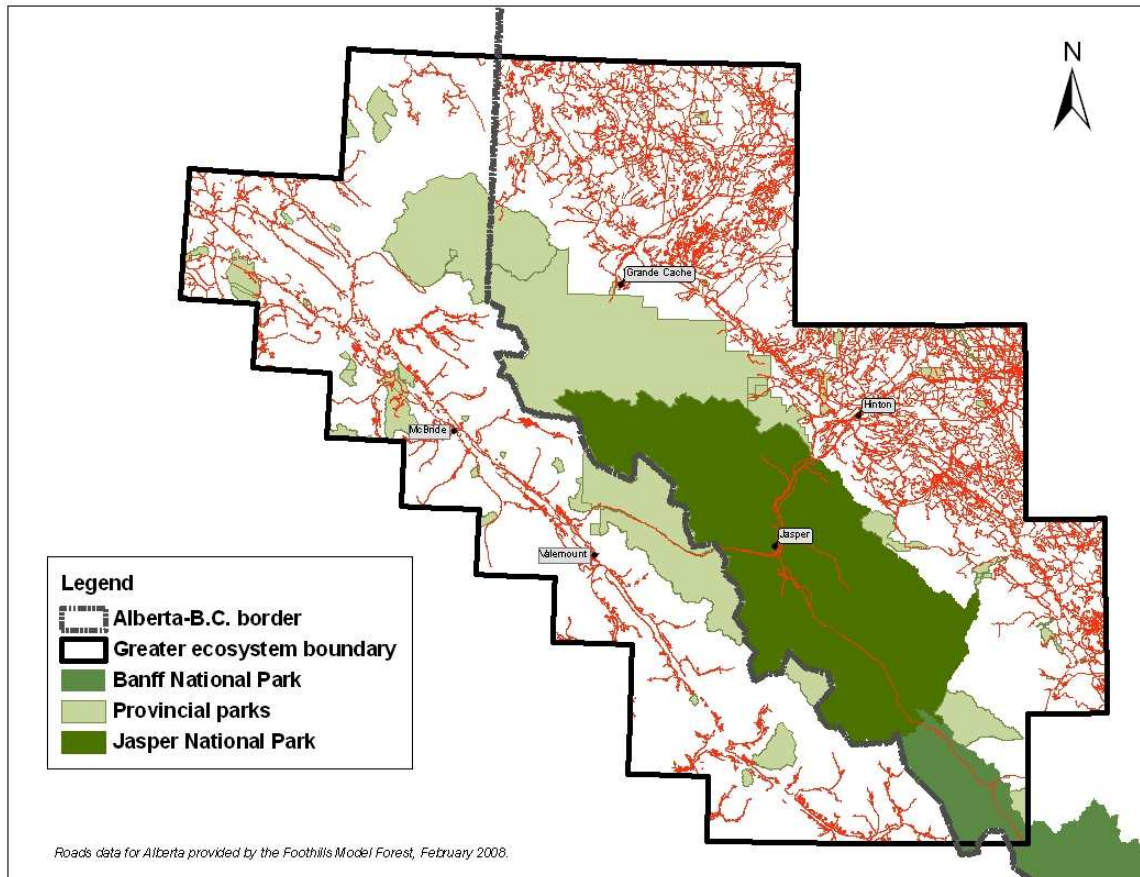


Figure 11. Current motorized access (red) in the Greater Yellowhead Ecosystem. This measure is still in development: the BC portion of the study area shows roads while the Alberta portion also includes pipelines, powerlines, and seismic.



Indicator: Climate

Climate plays a fundamental role in shaping ecosystems in the Mountain National Parks. Distributions of plant and animal species, rates of glacial advance and retreat, patterns of river flows, and the frequency and magnitude of natural disturbances are all heavily influenced by properties of climate, such as temperature, precipitation, and snow depth. Climate changes also have the potential to affect how people use and view the parks. Summer visitation seasons may lengthen, winter recreational activities may be affected by changing snow depth, and iconic views of glaciers and other park ecosystems may change dramatically. *Trends are identified for the condition of the measures; a condition rating for this indicator has not been assigned because of the challenge in establishing a reference condition.*

The measures used to inform the Climate and Atmosphere indicator include:

Measure	Condition/Trend	Measure	Condition/Trend
Glaciers	↓	Precipitation	NR
Temperature	↓	Snow Depth	NR

Although local trends in temperature, precipitation and snow depth have been identified, a condition rating will be assigned once the appropriate reference condition is identified.

Glaciers



Glacial Recession. Athabasca and Dome Glaciers photographed from Mary Schäffer, 1906. Photo right by B. H. Luckman, 1998.

Glaciers are internationally recognized as key indicators of climate and environmental change taking place on a larger regional and global level. Glaciers in the mountain national parks have experienced an accelerated decrease in volume and area since the mid-1970s. Glacier cover in the Canadian Rockies has decreased by at least 25% during the present century (Figure 12), and glacier fronts have receded to positions last occupied *ca.* 3000 years ago. This is consistent with the observed widespread retreat of other outlet and valley glaciers in the western Cordillera, where observations are available.

While the trend is declining, condition is not rated for this measure, as no scientific thresholds have been identified to assess the condition of glaciers.

Temperature, Precipitation and Snow Depth

Parks Canada operates a network of weather stations, often in collaboration with the Meteorological Survey of Canada or as Park Fire Information Stations. All statistically significant trends found showed an increase in temperature over time except for summer maximum temperatures at the Jasper East Gate weather station. Minimum temperatures are increasing faster than maximum or mean temperatures and winter temperatures were increasing faster than spring and summer temperatures. Data analysis for two weather stations in JNP coincided largely with larger scale studies done previously. If temperatures continue to rise, impacts on human and environmental systems in Jasper National Park could be potentially significant.

Trends in precipitation were mixed and very few of these were statistically significant. This does not, however, mean that changes are not occurring, but perhaps that they are not occurring linearly or at the micro-site at which the measurements are being taken.

Winter snow depth appears to be declining. If winter precipitation is increasing, it has not been enough to mitigate the effects of an increase in winter temperatures on snowmelt. Snow depth is a difficult measure to interpret or predict because it is dependent on other climatic factors that are difficult to interpret and predict.

3.2 Cultural Resources

A cultural resource can be a human work, a place that gives evidence of human activity, or an object or place having spiritual or cultural meaning.⁸ National parks protect cultural resources and intact landscapes, and tell their stories, providing visitors with opportunities to connect with places in meaningful ways, and to understand who we are as Canadians.

⁸ Parks Canada Guiding Principles and Operational Policies; Cultural Resource Management Policy.

In 2006, Parks Canada completed management plans for the four national historic sites located in Jasper National Park.⁹ State of the site reports will be completed for each NHS in five years; hence this report will focus only on “Level II” cultural resources that are not of national significance, though they are integral to the heritage fabric of Jasper National Park.







Figure 14 (above): Moberly homestead and descendents – the buildings built about 1898 have been stabilized and the family’s story is told on site. *Jasper Yellowhead Museum and Archives* photo.

The evaluation of Level II cultural resources in Jasper National Park is determined using the indicators of *Resource Condition* and *Selected Management Practices*. An assessment rating is assigned to the indicator where possible, based on quantitative and qualitative data, expert opinion, and traditional knowledge related to a suite of measures. Due to data limitations, trends will not be reported on. Effectiveness of communications is an important component of cultural resource management that will be reported in the section of this document concerned with public education.

 **Indicator: Resource Condition**

Evidence of human activities in what is now Jasper National Park spans at least 9,000 years. The park protects over 600 documented archaeological sites, more than 109,000 artifacts, over 250 historic objects, numerous historic structures including one classified and 36 recognized federal heritage buildings (including, a National Historic Railway Station), several Métis homesteads, and a Canadian Heritage River. Cultural Resource Condition in Jasper National Park is rated as *good*.

Measures informing the condition of this indicator are:


Measure	Condition	Measure	Condition
Landscapes and Landscape Features		Historic Buildings and Structures	
Archaeological Sites		Objects	

Archeological sites and objects are rated in good condition overall because they are largely intact and have a high level of protection. Measures are in place to protect resources through park zoning and regulations and the CEAA process for maintenance and development activities. Historic buildings and structures are rated as *fair* due to the physical condition of some resources.

⁹ The four National Historic Sites of Canada in Jasper National Park are: Athabasca Pass, Jasper House, Jasper Park Information Center, and Yellowhead Pass.

Landscapes and landscape features are not sufficiently inventoried and assessed to enable rating. For example, abandoned rail grades would benefit from heritage recording to understand their condition and values – extensive sections of rail grade were modified and adapted as park roads, while others appear relatively intact.

Cultural landscape values are not documented from an Aboriginal perspective, wherein all the oral history, traditional teachings, ceremonies, and everyday living practices are connected with specific geographical locations within traditional territories, which overlap from group to group.



 **Indicator: Selected Management Practices**

Management practices are activities related to identifying, inventorying and protecting cultural resources. To guide these activities, a draft *Cultural Resource Management Strategy* for Jasper National Park of Canada was completed in 1999 and is undergoing revision. The plan will address discrepancies and gaps in existing inventories and include a description and assessment of the respective cultural resources. Progress has been made to effectively integrate cultural resource considerations into the environmental assessment process and fire management planning - to develop measures and procedures to protect cultural resources. Aboriginal relationships have also grown in recent years and continue to improve. Selected Management Practices is rated *fair* overall.



Figure 15: An annual archaeological program in Jasper National Park is systematically adding knowledge, and linked with the environmental assessment process, investigates ground when required before potential developments occur, to avoid damage to cultural resources. Parks Canada photo.

Measures informing the condition of this indicator are:

Measure	Condition	Measure	Condition
Inventory and Evaluation		CRM Strategy	

Comprehensive inventories such as the *Archaeological Resource Description and Analysis* (1989) give a good indication of the cultural resources that exist in the park; however, more work needs to be done to catalogue collections, fill in gaps, eliminate discrepancies, and complete evaluations. A revised *Cultural Resource Management Strategy* will give direction and

formalize evaluation criteria. A new Cultural Resources Advisory Board (comprised of Parks Canada experts and practitioners) for the seven mountain national parks and historic sites is in place to help field units set priorities for and raise the profile and practice of cultural resource management.

3.3 Ecological and Cultural Resources – Key Issues and Challenges

1. Recovery planning for caribou, as a species at risk requires integration of SARA compliant recovery strategies into the management plan package of amendments, and will influence visitor experience strategies and area strategies (e.g., Edith Cavell, Maligne Valley).
2. The management plan for Jasper National Park does not address concerns surrounding climate change; research is required into the long-term effects of changing climate on the park's ecological integrity and visitor experience.
3. Future area strategies need to explore ways to improve *habitat security* for grizzly bears in the several landscape management units that are below threshold, recognizing that improvement is a challenge with existing development and visitor use patterns, but importantly, mortality risk is low. Concern exists for effects of regional land uses on shared grizzly bear populations.
4. Aaquatic connectivity along transportation corridors requires continued attention
5. Prescribed fire is on target but will have to be extended to more parts of the park to more closely achieve natural conditions
6. Non-native plant species require continuing attention.
7. The Cultural Resource Management Strategy called for in the management plan is needed. A preliminary draft has been prepared that requires further work, including the involvement of Aboriginal and public interests.
8. Aboriginal involvement is broadly needed in the management of ecological and cultural resources, through sharing knowledge of landscape values, place names, traditional use locations, stories and oral history, and building capacity.
9. Cultural resources need monitoring and review on an ongoing basis.
10. Cultural inventories and condition evaluations need completing and updating. This information then needs to be made easily accessible by staff.
11. Heritage recording is needed for landscape features such as historic rail grades.
12. Long term monitoring programs need to be fully implemented.

3.4 Visitor Experience

Jasper National Park of Canada has supported memorable visitor experiences (VE) for 100 years, with an ongoing reputation for service excellence. Knowing who the visitors are, what their expectations are and how their needs are being met is essential to ensuring that visitors continue to connect with the park.



Figure 16: Experiencing the ice at Mount Edith Cavell day use area. Shawn Cardiff photo.

Parks Canada has established four national indicators to assess and report on the state of VE: Understanding Visitors, Providing Opportunities, Quality Service and Connecting Visitors Personally with the Place. The program is new and evolving and standardized measures have not yet been developed to support the indicators. This State of the Park Report represents the first opportunity to apply these indicators to VE in Jasper National Park, although specific data are lacking for some measures. This deficiency will be remedied in future State of the Park reports.

There is considerable information available, such as trend series data for visitors entering the park and using facilities such as campgrounds, information centres and backcountry trails, though data collection methods have changed at times. Other data rely on surveys, such as the comprehensive 2003 Survey of Visitors, which are helping to improve knowledge.

The first two indicators, Understanding Visitors and Providing Opportunities, show fair condition, with an improving trend. Quality Service is rated good and stable, and Connecting People Personally with the Place is not rated because of the lack of suitable data.

Evaluation



Indicator: Understanding Visitors

In order to set the stage for a memorable experience, Parks Canada must first understand its visitors. This indicator examines our understanding visitor characteristics, visitation trends and how or if these visitors can be segmented to better target opportunities for memorable experiences.

Overall this indicator is rated as *fair* and *improving*. Since 2000 visitor information collected by Parks Canada has improved the agency's understanding of visitors and their needs. Areas where better information could be collected include statistics of day use of the backcountry, more detailed market segmentation information and better understanding of visitors that primarily drive through the park. We also need more information on visitor needs and interests and how we can enhance their visit.

Total visits to the park are increasing; driven by the regional growth in Alberta, this regional growth has offset the decline of international visitors in recent years. Regional visitors are frequent users of the park and have different needs and expectations, as well as different travel patterns. For instance, regional users primarily visit on weekends while international visitors arrive throughout the week. Repeat visitors are less likely to visit information centres.

Total visitors have increased by 5.1% (Table 4) and total visitor days by 3.7% in this period. Group tour visitors have increased slightly, from 14.1% to 17.6% of the total. These figures are not absolutes as the margin of error for total visitors is 7.0% and for total visitor days 7.1%.

Table 4. Total visitors to Jasper National Park

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Independent	1565548	1502539	1558775	1599813	1641438
Group Tour	1565548	1502539	1558775	1599813	1641438
Total visitors	1,823392	1676953	1,880,153	1,916,604	1,991,615
Visitor Days	3915494	3671912	3972789	4061663	4192263

In 2003, over 54% of visitors were Canadians (33.1% from Alberta), 24% were Americans and 20% were from overseas (15% from Europe) (Table 5). Seasonal variations are notable:

Table 5. Origin of visitors

Origin	Total	Summer	Winter
Alberta	33.1%	23.7%	63.0%
Other Canada	21.5%	22.4%	20.0%
United States	24.9%	30.0%	7.7%
Europe	15.1%	17.9%	6.7%
Asia	0.4%	1.0%	0%
Other Overseas	8.7%	5.0%	2.6%
Total	100%	100.0%	100

The prevalence of Canadians, particularly from Alberta, is striking in winter. The significance of the regional market is further emphasized by the fact that 60.8% of all visitors are repeat visitors. 96.1% of Albertans and 62.5% of other Canadians had previously visited the park. However, it is noteworthy that previous visits were also reported by 38.6% of Americans, 30.0% of Europeans and 50.0% of Asian visitors.

The average length of stay in JNP was two and a half days in 2003. The average party size was 2.6 people, with most (70%) staying overnight in the park as opposed to making day trips only.

Visitors can be grouped into four categories based on behaviour characteristics and expectations:

- **Flow Through Visitors (12%)** – These visitors tend to be less involved with the park experience than other visitor segments. They are less likely to have made previous visits and tend not to use sources of park information before and during the trip. They spend less and levels and most (83%) considered their visitor experience to be extremely enjoyable. The group is characterized by couples between the ages of 35 and 54, with 31% American and 24% European.
- **Premium Experience Visitors (31%)** – Many of these are first time visitors to the park but they tend to seek out park information either before or during the visit. The trips involve higher levels of spending and trip satisfaction is the highest. This group also consists more couples between the ages of 35-54, with 36% American and 27% European. They participate in activities like driving and sightseeing, hiking and walking.
- **Habitual/Familiar Visitors (23%)** – All visitors in this segment have made a previous visit and 38% had visited the park six or more times within the past two years. Most are Canadians and because they have past experience with the park they do not often seek additional sources of information. Trip spending is generally light to moderate and as the segment name implies, satisfaction is high (81%). There is a higher proportion of younger people and larger group sizes. 80% are Albertans. About one third hike or walk and 18% ski in the park.
- **Casual Experience Visitors (34%)** – This segment of visitors could also be termed “middle of the road”. In contrast to the above types of visitors, they do not stand out on any particular aspect. Many are repeat visitors and satisfaction with the park tends to be high (84%). Older couples are in the majority, with the largest majority (35%) from the United States and 29% Other Canadians. They tend to be a little less active and participate more in driving.



Indicator: Providing Opportunities

Jasper National Park continues to provide a wide variety of opportunities for people to enjoy and appreciate the outstanding natural and cultural features. This indicator is rated as *fair* and *improving*. Jasper National Park continues to provide a wide variety of opportunities for people to enjoy and appreciate the outstanding natural and cultural features. In recent years, considerable investments have been made to modernize and upgrade facilities and opportunities throughout the park.

Roads take visitors to key visitor nodes including – Miette/Pocahontas area, Maligne Lake, the greater Jasper Townsite area, Whistlers, Marmot Basin, Mt. Edith Cavell, Athabasca and

Sunwapta Falls, The Icefield Centre and stops along the Yellowhead Highway. The Icefields Parkway is an internationally renowned scenic drive. Parks Canada provides 25 picnic sites, and over 1280 km of trails, with 145 backcountry campsites. There are visitor information centres in Jasper and at the Icefield Centre and interpretive displays throughout the park.

Jasper National Park operates 11 campgrounds and two overflow campgrounds with a total of 1,728 sites in the summer and 93 sites in the winter. Services provided in the campgrounds range from full hookup for recreational vehicles to walk-in tent pads. Camping has decreased by about 6% in the last five years (Figure 16). Over one third of campers are from Alberta. Tents are used by 40% of campers, and are more frequently used at the campground farther from the town of Jasper. A large proportion of Americans (29%) and the majority of overseas campers (53%) stay in motor homes.

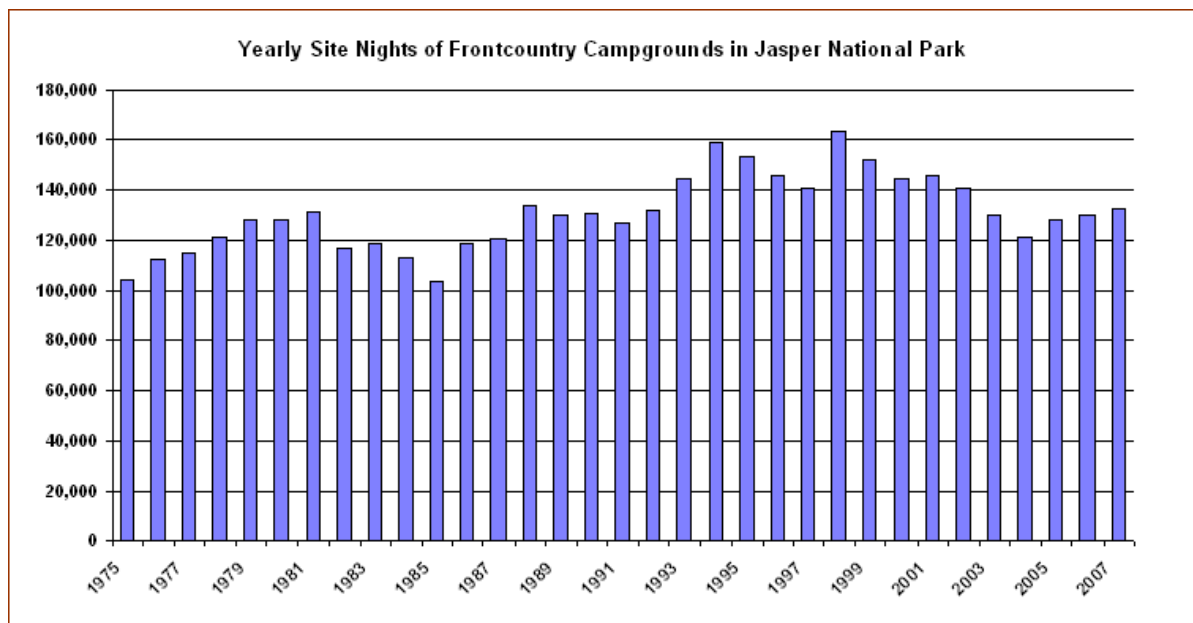


Figure 17. Frontcountry Campsite Use Jasper National Park 1975-2007

Commercial accommodation facilities are found throughout the park and most operate year-round. In summer there are more than 2,693 guest rooms, the majority of which are in the Town of Jasper and surrounding area, and an additional 329 beds in the Hostels, ACC Huts, and Backcountry Lodges. During the winter the number of guest rooms is 2,194. There is a wide range of restaurants and retail stores. In addition, commercial operators provide an 18 hole golf course, guided hikes, mountain climbing, ice walks, snowshoe tours, horse back riding, canoe rentals, river rafting, boat tours and gondolas to mountain viewpoints. Marmot Basin provides opportunity for nordic skiing for Canadian and international visitors and is the cornerstone of winter recreation. In addition, there is cross-country skiing and snowshoeing.

Parks Canada recently (January 2008) facilitated a visitor experience assessment with participation from the Municipality of Jasper, Jasper Tourism and Commerce, Travel Alberta, and Friends of Jasper National Park to determine strengths and gaps and identify future steps to improve the visitor experience in the Town of Jasper.

Day hiking continues to be a very popular activity. Based on field observations some of the most popular day use trails include Toe of the Glacier, Maligne Canyon, the Path of the Glacier and Cavell Meadows Trails, Whistler’s Summit Trail, Lake Annette Trail, Old Fort Point, The Valley of the Five, Sulphur Skyline, Bald Hills trail, Moose Lake loop and Mary Schaefer Loop, the new Discover Trail, and Wilcox Pass. Overnight use of the backcountry has decreased in recent years from approximately 18,346 user nights in 1999 to approximately 13,101 in 2005.

The most popular backcountry districts are the Skyline, Brazeau and Maligne Lake

The greater Jasper Townsite area, at the junction of the park’s two highways and in its Three Valley Confluence area, is the hub of visitor use (79.8% of visitors). Other focal points for visitors include the Columbia Icefield Centre (39.1%), Athabasca Falls (25.4%) Maligne Lake (24.9%), and Maligne Canyon (23.2%). Other Visitor Use nodes include, Lakes Edith and Annette (20.2%), along the Yellowhead Highway(17.8%), Miette Hot Springs Pools (17.3%), Whistlers Mountain Tramway (16.0%), Pyramid and Patricia Lakes area (14.4%), Sunwapta Falls (11.8%), Mt. Edith Cavell area (10.9%), Marmot Basin Ski area (6.1%) and Old Fort Point (3.1%).



Figure 18: Trails provide quintessential park experiences that connect visitors and area residents to the park in deeply personal ways. Most trails near the Town of Jasper permit multiple uses (hike, bike, and horse). Some trails have proved to be poorly placed in ecological terms. Adjustments to trails can be contentious, and the *Jasper Trails Project* is engaging users in collaboration to redesign a core trail network for better ecological and social results. Marcia DeWandel, photo.

Table 6. The top ten activities for visitors are:	
Driving and sightseeing	60.4%
Eating in a restaurant	35.8%
Sightseeing and landmarks	34.2%
Shopping	24.2%
Hiking	22.8%
Relaxing	18.6%
Walking	17.2%
Viewing Wildlife	17.1%
Eating outside a restaurant	12.0%

Visitors tend to participate in “soft” recreational activities and a small proportion participates in more strenuous forms of recreation. Albertans are more active in skiing/snowboarding, and golfing than visitors from other areas.

Much of Parks Canada’s infrastructure in Jasper National Park was built 4-5 decades ago. As with many places across the country, these assets are reaching the end of their design life and need significant reinvestment. The work has begun, 24

percent of assets are in good condition or better, but 76% are rated as fair or lower or are unrated at this time.

 **Indicator: Quality Service**

Parks Canada’s goal is to deliver consistently high quality services that meet or exceed visitors’ needs and expectations. The measure of success is that at least 85% of visitors should be satisfied with their visit and at least 50% should be very satisfied.

The most comprehensive assessment was conducted as part of the Patterns of Visitor Use survey for the four mountain parks in 2003. 82% of visitors rated their visit as “extremely enjoyable”, indicating that Parks Canada clearly exceeds its target. Friendliness of park staff, the recreational experience of the visit, and service in both official languages achieved the highest satisfaction rankings. The private sector also contributes significantly to this positive environment, as shown by the high rating for “friendliness of business staff” (Table 7).

Table 7. Service Satisfaction in the Four Mountain Parks (2003, Survey of Visitors to Banff, Jasper, Kootenay and Yoho National Parks of Canada).

Service Attribute	Mean Score (1 to 5)
My visit as a recreational experience	4.69
Friendliness of Parks Canada staff	4.65
Service in official language of choice	4.59
Friendliness of business staff in the park	4.41
Guided walks/tours	4.40
The "Mountain Guide" publication	4.38
The Columbia Icefields Snocoach Tour	4.34
History/geography info from the business staff in the park	4.28
Pre-trip print publications	4.23
My visit as an educational experience	4.22
Education/interpretive programs	4.18
Quality of education/interpretive programs	4.14
Availability of education/interpretive programs	4.09
Parks Canada website	4.05
Value for entrance fee	4.05
Travel Alberta website	3.98
Tourism BC website	3.87
Value for money at attractions/activities in the park	3.78
Value for money at hotels/motels in the park	3.66
Value for money at restaurants in the park	3.59

Figure 18 shows both the importance visitors attach to eight different attributes and visitors' satisfaction with these attributes. Of the attributes that are important to visitors, three have satisfaction levels that are high (a score greater than 4 out of 5). One attribute that is important to visitors but for which satisfaction was lower was value for money.

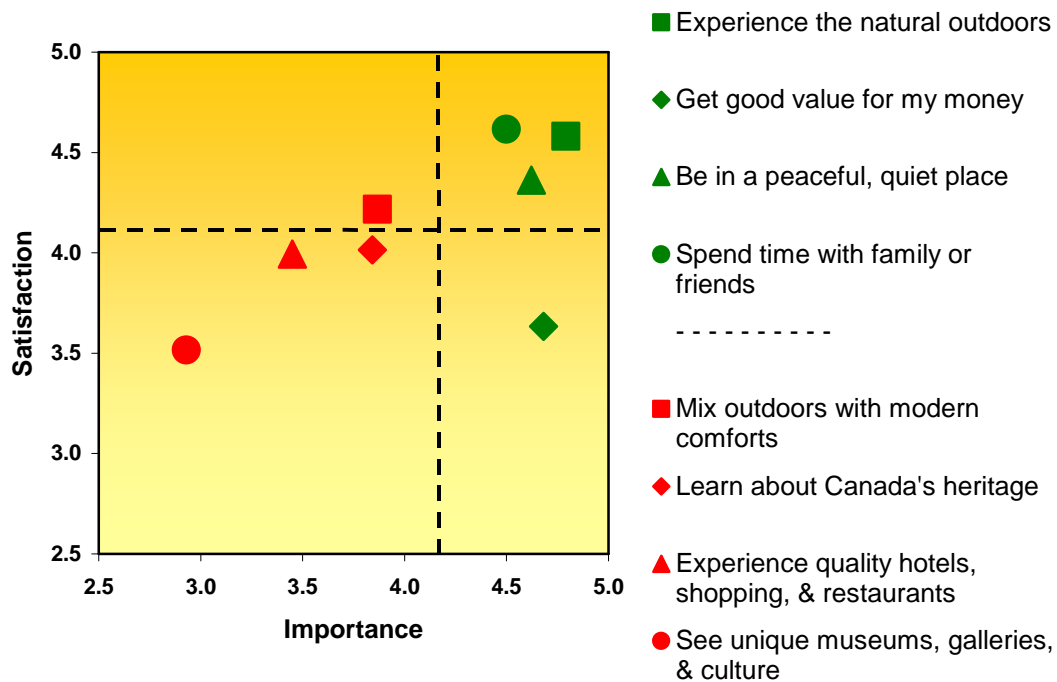


Figure 19. Importance and satisfaction of visit opportunities (2003, Survey of Visitors to Banff, Jasper, Kootenay and Yoho National Parks of Canada).
 (1 = Not at all important/unsatisfied, 5 = Very important/satisfied).

Annual campground satisfaction surveys are undertaken, using a 1- 5 scale rating system. The Parks Canada standard is to have at least 50% of respondents choose the top score. In 2005 and 2006, campers reported high satisfaction with four out of six attributes. Low satisfaction scores were reported for “Condition of Facilities” and “Cleanliness of Washrooms”. Overall camping experience dropped from high satisfaction in 2005 to good satisfaction in 2006.

The quality of service that is provided is influenced by the condition of the facilities. Parks Canada is re-investing substantial amounts into replacing and modernizing visitor facilities. Recent examples in Jasper National Park are:

- Athabasca Day Use Area Recapitalization Project (improved fencing, new bathrooms, rehabilitation of trails, reconfiguration of parking lot and new exhibits)

- Completed patching, paving, drainage and culvert work on Pyramid Lake road, 93A, Edith Cavell, Marmot road and campground roads.
- Day-use area and campground improvements (new electrical lighting in Whistlers, replacing fire bins, picnic tables and garbage bins and leveling campsites)
- Upgrades to campground water systems.
- Replaced and upgraded cook shelters
- Renovate the Jasper National Park Information Center



Indicator: Connecting Visitors Personally with the Place

Connection to Place reflects the relevance and significance of the heritage place to Canadians. This sense of attachment to our natural and cultural heritage is achieved through the processes of understanding, appreciation, support and engagement. The ultimate objective is to foster a shared sense of responsibility for the heritage area, thereby ensuring its long term sustainability. The concept of “Connection to Place “ is under development and measures are not yet defined.



Figure 20: Connecting youth with the park is a priority. Landon Shepherd photo

Parks Canada is doing a number of things to foster connection with place. A variety of educational opportunities are provided in Jasper National Park, via interpretive programs, displays and roving staff and commercial guides. At this time, only 7% currently take part in Parks Canada’s educational/interpretive programs, and a goal will be to increase this.

Another means of gauging personal connection is the likelihood of a repeat visit. 61% of all visits were repeat visits. The figure is 96% for Albertans and 62.5% for other Canadians.

Many individuals volunteer for a variety of consultative and advisory boards and committees, contributing significant time and effort to park management issues. For example, the Jasper Trails Project has had over 2,000 hours of volunteer time put into working group meetings, workshops, focus groups and improving the trails around town.

3.5 Public Education

For most visitors, a visit to a national park is a departure from their daily routine and Parks Canada and its partners provide information, opportunities and facilities so that people can have safe, enjoyable and rewarding experiences. The high percentages for satisfaction levels and repeat visits indicate success.

With interesting, useful and accurate information, people can enjoy their visits more and also appreciate the importance of heritage places and contribute to their integrity and sustainability.



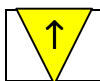
Figure 21: Contact with friendly staff offering park information and learning opportunities contributes to enhance visitor experiences and consistently high satisfaction ratings. Shawn Cardiff photo.

Parks Canada is developing four national indicators to measure the state of Public Education (PE): Understanding Audiences, Extending our Reach, Facilitating Understanding, and Influencing Attitudes. The indicators are still in development and no measures have yet been determined. New methods of data collection will be required to accurately report on these indicators in the future.

Past intermittent surveys, which were used for other purposes, are of limited value in terms of these indicators. As with Visitor Experience, this State of the Park Report represents the first opportunity to view PE in Jasper National Park in terms of these indicators. A limited amount of information is presented in this section. No data are available about the total number of people who are reached by the various programs, the understanding that is imparted and the long-term influence on attitudes, understanding and behaviour.

Based on the limited information available, three of the indicators are rated as in *fair* condition, with an *improving* trend to reflect ongoing work. They provide a baseline for comparison in future State of the Park Reports. The “Influencing Attitudes” indicator cannot be rated because of a lack of suitable data.

Evaluation



Indicator: Understanding Our Audience

Traditional methods of public education need revisiting, as today’s visitors are more comfortable directing their own experiences and learning through hands-on opportunities.

The market segments identified in the VE section provide an insight into the use patterns, needs and expectations of the park's two million visitors.

One important segment is the Habitual Users, the repeat regional audience that comprises 23% of Jasper National Park visitors and makes 61% of park visits. Currently 30% of participants in educational / interpretive programs are Albertans, compared to 24% for other Canadians and 35% Americans. Surveys of visitors from Alberta indicate that 50% are motivated to learn more about the park, but not necessarily by attending interpretive programs and not when they are focused on an activity such as skiing. These data indicate that new approaches need to be developed to engage these audiences.

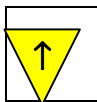
For Jasper visitors, the most common sources of pre-visit information include:

- past experience (43%);
- maps (34%);
- advice from friends or relatives (33%); and
- travel guidebooks (30%).

While in the park Visitors rely on information from:

- maps (37%);
- visitor Information Centres (31%);
- past experiences (29%); and
- travel guidebooks (22%).

Less than 1% of visitors used the Internet for in-park information, although the continuing growth of web-enabled cell phones and PDA's suggests that this figure will rise sometime in the future.



Indicator: Extending Our Reach

Parks Canada alone cannot reach more than a limited percentage of visitors. For the majority, their primary contact is often with hotel and retail store clerks, from whom they obtain information. Many of these people are, themselves, new and temporary residents with limited knowledge of the park.

There are numerous examples of the ways in which Parks Canada has extended its reach by working with partners. Parks Canada works with the community, to provide basic training to front-line staff. In 2006, "Discover Jasper" program was delivered to 500 industry employees and a partnership with the Alberta Motor Association resulted in Parks Canada information inserts in 450,000 copies of Westworld magazine.

Delivery of many key messages related to the park's natural and historic values are made possible through partnerships with groups such as the Friends of Jasper National Park,

interpretative associations, local museums, aboriginal groups, Jasper Tourism and Commerce, and the Municipality of Jasper, among others. Educational opportunities include interpretation programs, special event days (e.g., wildlife fair, centennial events, documentaries), theatre programs, and the development of display panels, brochures and websites to convey messages on ecosystem and cultural themes.

Parks Canada is providing high quality education programs for local, regional and national youth. The Parks Canada (Palisades) Stewardship Education Centre has developed and delivered pilot programs that engage youth in stewardship and mountain recreation programs. This year week long residential programs will welcome students from Alberta, Saskatchewan and Quebec. The education programs are beginning to incorporate videoconferencing sessions to reach students across Canada, and bring specialists from across Canada into the classroom.

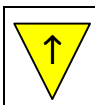


Figure 22. Environmental Stewardship students from the Jasper High School experience the frozen world of Maligne Canyon in winter. Parks Canada photo.

The Palisades Stewardship Education Centre has also collaborated broadly to author three additional high school credit courses for implementation in 2008-09. In the Province of Alberta students will be able to study 'Stewardship of Jasper National Park', 'Winter travel' and 'GIS/GPS' in a Parks Canada context while earning credits towards graduation.

The Palisades Stewardship Education Centre also offers adult programs that are delivered during evenings and weekends. This year some 36 programs have already made over 900 personal connections with themes from public safety to species at risk.

Due to the geographical distribution of national heritage places, not all Canadians can easily visit them. Consequently, Parks Canada also wants to reach out to Canadians where they live and has identified three priority markets: new Canadians, those living in urban areas and youth. Approximately 18 % of Canadians were not born in Canada (expected to rise to 30% by 2026) and almost 80 % of Canadians live in urban centres. These segments of the population represent important opportunities for Parks Canada to build awareness and appreciation of our national heritage



Indicator: Facilitating Understanding

Parks Canada facilitates public understanding of the park's heritage through its own educational and interpretive programming noted above and through partnerships with local

organizations. The success in facilitating public understanding in Jasper National park is rated as *fair* and results have been *improving* since the park management plan was developed. The initiatives discussed below contribute to public education.

The Mountain Parks Heritage interpretation Association (MPHIA) interpreters' certification course is a successful program. Since 1997, 292 professional interpreters have been accredited through this program, and almost 1,300 others have received training. The program trains local guides to become knowledgeable ambassadors for the mountain parks, in effect multiplying the capacity of park staff to facilitate understanding.

Currently 41 companies from Jasper and 43 companies from Banff are licensed to provide guiding services for visitors. Many of these are not MPHIA certified. The range of services varies from day hikes, to horseback riding, and fishing to full mountain guide services.

The Whistlers outdoor theater provides a range of interpretive programs to park visitors, and reaches between approximately 13,000 visitors and 20,000 visitors each summer (Figure 22).

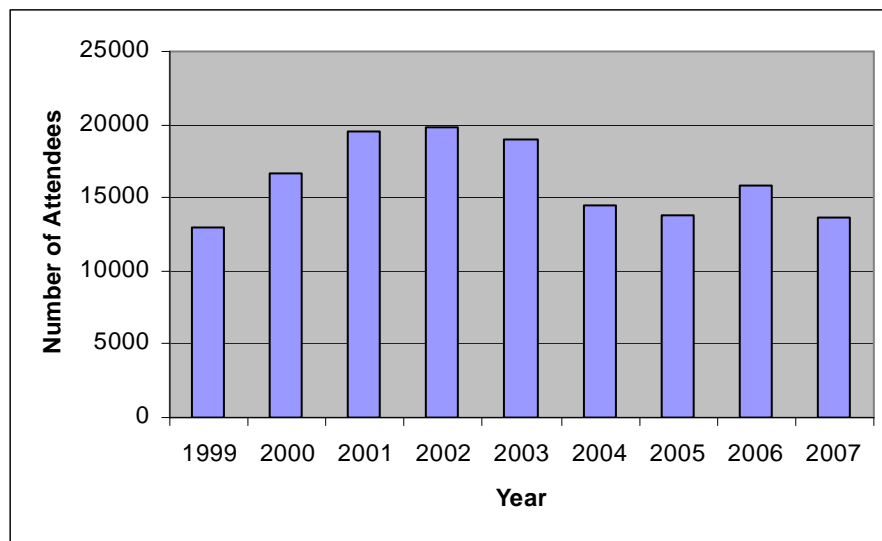
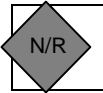


Figure 23. Number of attendees at the Whistlers outdoor theater.

Parks Canada also works with the Friends of Jasper to promote understanding, appreciation and respect for the natural history and cultural heritage of Jasper National Park. They offer interpretive programs, fund research, publish park related materials and perform park improvement projects.

The World Heritage Interpretive Theater annually provides informative and entertaining performances to people inside and outside the park, with themes such as the role of fire and the importance of water.

Survey results (Ipsos Reid, 2007) indicate Parks Canada's success in facilitation understanding. Survey participants support the use of prescribed fire and forest thinning for protection of facilities, mountain pine beetle management and ecological restoration. Additionally new non-personal interpretive media at Athabasca Falls and Medicine Lake, increased roving interpreters, and special education events such as the Wildlife Festival, Avalanche Days and the Centennial Celebration, should help to improve the knowledge of the in park visitors.



Indicator: Influencing Attitudes

This measure is under development and limited data are available for this report. As a result this indicator is not rated.

In 2006 a focused but limited survey of residents, business owners and government staff was conducted, to determine attitudes towards fire management (natural fires, prescribed fires and forest thinning). The survey indicated that interviewees are much more knowledgeable about and supportive of fire management programs than in 1994. During the intervening years, Parks Canada implemented a significant public education program.

Conversely, speeding and highway mortality continue to be a problem on the highways through Jasper National Park. Parks Canada has had limited success in changing driving behaviour and attitudes of highway users toward speed and wildlife safety. For example, in a recent study of compliance with 70 Kph speed zone for caribou on the Icefields Parkway (Neufeld, Bradley 2007), it was found during the day:

- 93% of cars exceeded the speed limit;
- with the "Caribou in Area" flashing sign on 86% of cars exceeded the speed limit; and
- with a sign flashing the speed limit and driver speed 77% of cars exceeding the speed limit.



Figures 24 and 25: A recent study shows poor compliance with speed limits on the Icefields Parkway - a concern for caribou crossing the highway in the area from Sunwapta Warden Station to *Beauty Flats*, where a lower (70km/h) speed zone has been in place for winter since 2005. Three caribou were killed in this corridor in 2003.

Extensive Awareness campaigns by Parks Canada - "*Slow Down for Wildlife*" - have targeted motorists travelling all park roads.

Far left: Mark Bradley photo. Right: Parks Canada

3.6 Connection to Place – Key Issues and Challenges

1. More social science is needed to populate the various measures of visitor experience and public education; indicators are being developed at a national level and may be further refined.
2. Knowledge requirements to support planning include understanding existing and potential markets and their characteristics, and identifying adjustments necessary to meet market needs and protection goals.
3. Most visitor use is concentrated close to the parks roads, viewpoints, and day use areas; reviews of market needs and Parks Canada's offer (as above) and facility upgrading are required to meet modern standards and respond to changing market needs and expectations
4. Modernizing aging frontcountry campgrounds and related infrastructure will be an ongoing challenge for Parks Canada.
5. Backcountry trends suggest a decrease in long, self-supported backcountry trips toward shorter overnight trips and day hikes. A better understanding is needed of the needs of backcountry users and demands related for facilities including roofed accommodation (e.g., ACC shelters and backcountry lodges).
6. Tools are needed to evaluate the effectiveness and reach of Parks Canada's communication efforts, messages, and educational programs. Quality and effectiveness of third party messaging should be assessed.
7. Visitor satisfaction with the quality and extent of educational programs is high, but participation rates are low. There is a need to engage more visitors, particularly regional repeat visitors, new Canadians, and youth in Parks Canada educational programs.
8. The combination of changing visitor characteristics and rapidly evolving technology presents both challenges and new opportunities for sharing the parks' natural and cultural heritage with more visitors, both on site and in their homes.
9. Significant opportunities exist for celebrating aboriginal history and culture in the park and providing experiences to connect visitors with Aboriginal cultures.
10. A Comprehensive suite of visitor experience and public education indicators needs to be developed.

3.7 Aboriginal Involvement

Parks Canada is connecting with twenty-four Aboriginal communities that have identified traditional connections to what is now Jasper National Park. Aboriginal perspectives are not well represented in the current management plan and decision-making processes, nor are Aboriginal cultures well represented in the park offer of visitor experiences and learning opportunities. In order to move forward on these matters of shared interest and to establish an effective dialogue, The Council of Elders of the Descendants of Jasper and the Jasper Aboriginal Forum were established in July 2004 and October 2006, respectively.

Concrete actions over the last five years include a number of special events presenting Aboriginal culture in Jasper including park centennial events, stabilization and presentation of the Moberly homestead, employment opportunities through the Firesmart initiative, participation in Foothills Model Forest traditional use studies and land-use referral programs, and influencing prescribed burn prescriptions. In February 2008, a draft action plan was developed with the membership of the Jasper Aboriginal Forum to focus on priorities related to cultural Programming, formalizing working relationships, access to the park for medicines, ceremonies and reconnection, and traditional use and ethnographic studies.

The Council of Elders of the Descendants of Jasper have met six times since their inception and are focused on priorities related to the assessment, protection and maintenance of grave sites, and telling the story of the Métis descendants of Jasper.

Aboriginal groups will be involved in the review of the management plan in order to determine how to ensure Aboriginal perspectives are better represented in future management plan direction and related decision-making processes.



Figure 24: Sharing Aboriginal Culture. Moberly homestead area. Park Canada Photo.



Figure 25: Participants at the February 2008 Jasper Aboriginal Forum. Gregory Deagle photo.

3.8 The Community of Jasper

- The first State of the Community Report was prepared in November 2006 to assess achievements and challenges to implementation the Jasper Community Land Use Plan; implementation is 90% complete through the combined efforts of Parks Canada and the Municipality of Jasper.
- Areas of notable progress are implementation of the Minister's planning framework for national park communities for *no net negative environmental impact*, appropriate use, responsible growth management, leadership in environmental stewardship and heritage conservation, and enabling affordable housing through offering to release residential lands at reduced market value to non-equity housing projects.
- The community has achieved local governance that assists in achieving of the community vision, and subsequent activities in partnership with the Municipality of Jasper have contributed to deliver key plan results.
- Given that implementation of the plan is substantially complete and important circumstances including governance have changed since the plan was approved, there is a need for a new Jasper community plan. Parks Canada and the Municipality of Jasper are conducting a joint planning program to prepare one community plan that will meet the requirements of the Parks Canada Agency and the Municipality of Jasper.
- Direct involvement of the community is strongly demonstrated in the FireSmart/ForestWise and Jasper Trails Project initiatives. Local residents influence the health of the lands surrounding the park in many ways, including their level of environmental stewardship (e.g., Energy and water conservation and solid waste practices) and through their recreational choices and trail use. There is an ongoing need to involve local residents in decisions that affect their lifestyles, to engage them in stewardship work, and provide learning opportunities that cumulatively will strengthen the connections of local residents with the park in ways that support the core mandate and long-term health of Jasper National Park.

3.9 Environmental Stewardship

- A community Environmental Stewardship Advisory Committee was formed in July 2006, with initial emphasis on building awareness and influencing the community and visitors through communications and special events.
- Significant gains have been made in wastewater management and solid waste diversion due to new facilities and programming. Further effort is required to improve waste stream sorting and diversion of recyclable and compost-able material from the solid waste stream.
- Concern exists over the life expectancy of the waste transfer station, the handling of trade waste, and addressing known contamination on site. Concern exists over the life expectancy of the waste transfer station, the handling of trade waste, and

addressing site contamination. Gravel extraction is linked with the current waste transfer station operations and with other active and inactive pits, needs to be reviewed in terms of long-term supply.

- More work is needed in the broad areas of energy conservation (eg. building renovation and construction), storm water management, restoration of disturbed sites, contaminated site remediation, and empowerment of residents and visitors to influence and adopt environmentally sound practices.

4.0 COMMON MOUNTAIN PARK ISSUES

Although each park has some specific characteristics that are not shared with the others, there are enough similarities that a number of common issues have been identified in the State of the Park Reports.

- Each park has species at risk; grizzly bears have been the focus of management action for the last 10 – 15 years and continue to require attention. The precarious situation of caribou populations has become critical in recent years in Banff, Jasper, Mt. Revelstoke and Glacier National Parks and throughout their range in Alberta and BC.
- Aquatic ecosystems remain at risk from impacts from roads, railways, effluent, water diversions and impoundments. Past fish stocking with non-native species has altered the natural characteristics of many waterbodies.
- Terrestrial ecosystems have been modified by a legacy of fire suppression. Currently, non-native invasive plant species account for up to 10% of all plant species in a park and are threatening native biodiversity in some locations.
- Climate change is affecting all parks and is most noticeable in glacier recession (except in Waterton Lakes). Long term monitoring will help identify ecological impacts and influence decisions about what is “natural evolution” and what can or should be done to mitigate or adapt to impacts. The recent expansion of mountain pine beetle populations and the decline in caribou populations may prove to have been influenced by climate trends in addition to other factors.
- Cultural heritage has frequently been secondary in national park management, but the rich legacies of past associations with the mountains, such as thousands of years of aboriginal history preserved in archaeological sites and the protection of cultural artifacts, provide opportunities for broadening the stories that are told.
- Although there are fluctuations, visitor use of all parks is stable or slowly increasing. Much of this is attributable to the growth of the regional population rather than to international visitors. Coupled with other domestic demographic characteristics – an aging population, a more urban population, a wider diversity of cultural backgrounds, an increasing proportion of first generation Canadians and a prediction

of an overall decline in the Canadian population – the trends require more social science research to guide park management responses.

- Comparatively little is known about the effectiveness of public education programs. The combination of changing visitor characteristics and rapidly evolving technology presents both challenges and exciting new opportunities for sharing the parks' natural and cultural heritage with more visitors, both on site and in their homes. Many are repeat visitors and many visit several parks; programs will have to respond to these circumstances.
- Changing land uses surrounding the parks require continued multi-jurisdictional approaches to issues such as the protection of species at risk and the control of forest pest and disease outbreaks.

5.0 EVALUATION OF MANAGEMENT ACTIONS

Since the Jasper National Park of Canada Management Plan was approved in 2000, Parks Canada and its partners have implemented a wide range of actions to maintain ecological integrity, protect cultural resources, and improve visitor experience and educational opportunities. While not intended to be all-inclusive, Table 8 highlights actions and results related to key strategies and initiatives presented in the park management plan. One example related to wildlife corridor restoration is described in more detail in a text box. Annual implementation reports provide additional detail about these and other park management actions and results.

Parks Canada takes an integrated approach to the protection of ecological and cultural resources and provision of quality visitor experiences and educational opportunities. Where possible, planning initiatives and management actions recognize the relationships between these aspects of the Parks Canada mandate.

Integration may take the form of a single project that simultaneously addresses protection, visitor experience and education objectives. Several discrete projects undertaken over a broader area may together represent an integrated approach to park management. While the individual projects may be focused on resource protection, visitor experience or public education, the cumulative objective is overall improvement in all areas of the mandate. Results presented in the following table are generally based on qualitative evaluation, as many actions are recently implemented or ongoing. Where feasible, quantitative results are presented. As long-term monitoring programs are further developed and sufficient time has passed for the full effects of actions to be realized, more specific measurement and reporting of results is anticipated.

Table 8: Management actions and results.

Challenge/ Opportunity	Management Actions	Results
Restore natural vegetation ecosystem composition, structure and processes	<ul style="list-style-type: none"> • Used prescribed fire to restore vegetation mosaic. 	<ul style="list-style-type: none"> • Area burned target achieved (equivalent to 50% of the estimated area that would burn under a natural fire), although not evenly distributed.
	<ul style="list-style-type: none"> • Implement prevention and control methods to reduce the risk of new non-native plant species establishing themselves. • Rehabilitation of disturbed sites with native plant species. 	<ul style="list-style-type: none"> • High priority species for eradication continue to expand in disturbed sites and remote locations where control actions cannot be easily applied. Lower priority species also continue to invade, become established and spread to an increasing number of sites. • While this increase in species richness and abundance indicates a worsening condition, invasion is limited to disturbed sites along travel corridors and areas of high human use, which represent a relatively small area of the park.
Maintain viable wildlife populations, improve habitat connectivity and protect species at risk	<ul style="list-style-type: none"> • Grain cars are being repaired as part of a funding agreement between CN and Agriculture Canada. Since 2007, CN has refurbished 1,164 grain cars to reduce grain spills with a target of 2000 repaired by the end of 2008. Parks Canada has worked with CN to have spilled grain removed by a rail mounted vacuum truck. 	<ul style="list-style-type: none"> • Parks Canada is monitoring the change in quantity of grain spilled in the park in response to grain car repairs. We sample sites on the tracks in high spill areas using mesh screening laid between the tracks. We collect and weigh grain to detect the change in grain spilled over time.

Challenge/ Opportunity	Management Actions	Results
	<ul style="list-style-type: none"> • Tested the effect of using fladry (hanging free flowing ribbon or flags) across packed trails in winter to reduce wolf access to caribou terrain 	<ul style="list-style-type: none"> • Monitoring found no evidence that fladry was an effective measure to deter wolves from using human-packed trails.
	<ul style="list-style-type: none"> • The Jasper Trails Project is redesigning the trail network near the Community of Jasper to improve trail user experience and ecological integrity. 	<ul style="list-style-type: none"> • Monitoring of pre-redesign condition has been completed including human use levels and wolf movement patterns. Post-redesign condition will be monitored starting in 2008.
<p>Maintain and, where feasible, restore aquatic ecosystems</p>	<ul style="list-style-type: none"> • Restored Lake Whitefish to Lac Beauvert and removed a barrier to fish passage between the Athabasca River and Lac Beauvert. • A new wastewater treatment plant for the community of Jasper became operational in 2003. • Rehabilitated the riparian willow community and upland vegetation communities in the Maligne Lake outlet area. 	<ul style="list-style-type: none"> • Lake Whitefish have re-established in Lac Beauvert. Monitoring of fish movement between the river and lake demonstrated improved connectivity for native species. • Water chemistry and benthic invertebrate sampling downstream of the wastewater treatment plant indicates water quality is in good condition. Effluent testing from the treatment plant indicates phosphorus levels have dropped from 10.3 mg/L in 2001 to 0.43 mg/L in 2006. • Willow and upland vegetation communities have established in the Maligne Lake outlet area.

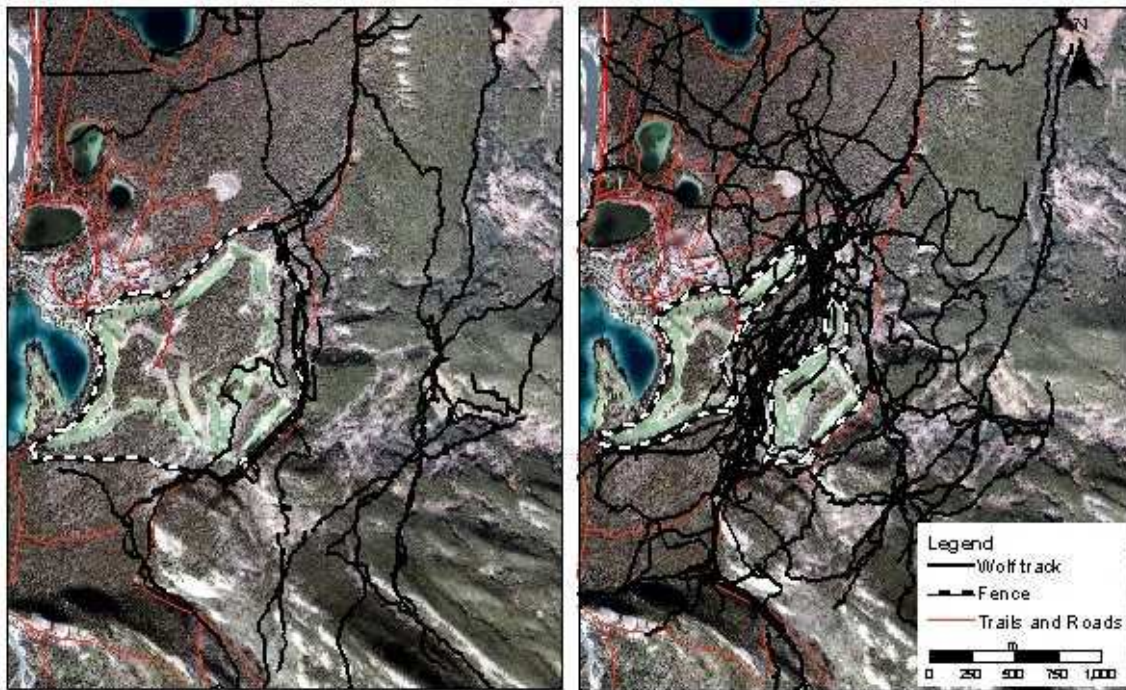
Challenge/ Opportunity	Management Actions	Results
<p>Provide opportunities and facilities to support memorable visitor experiences while addressing related ecological concerns.</p>	<ul style="list-style-type: none"> • Continued operation of all Parks Canada facilities • Increased re-investment in road paving, day use areas, new signage, washrooms, campground infrastructure and interpretive programs • Comprehensive visitor surveys undertaken including online survey program. • Continue working with other field units and partners to deliver quality pre-trip information. • Park publications provide orientation as well as stewardship information. • Information centre staff provide orientation and awareness information. 	<ul style="list-style-type: none"> • Continued high satisfaction ratings. • Improved pre-trip awareness. • Visitors have information that promotes a safe and enjoyable park experience while protecting ecological resources.
<p>Improve public education and awareness programs and extend the reach of these programs.</p>	<ul style="list-style-type: none"> • Special events such as Wildlife Festival, Avalanche Day, Eco Fair and the Park Centennial events created opportunities to partner with the community of Jasper to reach both visitors and residents. • The JNP E-news used new technology to improve delivery of information to stakeholders. 	<ul style="list-style-type: none"> • Improved visitor awareness and understanding of ecological messages and park management initiatives. • Increased reach of Parks Canada messages and involvement of community businesses and partners in delivery. • Increased flow of information and awareness of stakeholders to park issues and programs.

Challenge/ Opportunity	Management Actions	Results
	<ul style="list-style-type: none"> • The Parks Canada (Palisades) Stewardship Education Centre developed pilot programs to engage youth and adults in stewardship and mountain recreation programs. • The Whistlers outdoor theater is reaching between 13,000 and 20,000 visitors a summer. 	<ul style="list-style-type: none"> • Outreach activities targeted at youth. • Interpretive programs at Whistlers Theater have high attendance and high satisfaction rating.
	<ul style="list-style-type: none"> • Roving interpreters provide educational opportunities at high use areas. 	<ul style="list-style-type: none"> • The roving interpreters are increasing educational contacts with visitors.
<p>Improve collaboration with aboriginal people, including improved presentation of aboriginal cultural heritage.</p>	<ul style="list-style-type: none"> • Parks Canada has established (October 2006) an Aboriginal Forum to engaged with twenty-four Aboriginal communities that have identified traditional connections to what is now Jasper National Park, on matters of shared interest and to establish an effective dialogue. • Over the last five years there have been a series of special events presenting Aboriginal culture. These include the park centennial events, stabilization and presentation of the Moberly homestead, employment opportunities through the Firesmart initiative, and participation in Foothills Model Forest traditional use studies and land-use referral programs. 	<ul style="list-style-type: none"> • Participation in the Aboriginal forum has been consistently high; • In February 2008, a draft action plan was developed with the membership of the Jasper Aboriginal Forum and priorities were established to guide future work.

<p>Limit the growth of communities and of public and commercial facilities in the park</p>	<ul style="list-style-type: none"> • Boundaries and commercial space limits are legislated for the Town of Jasper. • Guidelines implemented for Outlying Commercial Accommodation facilities. • Site Guidelines consistent with Parks Canada's <i>Ski Area Guidelines</i> were approved for Marmot Basin Ski Area in 2008 	<ul style="list-style-type: none"> • Achieved land use certainty for the town of Jasper, OCAs and Marmot Basin. • In 2001 Maximum new commercial development in the Town of Jasper was set at 9209 m². New development since 2001 has been 3725 m². Percentage of total available new development utilized is 40.7%.
<p>Improve protection and presentation of cultural resources</p>	<ul style="list-style-type: none"> • Main focus has been on national historic sites, which are not included in this State of the Park Report. • Inventories continuing e.g., of archaeological sites 	<ul style="list-style-type: none"> • Profile of cultural and historic resources improved. • Improved knowledge for development of programs.
<p>Introduce a comprehensive monitoring program</p>	<ul style="list-style-type: none"> • National system for ecological monitoring is being implemented, based on bioregional indicators and measures. • National indicators and measures under development for visitor experience, public education and cultural integrity • Extensive ongoing research and monitoring programs in place 	<ul style="list-style-type: none"> • Improved data for problem identification and management decisions. • Production of 2005 and 2008 State of the Park Reports. • Consistent national measures required.

Evaluation of Management Actions – Example: Wildlife Corridor Restoration

The Jasper National Park Management Plan recognised habitat connectivity for wildlife as an important issue. JNP and the Fairmont Jasper Park Lodge (JPL) collaborated to restore a movement corridor through JPL’s golf course. A fence that kept elk from accessing non-native vegetation was redesigned in 2001 to open a corridor through the forested center of the golf course. A new rail fence continues to exclude elk from most of the fairways, but is permeable to carnivores (see map below). By snow tracking wolves before (below, left) and after (below, right) restoration, we found that wolves significantly shifted their movement to include the corridor. This project improved wolf access to prey and connectivity in low-elevation habitat. Results were published in the peer-reviewed journal “Ecology and Society”.



Before

After

Evaluation of Management Actions – Example: Tonquin Valley

The Tonquin Valley is one of the premier backcountry destinations in Jasper National Park of Canada. An area concept in the approved management plan sets direction to maintain continued, controlled access for both hikers and horses, and to ensure that the Tonquin Valley continues to support and contribute to viable populations of grizzly bears and caribou.



Long-term challenges have persisted in achieving ecological and visitor experience goals for the Tonquin Valley. Chronic problems for hikers are related to poor trail conditions, exacerbated by horse use. Trail repairs are costly due to wet soil conditions in upper subalpine and alpine areas.

Monitoring and visitor feedback shows free-ranging horse grazing in the Tonquin Valley affects soils, vegetation, and quality of experience for some visitors. Parks Canada and the two lodge operators that use horses have made operational adjustments, yet measures have fallen short of achieving the necessary improvements (*the management plan calls for reducing the number of horses, horse nights, scheduled trips, controlling free ranging horse movements reducing bare ground in grazing areas, and attaining levels of visitor satisfaction and acceptance of Toqnuin Valley trails equivalent to other areas in the park where horse use occurs*). In addition, recent research has improved our understanding of caribou habitat use and predation factors. Adjustments to human use may be required to improve caribou habitat security and recovery.

Further measures are needed to achieve the management plan objectives. The required outcome is to improve visitor experience and ecological conditions, to ensure that the Tonquin Valley remains one of the premier backcountry destinations in Jasper National Park of Canada for both hikers and horse users, and to ensure habitat security for grizzly bears and caribou.

6.0 SUMMARY ASSESSMENT

- The state of ecological and cultural resources in Jasper National Park is considered to be generally *fair*. However, some individual indicators and measures are rated as *poor* or show *declining* trends.
- Visitor experience and public education are both rated as *fair* with an *improving* trend. For all categories there are some challenges and opportunities for improvement and a need to refine or develop measurement tools.

- The long-term viability of some regional wildlife populations, such as caribou, remains uncertain as a result of pressures from within and outside of the park, and alterations to the predator-prey dynamic.
- Historical fire suppression activities have contributed to a reduction of wildlife habitat values, and increased native and exotic pathogens such as mountain pine beetle and whitebark pine blister rust.
- Highway and railway-related wildlife mortality continues to be a concern as identified in the current park management plan. This is a challenging issue, as Parks Canada has minimal ability to influence increasing traffic levels on the Yellowhead Highway or the CN Railway. The recent commitment by the Canadian National Railway and Transport Canada to update grain cars in order to reduce the attraction of bears to the tracks is a positive development.
- Aquatic ecosystems are faring relatively well in Jasper National Park, with an overall *fair* and *improving* ecological integrity rating. Major upgrades to the Jasper wastewater treatment plant are showing positive results. Ongoing improvements to wastewater infrastructure at Parks Canada facilities and commercial operations are expected to further improve conditions.
- Impacts to aquatic connectivity as a result of highway and railway culverts are a gradually increasing concern as culverts age and outfalls are eroded. Efforts to inventory and correct problematic culverts are underway.
- Although there is a paucity of long-term local data to confirm climate trends, and considerable uncertainty regarding the specific impacts of climate change on local ecosystems, concern regarding climate-related measures is warranted. There is widespread scientific consensus that climate change is occurring and that there will be potentially significant ecological changes as a result. More local monitoring will increase understanding, and may help to identify local effects. A review of the park management plan should consider strategies to monitor and adapt to changes in climate.
- The existing park management plan recognizes the cultural resource management issues identified in this report and presents several actions to address known deficiencies. In particular, the need to improve cultural resource management practices through more rigorous inventory, evaluation and planning processes is apparent in both the state of the park report and the existing park management plan.
- The state of the park report highlights the need to acquire more information related to all visitor experience and public education indicators in order to maintain or improve performance in those areas.

- Parks Canada provides a wide range of visitor opportunities and facilities, contributing to an overall *fair* and *improving* rating for visitor experience. While visitors to Jasper are generally satisfied with the experience, some opportunities for improvement are apparent. Many existing popular visitor facilities and associated infrastructure are outdated or in a state of disrepair. Considerable work has been undertaken in recent years to address these deficiencies. This positive trend is expected to continue.
- The current park management plan recognizes the need to provide high quality visitor experiences and provides strategies and specific actions to meet that objective. While substantial progress has been made in restoring or upgrading visitor facilities in recent years, there is an opportunity to better integrate visitor experience and ecological integrity objectives. Emphasizing the visitor experience as an outcome, rather than focussing primarily on facilities and capital investments, will lead to improvements in this area.
- This State of the Park Report confirms the importance of developing a consistent, comprehensive and scientifically rigorous monitoring program to measure and report on progress related to ecological integrity, culture resource protection, and visitor experience and public education objectives. While the existing management plan identifies indicators and the need for improved monitoring and reporting specific to ecological integrity, similar approaches to cultural resources, visitor experience and public education as part of the upcoming review of the management plan.
- Finding ways to better connect Canadians and international visitors to Jasper National Park in order to improve understanding, appreciation and support for national parks is an ongoing challenge for Parks Canada. The Jasper National Park State of the Park Report indicates that there are opportunities for improvement to ecological integrity, cultural resource management, visitor experience and public education that, when addressed in an integrated fashion, will help to meet that challenge.
- The existing park management plan recognizes the majority of the issues identified in this report and in most cases provides appropriate direction to address those challenges and opportunities. While many actions have been implemented, continued attention and long-term monitoring are required to ensure successful outcomes. In some cases, this report highlights specific areas that may benefit from additional attention as part of the upcoming management plan review.
- Deficiencies are recognized in Aboriginal involvement in all areas of delivery of the mandate. Important steps are being taken together to understand and advance the perspectives and aspirations of Aboriginal people. An Action Plan to focus on shared priorities has been established through the Jasper Aboriginal Forum.

- A separate State of the Community Report has been prepared for Jasper. Local residents influence the health of the lands surrounding the park in many ways, including their level of participation in environmental stewardship (e.g., Energy and water conservation and solid waste practices) and through their recreational choices. There is an ongoing need to involve local residents in decisions that affect them, to engage them in stewardship and provide learning opportunities that cumulatively will strengthen the connections of local residents with the park in ways that support the core mandate and long-term health of Jasper National Park.

Issues for consideration in the management plan review include:

- Strategies to recover species at risk in an ecosystem context that engages and educates park visitors and local and regional stakeholders.
- Effective regional collaboration to maintain secure habitat for grizzly bears and caribou.
- Recognition of the perspectives and aspirations of Aboriginal people for reconnecting with the park in ways that support their cultural values, contributing to park management, telling their own stories and offering authentic Aboriginal cultural experiences for visitors.
- Revision of fire targets and mountain pine beetle strategies to improve ecosystem health.
- Improved integration as infrastructure and programs are updated, so that visitors, especially repeat regional visitors, can experience the park in meaningful ways that derive from, and sustain, the park's unique ecological attributes.
- Increased emphasis on meaningful public education, as a key element of visitor experiences and the protection of ecological integrity and cultural heritage.
- Strategies for adapting to the impacts of climate change.
- Development of measures, targets and thresholds for visitor experience and public education indicators.
- Confirmation and/or refinement of measures, target and thresholds for ecological integrity indicators.
- Gravel extraction for long term park needs, and the future of the transfer station landfill operation.
- An update to reflect changes in local community governance, to discuss the role of the community as a visitor center, and reflect the unique role available to residents in stewardship of the park.

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