

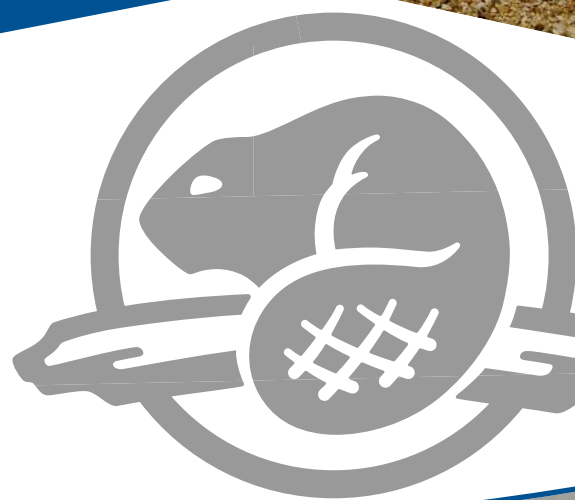


Aulavik National Park
of Canada
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State of the Park Report 2010

Aulavik National Park of Canada



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Parks Canada Agency Mandate:

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

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Cover image, bottom: Jean-François Bisailon. Parks Canada.

In Fifteen Years...

- Aulavik will have the same high level of EI that it does today;
- Aulavik will be an exemplary model of subsistence usage for national parks where traditional uses are allowed;
- Research and monitoring programs will have yielded a greater understanding of the state of park ecosystems, influences on EI, and appropriate management actions that maintain EI;
- Aulavik will continue to serve as an important contributor to the maintenance of wildlife and plant species on Banks Island;
- Aulavik's archaeological features, which span over 3,000 years of history, will continue to be protected and presented for the benefit of Inuvialuit and all Canadians;
- Aulavik will be an inspiration, especially for youth, of stewardship and proprietorship for the park, its resources and all of Banks Island;
- The residents of Sachs Harbour will have developed a prosperous tourist infrastructure based largely in town and will be providing most of the commercial tourism-related services to visitors to the park;
- Aulavik will be used by the Inuvialuit and Parks Canada as an exemplary model of low impact visitor use both in terms of impact on EI and on wilderness experience;
- Aulavik will be renowned by ecotourists, naturalists and adventure travellers as a premier destination for Arctic wilderness experiences;
- Traditional knowledge, scientific research and oral histories will provide a greater understanding of the wildlife populations in the park and on Banks Island;
- There will be a much greater understanding of the ecology of, and management actions for endangered species, including Peary caribou.

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EXECUTIVE SUMMARY

The State of the Park Report (SoPR) for Aulavik National Park of Canada provides an assessment of ecological integrity and cultural resources, visitor experience, public awareness and understanding, and effectiveness of management actions.

This is Aulavik National Park's first SoPR. It incorporates Inuvialuit traditional knowledge, provided by various co-operative management bodies and the residents of Sachs Harbour, to evaluate the condition of ecological integrity (EI) and cultural resources.

The state of the park is summarized in Table 1 on the following page. Of the ten indicators identified, three ecological integrity indicators and one public awareness and understanding indicator were not rated due to insufficient data. The two cultural resource indicators received a green and yellow rating while the visitor experience indicators received three green and one yellow rating. The ratings and symbols are described below.



Southern tip of Nasogaluak Cultural Site/ Jean-François Bisailon. Parks Canada.

Summary of Key Issues

The SoPR includes a brief synopsis of key issues to be considered during the preparation of the management plan. These key issues are:

- 1. Banks Island Peary caribou population decline.** Peary caribou population on Banks Island has declined by approximately 70% over the last three decades.
- 2. Monitoring ecological integrity.** The development and delivery of a comprehensive ecological integrity monitoring program in Aulavik continues to be a significant challenge. The challenges and costs associated with undertaking this work in such a remote and isolated location are significant.
- 3. Economic Benefits for Aboriginal Peoples.** The Inuvialuit Final Agreement and the Aulavik National Park Agreement for the Establishment of a National Park on Banks Island identify areas for economic and tourism development in Sachs Harbour. Community expectations in this area have not been realized.
- 4. Expanding Awareness, Understanding and Visitor Opportunities.** The high cost of travel and the remoteness of Banks Island severely limits opportunities for people to experience the Park. Connecting Canadians to the site is a key objective.

Symbols used to evaluate indicators and measures

CONDITION				TREND			
●	▼	■	N/R	↑	↔	↓	N/R
Good	Fair	Poor	Not rated	Improving	Stable	Declining	Not rated

Note: Refer to individual evaluation / assessment / monitoring tools for definitions related to condition and trend

To evaluate the current state of established indicators, measures are evaluated and rated using a rating guide. (Refer to Appendix 1 for definitions related to condition and trend). These ratings are rolled up into an overall condition assessment for the indicator. The condition of the indicators determines the overall state of the park. Many indicators and measures are not rated due to insufficient information. Because this is the first SoPR for Aulavik trend assessments for indicators are not provided. Trends of measures are provided wherever there is sufficient information.

Table 1: State of the Park – Summary for Aulavik National Park

INDICATOR	STATE	RATIONALE
Resource Conservation – Ecological Integrity		
Tundra	N/R	The condition of the Tundra Ecosystem is not assessed. Thresholds are yet to be established. A stable trend has been identified for the Banks Island Peary Caribou population size. The muskoxen population is stable.
Freshwater	N/R	The condition of the Freshwater Ecosystem is not assessed due to insufficient knowledge and information. Monitoring has commenced but sufficient data has not yet been collected. Work on further developing and refining measures for the Freshwater Ecosystem is required.
Coastal	N/R	Measures are yet to be established to evaluate the condition of the Coastal Ecosystem.
Resource Conservation – Cultural Resources		
Resource Condition	●	Known archaeological sites are in stable condition. Objects are held in trust according to the terms of a Memorandum of Understanding (MOU) between the Inuvialuit Regional Corporation (IRC) and Parks Canada. There are no Parks Canada-owned structures in the park.
Selected Management Practices	▼	A cultural resource data inventory was compiled in 1998. A monitoring program was established in 1997 to monitor the condition of specific cultural sites within the park boundary. Management decisions impacting cultural resources are made in cooperation with the co-management partners.
Visitor Experience		
Market Research and Promotion, Influencing Visits	▼	Annual visitor surveys identify visitors' needs. Market analysis was carried out in the past but is no longer current.
Interpretation, Influencing, Learning	●	Visitors receive comprehensive visitor pre-trip planning information, in-person orientation at departure, a visitor information package, and are well supported by both internal and external expertise. Park-specific messages regarding key ecological and cultural resource integrity are communicated as part of visitor orientation.

Visitor Service Offer, Influencing Enjoyment	●	A wide variety of trip planning materials and services are available. Satisfaction with pre-trip information, information at Parks Canada registration and park staff was high (at least 85%) in returned surveys. Contact with individual park staff takes place at least twice during the park trip cycle. Visitors may choose from opportunities including hiking, paddling, fishing, wildlife viewing and visiting cultural sites.
Personal Connection	●	The length of visits to the park (average 10 days) coupled with high expectations and the power of the experience makes the potential for transformative experiences very high. Personal communication to staff and visitor survey results all indicate that a majority of visitors experience a strong sense of personal connection to Aulavik. Memorabilia are available both in Sachs Harbour and Inuvik.
Public Awareness and Understanding		
Appreciation and Understanding	N/R	No research has been done to assess public awareness and understanding.



Introduction

The purpose of the State of the Park Report is to:

- Provide a snapshot of the state of the park;
- Report the results of Parks Canada's efforts to maintain or improve the state of the park since the last management plan; and,
- Identify key issues facing the park for consideration in management planning.

The SoPR serves as a reporting tool to the people of Canada on Parks Canada's management of the Park, and will assist Parks Canada, cooperative management partners and stakeholders in the work towards the development of a new management plan.

The document is divided into the following sections: Aboriginal Perspectives, State of Ecological Integrity, State of Cultural Resources, State of Visitor Experience, and State of Public Awareness

and Understanding. Each section begins with a narrative overview, followed by the rating of indicators and measures. The SoPR concludes with two sections on key park challenges and the results of management actions.

The purpose of the park is to protect for all time a representative natural area of Canadian significance in the Western Arctic Lowlands natural region, and to encourage public understanding, appreciation and enjoyment of the area so as to leave it unimpaired for future generations while permitting subsistence usage and trapping by the Inuvialuit.

-An Agreement for the Establishment of a National Park on Banks Island. 1992



Aulavik, which means "place where people travel" in Inuvialuktun, protects more than 12,000 km² of Western Arctic Lowlands on the north end of Banks Island. The park encompasses a variety of landscapes from fertile river valleys to polar deserts, buttes and badlands, rolling hills and seacoast. At the heart of Aulavik is the Thomsen River, which offers visitors a chance to paddle one of the continent's most northerly navigable waterways.

This remote arctic environment is home to both Peary caribou and muskoxen. The wildlife and land have supported aboriginal peoples for more than 3,000

years, from Pre-Dorset cultures to contemporary Inuvialuit.

Sachs Harbour (population 122) is the closest community to the park, and is located 250 km

from the southern park boundary. While residents occasionally use the north end of the island, Aulavik is regarded as a reservoir for sustaining regional wildlife populations.



Aboriginal Perspectives

2.1 Aboriginal Context

The park is located on the north end of Banks Island in the Inuvialuit Settlement Region. It is cooperatively managed with the Inuvialuit, through the Wildlife Management Advisory Council, Northwest Territories (WMAC (NWT)), the Fisheries Joint Management Committee (FJMC), the environmental assessment process of the Environmental Impact Screening Committee (EISC) and the Environmental Impact Review Board (EIRB) and the Inuvialuit Regional Corporation. Parks Canada also works closely with the Inuvialuit Game Council (IGC) and the Sachs Harbour Hunters and Trappers Committee (SHHTC) to address Park management issues.

The Aulavik National Park Advisory Board (ANPAB) is an informal advisory board established in 2004 to advise the Superintendent on Park matters. The ANPAB consists of representatives from the Hamlet of Sachs Harbour, the Sachs Harbour Community Corporation, the SHHTC, the Sachs Harbour Elders Committee and Parks Canada.

2.2 State of the Land and Inuvialuit Relationship with the Land

The Aulavik National Park Visitor Reception Centre serves as a link between the community and the national park. This is the primary point of contact for local residents with Parks Canada. Community members use the VRC for meetings and activities. The VRC exhibits, photo displays and maps



Sachs Harbour elder Lena Wolki explaining how to use lichen to dye kyviat, Green Cabin/ Melinda Gillis, Parks Canada

encourage story-telling and remembrances by elders.

Parks Canada facilitates park visits for community members through annual camps held for local youth and/or adults. There are sometimes paid or volunteer opportunities to travel into the park to participate in research projects or to work as a camp cook or wildlife monitor.

The Inuvialuit Final Agreement (1984) and the Agreement for the Establishment of a National Park on Banks Island (1992) both recognize Inuvialuit subsistence harvesting rights in Aulavik.

2.3 Community Economic Development Opportunities

In the Inuvialuit Final Agreement and An Agreement for the Establishment of a National Park on Banks Island, the Government of Canada has agreed to work with the Inuvialuit to attain specific economic goals. Parks Canada provides employment opportunities for the residents of Sachs Harbour and works to facilitate other economic opportunities:

- Since the establishment of Aulavik, Parks Canada has annually employed 3-5 staff based in Sachs Harbour.
- Parks Canada frequently hires Sachs Harbour residents for short-term and contract work related to park operations.
- Parks Canada employs residents in the broader Inuvialuit Settlement Regional; the Agency is one of the largest federal employers in the region.
- Third-party researchers working in Aulavik are encouraged to buy supplies locally and hire local residents when feasible.
- Parks Canada purchases many hundreds of thousands of dollars in goods and services annually from Inuvialuit-owned businesses.

Because of the remoteness of Banks Island and the high cost of travel, both Aulavik and Sachs Harbour experience low numbers of visitors each year. Low visitation limits the potential for tourism as a strong economic activity on the island. Overall, high community expectations for significant tourism-related economic benefits associated with the National Park have not been realized.

Under the terms of the establishment agreement, Parks Canada encourages the use of Inuvialuit guides licensed to operate within the park. However, during the history of the park, no Inuvialuit guide or company has obtained a licence to operate guided trips in Aulavik.



2008 Aulavik Youth Camp Participants and Parks Canada staff/ Parks Canada.



3 State of Ecological Integrity

3.1 Ecological Context

Aulavik is located on northern Banks Island in the Northwest Territories. Banks Island is the most westerly island in the Canadian Arctic archipelago.

Aulavik has an Arctic climate. The tundra is frozen and snow-covered from September to June. Summers are brief and cool. The sun does not set between mid-May and late July, and the sky lights up briefly from late November to late January. During the summer (mid-June to mid-August), temperatures in the centre of the park range from 1°C to 20°C with a daily average of 10°C. Closer to the coast, the temperatures tend to be cooler and range from -2°C to 12°C with a daily average of 8°C. Snow and freezing temperatures can occur at any time of the year. Aulavik is considered a polar desert. The total annual precipitation for the park is approximately 300 mm, one third of which falls as rain during the summer. The wind is an almost constant presence. Severe winds are common.

Banks Island is treeless. The tallest plant, the arctic willow, generally grows no higher than a few centimetres. More than 150 species of flowering plants have been documented in Aulavik. Though the growing season is very short, the continuous sunlight from May to late July provides enough energy for vegetation to carry out its annual cycle. The growing season peaks in early July, and the most vibrant growth occurs on south facing slopes of hills that are sheltered from the wind and have the greatest exposure to the intense summer sun. By

late July most of the plants have gone to seed and the grasses have cured.



Black-bellied Plover/ W. Lynch. Parks Canada

The most abundant large mammal on Banks Island is the muskox. This species has experienced a dramatic increase in numbers over the last 50 years. Another important land mammal found in the park is the Peary caribou. Peary caribou was re-listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2004. A variety of other mammals are found in Aulavik including: arctic foxes, arctic wolves, ermine, arctic hares, brown lemmings and collared lemmings. Mammals along the north coast include Marine polar bears, ringed seals, bearded seals, beluga whales and bowhead whales.

Over forty-three species of birds make seasonal use of Aulavik. Only rock and willow ptarmigan and common ravens are considered permanent residents. Thirty-two bird species have been recorded breeding within the park. Breeding bird densities are generally low. The most abundant species include lesser snow geese, Lapland longspurs, horned larks, black-bellied plovers, long-tailed jaegers and sandhill cranes.

Birds of prey in Aulavik include snowy owls, rough-legged hawks, gyrfalcons, and peregrine falcons. The abundance of some of these species depends greatly on the abundance of lemmings. When the multi-year lemming cycle is low, so are the number of birds that rely on lemmings as a primary food

source. There are two Migratory Bird Sanctuaries on Banks Island, one in the northern part of Aulavik and the other covering the southwest corner of Banks Island. These two sanctuaries protect the seasonal nesting and moulting grounds of the Western Arctic's 500,000 lesser snow geese.

The Thomsen River watershed is possibly the most northerly example of a multi-species freshwater fish community. The Thomsen watershed is home to six freshwater species: lake trout, arctic char, least cisco, lake cisco, nine spine stickleback and fourhorn sculpin.

A conceptual model of the terrestrial ecosystems of Aulavik is shown in Figure 1.



Muskox Grazing/ Jean-François Bisailon. Parks Canada.

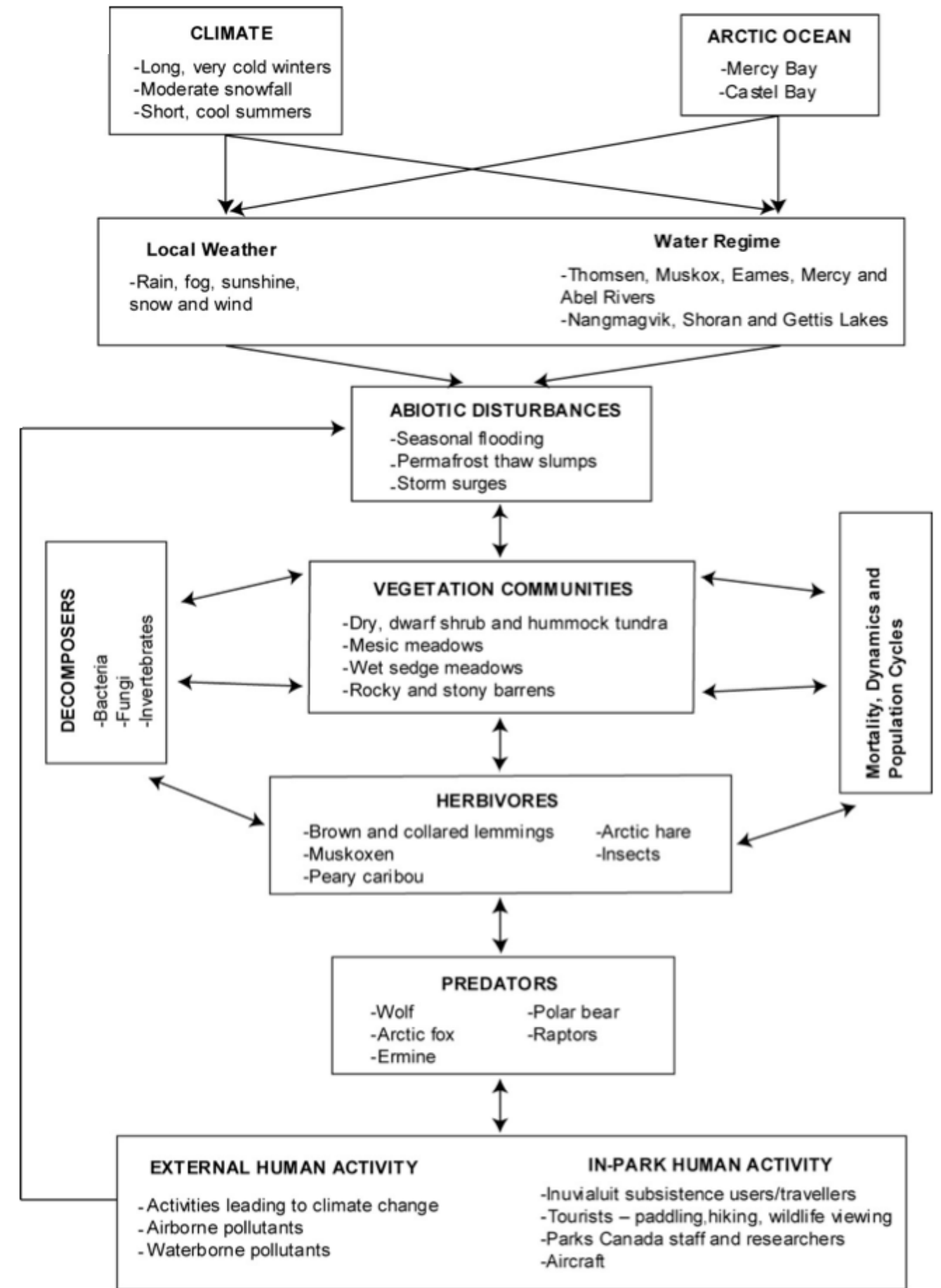


Figure 1: Conceptual model of the terrestrial ecosystems of Aulavik National Park.

3.2 Ecological Integrity Monitoring and Reporting

Three ecosystem indicators have been identified for Aulavik National Park: (1) Tundra; (2) Freshwater; and (3) Coastal. Monitoring efforts have thus far focused on the first two EI indicators: Tundra and Freshwater. The Tundra ecosystem encompasses the majority of Aulavik National Park and supports many species, including muskoxen and Peary caribou, which are important for subsistence harvesting. The Freshwater ecosystem is an important EI indicator to monitor because climate condition, potential mineral exploration and development, and the transport of contaminants can have a range of effects on this environment. This may include impacts on the flow of water and the quality of aquatic ecosystems, the introduction of pollutants, and the uptake and accumulation of contaminants by aquatic organisms.

The Coastal ecosystem has no current EI measure developed because the logistics of conducting EI monitoring work on the north shore of Banks Island are challenging and cost prohibitive.

The ability for park staff to go to Aulavik National Park is often restricted by lack of available aircraft and unpredictable weather. Consequently, monitoring programs, especially field-based components, are

significantly hindered. To address this, Parks Canada is investigating the potential of remote sensing technology to develop EI measures. Parks Canada

will also continue to rely heavily on partnerships with other agencies and Inuvialuit organizations to advance monitoring efforts.



Purple Saxifrage/ Parks Canada.

Because of the lack of data, thresholds for measures and indicators of EI in Aulavik have not been developed. As a result, the condition of all EI measures and indicators is “undetermined.”

Since this is the first State of the Park report for Aulavik, trends of indicators are not assessed but will be reported in subsequent state of the park reports. Trends of some measures, however, were identified based on traditional knowledge and scientific data collected over the last two decades.

Indicator	Condition	Measures	Trend
Tundra	Undetermined	Peary caribou population size	→
		Muskoxen population size	→
		Plant productivity	Undetermined
		Timing of the onset of green-up	Undetermined
		Permafrost temperature & depth	Undetermined
Freshwater	Undetermined	Water quality	Undetermined
Wetland	Undetermined	Not yet developed	Undetermined
Coastal	Undetermined	Not yet developed	Undetermined

3.3 EI Indicator: Tundra Ecosystems

Indicator	Condition	Rationale
Tundra Ecosystems	Undetermined	The condition of the Tundra ecosystems is “undetermined” because thresholds are yet to be established for each measures and the indicator. Monitoring for Tundra Ecosystems has commenced; sufficient data has yet to be collected.

3.3.1 EI Measure: Banks Island Peary caribou population size

Condition	Undetermined
Relevance	Peary caribou is an important symbol of ANP and Banks Island. A healthy population of Peary caribou on Banks Island is considered a sign that the Tundra ecosystem is healthy. Peary caribou are an important and preferred source of food for Inuvialuit living in Sachs Harbour.
Thresholds	Thresholds for Peary caribou on Banks Island have not been set. WAFU is currently reviewing existing data and a threshold will be set through the establishment of the Ecological Integrity Monitoring Program (EIMP). This threshold will be developed in consultation with Inuvialuit and co-management partners, especially the Inuvialuit Game Council, the Sachs Harbour Hunters and Trappers Committee, and the Wildlife Management Advisory Committee (NWT).
Assessment	The condition of the Peary caribou population size measure cannot be determined due to the lack of established thresholds.
Trend	The trend of the Peary caribou population size measure is considered to be “Stable.” This population declined sharply between 1981 and 1991 but appears to have stabilized, at a low population level, between 1991 and 2005. Another population survey planned for 2010 will verify this assessment.

Peary caribou have seasonal ranges through much of Banks Island, including Aulavik. The residents of Sachs Harbour state that the Banks Island Peary caribou population is currently low. They believe that the population likely cycles naturally, and that it is currently at a low point of a cycle. The decrease in numbers has been taking place since about the 1980s. Possible reasons for the decline, provided by residents, include:

- An increase in icing conditions, especially those caused by rain in the fall, reducing access to forage;
- An increase in the number of caribou killed by wolves; the wolf population on Banks Island has been rising since wolf control activities were stopped in the 1950s;
- Changes in the migration and movements of Peary caribou on Banks Island, and especially a possible increase in migration of Banks Island Peary caribou to Victoria Island;
- Shifting climate conditions may result in an earlier onset of green-up, which can mean a reduction in important nutrients for calves and a decrease in their rate of survival.

In response to concerns about the Peary caribou population, a quota on subsistence harvesting was first established in 1990 by various co-management partners. The current quota is one bull caribou per household (approximately 30).

The first aerial population surveys for Peary caribou that covered all of Banks Island were conducted in 1971 and 1972. The numbers of Peary caribou ranged from 11-12,000 during this period.

Since 1982, population surveys for Peary caribou have been conducted by the GNWT. The surveys are conducted every three to four years. Parks Canada is a partner in this project, providing funds and other resources. The most recent statistics for the Peary caribou population on Banks Island are from 2005. (See table 2).

In 2004, Peary caribou across the Canadian Arctic were designated as endangered by COSEWIC. Based on population size since the early 1990s, as demonstrated in Figure 2, a stable trend is shown for Peary caribou in Aulavik National Park.

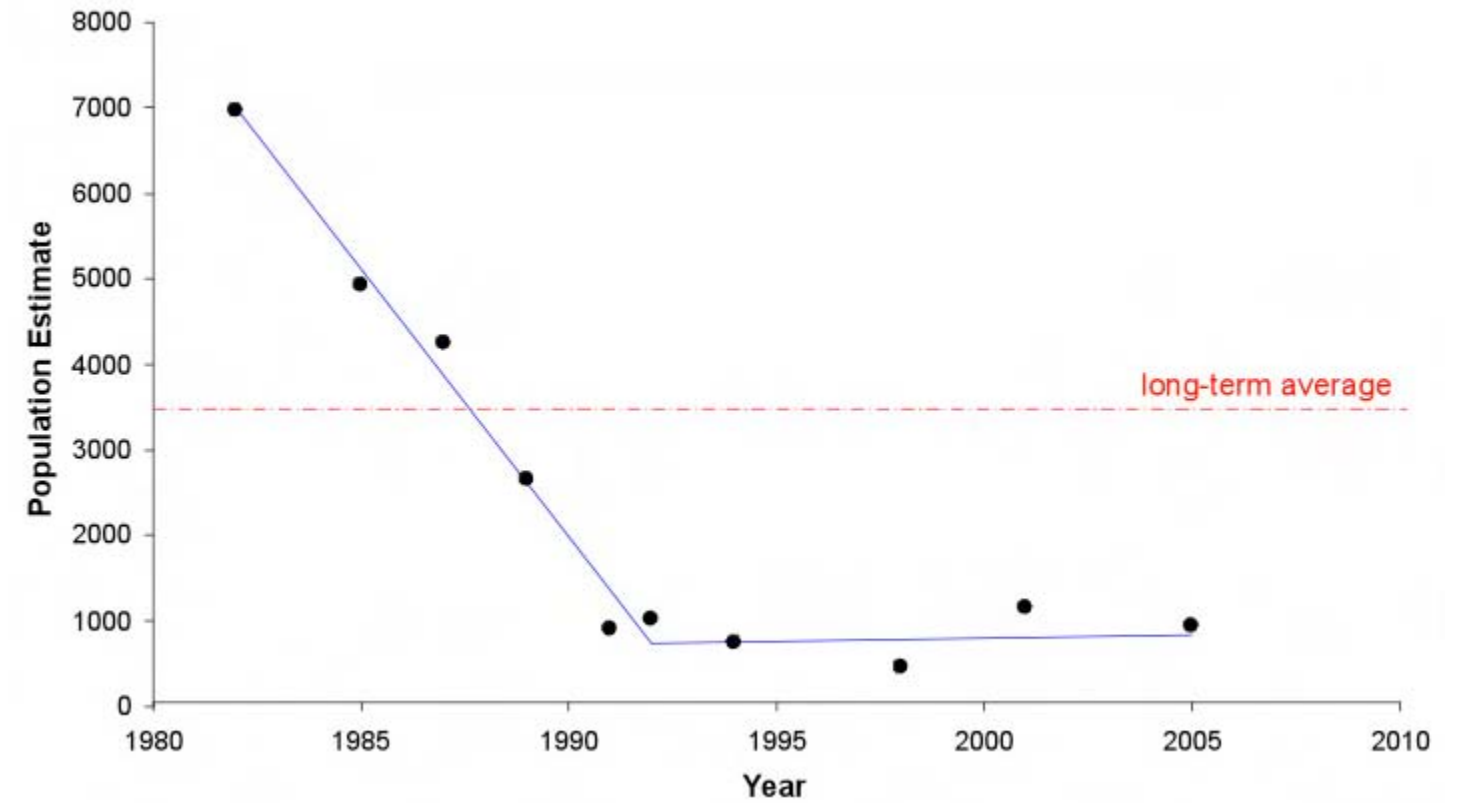


Figure 2: Line graph demonstrating decline of non-calf Peary caribou on Banks Island, 1982-2005

Year	Population estimate	Standard error
1982	6,970	1,133
1985	4,931	914
1987	4,251	663
1989	2,641	334
1991	897	151
1992	1,018	270
1994	742	269
1998	451	123
2001	1,142	324
2005	929	289

Table 2: Population estimates of non-calf Peary caribou on Banks Island, 1982-2005.

3.3.2 EI Measure: Banks Island muskoxen population size

Condition	Undetermined
Relevance	Muskoxen are a common species in ANP and throughout Banks Island. They are also an important source of food for Inuvialuit living in Sachs Harbour, and provide income through sport hunting and commercial harvest.
Thresholds	Thresholds for the muskoxen population on Banks Island have not yet been set. A threshold will be established through the EIMP. This threshold will be developed in consultation with aboriginal and cooperative management partners, especially the WMAC (NWT), the SHHTC and the IGC.
Assessment	The condition of the Banks Island muskoxen population size currently cannot be assessed, since no thresholds have been set.
Trend	The trend of the muskoxen population size measure is considered to be "Stable." This assessment is based on Inuvialuit traditional knowledge and scientific information collected.

Muskoxen have been present on the Island for thousands of years, although the population has fluctuated significantly during these times. Evidence from Pre-Dorset sites estimated to be over 3,000 years old, and recently used sites from 1853 to the late 19th century indicates that muskoxen were present on Banks Island during these time periods. Stefansson did not see any muskoxen during his extensive travels on Banks Island between 1914 and 1916. In fact, Muskoxen were rarely encountered on Banks Island until the 1960s, despite extensive travel on the island by fox trappers. Aerial wildlife surveys conducted on Banks Island in the 1970s provided the first evidence that the number of muskoxen on the island had increased since the 1960s. The first survey to determine a population estimate of muskoxen on Banks Island was conducted in May 1972. The population was estimated at 3,800.



Muskoxen/ B. Johnson, Parks Canada

The residents of Sachs Harbour believe these changes in population size are part of a natural cycle and that it is not a concern. Icing conditions are a concern for wildlife management as they can cause major die-offs, such as that reported in 2003-04. Based on the population survey and traditional knowledge a stable trend is shown for the muskoxen population on Banks Island.

Surveys of muskoxen numbers on Banks Island have been conducted by the Government of the Northwest Territories since 1982. These are the same surveys used to estimate the Peary caribou population on Banks Island. Estimates of the Banks Island muskoxen population have fluctuated from 29,168 in 1985 to 47,209 in 2005 (see Table 3 and Figure 3).

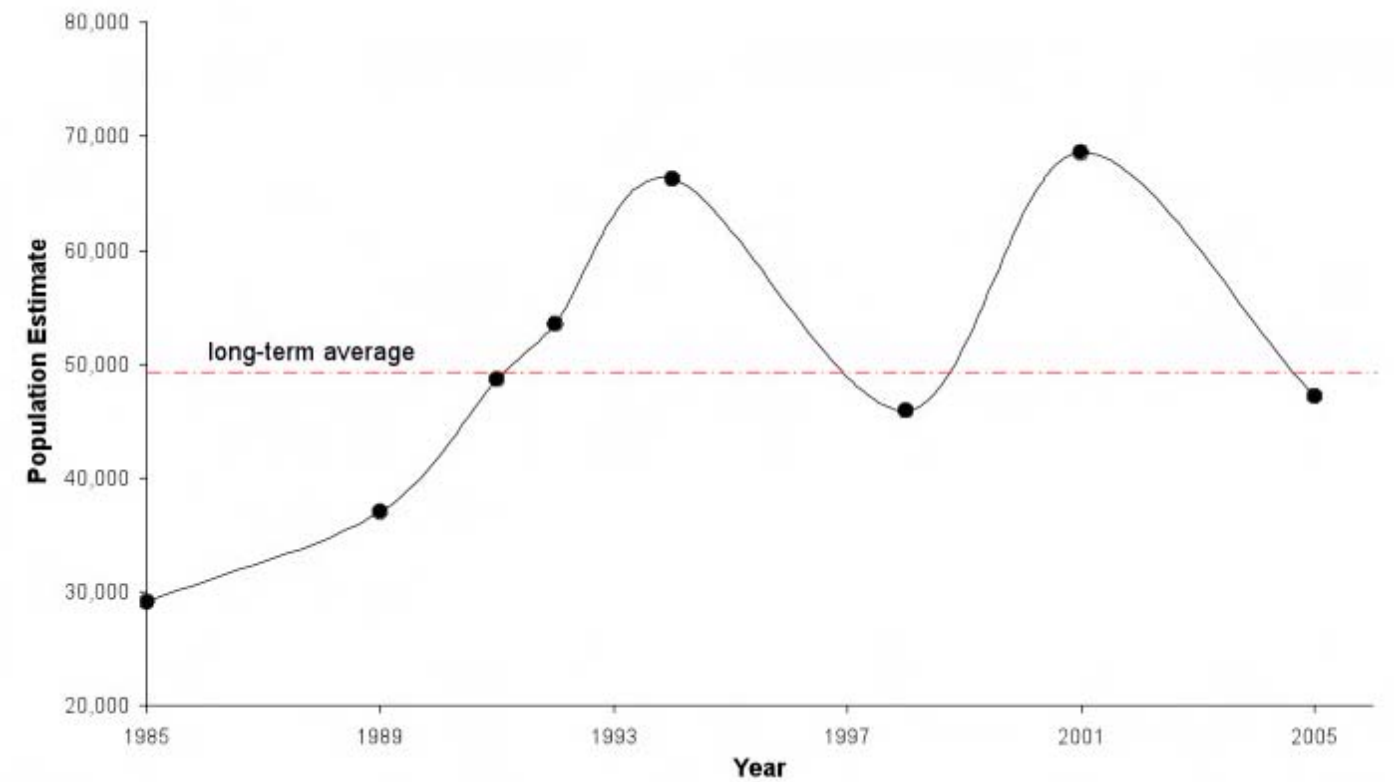


Figure 3: Population estimates of non-calf muskoxen on Banks Island, 1985-2005

Year	Population estimate	Standard error
1985	29,168	2,104
1989	37,046	2,429
1991	48,704	3,979
1992	53,526	4,032
1994	66,297	5,106
1998	45,922	4,097
2001	68,585	6,972
2005	47,209	3,997

Table 3: Population estimates (standard error) of non-calf muskoxen on Banks Island, 1985-2005.

3.3.3 EI Measure: Plant productivity

Condition	Undetermined
Relevance	Plants are primary producers and form the base of the terrestrial food chain. All tundra organisms are reliant on plant productivity, either directly (e.g. caribou) or indirectly (e.g. wolves). The Normalized Difference Vegetation Index (NDVI) is a measure of plant greenness used to detect changes in vegetation productivity.
Thresholds	A threshold for primary productivity has not yet been set. A threshold will be established through the EIMP.
Assessment	The status of the plant productivity measure is considered to be "Undetermined".

Parks Canada monitors changes in plant productivity by using the Normalized Difference Vegetation Index (NDVI), which is acquired from Advanced Very High Resolution Radiometer (AVHRR) satellite data. This work is conducted through the Satellite Monitoring of Northern Ecosystems Project carried out by Parks Canada in partnership with the Canadian Centre for Remote Sensing.

Vegetation conditions in spring and summer are important for the reproductive success of large herbivores. AVHRR satellite images provide

information about plant productivity and peak times of vegetation growth, which can be used to monitor long-term changes in the park environment. An increase in the productivity of vegetation is normally detected by an increase in the NDVI value. NDVI data collected over the past 11 years was recently obtained by the field unit and will be analyzed in 2010.

3.3.4 EI Measure: Timing of the onset of green-up

Condition	Undetermined
Relevance	The timing of spring green-up is linked to the reproduction of many birds and mammals. Changes to this measure can have repercussions for animal productivity.
Threshold	A threshold for the timing of the onset of green-up has not been set because of insufficient data. A threshold will be established through the EIMP.
Assessment	The status of the timing of the onset of green-up measure is considered to be "Undetermined" due to the lack of adequate scientific and traditional knowledge.

Traditional knowledge indicates that changes are occurring to the timing of the onset of green-up on Banks Island, and that these changes are likely occurring in Aulavik. The residents of Sachs Harbour have indicated that in recent years green-up may be occurring earlier in the season.

At high latitudes, the distribution of calving caribou and other animals is related to the pattern of spring green-up. Birth of ungulates is synchronized with

the spring green-up because the emergent forage is rich in protein and digestible energy. Changes in the timing of the onset of green-up may have an impact on caribou distribution and calf survival. The timing of the onset of green-up is monitored through the Satellite Monitoring of Northern Ecosystems Project. At this stage, there is insufficient data to determine trends of this measure in Aulavik.

3.3.5 EI Measure: Permafrost temperature and depth

Condition	Undetermined
Relevance	Permafrost is an important part of how terrestrial ecosystems in ANP are structured and how they function. It is expected that permafrost will be affected by changes in climate over time. Permafrost temperature and depth are two separate measurable data that will be used to report on a single permafrost measure.
Threshold	Thresholds for permafrost temperature and depth have not been set because of insufficient data. These thresholds will be established through the EIMP.
Assessment	The status of the permafrost temperature and depth cannot be assessed because thresholds for this measure are yet to be established.

While the community of Sachs Harbour reports shifting climate conditions are having impacts on permafrost on Banks Island, research conducted by the Geological Survey of Canada in 2003 and 2006 detected little change in coastal erosion/stability at sites in Aulavik.

Although permafrost probes were added to the two climate stations in the park to collect permafrost temperature and depth data in 2000, Environment

Canada has advised that these probes were damaged some time in the intervening years and data has not been collected as planned. A manual method of measuring permafrost has been proposed. Efforts to measure permafrost temperature and depth will begin in 2010.

3.4 EI Indicator: Freshwater Ecosystem

Indicator	Condition	Rationale
Freshwater Ecosystem	Undetermined	The condition of the Freshwater Ecosystem in ANP was not assessed due to insufficient traditional knowledge and scientific information. At present, water quality is the sole EI measure selected for the Freshwater Ecosystem in Aulavik. The condition of this measure is "undetermined."

3.4.1 EI Measure: Water quality

Condition	Undetermined
Relevance	Contaminants from sources within and outside of the North are found in Arctic ecosystems, including rivers and lakes. Prevailing winds carry chemical contaminants to colder climates, where they condense and are trapped in the snow or ice until they are released into the ecosystem in the spring melt. Water quality is assessed from a combination of a number of separate parameters, which are then used to report on a single water quality measure. This measure will provide baseline data and track potential water quality changes. Monitoring organic contaminants in the Thomsen River is identified as a management goal in the current management plan.
Threshold	Thresholds for the separate parameters that make up the water quality measure, or the water quality measure itself, have not been set because of insufficient data. At least 10 years of continuous data sets are required to set a threshold for these measures. These thresholds will be established through the EIMP.
Assessment	The status of this measure is "Undetermined" due to insufficient knowledge.

The residents of Sachs Harbour indicate that there is little traditional knowledge about water quality on Banks Island, especially in Aulavik.

Community members do indicate that the taste and appearance of drinking water in Sachs Harbour, and potentially in other areas of Banks Island, has deteriorated. Water quality monitoring has been conducted in Aulavik since 2000. Water quality samples are typically collected once a year from a single site on the Thomsen. These samples are analyzed for physical characteristics (e.g. temperature, pH), nutrients, major cations, major anions, trace metals and organic contaminants. This program is conducted in partnership with Environment Canada and is the only water quality monitoring program taking place in the western Arctic islands.

Analysis of data collected for the water quality measure will begin in 2010. Preliminary analysis has been conducted for lindane, as this is a contaminant of interest. The concentration of lindane found in the Thomsen River does not exceed the Canada Water Quality Guideline for the protection of aquatic life (Figure 4).



Thomsen River water sampling/ L. Nguyen, Parks Canada

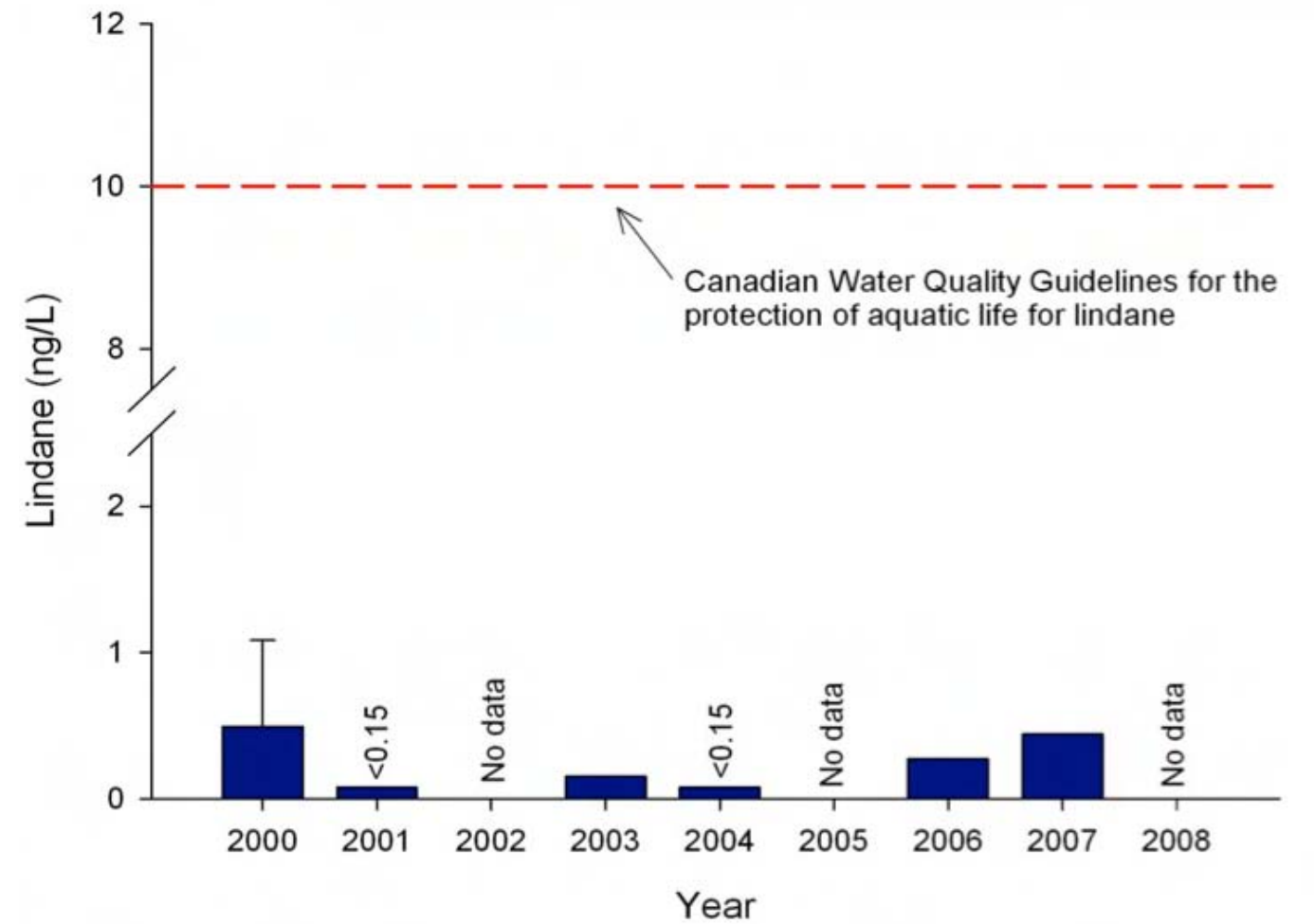


Figure 4: Mean (+/- standard deviation) of lindane in water samples collected from the Thomsen River in Aulavik National Park, 2000-2008.

3.5 EI Indicator: Coastal Ecosystem

Indicator	Condition	Rationale
Coastal Ecosystem	Undetermined	Measures are yet to be established in order to evaluate the condition of the Coastal Ecosystems in Aulavik.

Currently, no EI measure for the Coastal ecosystem has been developed for Aulavik. Parks Canada does not have sea-going vessels suitable for conducting research in the extreme coastal environment of Aulavik. Undertaking such fieldwork without the proper equipment presents serious Occupational Health and Safety issues. Also, it may not be cost-effective to relocate equipment and personnel to the north end of Banks Island for a few sampling locations. Remote sensing technology to develop EI measures for this indicator is being investigated. A pilot study on the Coastal ecosystems using remote sensing technology was conducted in Ivavik and Torngat Mountains national parks. Final measures and associated thresholds will be developed for this indicator through the EIMP by 2013.

Residents of Sachs Harbour provided information about the condition of the coastal ecosystem around Sachs Harbour. These are:

- The increasing frequency of storms, which is causing more erosion along the coastline;
- Thinning ice, which makes traveling difficult; and
- Rising ocean levels around Sachs Harbour.



State of Cultural Resources

4.1 Human Use History of Aulavik

Though people have lived in this part of the Arctic for almost 4,000 years, Banks Island has always been a land on the edge of human existence. Human use of the area that is now Aulavik National Park has been sporadic and greatly influenced by changing environmental conditions. During warmer periods, often lasting hundreds of years, parts of the island were occupied. During colder cycles, the inhabitants moved to areas that were more hospitable, occasionally returning to hunt or fish on the island.

The earliest archaeological sites found within Aulavik are near Shoran Lake. They are Pre-Dorset cultural sites dating back to almost 1500 B.C. People seldom visited the northern half of Banks Island from approximately 800 B.C. to 1000 A.D. The few sites found from that time period are located mostly along the island's south coast, and have characteristics of both the Eastern Arctic Dorset culture and their Western Arctic counterparts. During the period between 1000 and 1450 A.D., the Thule people occupied several sites along the south coast of Banks Island and made some use of what is now Aulavik. At the coastal sites, Thule harvested sea mammals, particularly bowhead whales and ringed seals. They also ventured into the northern reaches of the island to harvest muskoxen.

A major climatic cooling, known as the Little Ice Age, probably ended most occupation on Banks Island for several hundred years. The severe climatic

conditions forced the Thule people to live and hunt within a smaller geographic area where they developed very effective and specialized hunting skills. As the climate warmed, the now isolated groups wandered farther. They re-established themselves as several closely related but locally distinct groups of Inuit. One of these groups, the Mackenzie Inuit (early Inuvialuit) occasionally used Banks Island between 1650 and the 1820s. They occupied sites along the southern coast and hunted muskoxen in the area that is now Aulavik.

Exploration of the area by Europeans began in the early 1800s. In 1820, Frederic William Beechy, a member of the first expedition led by William Edward Peary, saw land to the southwest of Melville Island and christened it Banksland to honour a past president of the Royal Society. Europeans did not actually visit Banks Island until thirty years later. In 1850, the H.M.S. Investigator, under the command of Captain Robert M'Clure, came in search of the Northwest Passage and the lost Franklin Expedition. In September 1851, his ship became trapped in the ice at Mercy Bay at the northern end of Banks Island. In 1853, after almost two years locked in the pack ice, the ship was abandoned and the crew walked over the ice to Melville Island where they were rescued by the H.M.S. Resolute. Later, the Investigator either sunk or drifted away.

During the period of 1855 to 1890, Copper Inuit from Victoria Island made annual trips west to Mercy Bay, via the Thomsen River valley, in order to salvage wood, metals and other valuable materials from the abandoned Investigator site.

From the late 1920s to the decline of the fur trade in the 1970s, lucrative arctic fox trapping drew Inuit to Banks Island from the Mackenzie Delta, Victoria Island, the Tuktoyaktuk Peninsula, and Alaska's North Slope. Families converged at the southwestern tip of Banks Island and set up the permanent community of Sachs Harbour.

Seismic surveys on Banks Island, including areas that are now part of Aulavik, were first conducted in the 1970s. By 1975 eight exploratory wells had been drilled on Banks Island, two of which are within the park boundary.

Parks Canada does not assert ownership of archaeological specimens under its management, but rather holds them in trust and manages them as stewards for the Inuvialuit so that present and future generations of Canadians may enjoy, be educated and learn from them.

-Memorandum of Agreement between the Inuvialuit Regional Corporation and Parks Canada regarding ownership and custody of artifacts

4.2 State of Cultural Resources

Parks Canada protects Aulavik's cultural resources for present and future generations of Canadians. These resources include numerous sites and artifacts representing the broad spectrum of the park's cultural history.

Aulavik's cultural resources and human history are communicated through the exhibits in the Visitor Reception Centre in Sachs Harbour, the Parks Canada website and various brochures and publications related to the park and field unit. Specific cultural messages for Aulavik have not yet been identified.

Aulavik National Park has an inventory of 361 identified archaeological sites. These range from Pre-Dorset cultural sites dating back to almost 1500 B.C. to Inuvialuit cultural sites dating to the 1970s. Culturally sensitive areas at Head Hill, Nasogaluak and M'Clure's Cache have been inventoried and monitoring protocols are established. Due to low visitation, visitor disturbance is minimal but still an issue of concern for community members.

Indicators	Condition	Measures
Resource Condition	●	Landscapes and landscape features ●
		Archaeological sites ●
		Objects (held in trust by Parks Canada) ●
		Buildings and structures
Selected Management Practices	▼	Inventory ●
		Evaluation ▼
		Cultural resource management strategy ▼
		Monitoring Program ●

4.3 CRM Indicator: Resource Condition

Indicator	Condition	Rationale
Resource Condition	●	Artifacts held in trust by Parks Canada, according to the terms of an MOU with the IRC, are in good condition. There are no historic structures within the park boundary. Selected landscape and landscape features have been identified and formally evaluated. Additional cultural resource evaluation will take place during the CRVS preparation process.

4.3.1 CRM Measure: Landscape and landscape features

Condition	Good
Assessment	There are 16 graves/burial sites listed in Artefact Information System (AIS). Of these 16 features, ten of these features have been positively identified ¹ . Three landscapes have been identified (Nasogaluak, Head Hill and M'Clure's Cache). All landscapes and landscape features are in stable condition. More landscape or landscape features may be identified in the future.

4.3.2 CRM Measure: Archaeological Sites

Condition	Good
Assessment	Archaeological surveys were conducted by Parks Canada in 1994,1995,1997, and in partnership with the University of Western Ontario in 2008. In total, 361 archaeological sites have been located and recorded. Rating is based on the initial condition assessment at the time of recording. Known threats are so low that resources are assumed to be in good condition.



Hide Drying Area, Dissection Creek/ Lisa Hodgetts.

Parks Canada is developing a field unit Cultural Resource Management Plan. The first draft of the CRM plan will be available for consultation with stakeholders and partners in 2010. A Cultural Resource Value Statement (CRVS) is also required for Aulavik. This multi-year project will initially focus on the three culturally sensitive areas at Head Hill, Nasogaluak and M'Clure's Cache. Specific cultural messages developed in the CRVS will then be used as indicators to measure communication effectiveness.

¹ Graves and burial sites are managed as cultural resources under the Cultural Resource Management Policy. Human remains and funerary objectives are not cultural resources and are managed under Parks Canada Management Directive 2.3.1.

4.3.3 CRM Measure: Objects

Condition	Good
Assessment	There are 36 artifacts stored at the Western and Northern Service Centre of Parks Canada in Winnipeg, Manitoba. These artifacts have undergone treatment, documentation and are inventoried in the Parks Canada Artifact Inventory System. The artifacts are held in trust by Parks Canada in accordance with <i>An Agreement for the Establishment of a National Park on Banks Island (1992)</i> and the MOA between the Inuvialuit Regional Corporation (IRC) and Parks Canada.



University of Western Ontario archaeologist Lisa Hodgetts and Sachs Harbour elder Martha Kudlak look at artifacts during a community meeting at the Aulavik VRC/ Parks Canada

4.3.4 CRM Measure: Buildings and structures

Condition	Not applicable
Assessment	There are no heritage buildings or structures within the park boundary.

4.4 CRM Indicator: Selected Management Practices

Indicator	Condition	Rationale
Selected Management Practices	▼	<p>A cultural resource inventory for the Thomsen River corridor was compiled in 1998. These sites have not been evaluated to determine historic value. There is no Cultural Resource Value Statement (CRVS) in place for Aulavik but a CRM plan is in draft and should be available for stakeholder consultation in 2010.</p> <p>Cultural resources are monitored on a regular basis through a cultural resource monitoring program.</p> <p>All management decisions regarding cultural resources are made in consultation with the IRC and SHCC and the Parks Canada CRM policy.</p>

4.4.1 CRM Measure: Inventory

Condition	Good
Assessment	All known sites are mapped. Objects and known landscapes are inventoried.

4.4.2 CRM Measure: Evaluation

Condition	Fair
Assessment	Historic values are known but not formally identified for some landscapes and landscape features, archaeological sites and objects. Historic values for cultural resources will be identified through the CRVS preparation process.

4.4.3 CRM Measure: Cultural Resource Management Strategy

Condition	Fair
Assessment	A field unit CRM plan is in draft and will be available for consultation in 2010. There is no CRVS for Aulavik yet; the field unit will begin the preparation of the CRVS in 2010.

4.4.4 CRM Measure: Monitoring Program

Condition	Good
Assessment	In 1997, a cultural resource monitoring program was established for three culturally sensitive areas: Nasogaluak, Head Hill, and M'Clure's Cache (see Figure 3). These sites were visited annually between 1999 and 2003, and monitored by field unit staff. The monitoring program was reviewed in 2003 and 2007; minor adjustments were recommended. All sites were monitored in 2007 and 2008, and are in good condition with no negative human or environmental impact noted.

A monitoring protocol is in place for three sites within the park boundary. Objects are inventoried, conserved and stored at the Western and Northern Service Centre, Parks Canada. As reflected in the park management plan, Inuvialuit oral histories and traditional knowledge are important components of the park and help guide park management. As much as possible, Inuvialuit names for places, plants and animals are used in park material. Copies of archaeological reports, monitoring reports and records related to curatorial objects are kept in the Western Arctic Field Unit office in Inuvik and at Parks Canada Western and Northern Service Centre in Winnipeg.



Lithic Scatter, Nasogaluak Cultural Site/ Jean-François Bisailon, Parks Canada.

State of the Park's Visitor Experience

5.1 Current State in Visitor Experience

The Arctic landscape, the Thomsen River paddling experience, the rich Arctic cultural heritage and ample wildlife viewing opportunities offer extraordinary, once-in-a-lifetime experiences for people who make the journey to Aulavik National Park.

During the eight summers from 1999 through 2009, 451 people visited Aulavik. Of these, 224 were Canadian, 136 were American, and 91 were European.

Almost without exception, visitors to Aulavik National Park come to paddle the Thomsen River. One outfitter is licensed to run trips in Aulavik and offers at least one guided Thomsen River paddling trip each summer. Private groups also come to Aulavik to paddle the Thomsen. Hiking and wildlife viewing opportunities are excellent in Aulavik. While nearly all visitors participate in these activities as part of a river trip, they are potential attractants to the park in and of themselves.

Visitors establish a strong personal connection to the park: they have told us that the park is “a special place”, “a fantastic national park”, and they “had a superb time and would like to return there”. Research suggests that the remoteness and difficult access of Arctic destinations are part of the attraction of Arctic visits. Groups seek out these

destinations for reasons that include the cachet of having visited them, the chance to appreciate and savour their own self-reliance, and for philosophical reasons.



2006 Parks Canada Youth Camp in Aulavik/Parks Canada

While few people visit Aulavik National Park, those who do visit are immersed in the park for many days. Most people visit Aulavik from 10 days to two weeks. This extended stay undoubtedly increases the intensity of the experience. Parks Canada has the opportunity to make these experiences still more meaningful, by helping visitors achieve an understanding of the rich natural and cultural resources that the park presents.

The Visitor Cycle

- The visitor contacts the site office in Sachs Harbour or the field unit office in Inuvik, usually referred from park's website;
- A pre-trip information package is sent. Individual trip counseling is provided as needed;
- The visitor registers in person at the Inuvik office prior to the trip and de-registers afterwards. After registration, the visitor receives a personal orientation from Parks Canada staff. This presentation provides information on safety and regulatory requirements. It also provides key park messages about the significance of Aulavik National Park and the features it protects;
- Outfitted groups and researchers working in the park for the first time also participate in the park orientation when they register;
- With the permission of the visitor, a survey is sent to evaluate satisfaction with the visit, services provided, and retention of key messages;
- For visitors who fail to de-register, or in case of call-out, or emergency, Parks Canada staff will launch an investigation and potentially a search (after 48 hours of failure to de-register).



Along the Thomsen River/ Jean-François Bisailon, Parks Canada.

Visitor Reception Centre

The Aulavik National Park Visitor Reception Centre is located in Sachs Harbour. Exhibits include a wildlife diorama, a traditional clothing diorama, panels and banners showing scenes from community life, history and scenes of the park itself, and display cabinets exhibiting artifact replicas and local arts and crafts. Messaging was developed with the community, the ANPAB and a visitor centre advisory committee, as well as through the management plan.

Visitors to the Visitor Reception Centre include independent travelers, but are for the most part business travelers, government workers, and community residents. The VRC serves as a link between the community and the national park. This is the primary point of contact for local residents with Parks Canada.

Parks Canada facilitates park visits for community members through annual camps held for youth or community residents.

Facilities

There are no publicly accessible facilities in the park. Staff, researchers and Parks Canada community camps participants use Green Cabin and Polar Bear Cabin, neither of which is owned by Parks Canada. There are two unmaintained landing strips in the park. Access to the park is by chartered aircraft only.

Surveys

At the end of summer, a voluntary questionnaire is mailed to all park visitors who have agreed to participate in the survey. The survey assesses satisfaction with park staff and the trip information provided by Parks Canada. In the majority, about 85% of returned surveys, visitors expressed high satisfaction with pre-trip information, information given at registration, and park staff service.

Indicators	Condition	Measures
Market research and promotion, influencing visits	▼	Market information and effective analysis ●
		Ability to understand and respond to changing demographics and emerging trends ▼
		Access to information about visitors' interests ▼
		Availability of professional and technical advice ▼
		Development of visitor communications program ●
Interpretation, influencing learning	●	Visitors receive key ecological and commemorative messages throughout the visitor cycle ●
Visitor service offer, influencing enjoyment	●	Responsive service that meets corporate standards. ●
		Visitors can select from a range of opportunities ●
Personal connection	●	Potential for transformative experiences ●
		Providing memorabilia ▼
		Providing opportunities to be involved ●

5.2 Visitor Experience Indicator: Market research & promotion, influencing visits

Indicator	Condition	Rationale
Market research and promotion, influencing visits	▼	Annual visitor surveys identify visitors' needs. Market analysis was carried out but is no longer current.

5.2.1 Visitor Experience Measure: Market Information and Effective Analysis

Condition	Good
Assessment	The park undertakes visitor surveys annually and contacts nearly all visitors. Parks Canada maintains a database of past park visitors starting from 1999. This information includes a marketing study commissioned in 1998 and research undertaken by NWT Tourism.

5.2.2 Visitor Experience Measure: Ability to understand and respond to changing demographics and emerging trends

Condition	Fair
Assessment	Parks Canada is increasing its capacity to analyze markets and trends and to carry out social science. Knowledge is accessible but has not been gathered specific to ANP.

5.2.3 Visitor Experience Measure: Access to information about visitors' interests

Condition	Fair
Assessment	The 1998 Market Analysis of Visitors to Aulavik National Park established baseline information about prospective visitors and presented information on the potential growth of several activities on Banks Island, including but not limited to the park. A comparison of this analysis with current visitors has not been undertaken.

5.2.4 Visitor Experience Measure: Availability of professional and technical advice when needed

Condition	Fair
Assessment	Parks Canada has access to both internal and external service and expertise. Prospective visitors have access to Parks Canada specialists and third party tour operators with years of experience.

5.2.5 Visitor Experience Measure: Development of visitor communications program

Condition	Good
Assessment	A high level of service is provided, with a range of communications products from pre-trip information to post-trip assessment. The field unit has been responsive to visitors' needs and provides comprehensive information and trip planning advice.

5.3 Visitor Experience Indicator: Interpretation, influencing learning

Indicator	Condition	Rationale
Interpretation, influencing learning	●	On-site learning and experiences are self-directed: comprehensive interpretive and other materials are provided. Off-site, the VRC in Sachs Harbour presents an authentic experience, providing a good introduction to the park and to the community. Park-specific messages are communicated in Sachs Harbour and Inuvik, as part of the visitor orientation.

5.3.1 Visitor Experience Measure: Visitors receive key ecological and commemorative messages

Condition	Good
Assessment	The mandatory orientation program delivered to park visitors provides a good opportunity to inform visitors. Park information materials on natural and cultural history are comprehensive.

5.4 Visitor Experience Indicator: Visitor service offer, influencing enjoyment

Indicator	Condition	Rationale
Visitor service offer, influencing enjoyment	●	The majority of visitors returning voluntary satisfaction surveys reported that they were very satisfied with their experience. Satisfaction with pre-trip information, information at registration, and park staff service was also high, with 5 out of 5 given for at least one of these services on all returned surveys. Visitor satisfaction was highly influenced by the nature of their encounters with staff and with other visitors. It is not uncommon for Parks Canada staff to be mentioned by name as having been exceptionally helpful and informative.

5.4.1 Visitor Service Measure: Responsive service that meets corporate standards

Condition	Good
Assessment	A wide variety of trip planning materials and services are available. Satisfaction with pre-trip information, information at Parks Canada registration and park staff was high (at least 85%) in returned surveys. Contact with individual park staff takes place at least twice during the park trip cycle.

5.4.2 Visitor Service Measure: Visitors can select from a range of opportunities

Condition	Good
Assessment	Visitors may choose from opportunities including hiking, paddling, fishing, wildlife viewing and visiting cultural sites.

5.5 Visitor Experience Indicator: Personal connection

Indicator	Condition	Rationale
Personal connection	●	The long duration of the average stay, the challenges of accessing the park – it requires real determination to go there – and high visitor expectations create an intense and potentially “transformative” visitor experience. Personal communications from visitors indicate that visits are a once-in-a-lifetime experience and that the level of personal connection is high.

5.5.1 Visitor Experience Measure: Potential for transformative experiences

Condition	Good
Assessment	Though opportunities for visitors to interact with local people are limited, the park experience itself is without doubt powerful as indicated by visitor surveys.

5.5.2 Visitor Experience Measure: Providing memorabilia.

Condition	Fair
Assessment	Arts and crafts by local artisans are showcased in the Aulavik Visitor Reception Centre. Staff in both Sachs Harbour and Inuvik direct visitors to artisans as an opportunity to make a unique purchase and benefit local artists. The field unit carries a limited selection of memorabilia available for purchase out of the Inuvik office. These items include T-shirts, ball caps, posters, pins, and thermal coffee mugs.

5.5.3 Visitor Experience Measure: Providing opportunities to become involved

Condition	Good
Assessment	Parks Canada provides opportunities to local residents to visit the park as part of community and youth camps. The field unit has developed a volunteer policy to manage and promote volunteer opportunities. Local community residents are a priority for the available volunteer positions.



Campsite on the Thomsen River/ Jean-François Bisailon. Parks Canada.

6

Public Awareness and Understanding

Public awareness and understanding activities in Aulavik are supported by a range of published materials. In addition to general field unit information, materials specific to Aulavik include:

- Aulavik National Park lure card
- Pre-trip planning package
- Cultural and Natural History handouts
- Aulavik National Park website
- Draft Thomsen River Guide (in progress)
- 3-D Virtual Tour (on website)
- Bird checklist

The effectiveness of these publications has not yet been assessed.

Work has been done to define Aulavik's key messages during the management planning process and the planning of the visitor reception centre exhibit in Sachs Harbour, in collaboration with the community. Further work remains to be done to consolidate these messages and develop a communications and outreach strategy.

Educational programming delivered by Parks Canada staff each year includes:

- Environmental Stewardship Certificate program in Inulathuyak School in Sachs Harbour. Every student in Sachs Harbour experiences this program at least once during their school career.

This is a general, field-unit-wide program that delivers messages specific to Aulavik. It is delivered to Grade 4 classes in eight Western Arctic communities, as well as Deline.

- Parks Canada coordinates annual youth and/or community camps to foster and maintain the relationship between the residents of Sachs Harbour and Aulavik.
- The WAFU is actively involved in the Parks Canada in Schools program. This national program works to engage Canadians across the country by supporting school curriculum with materials that convey messages and stories from northern national parks.
- The Visitor Reception Centre serves to create and reinforce links between Aulavik and the community.

The public awareness and understanding evaluation is based on one critical success factor with respect to the local and regional communities. No research and evaluation has been undertaken to assess the effectiveness of awareness and outreach activities for Aulavik.

Indicator	Condition	Measures	Rationale
Do visitors and the surrounding communities understand and know about Aulavik National Park and its themes?	Undetermined	Resource protection messages are relevant to targeted visitor/community segments.	Visitors receive targeted communications concerning Aulavik National Park and feedback and evaluation of this target audience takes place through annual visitor surveys. The field unit has not yet developed a targeted outreach program on Aulavik's themes to the region. The visitor centre is the park's primary outreach venue and activity.
		Communications and education messages are continually revised as a result of research tests and evaluations.	



Mapping an archaeological site, 2008 Aulavik youth camp/ Parks Canada.

7

Key Park Challenges

Peary Caribou Population Decline

Although research indicates that the Peary caribou population has remained stable over the last ten years, since the early 1980s the population has experienced a 70% decline. In 2004, Peary caribou received an “Endangered” assessment from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

A decision is pending regarding the listing of Peary caribou as “Endangered” under Schedule 1 of the Species at Risk Act (SARA). Should Peary caribou be listed, Environment Canada will be responsible for ensuring that a recovery strategy is developed and implemented. Any recovery strategy will be prepared in cooperation and consultation with

various federal departments and agencies, provincial and territorial governments, wildlife management boards, Aboriginal organizations and stakeholders.

Peary caribou are a traditional source of food for the Inuvialuit community of Sachs Harbour, and an important symbol of ANP and Banks Island. Parks Canada with WMAC(NWT) and the IGC will participate in the development and implementation of any future recovery strategy.

Long-term monitoring of the size of the Peary caribou population on Banks Island, within and beyond the Aulavik boundary, is important to understanding



Canoeing on the Thomsen River / Parks Canada.

the health of the population. The scale of such monitoring will require regional partnership and cooperation.

Development and delivery of ecological integrity monitoring program

The development and delivery of a comprehensive ecological integrity monitoring program in Aulavik continues to be a significant challenge, given the logistical challenges and costs associated with undertaking this work in such a remote and isolated part of the country. This situation is not unique to Aulavik; all national parks in the Western Arctic, indeed the North, face similar challenges.

Parks Canada is working to develop an effective monitoring program for Aulavik. Key to the success of this program is continuing with and building upon existing resource and monitoring partnerships with other federal and territorial government departments, as well as pursuing innovative approaches to EI monitoring. The EI monitoring program will be developed closely with cooperative management partners.

Economic Benefits for Aboriginal Peoples

Although Parks Canada is one of the largest federal employers in the ISR, and contributes millions of dollars to the regional economy through salaries and the purchase of goods and services from Inuvialuit owned companies, the high community expectations for economic opportunities associated with the creation of the Park have not been realized in Sachs Harbour.

Expanding Awareness, Understanding and Visitor Opportunities

Despite remarkable landscapes and a connection to some of Canada’s most fascinating history, including the search for the lost Franklin Expedition, both Aulavik and Sachs Harbour experience low numbers of visitors each year. This is primarily because of the area’s remoteness and associated high cost of travel, as well as few tourism services and related infrastructure.

Aulavik is unknown to many, if not most, Canadians. Parks Canada needs to develop tools to ensure Canadians have a strong sense of connection to the Park. Reaching ISR communities, local students, and the wide audience of Canadians who may never have an opportunity to visit Aulavik – including youth, urban and new Canadians – are key to success.



Char Lake/ Jean-François Bisailon. Parks Canada

8

Results of Management Actions

MANAGEMENT PLAN OBJECTIVES	ACTIONS IDENTIFIED IN THE MANAGEMENT PLAN	RESULTS
To protect the integrity of ecosystems and cultural resources of the park by participating in: the co-management process with the Inuvialuit Game Council (IGC) and co-management bodies, as well as other relevant Inuvialuit organizations under the Inuvialuit Regional Corporation (IRC)	<ul style="list-style-type: none"> Create a working relationship with IGC, WMAC(NWT) and the IRC. Develop a field unit newsletter for partners. Publish an annual report of research and monitoring for Inuvialuit partners. Establish a park advisory board. 	<ul style="list-style-type: none"> There is regular contact between Parks Canada and IGC, WMAC(NWT) and the IRC. A quarterly field unit newsletter, the WAFU Update, is sent to Inuvialuit partners. An annual research and monitoring report is published and made available to partners and stakeholders. The Aulavik National Park Advisory Board was established in 2004.
To develop an understanding of the ecosystem within the park in support of the park's long-term protection purpose. The term ecological integrity integrates both the natural and cultural environment.	<ul style="list-style-type: none"> Research needs and gaps are identified and research is encouraged. Park manager collaborates with many other agencies in wildlife management. Cultural resources survey and inventory is ongoing. Traditional knowledge is considered in all management actions. 	<ul style="list-style-type: none"> Partnership between Parks Canada and GNWT for Peary caribou and muskoxen population surveys. A partnership was established with the Canadian Centre for Remote Sensing to monitor changes in plant productivity. Annual water quality testing and lemming population monitoring. Parks Canada supports a University of Western Ontario archaeologist in a long-term archaeology study based in Aulavik. Cultural resource monitoring program is in place for zoned cultural sites in the park. Traditional knowledge is gathered through regular meetings with the ANPAB and project-specific community consultations. Elders were fully involved in the 2009 archaeology field season through interviews and site visits.
To ensure that the ties between the Inuvialuit and the land are maintained through subsistence usage	<ul style="list-style-type: none"> Subsistence usage is encouraged. Amend the National Park Wildlife Regulations to reflect Inuvialuit rights under the IFA. 	<ul style="list-style-type: none"> Subsistence users continue to use the park and inform Parks staff of any ecosystem changes they observe. The National Park Wildlife Regulations are being amended to reflect Inuvialuit rights.
To promote and encourage the education, training and development of Inuvialuit youth so that they may become equal participants in the ongoing management of the park	<ul style="list-style-type: none"> Create learning opportunities for youth. Continue holding annual youth and community camps. Participate in local career fairs. 	<ul style="list-style-type: none"> Grade 4 Environmental Stewardship is offered annually at Inulathuyak School. Youth have opportunities to participate in summer camps held in Aulavik. Parks Canada staff participate in career fairs throughout the ISR.

To facilitate public appreciation, understanding, and enjoyment of the park through presentation and interpretation of natural and cultural heritage, and present day use of the park, including sustainable traditional, cultural use.	<ul style="list-style-type: none"> Develop a communications plan. Improve the ANP webpage and create written materials for visitors. Develop visitor information packages. Identify a target audience. 	<ul style="list-style-type: none"> All visitors to Aulavik receive mandatory orientation from Parks Canada staff. A visitor information package is available electronically and in hardcopy. Lure cards and 'cultural and natural history notes' are available to visitors. The Thomsen River Guide is in draft. A Visitor Experience Assessment was held in 2008.
To facilitate appropriate visitor use and tourism in the park, and to increase visitation and public awareness of the park	<ul style="list-style-type: none"> Develop a market strategy targeted at current and potential visitors, tourism operators and the global tourism industry. Interpretive themes and messages will be developed for use in public communications. 	<ul style="list-style-type: none"> Western Arctic Handbook published in 2002. Parks Canada is a member of the Western Arctic Tourism Stakeholder Group. Visitor Reception Centre in Sachs Harbour opened in 2002. Visitor market analysis is complete. Waste management and fuel caching protocols are in place.
To ensure that the majority of the economic benefit of the park accrue to the Sachs Harbour Inuvialuit	<ul style="list-style-type: none"> Develop a human resources plan. Purchase goods and services locally. Ensure the majority of field unit staff and all Sachs Harbour staff are Inuvialuit. Inform community residents of opportunities for guiding and outfitting in the park. 	<ul style="list-style-type: none"> A field unit human resources plan is in place. Good and services are purchased locally when possible. +50% of field unit staff are Inuvialuit. 100% of staff in Sachs Harbour are Inuvialuit. Although there are currently no local guides or outfitters in Sachs Harbour, residents know about this opportunity. Community members are made aware of opportunities for short-term or contract positions.
To ensure that ongoing traditional activities and subsistence usage are not affected by tourism	<ul style="list-style-type: none"> Ensure all visitors to the park are registered. Maintain minimum altitudes on all overflights. Designate landing strips. 	<ul style="list-style-type: none"> All visitors are required to attend a mandatory visitor orientation and are registered in the backcountry registration system. Overflight altitude guidelines are in place. Landing sites have been designated in the park and all landings require a landing permit.

9

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


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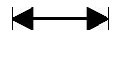

APPENDIX I: Description of Rating Assessments for State of Ecological Integrity

Good		The ecosystem is presently secure, and contains a healthy composition and abundance of native species and biological communities, rates of change and supporting processes. No major active management actions are required.
Fair		The ecosystem is presently vulnerable and does not contain a completely healthy composition and abundance of native species and biological communities, rates of change and supporting processes. Active management actions are required.
Poor		The ecosystem is impaired and does not contain a healthy composition and abundance of native species and biological communities, rates of change and supporting processes. Significant and ongoing management actions may be required.
Not Rated	N/R	There is presently not enough information available to provide a condition for the indicator.

Description of Rating Assessments for State of Cultural Resources

Good		Good, effective, or not currently impaired
Fair		Fair, or minor to moderate impairment. Requires improvement.
Poor		Poor, ineffective, seriously impaired or a significant attribute missing (whether related to condition or selected management practices).
Not Rated	N/R	Not rated or not reported on because the information is not available.
Not Applicable	N/A	Not applicable; the question does not apply.

Description of Trend Assessment for State Indicators

Improving		The state of the indicator/measure has improved since the last assessment.
Stable		The state of the indicator/measure has not changed since the last assessment.
Declining		The state of the indicator/measure has declined since the last assessment.

APPENDIX II: GLOSSARY

Abiotic: Non-living components of an ecosystem (e.g. rock, water, air, soil, sunlight, temperature).

Biotic: Living components of an ecosystem (e.g. plants, animals, fungi, bacteria).

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

Landscape Features: cultivated areas, enclosures, water features, buried resources, statuary/monuments, turf areas, landform areas, surfaces, plated areas, vistas, structures, natural features and woodland.

Cultural Landscape: Any geographical area that has been modified, influences or given special meaning by people.

Cultural Resource Management: Generally accepted practices for the conservation and presentation of cultural resources, founded on principles and carried out in a practice that integrates professional, technical and administrative activities so that the historic value of cultural resources is taken into account in actions that might affect them. In Parks Canada, Cultural Resource Management encompasses the presentation and use, as well as the conservation of cultural resources.

EI Indicator: One of 7 potential Northern ecosystems (e.g., forest, tundra, wetlands, freshwater, glaciers, coastal, and marine), usually comprising of several EI measures (e.g., Banks Island Peary caribou population size), that are combined to provide an overall indication of the park's ecological integrity.

Ecological Integrity (abbreviated EI): An ecosystem has integrity when its condition is believed to be characteristic of its natural region. For example, Aulavik National Park's Tundra system has integrity when its native components (e.g. plants, animals, other organisms, and land formation) and its processes (e.g. predation, climate, water quality, plant growth, permafrost) are intact and representative of the Western Arctic Lowlands natural region.

EI Measure: A measurement (information or data) that contributes to an EI indicator and is periodically collected following strict protocols to indicate present condition and any changes that may have occurred; an EI measure may be a single ecological field measurement (e.g. Banks Island muskoxen population size), or may be an index that combines several field measurements (e.g. amount of precipitation, wind speed and direction, air temperature, incoming short-wave radiation, relative humidity, dew point, amount and depth of snow fall, barometric and water pressure; all of which are combined to give us a picture of climate).

Ecosystem: A mutually dependent system consisting of all the living organisms (animals, plants, and micro-organisms) in a given area, and the physical, geographical, and chemical environment in which they interact.

Ecosystem process: The physical, chemical and biological actions or events that link organisms and their environment. (e.g. predation, flooding, decomposition, pollination, vegetation succession).

Education: A key element of the Parks Canada mandate, the focus of education is to inspire long term support, involvement and stewardship in heritage protection and presentation by moving audiences along the engagement continuum- from awareness to understanding, to appreciation, to support and involvement. Education activities are designed to reach Canadians at home, at leisure, at school and in their communities and includes outreach, interpretation as well as formal and informal learning.

Field measurement: The measurements (data) collected through a monitoring project that contribute to an EI measure (e.g. water temperature, permafrost active layer depth).

Stressor: any factor that affects ecosystem processes or biodiversity and moves ecosystems away from a state of ecological integrity (e.g. global warming, pollution, human activity).

Threshold: A point or range where a resource undergoes an unacceptable change or reaches an unacceptable level, either from an ecological or social perspective (e.g. minimum/maximum muskoxen population size on Banks Island, optimum calf/cow ratio for the Banks Island Peary caribou, maximum level of visitation for Aulavik National Park, carrying capacity for canoeists on the Thomsen River). Several thresholds may exist for an EI measure.

Traditional Ecological Knowledge: Knowledge that is the product of generations of learning and experience with the lands, waters, fish, plants, wildlife, other natural resources, and environment of Banks Island.

Visitor Experience: The sum total of a visitor's personal interaction with national parks or people that awakens their senses, affects their emotions, stimulates their mind, and leave them with a sense of attachment to these places.

Vision Statement: A passionate, inspirational, unique, picture of the heritage place at its desired future. It must portray relationship between the mandate components and be prepared with the involvement of the public, Aboriginal communities, stakeholders and partners.

APPENDIX III: LIST OF ACRONYMS

- AIMS:** Artefact Information Management System
ANP: Aulavik National Park
ANPAB: Aulavik National Park Advisory Board
AVHRR: Advanced Very High Resolution Radiometer
COSEWIC: Committee on the Status of Endangered Wildlife in Canada
CRM: Cultural Resource Management
CRVS: Cultural Resource Value Statement
CWS: Canadian Wildlife Services
DFO: Department of Fisheries and Oceans, Government of Canada
EI: Ecological Integrity
EIMP: Ecological Integrity Monitoring Program
EIRB: Environmental Impact Review Board
EISC: Environmental Impact Screening Committee
ENR: Department of Environment and Natural Resources, Government of Northwest Territories
FJMC: Joint Fisheries Management Committee
GIS: Geographic Information Systems
GNWT: Government of the Northwest Territories
ICE: Information Centre on Ecosystems
IFA: The Inuvialuit Final Agreement
IGC: Inuvialuit Game Council
IRC: Inuvialuit Regional Corporation
ISR: Inuvialuit Settlement Region
WAFU: Western Arctic Field Unit, Parks Canada
WMAC (NWT): Wildlife Management Advisory Council (Northwest Territories)
WNSC: Western and Northern Service Centre, Parks Canada
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
NDVI: Normalized Difference Vegetation Index
NWT: Northwest Territories
SARA: Species at Risk Act
SE: Standard error
SHHTC: Sachs Harbour Hunters and Trappers Committee
SoPR: State of the Park Report
TK: Traditional Knowledge