Periodic Report on the Application of the World Heritage Convention

Section II

Report on the State of Conservation of Kluane/Wrangell-St. Elias/Glacier Bay/Tatshenshini-Alsek

1 INTRODUCTION

1a State Party

CANADA and the UNITED STATES OF AMERICA

1b Name of World Heritage Site

Kluane/Wrangell-St. Elias/Glacier Bay/Tatshenshini-Alsek

1c Geographic Coordinates

Latitude 58°45' N / Longitude 136°10' W
Latitude 59°31' N / Longitude 137°14' W

1d Date of inscription

26/10/79

1e Date of subsequent extension(s)

14/12/92

17/12/94

1f Organization(s) responsible for the preparation of report

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2 STATEMENT OF SIGNIFICANCE

2a Original justification for inscription

Kluane National Park and Reserve and Wrangell-St. Elias National Monument were nominated jointly by Canada and the United States and inscribed as a transboundary World Heritage Site in October 1979. Glacier Bay National Park and Preserve was nominated as a geological and ecological extension of the existing World Heritage Site and was inscribed as an addition to the site in December 1992. The Tatshenshini-Alsek Provincial Wilderness Park was added to the existing World Heritage Site in 1994.

The 1979 nomination focussed on the dominant natural characteristic of the joint properties - the glacier ice and snowfields of the St. Elias Mountains. It noted that this is the largest non-polar icefield in the world, contains examples of some of the world's most spectacular glaciers and a rich variety of land ecosystems. Within the montane forest, coastal forest, sub-alpine zone, and alpine tundra are complex and intricate mosaics of plant life at various successional stages. Such a huge area of natural sub-arctic vegetational patterns is unique in North America. The nomination also described the features of geological interest in the area, as well as the ongoing tectonic, volcanic and hydrological processes that are evident.
Further, the nomination noted that the immense size of the joint properties contains the entire watershed of

dozens of major rivers and pristine ecosystems that are unaltered by human activities and isolated by natural barriers from external influences. “There are few places in the world where the ecological processes such as predation, migration, mortality and natality are governed only by natural stresses and the evolutionary changes in the ecosystems.” It stated that species such as the grizzly, wolf, wolverine, bald eagle, trumpeter swan, arctic grayling, Kokanee salmon, and peregrine falcon that are extinct, rare, threatened, or endangered elsewhere, are found in the joint properties in stable, self-regulating populations. The trumpeter swan breeding areas are the largest in Alaska and one of three remaining breeding sites for this species in North America. All forms of herbivorous animals common to Alaska and northwestern Canada are represented in the fauna of the joint properties, some in numbers exceeded nowhere else. Over 14,000 Dall sheep, the single largest group in the world, are found on lands encompassed by the nomination. Some 600 grizzly bears range through the area, one of the largest protected populations in the world.

In the 1991 nomination of Glacier Bay National Park and Preserve, the United States argued that Glacier Bay shares and complements the characteristics and attributes of the original World Heritage Site. It described the area as a coastal, southward, and seaward extension of a geological and ecological continuum and argued that the extension would enhance the representation of later stages of glacial and ecological succession and provide regional coherence to the existing World Heritage Site. The World Heritage nomination of Glacier Bay was based on the significance of the site in providing full coverage of glacial processes originally justified in the first nomination, as well as related ecological succession in both terrestrial and coastal/marine environments. These ongoing successional processes still drive much of the scientific interest in the park today.

The nomination also argued that Glacier Bay would add an extensive, intact, and unique deglaciated fjord marine ecosystem to the existing World Heritage Site. This ecosystem provides habitat for several marine mammal species, including the endangered humpback whale and the threatened Steller sea lion. The humpback whale has been monitored and studied in Glacier Bay for nearly 30 years, and these studies have provided one of the most extensive data sets on the species in existence. This major effort has contributed substantial scientific understanding of the humpback whale’s behavior, reproductive biology and migratory patterns. The marine environment also is rich in other wildlife including over 230 species of birds, a like number of marine fish species, and such large mammals as wolves, bears (black and brown), moose, and mountain goats.

In the 1993 nomination of Tatshenshini-Alsek Provincial Wilderness Park, Canada argued that the addition of Tatshenshini-Alsek would make a vital connection between the other three units and contains superlative resources of its own. The Tatshenshini-Alsek Rivers are internationally acclaimed as being among the world’s most significant wilderness river systems and are the central and pre-eminent corridor through which one can easily travel and appreciate the diversity of environments and the vastness of space which characterize this 8.5 million hectare (21 million acre) international park area. The Tatshenshini-Alsek River systems are an essential and unique component of the large ecosystems which the other national parks and reserves were established to preserve. The Tatshenshini-Alsek River valleys are pivotal to these regional ecosystems, since they are one of the only vegetated, low elevation and ice-free linkages from the coast to the interior, and thus provide an essential connection for migration of plant and animal species in the entire region.

Examples of the outstanding phenomena within the Tatshenshini-Alsek Park cited by the nomination include:
• The highest mountain in British Columbia, Mount Fairweather, rising to 4,663 meters.
• The largest non-polar ice cap in the world, over 350 valley glaciers and an estimated 31 surge-type glaciers.
• Approximately 200 of the known 400 Dall’s sheep in British Columbia have their summer and winter range in this area.
• Black bears and the “blue” or “glacier” bear occur. The glacier bear (Ursus americanus emmonsi) is found nowhere else in the province, or Canada, and is rare in Alaska.

2b Criteria for initial inscription

Cultural Criteria:

Natural Criteria:

ii

iii

iv

2c Agreed upon Statement of Significance

At the time of inscription, the World Heritage Committee did not agree upon a Statement of Significance.

Proposed Statement of Significance

The World Heritage Committee inscribed the Kluane/Wrangell-St. Elias/Glacier Bay/Tatshenshini-Alsek site on the World Heritage List based on criteria (ii), (iii) and (iv):

(ii) Ongoing Glacial Processes
The joint Alaskan-Canadian World Heritage Site represents the most extensive realm of mountains, icefields, and glaciers in North America. The site contains nine peaks more than 14,000 feet high, four of them rising more than 16,000 feet. There are uncounted peaks in the 10,000 to 14,000-foot range. The Malaspina and Nabesna are some of the world's largest glaciers. The glaciers generate the two dozen river systems that drain from the clustered masses of mountains.

(iii) Rare and Superlative Natural Phenomena
This site encompasses the breadth of active natural processes from tectonic to volcanic to glacial to fluvial. It contains a diversity and abundance of habitat for wildlife and fisheries - resident and migratory, marine and terrestrial. The vegetation zones range from sea level to 5,000 meters.

(iv) Habitats of rare and endangered species
This area of North America contains the largest concentration of Dall sheep in the world. Populations of bears, wolves, caribou, mountain goats and moose that are endangered elsewhere are self regulating here. This is one of the few places in the world where ecological processes such as predation, migration, mortality and natality are governed by natural stresses and the evolutionary changes in ecosystems.

(Note: The Statement of Significance proposed here reflects the definitions and numbering of the criteria at the time the site was inscribed on the World Heritage List. Changes in the definitions and numbering of the criteria since that time will need to be taken into account when officially submitting a Statement of Significance to the World Heritage Committee for approval.)

2d Criteria added after initial inscription

Since the initial inscription, the World Heritage Committee has not added additional criteria to the inscription.

3 STATEMENT OF AUTHENTICITY/INTEGRITY

3a Initial evaluation of authenticity/integrity

In the 1979, 1991 and 1993 nominations, Canada and the United States emphasized that the nominated properties were essentially unmodified wilderness areas, with minimal development. Traditional activities, such as subsistence hunting, were taking place in some parts of the nominated properties, but were not a cause for concern. The nomination of Glacier Bay National Park and Preserve noted that commercial fishing was taking place in Glacier Bay but described the process of determining compatibility of this activity with the purposes and values of the park. The nomination also noted concerns about possible mining developments in the region. The nomination of Tatshenshini-Alsek also described some localized impacts from mineral exploration and extraction but concluded that the vast majority of the area was in a pristine state.

In 1979, IUCN concluded that "the vast area of 160,000 sq. km. (of the joint properties) contains many complete ecosystems that are to a great extent inaccessible and inhospitable to man. The combined efforts of the US and the Canadian Governments provide the manpower and resources for effective management and protection."

In 1992, IUCN concluded that "apart from limited commercial and sport fishing activities, all resources within Glacier Bay National Park are fully protected from consumptive uses by national legislation. The designation in the management plan of 85 per cent of the park as a wilderness area reinforces protection and effectively precludes direct human modification within this zone. Legislation gives management of the ocean waters and the bottom of the Bay and the outer coastal fringe to the National Park Service (NPS). This provision is an unique one and greatly enhances integrity. A small portion of the nomination is the Glacier Bay National Preserve in the north corner of the park. This area receives much less protection and is the scene of a major commercial fishery. Sport hunting is also allowed. Consideration was given by IUCN to requesting the Dry Bay area to be excluded from the site. But as the use is seasonal and closely regulated and as the Alsek River floodplain is integral to the whole unit, its inclusion is still seen as valuable. Threats to the integrity of the park that are being addressed by management include:

- illegal commercial fishing in wilderness waters;
- the impact of tour boats on wildlife of Glacier Bay, particularly the humpback whale;
- native Huna Tlingit claims to subsistence harvesting rights within the park; and
- existence of a 80 hectares (198 acres) mining claim on the Brady Ice Field."

IUCN noted that "Glacier Bay, however, faces one significant threat", that being the proposed large open-pit copper mine on the upper Tatshenshini River, 24 km from the park boundary.

In 1994 IUCN concluded that "apart from subsistence fishing and hunting in the upper reaches of the T/A by the Champagne-Aishihik First Nations, the area is entirely protected from any consumptive use by Class A Provincial Wilderness park status. Mining claims which existed in the area prior to its official establishment in 1993 will be extinguished. The major threat from the proposed open pit mine at Windy Craggy has been removed as the government of British Columbia opted to give the area park status. Some restoration work needs to be done to remove evidence of mining exploration activity but over 95 per cent of the total area of the park is wildemess. There are some recreational use pressures from rafters and kayakers along the river, but these are being managed by the park services involved. The T/A is only one year old and the planning for its management has just commenced. Only two staff are based in the park on a seasonal basis but this may be sufficient at this point in time. Finally, the T/A part of the St. Elias unit has been less intensively studied than the other components but it is expected that the management plan will identify the areas of research that need attention."

3b Significant changes in authenticity/integrity

Since inscription, there have been significant changes in the authenticity/integrity of the site.

Description of changes in authenticity/integrity

Generally speaking, the World Heritage Site has better integrity today than previously. Park management plans have identified a number of resource protection measures to address internal and external pressures from recreational use inside and/or adjacent to the World Heritage Site, and from commercial growth and development outside the World Heritage Site.

4 MANAGEMENT

MANAGEMENT REGIME

4a Ownership/Management

Management under protective legislation

Management under contractual agreement(s) between State Party and a third party

Description: Kluane National Park and Reserve is managed under the authority of the Canada National Parks Act and its associated regulations, and the Parks Canada Agency Act, and according to Parks Canada's Guiding Principles and Operational Policies. The Canada National Parks Act can be found at: http://www.parl.gc.ca/36/2/parlbus/chambus/house/bills/government/C-27/C-27_4/90065bE.html and http://www.parl.gc.ca/36/2/parlbus/chambus/house/bills/government/C-27/C-27_4/90065bF.html. A description of the lands set aside can be found at: http://laws.justice.gc.ca/en/N-14.01/18439.html#rid-18441 and http://lois.justice.gc.ca/fr/N-14.01/75951.html#rid-75953. Wrangell-St.Elias National Park and Preserve was established under the Alaska Natural Interest Lands Conservation Act (ANILCA) at 5.34 million hectares (13.2 million acres), with some sections designated as national preserve and the bulk of the area designated as national park. 3.6 million hectares (8.9 million acres) of federally designated wilderness was overlaid on these sections. Both Wrangell-St.Elias National Park and Preserve and Glacier Bay National Park and Preserve are managed under the Organic Act "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (NPS Organic Act, 1916 - 16 USC 1). ANILCA may be found at: http://www.r7.fws.gov/asm/anilca/toc.html. The Organic Act may be found at: http://www.nps.gov/legacy/organic-act.htm. Both US parks' designated wilderness lands and waters are also managed under the Wilderness Act. Wilderness under the act is defined as "…an area…retaining its primeval character and influence, without permanent improvements or human habitation….1) affected primarily by the forces of nature…., 2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation…." The Wilderness Act can be found at: http://www.nps.gov/isro/wild_links/FROM_ANN/WILDERNESS%20ACT.htm. Glacier Bay National Monument was established on February 26, 1925 by proclamation of Calvin Coolidge (43 Stat 1988) under the Antiquities Act. In 1980, the ANILCA redesignated the monument as Glacier Bay National Park and Preserve and extended the boundaries to include the northern end of the Fairweather Range and adjacent coastal areas. ANILCA also designated most of the park lands and a portion of the park waters as Wilderness. The Antiquities Act may be found at: http://www.cr.nps.gov/local-law/anti1906.htm. Tatshenshini-Alsek Park was established in 1993 by the Province of British Columbia as a Class A Park under the Park Act by an enactment of the provincial legislature. It is also protected under the Protected Areas of British Columbia Act. Parks are managed for important conservation values and are dedicated for the preservation of their natural environments for the inspiration, use and enjoyment of the public.

4b Level of authority

National
Description: Kluane National Park and Reserve is managed and owned by the Canadian Federal Government as a National Park. Wrangell-St. Elias and Glacier Bay National Park and Preserves are managed by the US National Park Service (NPS) under the US Department of Interior, a cabinet level agency within the executive branch reporting directly to the President. Tatshenshini-Alsek Park is managed under the authority of the Minister of Water, Land and Air Protection (WLAP) of the Province of British Columbia, Canada. The park is co-managed by the Ministry of WLAP and the Champagne and Aishihik First Nations.

4c Legal status

Kluane National Park and Reserve is a Canadian National Park in areas where land claim settlement agreements have been reached, and a National Park Reserve in areas containing settlement lands where land claim agreements have not yet been reached. Wrangell-St. Elias National Park and Preserve is a U.S. National Park in areas where hunting is not allowed and a U.S. National Preserve in areas where hunting is allowed. Glacier Bay National Park and Preserve is also a U.S. National Park and Preserve managed under the same provisions. Tatshenshini-Alsek Park is managed as a Class A Park under the Park Act of British Columbia.

4d Agency/agencies with management authority

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4e Protective measures and means of implementing them

The Canada National Parks Act (2000) and its associated regulations govern the protection and management of the cultural and natural resources of Kluane National Park and Reserve. Land Claim Final Agreements with the Champagne and Aishihik and Kluane First Nations provide additional direction for the protection and management of the park and park reserve's cultural and natural resources.

National park regulations include but are not necessarily limited to:
• aircraft access
• business
• camping
• fire protection
• fishing
• general
• wildlife regulations

The Canada National Parks Act requires that "maintenance or restoration of ecological integrity, through the

protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks."

The Parks Canada Agency Act (1998) established an Agency "for the purpose of ensuring that Canada's national parks, national historic sites and related heritage areas are protected and represented for this and future generations and in order to further the achievement of the national interest as it is related to those parks, sites and heritage areas and related programs."

Other laws that apply to Canadian national parks include:
• The Fisheries Act (1985)
• The Canadian Environmental Assessment Act (1992).
• The Migratory Birds Convention Act (1994)
• The Species at Risk Act (2002)

Consolidated versions of the Canada National Parks Act and associated regulations can be found at: http://laws.justice.gc.ca/en/N-14.01/index.html and http://lois.justice.gc.ca/fr/N-14.01/index.html

Canadian national parks are also managed according to Parks Canada's Guiding Principles and Operational Policies.

Wrangell-St. Elias and Glacier Bay National Park and Preserves are administered under the authority of the Organic Act of August 25, 1916 (39 Stat. 535), which established the United States NPS and which states that the fundamental purpose of national parks is "…to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner as by such means as will leave them unimpaired for the enjoyment of future generations." The Organic Act and its associated regulations govern the protection and management of the cultural and natural resources of the unit.

Wrangell-St. Elias National Park and Preserve was established under ANILCA at 5.34 hectares (13.2 million acres), with some sections designated as national preserve and the bulk of the area designated as national park. 3.6 million hectares (8.9 million acres) of federally designated wilderness was overlaid on these sections.

Glacier Bay National Monument was established on February 26, 1925 by proclamation of Calvin Coolidge (43 Stat 1988) under the Antiquities Act. In 1980, ANILCA redesignated the monument as Glacier Bay National Park and Preserve and extended the boundaries to include the northern end of the Fairweather Range and adjacent coastal areas. ANILCA also designated most of the park lands and a portion of the park waters as Wilderness.

Management of the properties' resources is mandated under several additional federal statutes enacted over the past 80 years:
• Wilderness Act
• National Historic Preservation Act
• Redwood Act
• National Environmental Policy Act
• Endangered Species Act
• The National Parks and Recreation Act of 1978
• Marine Mammal Protection Act
• National Parks Omnibus Management Act of 1998

Tatshenshini-Alsek Park was established in 1993 by the Province of British Columbia as a Class A Park by an enactment of the provincial legislature. Parks are managed for important conservation values and are dedicated for the preservation of their natural environments for the inspiration, use and enjoyment of the public. It is managed under the following statutes:

• Park Act and regulations

• Protected Areas of BC Act
• Wildlife Act

4f Administrative and management arrangements

Day-to-day management of Kluane National Park and Reserve is directed by the Field Unit Superintendent of the Yukon Field Unit who reports via the Executive Director of Mountain Parks and the Director General, Western and Northern Canada to the Chief Executive Officer of the Parks Canada Agency. Management direction for the park comes from the legislation cited in 4e, as well as from Parks Canada's Guiding Principles and Operational Policies and the Kluane National Park and Reserve of Canada Management Plan (2004).

1995, the effective date of the Champagne and Aishihik First Nations (CAFN) Final Agreement, ushered in a new era in the management of Kluane National Park. The Final Agreement created a co-operative management regime based on shared responsibility for managing park resources by the establishment of the Kluane National Park Management Board (Board). The Board was expanded in February 2004, when the Kluane First Nation (KFN) Final Agreement came into effect. The Board's work currently relates to the national park and the park reserve.

The Board consists of six voting members; two nominees of CAFN, two nominees of KFN and two nominees of Canada. All are appointed by the Minister responsible for the Parks Canada Agency. Parks Canada is represented on the Board by the Park Superintendent, a non-voting member. The Board provides a vehicle for public involvement in park management and may make recommendations to the Minister on any matters related to management or development in Kluane National Park and Reserve.

The CAFN and KFN Final Agreements identify the following objectives for Kluane National Park and Reserve:

• to recognize their history and culture, and the rights provided for in the agreements, in the planning, management, administration and operation of the Kluane National Park and Reserve;
• to recognize and protect the traditional and current use of the park by CAFN and KFN in the development and management of Kluane National Park and Reserve;
• to provide economic opportunities to Champagne and Aishihik and Kluane People in the development, operation and management of the Kluane National Park and Reserve;
• to recognize that oral history is a valid and relevant form of research for establishing the historical significance of heritage sites and moveable heritage resources in Kluane National Park and Reserve directly related to the history of Champagne and Aishihik, and Kluane People;
• to recognize the interest of Champagne and Aishihik, and Kluane People in the interpretation of aboriginal place names and heritage resources in Kluane National Park and Reserve directly related to the culture of CAFN and KFN; and
• to integrate traditional and scientific knowledge in the management of the natural and cultural resources of Kluane National Park and Reserve.

Glacier Bay and Wrangell-St. Elias National Park and Preserves are units of the US NPS. Day-to-day management is directed by the Park Superintendent who supervises a staff organized into six divisions (Administration, Interpretation, Resource Management, Resource Protection, Facility Management, and Concessions Management). These properties are managed in accordance with the legislative and regulatory mandates of the US NPS (see section 4e). Management of the properties is overseen by the Alaska Region of the US NPS. The Regional Director reports to the National Director for the US NPS in Washington D.C. who in turn reports to the Secretary of Interior.

Wrangell-St. Elias National Park and Preserve has two government-to government agreements with Mentasta and Cheesh-Na Native Villages a-d is working on a third one. These agreements outline communication and consultation strategies for cooperative projects between the NPS and the Ahtna people. Wrangell-St. Elias

and Ahtna Inc. are working on an agreement that would place conservation easements on Ahtna land with the park boundary. If implemented additional lands could be protected from logging and mining concerns. Since Ahtna Inc. owns close to 364,230 hectares (900,000 acres) within the park, this agreement could have significant positive impacts for resource protection.

Glacier Bay National Park and Preserve also has established a government-to-government agreement with Native American (First Nations) stakeholders. As a result of years of strained relations between NPS and the Hoonah Tlingit over inclusion of the tribal homeland within Glacier Bay National Park, NPS officials and Tribal government leaders determined in the mid 1990s to establish better communications and attempt to address a host of issues. A major outcome was a Memorandum of Understanding (MOU), signed on September 30, 1995, and effective for five years, between Glacier Bay National Park and Preserve and the Hoonah Indian Association. The MOU had several objectives: "to formally recognize our government-to-government relations and recognize areas of mutual concern and support, establish a framework for cooperative relationships, and promote communication between both parties." The Hoonah tribe agreed to assign a tribal liaison officer, form an advisory board, and consult with the NPS on matters of common concern and interest. The NPS agreed to recognize the tribe as a government, assign an NPS liaison officer, and invite comment from the tribe concerning park operations, planning and management.

Since that time, the Hoonahs have discussed with NPS officials a number of subsistence-related concerns—a cultural fishery program, the gathering of berries and gull eggs, and other matters—which the agency has accommodated whenever possible, and is working to resolve where legal barriers exist. The MOU has also resulted in a proactive program in which NPS staff and the Hoonah Tlingits are working cooperatively on a host of cultural preservation and education projects designed to help perpetuate Hoonah Tlingit cultural traditions. The MOU was updated for an additional five years on September 29, 2000.

Tatshenshini-Alsek Park is managed by the Tatshenshini Alsek Management Board under authority of the Minister of Water, Land and Air Protection (WLAP). The Regional Manager for the Ministry of WLAP is located in Smithers, British Columbia.

4g Significant changes in management regime since inscription

Kluane National Park and Reserve and the adjoining Wrangell-St. Elias National Monument in Alaska were jointly nominated to the World Heritage List in 1979. Since that time, Glacier Bay National Park and Preserve (Alaska) and Tatshenshini-Alsek Park (British Columbia) have been added to the site, creating the Kluane/Wrangell – St. Elias/Glacier Bay/Tatshenshini – Alsek World Heritage Site. The qualities that led to the initial nomination are “an unbroken, pristine natural system with a rich variety of vegetation patterns and ecosystems, a wealth of wildlife populations including grizzly bears, Dall’s sheep (the largest single concentration in the world), and a number of rare plant communities. They also contain the largest non-polar icefield in the world and some of the world’s most spectacular glaciers.” (from the World Heritage Site plaque)

In 1998, a five-year MOU was signed between the US NPS and Parks Canada on co-operation in management, research, protection, conservation and presentation of national parks and historic sites. Managers of the four units meet at least every other year to discuss and plan mutual projects. The Kluane/Wrangell – St. Elias/Glacier Bay/Tatshenshini – Alsek World Heritage Site is listed as one of twelve priority areas for possible collaboration. Potential areas for collaboration include: developing staff training and exchanges; building inter-agency networks of biologists, planners, visitor services and interpretation staff; formalizing the international management of the Tatshenshini-Alsek Rivers; developing a common base map for the four parks; seeking a moratorium on the forest clearing of the international boundary in these parks; and updating the World Heritage Site plaques, including seeking a common name for the World Heritage Site.

While the five-year MOU may have expired, it is philosophically still being implemented. Cooperative projects occur within the various resource management divisions and the interpretation divisions. Unit Managers have a biennial trip down the Tatshenshini-Alsek Rivers as well.

In Kluane National Park and Reserve, a significant change has been the settlement of the CAFN and KFN land claim agreements. The CAFN agreement established approximately 5,900 km² of the southeastern portion of the former Kluane National Park Reserve as Kluane National Park. The northwestern portion of the Kluane National Park Reserve within the traditional territory of the Kluane First Nation, also known as the Tachal Region, remains a National Park Reserve until the land claim with the White River First Nation is settled.

When Wrangell-St. Elias was first designated a World Heritage Site, it was a National Monument. In 1980, a year later ANILCA was passed and Wrangell-St. Elias was designated a National Park and Preserve. This change in status allowed for both sport and subsistence hunting; activities that were not permitted under its Monument status. Other changes included designating most of the park and preserve as Wilderness.

In Glacier Bay National Park and Preserve, after years of controversy, commercial fishing in Glacier Bay began a legislatively mandated phase-out in 1999. Fishing ended immediately in all park wilderness waters and in the northern arms of the bay (18 per cent of total park marine waters). Limited fishing will continue in specified non-wilderness waters within Glacier Bay by qualified permit holders for their lifetimes only. Fishing in the park in non-wilderness waters outside of Glacier Bay itself will continue indefinitely. When the phase-out is completed, about 55 per cent of the park's marine waters will be completely closed to commercial fishing. This will create the largest high-latitude marine reserve in the world.

Prior to the land withdrawal for Glacier Bay National Monument in 1924, 21 natives of Hoonah, Alaska filed for 65 hectare (160 acres) land allotments under terms of the 1906 Native Allotment Act within the area that would later become Glacier Bay National Park and Preserve. Through nearly seven decades of adjudication and legal challenges, by 1992 four of the prior land claims had been approved and conveyed to private ownership, while 17 others were still pending.

The NPS, working with the allotment owners, has developed a strategy in which allotments are purchased and brought back into the park, while the allottees retain cultural easements (the right to build a simple shelter and conduct activities compatible with current regulations). This helps facilitate land transactions and insures that native peoples retain their cultural connections to the landscape. At the same time, the potential exists for some future commercial or other uses on lands within the park that would not necessarily be sanctioned by the NPS. Efforts to address this potential conflict are ongoing.

The Tatshenshini-Alsek Park Management Board is fully operational and meets 2-4 times per year. A Management Direction Statement has been prepared for the park and will guide operations until a full management plan has been prepared.

4h Management plan

There is a management plan in place for the site.

Summary of management plan

Kluane
A park management plan is required under the Parks Canada Agency Act and Canada National Parks Act. Over the last several years and following a series of public consultation meetings, workshops with local students and the CAFN, stakeholder meetings, and with input from a volunteer working group established to provide recommendations on the park recreational opportunities, the 1990 management plan was updated.

Approved by Canada's Minister of the Environment in early 2004, the updated management plan provides long-term strategic direction for the management and operation of Kluane National Park and Reserve. The Park Superintendent, working cooperatively with the Kluane National Park Management Board and the Champagne and Aishihik and Kluane First Nations, is responsible for the implementation of the management plan.

The management plan identifies a number of key actions related to heritage resource protection and

presentation, visitor services, and management of Parks Canada. These actions fall within eight general themes related to:
• Identifying and protecting critical wildlife habitat and movement corridors
• Strengthening co-operative management
• Working with partners in the region to maintain a healthy ecosystem
• Increasing ecological integrity monitoring
• Assisting local First Nations to become reacquainted with the park
• Offering a variety of high quality wilderness experiences without impairing ecological integrity
• Expanding interpretation and outreach services; and
• Establishing wilderness area declaration for Zone I and II areas of the park

Wrangell-St. Elias
The General Management Plan for Wrangell-St. Elias National Park and Preserve was completed in 1986. The plan and subsequent action plans fulfill the requirements of ANILCA of 1980, which established the park and preserve. Major topics covered include:
• Land Protection planning
• Natural and Cultural Resources planning
• Backcountry and Wilderness management
• Management zoning
• Visitor services
• Commercial services
• Access

There have been two amendments to the General Management Plan: one to cover the issue of existing mining claims within the park and one to incorporate Kennecott National Historic Landmark into the park. The plan is available at: http://www.nps.gov/wrst.

Glacier Bay
The General Management Plan for Glacier Bay National Park and Preserve sets the overall direction for management of natural and cultural resources, visitor use, land protection, and facility development. The plan and subsequent action plans fulfill the requirements of ANILCA of 1980, which established the park and preserve. This plan was developed in accordance with the National Environmental Policy Act, which requires public participation and review. The main elements of the plan are:
• Natural Resource Management
• Cultural Resource Management
• Land Protection
• Park/Preserve Boundary Changes
• Wilderness Management/Zoning
• Private Lands Use and Development
• Commercial Visitor Services
• Backcountry Use
• Use of Glacier Bay National Preserve
• Vessel Use
• Bartlett Cove Development Concept

The plan is available at:
http://www.nps.gov/glba/pphtml/facts.html.

Tatshenshini-Alsek Park
Tatshenshini-Alsek Park is currently managed under an approved Management Direction Statement pending preparation of a full management plan. The priority for management of the park is to ensure that its internationally significant natural, cultural heritage and recreational values are protected and that ecosystems within the park maintain their natural function. The direction statement includes principles for management and priority management objectives and strategies for:
•protecting biophysical values
•protecting cultural heritage values

•protecting recreation values and managing for appropriate levels of recreational use
•ensuring environmental protection
•resolving non-conforming uses
•encouraging public understanding, appreciation and enjoyment
•cooperating in identifying and optimizing commercial, economic, training and employment opportunities for CAFN and
•ensuring coordinated approaches for management with adjacent jurisdictions in recognition of the World Heritage status.

FINANCIAL RESOURCES

4i Annual operating budget

Kluane: $3 million (USD) Wrangell-St. Elias: $3 million (USD) Glacier Bay: $ 3.5 million (USD) Tatshenshini-Alsek $50.0 K (USD)

STAFFING LEVELS (HUMAN RESOURCES)

4j Staffing levels

Full time: 0
Part time: 0
Seasonal: 0
Other: 0

Kluane
The staff of Kluane National Park and Reserve consists of park wardens, finance and administrative staff, heritage communicators, and visitor services staff, technical services staff and managers, and informatics staff. Generally speaking the park warden and heritage communicator/visitor services staff have science based university degrees or college diplomas. The technical services staff have trades diplomas. The breakdown of job categories is as follows:

15 Full-time staff, 2 Part-time staff, 10 Seasonal-staff and 7 Term staff.

Wrangell-St. Elias
Wrangell-St. Elias National Park and Preserve has a full-time permanent staff of approximately 45 people within six divisions: Management and Administration, Planning and Compliance, Interpretation, Natural and Cultural Resources, Maintenance, and Resource Protection. During the field season Wrangell-St. Elias adds almost 100 seasonal employees of which half are in the Maintenance Division.

Glacier Bay
Glacier Bay National Park and Preserve has a staff of 51 permanent and 48 temporary or term positions within five divisions, broken down as follows: Administration 11, Protection 14, Resource Management 26, Interpretation 19, Maintenance 29

Tatshenshini-Alsek Park
The Ministry of Water, Land and Air Protection has assigned one seasonal employee and approximately 25 per cent of an Area Supervisor position to park management.

SOURCES OF EXPERTISE AND TRAINING IN CONSERVATION AND MANAGEMENT TECHNIQUES

4k Sources of specialized expertise, training and services

Kluane
Training in conservation and management for park staff takes place in a variety of training centres and

locations across Canada. A network of professional and technical expertise ranging from human resource management, finance and administration, management planning, natural and cultural resource conservation, heritage presentation, information management and technology, to engineering and architecture works with Kluane National Park and Reserve staff to protect and present the parks cultural and natural resources. These staff can be found in the Yukon Field Unit's office in Whitehorse, or in Western Canada Service Centre Offices in Vancouver, Calgary and Winnipeg.

Glacier Bay and Wrangell-St Elias
A wide array of resource management training opportunities is available to employees of the NPS. Two training facilities of note are the Horace M. Albright Training Center in Arizona and the Arthur Carhart National Wilderness Training Center in Montana. The Albright Center offers a resource curriculum focussed on developing the skills necessary to protect and maintain natural resources, including techniques for resource monitoring, general ecosystem management, and compliance with the National Environmental Policy Act (NEPA) and other environmental laws and policies. The Carhart Center offers training opportunities designed to foster excellence in wilderness stewardship by cultivating knowledgeable, skilled and capable wilderness managers. Another source of conservation expertise, the Aldo Leopold Institute, conducts research to further develop knowledge required to preserve wilderness and the ecological and social values derived from wilderness and similarly managed lands. Results of this research are made available to NPS employees through a wide variety of venues.

Tatshenshini-Alsek Park
The regional office of the Ministry of Water, Land and Air Protection contains staff with expertise in park management, planning, fish and wildlife management, recreation management and habitat management. Other more specialized expertise is potentially available from headquarters offices in Victoria or on contract subject to funding.

The Champagne and Aishihik First Nations has staff expertise in resource management and cultural resource management which is indirectly available to the management board through CAFN representatives at the board.

Limited training is available based on need.

VISITATION

4l Visitor statistics available

Visitor statistics are available for the site.

Annual visitation, methodology and trends

Kluane
Visitation to Kluane is 66,400 person days on average for Backcountry, Visitor Centre and Campground use combined. Visitation in Kluane is captured through highway campground use permits, visitor reception centre counts, and backcountry use permits.

Wrangell-St. Elias
Average annual visitation was 40,000 in 2002. This is an increase from 15,000 in 1982 when the park started keeping statistics. Visitors are counted through reports of commercial operators, traffic counters on park roads, visitor and ranger station attendance and employee observations. These numbers are then extrapolated using a multiplier to estimate visitors that would not have been counted directly.

Glacier Bay
The official visitor count (US Government Public Use Statistics Office) was 408,143 for 2003. This compares to the 1992 (year of inscription) official count of 211,424 for an increase of 66 per cent. Visitors are counted through camper permits, Alsek River rafting permits, private and charter boat permits, Glacier Bay Lodge guest lists, and tour boat and cruise ship passenger lists.

Tatshenshini-Alsek Park
No comprehensive visitor statistics are available. However, numbers of commercial and private rafters are maintained by Glacier Bay National Park and Preserve. As a rough estimate, 2,000-3,000 people visit the park annually

4m Visitor facilities

Kluane
The Haines Junction Visitor Reception Centre (VRC) was built in 1980 to accommodate visitor reception and park administration. In recent years about 32,000 people visited the Haines Junction VRC annually. The Tachäl Dhäl (Sheep Mountain) Visitor Reception Centre, located along the Alaska Highway near the mouth of the Slims River, is open seasonally from mid-May to early September. It serves as an important day use visitor reception and overnight hiker registration centre for the north end of the park. A current average of 21,000 visitors per year pass through this centre.

Kathleen Lake is Kluane's focal point for highway accessible water based recreation and vehicle camping. The 40-site campground and day use areas provide easily accessible day and overnight recreation. The Kathleen Lake campground receives an average of just over 1,500 parties per year. The King's Throne and Kathleen Lake shoreline trail are two of the most popular day use trails in the park.

About 200 km (124 miles) of trails and 400 km (249 miles) of recognized hiking routes are found in Kluane. Trails are generally well defined with signs, posts, trailheads and obvious walking surfaces for the most part found on old mining roads and trails built prior to park establishment. Trails range from easy twenty- minute walks to more difficult five-to six-day hikes. Some trails, such as the Cottonwood, have become more difficult in recent years because of bridge washouts, campsite closures and the change to designated campsites. In contrast to trails, routes typically follow no formal path and are not maintained by the park. They follow streambeds and river channels, alpine meadows and ridgelines, game trails, and occasionally old mining roads. Routes are generally longer and more challenging than the park's trails.

Wrangell-St. Elias
The Wrangell-St. Elias Visitor Center is located in Copper Center, Alaska and consists of a suite of buildings, and includes a comfort station, theater, exhibit, visitor contact facility, Alaska Natural History Association (ANHA) bookstore, community meeting space, and walking trails. A museum for Ahtna Heritage is planned.

Ranger Stations and visitor contact stations are located in Slana, Chitina, McCarthy, Kennecott and Yakutat. These five stations provide visitor information and interpretive programs, ANHA bookstore, off-road vehicles (ORV) permits, hunting permits, and emergency services.

There are 17 hunting guide concessionaires consisting of between 65 and 75 operators that provide a variety of services including air transportation, flightseeing, mountain climbing, river rafting, backcountry guiding, and historical tours of Kennecott National Landmark.

Glacier Bay
The Glacier Bay Visitor Center is located on the second floor of the Glacier Bay Lodge in Bartlett Cove. It has an information desk, an ANHA book store, and an auditorium. Exhibits that explore the park's natural and cultural history are available in the Visitor Center as well. Daily throughout the summer, park rangers present evening programs, show educational videos in the Visitor Center auditorium and lead walks in the area.

The Visitor Information Station offers information, permits and orientations for campers and recreational boaters in the park. Maps and nautical charts are available there as well.

The Glacier Bay Lodge offers overnight accommodations, a restaurant, gift shop, and fuel sales. The Glacier Bay Lodge operates a daily tour boat trip into the bay during the summer months. The lodge also offers a

camper/kayaker drop-off service at designated locations in the bay.

Various large cruise ship and tour boat companies bring visitors into the park. Park rangers provide a public address commentary, slide program and children's program on board tour boats and cruise ships entering Glacier Bay.

Guided kayak adventures and kayak rentals are available. There are guided kayak trips in Glacier Bay and guided raft trips down the Alsek River. Hunting and fishing guides are available in Glacier bay National Preserve, where such activities are authorized.

The only developed trails in Glacier Bay National Park are in the Bartlett Cove region: the Forest Loop Trail, Bartlett River Trail, and Bartlett Lake Trail. These trails enable visitors to explore the rain forest environment typical in lower Glacier Bay. The Forest Loop Trail is handicapped accessible (boardwalk) along a portion of its length.
Tatshenshini-Alsek Park
There are no visitor facilities in the park other than a few rustic trails consistent with the wilderness nature of the park. The Ministry of Water, Land and Air Protection has a small display at the Parks Canada Visitor Centre.

4n Tourism/visitor management plan

There is a tourism/visitor management plan in place for the site.

Summary of tourism/visitor management plan

Kluane
The new park management plan directs the park to work with others to ensure visitors arrive at the park with expectations appropriate to the visitor experience objectives identified for the major geographic areas of the park. Sustainability underlies Kluane National Park and Reserve's heritage tourism goal. For Kluane, sustainability means offering a range of opportunities that highlight the unique features and nature of the park without impairing its ecological integrity, damaging its cultural resources or diminishing its wilderness character. Kluane National Park and Reserve will work with the Champagne and Aishihik First Nations and Kluane First Nation, their World Heritage Site partners, and stakeholders such as the tourism industry to "attract park visitors to the right place, at the right time, in the right numbers and with the right expectations."

The new management plan for Kluane National Park and Reserve calls for the park to expand its image beyond the premier wilderness recreation destination that has been promoted for more than twenty-five years. "Kluane Wilderness" –the wilderness park of hikers and mountaineers – will continue to be the primary recreational/visitor service offered, but new images of "Kluane Waterways", "Kluane Culture", and "Kluane Winter" will appear in visitor information media produced by the park.

"Kluane Waterways" will create awareness that there are significant opportunities for high quality water-based wilderness and semi-wilderness experiences in the park via the Alsek Canadian Heritage River, Kathleen and Louise Lakes, and the Mush and Bates Lakes system. "Kluane Culture" will develop public awareness of Kluane National Park and Reserve as part of the Southern Tutchone traditional territories. First Nations cultural interpretation programs and guided trips will feature prominently in the recreational/visitor service offer. The park image will reflect First Nations' role in park establishment and management. Profiling the Southern Tutchone language in park materials and using Southern Tutchone place names will communicate the long aboriginal association with the regional landscape. "Kluane Winter" will reflect the variety of visitor opportunities that the park offers during the winter when cross-country skiing on groomed trails, ice fishing on Kathleen Lake, backcountry ski touring, dog sledding and winter camping activities are all available.

Wrangell-St. Elias
There have been no park specific visitor management plans since inscription. However, there has been considerable data collection that characterizes site visitors and informs us as to where they go within the site and what activities they engage in while there. In October of 2002, the site initiated a backcountry

management planning process which provides guidance on visitor use in most of the unit. Additionally, the unit staff works closely with state and local entities to characterize and anticipate present and future visitor opportunities and services.

Glacier Bay
A vessel permit system has regulated the number of entries into Glacier Bay National Park and Preserve for cruise ships, tour vessels, charter vessels, and private vessels since 1985. Regulations establishing a new vessel quota system, operating requirements, special use areas and mitigation measures were finalized in May 1996 (36 CFR 13.65) based on a vessel management plan and environmental assessment finalized in March 1996. The plan was recently redone as an environmental impact statement and was completed in January 2004. New regulations, which include a modest increase in cruise ship numbers, will be published in late 2004.

The park has an existing Wilderness Visitor Use Management Plan that was approved in 1989, tiered off the park's General Management Plan. The plan covers visitor-use activities in the park's backcountry, which includes the congressionally designated wilderness lands and wilderness waters. There are two major zone types described in the Plan; 1) the "threshold" zone is within a one-mile radius of a camper drop-off point and 2) the "pristine" zone includes all other areas excluding the Bartlett Cove developed area. Desired resource and social conditions are described for each zone.

There is a general recognition that the plan is outdated, and a comprehensive backcountry management planning process is currently underway as part of a planning effort that will include the entire Alaska Region of the NPS.

Tatshenshini-Alsek Park
There is currently no formal approved visitor or tourism management plan.

SCIENTIFIC STUDIES

4o Key scientific studies and research programs

The parks which constitute the World Heritage Site have been the focus of much scientific research over the past century or more. Below are listed the major research efforts that are ongoing. Many of these are related directly to the management needs of the various properties.

Kluane
• Grizzly bear monitoring and research programs
• Risk Assessments of Bear-Human Conflicts at Campsites and along Trails and Routes.
• Cumulative effects assessments
• Visitor use monitoring
• Visitor satisfaction and wilderness experience surveys
• Campsite impact monitoring and assessments
• Spruce bark beetle research and monitoring
• Long-term monitoring surveys of Dall sheep, mountain goat, moose and Kokanee salmon populations
• Breeding bird surveys
• Monitoring of a variety of ecological components (i.e. snowshoe hare, furbearer populations, spruce cones, soapberries, forest mushrooms etc) in conjunction with the Arctic Institute Research Station
• Fire history
• Water quality monitoring
• Oral history program
• Archaeology and cultural resource inventories
• Ice patch research
• Glaciology research and monitoring program
• Rare plant species at risk inventories

Many of the monitoring components listed above have been amalgamated into a over arching mo nitoring

program entitled the Kluane Ecological Monitoring Project (KEMP), a partnership between researchers at the Arctic Institute Research Station at Kluane Lake, Parks Canada, Yukon Territorial Government Environment, the Canadian Wildlife Service and Yukon College.

Wrangell-St. Elias
• Physical Science:
* Monitoring of Bering, Coastal, Hubbard, Russell and Root Glaciers
* Mt. Wrangell volcanic field hazards and seismic monitoring
* Geologic history of Chugach, Wrangell, Nabesna, St. Elias and Coastal Mountain Ranges

• Vegetation:
* Monitoring and Assessment of Off-Road Vehicle (ORV) Use in the Nabesna District
* Comparison of natural and geosynthetic materials for surface hardening of ORV trails
* Baselines for moss, lichen, spruce and surface soils within the park
* Vegetation assessment of grazing allotments
* Spruce bark beetle assessment and monitoring
* Floristic inventory of vascular plants in all major mountain ranges within the park
* Fire history for vegetative zones of the park

• Wildlife:
* Small mammal inventory
* Freshwater fish inventory of park lakes and rivers
* Wolf distribution and monitoring
* Moose distribution and monitoring
* Breeding bird monitoring
* Dall Sheep population and distribution surveys
* Bald eagle productivity
* Mentasta and Chisana Caribou Population Assessment

• Cultural:
* Kennecott National Historic Landmark Cultural Landscape Report
* Chisana Mining District Cultural Landscape Report
* Bremner Mining District Cultural Landscape Report
* Archeological survey of high visitor use areas
* Cultural History of Ahtna Villages
* Customary and Traditional Uses of Park
* Subsistence resources studies

Glacier Bay
• Marine Ecosystem:
* Testing the Effectiveness of Marine Reserves
* Ecological Effects of Sea Otter Recolonization
* Inventory/Monitoring of Shallow Subtidal
* Fjord Oceanographic Processes in Glacier Bay
* Ecology of Selected Marine Communities in Glacier Bay
* Marine and Estuarine Fish Inventory

• Marine Mammals and Birds:
* Humpback Whale Monitoring Program
* Harbor Seal Monitoring Program
* Steller Sea Lion Monitoring Program
* Harbor Seal/Vessel Interaction Study
* Steller Sea Lion/Vessel Interaction Study
* Acoustics Monitoring/Research
* Marine Predator Distribution & Abundance
* Opportunistic Marine Mammal Sightings in Glacier Bay and Icy Strait

* Kittlitz's Murrelet Distribution and Abundance
* Shoreline Nesting Bird Distribution and Abundance
* Black-legged Kittiwake Abundance and Productivity

• Air Quality:
* Stack Emissions Modeling Climatological Monitoring
* Visitor Experience/Satisfaction:
*Visitor Use - Annual Numbers
*Visitor/Vessel Distribution
*Visitor Survey
*Backcountry visitor survey

• Shoreline Impacts:
* Coastal Mapping/Inventory
* Wilderness Camping Impacts Assessment
* Coastal Monitoring Protocol Development
* Impact Study of Vessel Effects

• Cultural Resources:
* Ethnographic Overview
* Systemwide Archaeological Inventory
* Cultural and Ethnographic Studies
* Maritime Anthropology - Commercial Fishing History

Tatshenshini-Alsek Park
There have been relatively few scientific studies and research programs in the park. These are noted below.
• Tatshenshini-Alsek River Use Study
• Tatshenshini-Alsek Park Background Study – Draft
• Interim Report on Tatshenshini/Alsek Land Use
• Tatshenshini-Alsek Region Wilderness Study
• Tatshenshini-Alsek Rivers Recreation Corridor Assessment
• Risk Assessment of Bear-Human Interaction at Campsites on the Tatshenshini River and Lower Alsek River

Recently, however, there has been considerable research related to Kwaday dan Tsinchi (long ago found person) whose remains were found in a receding glacier several years ago. Information on the research may be obtained through the Champagne and Aishihik First Nation.

Use of results of scientific studies and research programs

In the four units of the World Heritage Site, research and monitoring programs play an important role in recreational use management and decision making. They have also been used to identify indicators and targets/standards for ecological integrity and wilderness character. The four units have a long and rich history of scientific research. The enabling legislation for some of the units specifically cites the "unique opportunity" for scientific research, and park management has incorporated research into all management decisions when appropriate. Some examples include: research on mitigation for trails used by all-terrain vehicles (ATVs) at Wrangell-St. Elias which resulted in development of new techniques to repair areas of heavily disturbed tundra. At Glacier Bay, it has incorporated the latest scientific research into its vessel management planning effort. The studies for Tatshenshini-Alsek Park have provided valuable information to support preparation of management strategies. Reports on Kwaday dan Tsinchi have provided valuable information on cultural, genetic and environmental topics from some 400-500 years ago.

Role of WHS designation in design of scientific studies and research programs

The four units' research and monitoring programs largely reflect the natural values for which the properties were nominated as a World Heritage Site, i.e. monitoring of Dall sheep populations, grizzly bear research and monitoring efforts. World Heritage Site designation has prompted cross-boundary studies on such migratory species as caribou. Additionally, each unit shares its research results with its neighbors.

EDUCATION, INFORMATION AND AWARENESS BUILDING

4p WHS plaque

There is a plaque at the site indicating that it is a World Heritage Site.

4q Use of WHC logo

The World Heritage Convention logo is not used on all publications for the site.

4r Educational programs for schools

There are educational programs about the site's World Heritage values aimed at schools.

Description of educational programs for schools

Three of the four units that constitute the World Heritage Site offer school programs. Below are some examples:

Kluane provides on-site school programs on some of the natural values (i.e. bear research) for which the site was nominated.

Wrangell-St. Elias has implemented an educational mission through collaboration with a number of partners: the Wrangell Mountains Center, Copper Basin School District, Wrangell Institute for Science and the Environment, Prince William Sound Community College, Mount Sanford Tribal Consortium, and Gateway School District. Educational programs run the gamut from a wide variety of natural resource topics to a selection of cultural resource topics in cooperation with the First Nations partners.
Glacier Bay has a very active student program involving both visiting youth as well as area schools. Park staff offer a weekly series of presentations to students at Gustavus School. Facilitated by the Division of Interpretation, the series features NPS staff from all divisions who speak to the students on a wide range of topics, from park planning, to bears, to construction, to oil spill clean-up. They also share their backgrounds, education and experiences so students could see how they, too, might pursue a job in national parks.

Each year the park sponsors an overnight culture camp experience into Glacier Bay National Park for students from the predominantly native Alaskan village of Hoonah. Using park chartered vessels as a "moving classroom," the group travels to cultural sites of high significance to the clans of Glacier Bay. Elders teach the students Tlingit cultural skills including stories, songs, art, subsistence gathering and language. Students also use the Huna Tlingit Talking Map, a computer-based multi-media geographic learning tool that contains over 200 traditional names and detailed ethnographic information for locations throughout Glacier Bay.

Children traveling through Bartlett Cove can visit the ranger at the information desk in the visitor center to pick up a free Junior Ranger booklet, which contains age-appropriate material on national park values and ideals. Children's centers aboard cruise ships that visit the bay offer a Glacier Bay Junior Ranger Program to children over the course of the cruise. During the trip through the bay, park rangers present a special children's program to aspiring Junior Rangers.

4s Special events and exhibitions

There are special events and exhibitions concerning the site's World Heritage values.

Description of special events and exhibitions

A variety of campfire talks, guided walks and hikes, and audio-visual programs are provided at Kluane National Park and Reserve. Topics covered reflect the site's natural and cultural values and range from glaciation, Dall sheep, bears, and ecology to Southern Tutchone lifestyle, traditional knowledge and Ice Patch

research.

Educational films are shown every day in the Visitor Center auditorium at Glacier Bay National Park and Preserve, and every night park rangers present a 30-minute slide program on an aspect of Glacier Bay's natural or cultural history. A ranger led walk is conducted daily on a one-mile loop trail that winds through the rainforest in Bartlett Cove. The visitor center contains a variety of exhibits that explore the wonders of Glacier Bay.

4t Facilities, visitor centre, site museum, trails, guides, information materials

The four units of the World Heritage Site have a variety of interpretive and educational materials available at their facilities. For example:

Kluane has Visitor Reception Centers at the main park administrative center in Haines Junction and near the base of Tachäl Dhäl (Sheep Mountain) along the Alaska Highway near Slims River which all contain exhibits and other educational material. A variety of interpretive signage can be found at the Kathleen Lake day use and 40-site campground area. The World Heritage Site plaque is found along the Haines Road at the Kathleen Lake overview highway pull-off. The World Heritage Convention logo is used on Kluane National Park and Reserve's main park brochure.

Wrangell-St. Elias National Park's new Visitor Center is the main location for visitor orientation and distribution of educational materials and issuance of permits needed to harvest park resources. These same services are also provided at District Ranger Stations as well. A new museum will be built at the visitor center site that will interpret Ahtna heritage. Currently there is a park movie, "Crown of the Continent," that provides a bird's eye view of the park, and the exhibit building's themes include glaciology, tectonics and plant and animal adaptation to harsh environments. Exhibits are planned for the Kennecott National Historic Landmark after appropriate stabilization of a structure is completed.

Glacier Bay National Park and Preserve's Visitor Information Station near the dock offers information, permits and orientations for campers and recreational boaters in the park. Maps and nautical charts are available as well. The information desk at the Visitor Center in the lodge is open daily as well, and a ranger is available to answer questions. Books and maps are available for purchase and free brochures may also be obtained.

For Tatshenshini-Alsek Park, a small display is housed in conjunction with the Kluane National Park Visitor Center. Basic information on the park is contained on the Ministry of Water, Land and Air Protection's website including information on a number of trails existing along the Haines Road.

4u Role of WHS designation in education, information and awareness building activities

The management plans of the four units reflect the importance of safeguarding and communicating the natural values that led to inscription of Kluane/Wrangell-St.Elias/Glacier Bay/Tatshenshini-Alsek as a World Heritage Site. Updating the World Heritage Site plaque, seeking a common name for the World Heritage Site, developing a common base map for the four parks, and seeking a moratorium on the clearing of international boundary in these parks are some of the collaborative actions that have been discussed between the inter-agency World Heritage Site site managers. However, to date, little effort has been made to capitalize on the World Heritage Site designation in the way of educational programs, special events, exhibitions etc.

5 FACTORS AFFECTING THE PROPERTY

5a Development Pressures

Development-related pressures that could impact the site as a whole include:
• increased development along highways and outside local communities leading to habitat fragmentation and loss (e.g., incremental development in the valley bottoms)

• degradation of water quality
• forest harvesting, agriculture and mining operations outside the park
• effects from the lack of integrated land use planning (e.g., no forest management plan for the region)
• impacts on wildlife species of solid waste management outside the park
• invasive exotic vegetation

Glacier Bay National Park and Preserve with its marine resources has the following specific concerns: Given the vast biomass removed annually from poorly known marine ecosystems, direct and indirect effects of commercial and sport fishing are likely occurring. Commercial fishing, principally for salmon, Tanner crab and halibut, removes as much as half a million pounds of biomass from Glacier Bay proper's marine waters annually. This removal of biomass has poorly known but likely important effects on marine ecosystems, including associated nearshore and riparian habitats. Regulations affecting commercial fisheries in Glacier Bay limit the types of allowed fisheries and the number of participants. As a result of recently legislated phaseout, commercial fishing within the bay is anticipated to cease within the next four decades.

The establishment of Tatshenshini-Alsek Park precluded a major mine development, the Windy Craggy Mine, from proceeding. This mine was considered to pose unacceptable risk to the region. Previous mineral development and a pipeline adjacent to the Haines Road have left environmental liabilities which are being monitored.

As human populations increase in the area surrounding the World Heritage Site, the development pressures will tend to increase. The four units comprising the site all work extensively with the local communities on various planning projects to minimize these impacts.

5b Environmental Pressures

Environmental pressures on the property occur on both a global and regional scale.

Global level stressors include:
• large-scale effects of global climate change (e.g., rapid wasting of glaciers and the melting of permafrost soils. Ozone depletion in the stratosphere and increases in greenhouse gasses have been shown to effect atmospheric change with subsequent effects on marine ecosystems. Global warming may alter ocean circulation and upwelling, affect rainfall patterns and storm tracks and melt glacial ice, ultimately resulting in elevated sea levels)
• long-range transportation of pollutants and the concentration of these toxins in cold northern environments

Regional level stressors include:
• impacts of wolf management programs
• effects of fire suppression (e.g., disruption of natural forest fire regime)
• effects of hunting outside the park (e.g., harvesting transboundary wildlife populations)

Water quality degradation stemming from sources outside the park -both global and regional - will have an effect on overall water quality within park boundaries.

While managers at the World Heritage Site may not be able to directly influence change within global level stressors, they do work cooperatively with sister agencies to minimize impacts on the regional level. The managers have entered into numerous agreements with regional partners to address these issues.

5c Natural Disasters and Preparedness

Permanent damage to the property from natural disasters is not considered a threat. Frequent perturbations by natural forces are in fact considered to be within the normal range of influences on these wilderness areas and adaptation to natural events both large and small is continually occurring. This adaptation to natural change and its scientific value for study are considered to be among the site's premier heritage values as described in the original justification for inscription.

However, with active volcanoes within the park and frequent earthquakes, there are issues in terms of visitor and resident safety. Considering the size and remoteness of the area, risk would be considered minimal.

5d Visitor/Tourism Pressures

Described below are some specific examples of pressures facing specific units of the site:

Kluane
Visitor use of Kluane National Park and Reserve has leveled off over the last five years. Park level stressors include:
• Impacts of recreational use in the backcountry (e.g., A'äy Chù' (Slims River) drainage and Alsek River Valley)
• Impacts of aircraft flyovers and landings on energy budgets of wildlife
• Displacement of regional First Nations from their traditional lands
• Erosion of traditional knowledge base within the regional First Nations
• Effects of sport fishing on aquatic ecosystems (e.g., harvest levels at Kathleen Lake)
• Impacts from the use of pack animals in the backcountry
• Displacement of wildlife by humans (e.g., grizzly bears)
• Impacts from the use of snowmobiles and all-terrain vehicles (ATVs)

Wrangell-St. Elias
Use of ATVs and snowmachines for access within Wrangell-St. Elias National Park and Preserve for traditional and recreational activities has the potential to negatively impact park resources and affect visitor experience. As technology advances such vehicles venture into areas of the park that haven't previously seen such use, with the potential to impact wildlife and other park resources.

Glacier Bay
Direct habitat alteration is currently relatively minor and is limited both temporally and spatially. Vessels emit underwater noise, periodically leak pollutants, and mix stratified waters. Although vessel noise, periodic small-scale leaks and spills, and mixing effects may be chronic in nature, they are typically spatially and temporally isolated to specific access corridor areas and seasons. Some of the issues that park managers are monitoring include:
• The effects of vessel traffic on feeding, breeding and molting birdlife and marine mammals, either through disturbance or direct strikes
• The impact of shoreline camping on nesting birds
• Disruption of wildlife travel patterns by human presence on the shoreline
• The effect of flightseeing aircraft overflights on wildlife and the visitor experience

Tatshenshini-Alsek Park
Generally visitor use is low. Nodes of use occur along the Haines Road and at wilderness campsites along the Tatshenshini-Alsek Rivers. For the former, management guidelines and no trace camping rules are in place. One area of concern is increased snowmobile use at the Haines summit area and guidelines are being developed and implemented to minimize environmental and other impacts.

Commercial aircraft landings and use are controlled. There is some conflict between river rafters and aircraft overflights.

5e Number of inhabitants within property, buffer zone

Kluane
Approximately 1,000 to 1,200 people reside in the surrounding area outside the park and reserve in the villages of Haines Junction, Lù Gha/Klukshu, Destruction Bay, Burwash and Beaver Creek.

Wrangell-St. Elias

Approximately 200 people live within the park on park inholdings and 3000 along the park boundary.

Glacier Bay
The newly incorporated town of Gustavus adjacent to the park boundary has approximately 400 year-round residents. Population is thought to double during the summer months. There are no inhabited inholdings within the boundary of the national park section of Glacier Bay. However, there are several permitted fishing camps and hunting/fishing lodges within the preserve portion of the park and preserve. This population has fallen drastically in recent years as fishing closures have occurred due to poor returns of salmon stocks. Currently the preserve would have a fluctuating summer population that would average approximately 30 persons, including lodge employees and fishermen.

Tatshenshini-Alsek Park
There are 5 cabins near Blanchard Creek along the Haines Road with 4-8 mostly part-time residents.

These residents residing both inside and adjacent to the site are not significantly impacting the site with respect to its original World Heritage Site values.

5f Other

Kluane National Park and Reserve: Cultural Reintegration
The Southern Tutchone have a long-standing relationship with the land. For thousands of years they have been an integral part of the greater Kluane ecosystem. Kluane National Park and Reserve forms part of their cultural landscape. The traditional knowledge that arises out of the Southern Tutchone relationship to the land contributes to the maintenance of ecological integrity and contributes to the modern day management of the park. Unfortunately, the exclusion of Aboriginal People from the park from the mid to late 20th century has had negative consequences not only on the park's ecological health, but also on First Nations cultures. As a result of not being able to use the park, traditional knowledge of the park lands and resources and their people's history in this area could not be passed on through community members.

Kluane National Park and Reserve's new park management plan calls for the sustainable relationship that Southern Tutchone have had with the lands within the park to be re-established and fostered. It calls for activities that enhance and pass on traditional knowledge within the local First Nations communities to be encouraged so that local First Nations once again use the park as part of their traditional lands. Such programs will contribute to the ecological health of the park. They will also provide us a more comprehensive knowledge and understanding of the World Heritage values of the park.

The plan calls for the Kluane National Park and Reserve to:
1. Work with Champagne and Aishihik First Nations and Kluane First Nation to establish programs that enable First Nations members to become re-acquainted with their cultural heritage in the park (e.g., culture camps, participation in wildlife surveys), and to convey this knowledge to members of their communities.
2. Work with Champagne and Aishihik First Nations and Kluane First Nation to develop and deliver programs (e.g., workshops, spending time on the land with elders) that assist park staff and others to understand how First Nations traditional knowledge and ties to the land contribute to the maintenance of ecological integrity.
3. Establish guidelines to ensure that park research and management programs are used as opportunities to familiarize local First Nations' members with the park's plant and animal communities.
4. Support local First Nations in the development and delivery of educational programs to First Nation members that focus on land-based aspects of Southern Tutchone culture (e.g., educational trap line).

The absence of the Southern Tutchone from their traditional lands for this period of time has meant the loss of traditional ecological knowledge about Kluane National Park and Reserve natural resources. Managers have not had the benefit of traditional knowledge in developing their management strategies. Kluane National Park and Reserve has secured additional ecological integrity funding of $1.3 million dollars over four years to reintegrate the Champagne and Aishihik and Kluane First Nations into the park, and to implement the management plan actions listed above.

6 MONITORING

ADMINISTRATIVE ARRANGEMENTS FOR MONITORING PROPERTY

6a Formal monitoring program

There is a formal monitoring program established for the site.

Description of formal monitoring program

The NPS and Parks Canada are in the process of implementing long-term ecological monitoring programs (e.g. the Kluane Ecological Monitoring Project) to continuously monitor the health of park ecosystems. These programs (called Vital Signs in the U.S.) are in the early stages of a planning process that will determine the key indicators that are to be monitored in each park. After the process is complete, the second phase will involve the scientific design of each park's individual monitoring program. These long-term monitoring programs will be designed to efficiently and effectively monitor ecosystem status and trends over time at various spatial scales. As trends are determined, geographic information systems and other tools needed to apply field data will be used to aid park managers in identifying alternative courses of management actions. When fully operational, monitoring programs will provide important feedback between natural resource condition and management objectives, which can serve both to trigger management actions and to evaluate managerial effectiveness.

An example of such a monitoring program being designed and developed is for the Kokanee Salmon at Sockeye Lake in Kluane. The long term average annual spawning count minus or plus its standard deviation is used as an indicator that a population may require further attention or investigation. When the long term Kokanee salmon spawning count dropped below it's target threshold range (2678 + 1171) for two successive years, a multi-stakeholder research investigation was launched to determine what was causing the low count, and to determine what if any corrective management actions i.e. moratorium on Kokanee fishing are needed to address this issue.

There are no general environmental programmes in place or contemplated for Tatshenshini-Alsek Park. Specific environmental monitoring occurs for trails, wilderness campsites, mining sites (Windy Craggy) and pipeline sites (Rainy Hollow).

KEY INDICATORS FOR MEASURING STATE OF CONSERVATION

6b Agreed upon key indicators

No key indicators for measuring the state of conservation of the site's World Heritage values have been agreed upon.

Future development of key indicators

As US NPS and Parks Canada develop and implement their programs, site managers will meet to decide if sufficient overlaps occurs to warrant consolidation of effort. Certainly Tatshenshini-Alsek Park managers would be included in the effort and perhaps the other units could assist them in implementing a combined program.

There is no current plan to develop indicators specifically for the recognized World Heritage values. Development of the monitoring programs described in 6a will be sufficient.

RESULTS OF PREVIOUS REPORTING EXERCISES

6c State Party actions in response to World Heritage Committee recommendations

Upon the inscription of Glacier Bay into the existing Kluane/Wrangell-St. Elias Site, the Committee encouraged the two States Parties to consider linking the Glacier Bay unit with the Kluane/Wrangell-St. Elias unit; specifically, the Committee urged the American authorities to consider adding the "Tongass National Forest Wilderness" and the Canadian authorities to establish and incorporate a new protected area within the

Haines Triangle. The Committee also requested the Canadian and American authorities to propose a new name such as "St. Elias Mountain Parks" for the transfrontier World Heritage property. The Committee also expressed serious concerns over the prospect of potential impacts to the site of the proposal to exploit the Windy-Craggy mine in Canada.

Though it is not stated in the minutes which “Tongass National Forest Wilderness” was being referred to, it would presumably be the adjacent Russell Fjord Wilderness. To date, no action has been taken to include any portion of the Tongass National Forest in the World Heritage Site. Such an action seems unlikely at present.

In 1993, the Canadian authorities designated a new protected area, the Tatshenshini-Alsek Park, which was incorporated into the World heritage Site in 1994. This park links the World Heritage Site units by connecting Glacier Bay National Park to Kluane National Park via a new protected area within the Haines Triangle, as per the Committee's request. The incorporation of this property into protected status along with the World Heritage Site designation also ended the Windy-Craggy mine concern, as the mine property was bought by the British Columbia provincial government as part of the new park’s creation.

The status of the name change request is less clear. Although some references are now made to the site as “St. Elias Mountain Parks,” no action has been taken to formally change the name.

7 CONCLUSIONS

WORLD HERITAGE VALUES

7a Main conclusions regarding the state of the property's World Heritage Values

The combined Canadian-American World Heritage Site continues to retain and protect the values for which it was designated. Changes since inscription have largely been positive and have improved the values for which it was designated. Some key examples are:

- Three of the four units have management plans in place
- The site as a whole retains its wilderness values and character
- There has been considerable progress with government-to-government agreements with First Nations and Native Alaskans
- Commercial fishing in Glacier Bay is being phased out
- Ecological processes are functioning naturally within intact ecosystems
- Measures are being implemented to re-establish First Nations connection to the land

MANAGEMENT AND FACTORS AFFECTING SITE

7b Main conclusions regarding the management of and factors affecting the property

The unit managers comprising the World Heritage Site meet on a regular basis and work toward establishing a common set of objectives by which they can manage as cooperatively as possible. All the units are working on specific plans that tie to their management plans that will address ways to minimize various impacts. These include plans for vessel management, backcountry and wilderness management and commercial services. These plans and associated management policies will lead to a set of guiding principles for overall site management. Additionally, an extensive research program provides managers with the best information for their decision making. The managers of the site have been able to achieve partnership relationships with local groups for the judicious use of park resources in a traditional manner.

Re-establishment of the sustainable relationship that Southern Tuchtone had with the lands within Kluane National Park and Reserve through the use of Aboriginal place names, cultural camps, spending time on the land with First Nations elders, and other activities that encourage First Nations to use the park as part of their traditional territory will contribute to the ecological health of the park and the World Heritage Site. Re-establishment of and use of First Nation knowledge as an integral part of the resource management process will contribute to the ecological health of the park and World Heritage Site, and provide park managers a better understanding of the recognized World Heritage values.

PROPOSED FUTURE ACTION(S)

7c Approved future actions

The managers of the World Heritage Site plan to further the maintenance and protection of the joint properties in the following ways:

• Continue exploring and participating in collaborative training exercises and exchanges where possible, i.e. continued joint raft training exercises, collaborative natural and cultural resource management workshops;

• Continue to develop and build their inter-agency network of biologists, planners, visitor services, cultural resource management, and interpretive staff specialists;

• Continue to seek opportunities to formalize the international management of the Tatshenshini-Alsek Rivers through private and commercial permit systems, including scheduling, commercial allocation, fee collection, reporting of problem wildlife occurences, etc;

• Draft a set of common management principles and objectives for the World Heritage Site;

• Continue the development of the common World Heritage Site base map for all four parks;

• Continue to investigate the establishment of a moratorium on the clearing of the international boundary between Canada and the United States;

• Continue to seek a common name for the combined World Heritage Site;

• Continue to update the wording and replacement of the World Heritage Site plaques;

• Continue to explore and collaborate on trans-boundary research efforts such as a watershed based Tatshenshini-Alsek Visitor Survey, the watershed based campsite impact and risk assessment project, the spruce beetle infestation study, etc;

• Continue to plan and host biannual inter-agency management meetings addressing common issues and opportunities;

• Continue to explore adding a cultural criteria which recognizes the significant cultural values inherent to the World Heritage Site;

• Facilitate relationships between Alaskan and Yukon First Nations by including them in the bi-annual site managers meetings; and

• Raise the profile of World Heritage Site name in order increase the area's status. The existence of the site can be used as a marketing tool for the surrounding communities to attract visitors.

RESPONSIBLE IMPLEMENTING AGENCY(IES)

7d Agency(ies) responsible for implementing actions

Agency Name: U.S. National Park Service Alaska Region
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Agency Name: Parks Canada
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Agency Name: Ministry of Water, Land and Air Protection
Name: Markides, Hugh
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TIMEFRAME FOR IMPLEMENTATION

7e Timeline for implementation of actions

Implementation of the noted actions will take place over the coming years, through ongoing planning and cooperation amongst site managers.

NEEDS FOR INTERNATIONAL ASSISTANCE

7f Anticipated Requests for International Assistance

It is not anticipated that International Assistance, through the World Heritage Fund, will be requested.

ACTIONS STATE PARTY INTENDS TO REQUEST FROM WORLD HERITAGE COMMITTEE

7g Potential Decisions for the World Heritage Committee

- Change to criteria for inscription
- Proposed new Statement of Significance, where previously missing

Signatures on behalf of State Parties:

For Canada

_____

Christina Cameron
Director General, National Historic Sites
Parks Canada
and
Head of the Canadian Delegation to the
World Heritage Convention

Date_____

For the United States of America

_____

Paul Hoffman
Deputy Assistant Secretary
Fish and Wildlife and Parks
U.S. Department of the Interior

Date_____