

Ten Year Monitoring Report for the Alsek River as a Canadian Heritage River

Prepared for

The Canadian Heritage Rivers Board

May 1997

Executive Summary

In 1986, the Alsek River in southwest Yukon was designated a Canadian Heritage River based on its outstanding natural heritage values. The designated Alsek lies entirely within Kluane National Park. Since 1986, the Alsek watershed has been the subject of additional research, the introduction of innovative co-management regimes and the settlement of aboriginal land claims (Yukon). This report reviews the original nomination values and assesses these values with respect to the Alsek over the past decade. This assessment produces a relatively positive report card on the river's heritage quality, despite some significant changes in usage along the river and within the Alsek watershed. Much of the success in maintaining the natural heritage values of the Alsek can be traced directly to existing national parks policies for wilderness parks, as well as the designation of Kluane National Park as part of a U.N. World Heritage Site, an internationally recognized designation based on the region's unique wilderness values.

The most significant change on the Alsek over the past decade has been a sharp increase in the number of river rafting expeditions descending the river every summer. In order to protect the wilderness experience for these visitors and to ensure that the natural heritage values of the river were protected, new co-management relationships were forged and new structures and procedures agreed upon by those sharing jurisdiction of the river, namely, Parks Canada and the Champagne and Aishihik First Nations. Human intrusion into the Alsek River valley has the potential to degrade grizzly bear habitat and increase the possibility of serious bear-human interactions.

Given the Alsek's siting within Kluane National Park and within the larger U.N. World Heritage Site, the designated portion of the Alsek is protected from future large-scale resource development projects, such as mineral and/or hydro power projects. Use of the Alsek River by visitors will continue to negatively impact certain wildlife species, notably, grizzly bears.

This report was prepared on behalf of Parks Canada by Champagne and Aishihik First Nations for the Canadian Heritage Rivers Board. The Champagne and Aishihik First Nations wish to acknowledge the valuable assistance and cooperation of the Kluane National Parks officials in the preparation and critique of this document.

Ten-Year Monitoring Report for the Alsek River

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Cover Photo:

Lowell Lake - hikers relax at the summit of Goatherd Mountain. The day-hike is one of the most popular features of the Alsek River raft trips and rewards visitors with a spectacular view of the Lowell Glacier. The camping area at the foot of Goatherd has been moved to a more suitable location and is now subject to one-night stay restriction, to help reduce impacts on the grizzly bear that travel through the area and in the interests of public safety.

photo: Sarah Gaunt

1. Introduction

The purpose of this report is to review the heritage values for which the river was nominated and to demonstrate whether these values have been compromised and whether or not they have been managed according to Canadian Heritage River Systems' standards. It reviews the integrity of the river resources today -- one decade after acceptance of the Alsek as a Canadian Heritage River. This report also reviews the jurisdictional changes and research and management initiatives that have taken place over the past ten years. The main body of the report discusses the more prominent changes in the use and study of the Alsek watershed over the past ten years. The Appendix outlines in tabular format changes and issues in relation to the nominated values and baseline conditions of the river's resources.

Information for this study was derived from published and unpublished sources, including consultations with Parks Canada and Champagne and Aishihik First Nations' officials.

2. Background

The Alsek River in southwest Yukon was designated a Canadian Heritage River in 1986. At that time, the Alsek region was known to the outside world as a wild and untouched land. The Alsek was considered a national treasure; one worthy of protection and proper management. Policies and procedures for designating and managing heritage rivers, like the Alsek, were still being fine-tuned in 1986.

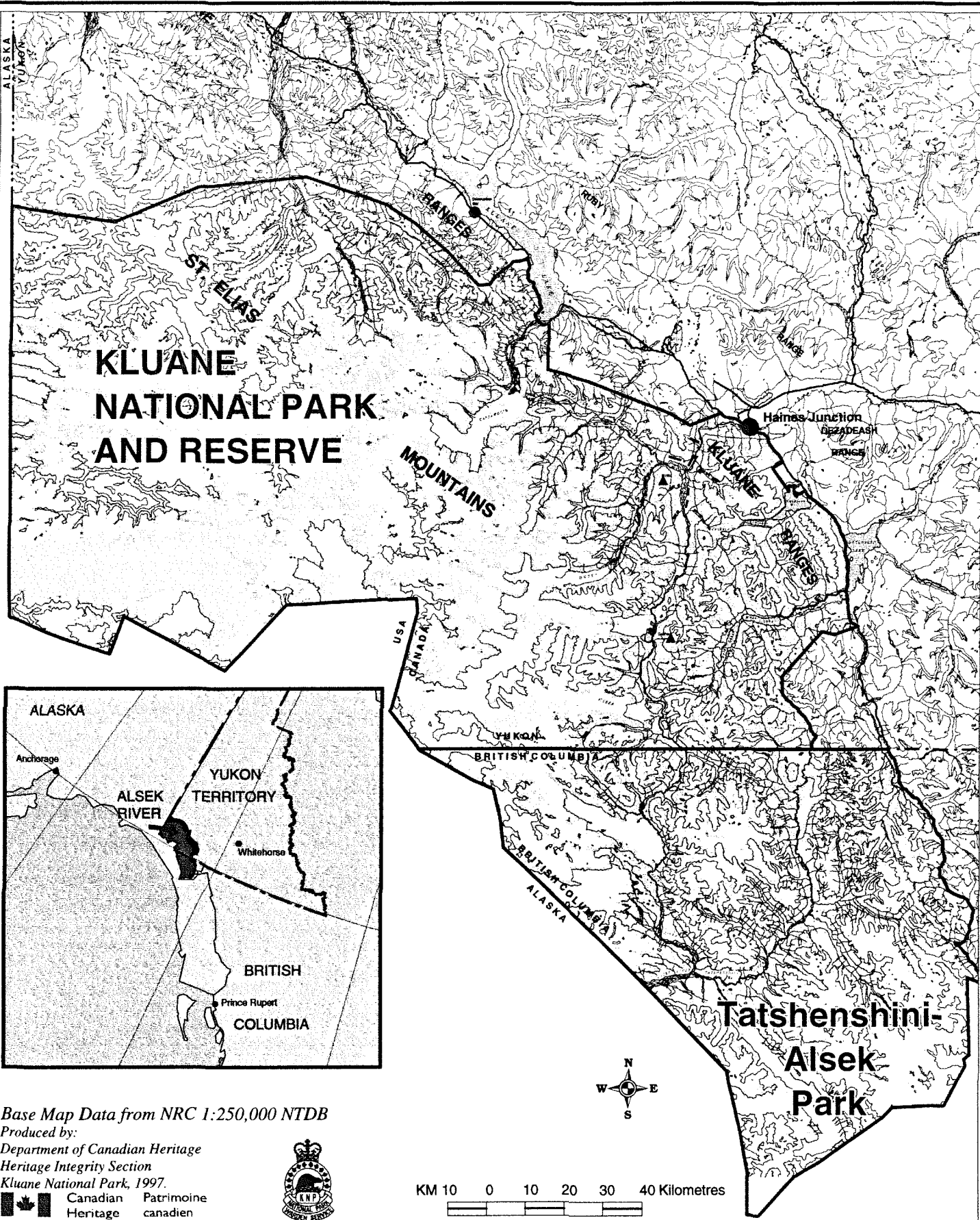
The Alsek was selected as a Canadian Heritage River candidate because of its highly significant natural resources: massive icefields, high mountain peaks, unique geologic history, coastal and interior plant communities, significant grizzly bear population, and diverse bird species. The Alsek River was also an ideal candidate because it was situated within Kluane National Park Reserve and was subject to the provisions of the Park's management plan.

At the time the Alsek was designated, the original nomination document noted:

The human heritage and recreational resources of the Alsek River valley were judged, *on the basis of the information available at this time*, to be much less significant than its natural heritage resources. (emphasis added).

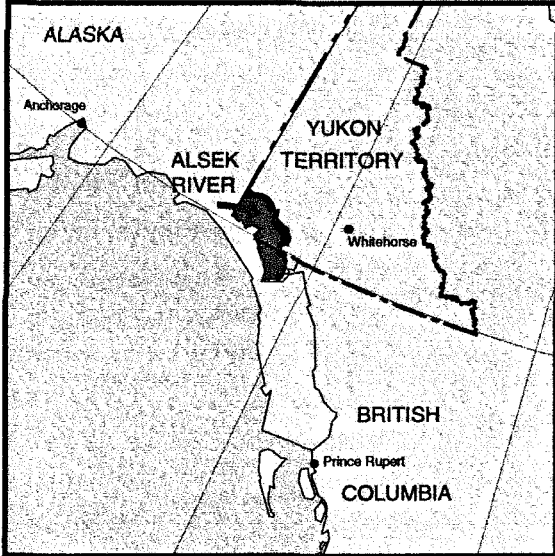
(Canadian Heritage Rivers System: Nomination Document for the Alsek River, Yukon Territory [Kluane National Park Reserve], 1984, p. 10).

The nomination did, however, anticipate an increase in the use of the recreational resources of the Alsek. Knowledge of the human heritage of the river valley has strengthened over the past decade. Archeological and ethnographic research has revealed human use and occupation in the past.



KLUANE NATIONAL PARK AND RESERVE

Tatshenshini-
Alsek
Park





Base Map Data from NRC 1:250,000 NTDB

Produced by:
Department of Canadian Heritage
Heritage Integrity Section
Kluane National Park, 1997.

Canadian Patrimoine
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ALSEK RIVER

 Park Boundary
 Road

KM 5 0 5 10 15 20 Kilometres

Base Map Data from NRC 1:250,000 NTDB

Produced by:
Department of Canadian Heritage
Heritage Integrity Section
Kluane National Park, 1997.

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Haines Junction

**KLUANE
NATIONAL PARK
AND RESERVE**

**TATSHENSHINI
ALSEK
PARK**

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3. Major Events on the Alsek River, 1986-97

The following major events that have occurred on the designated portion of the Alsek River since 1986 include:

1. Research studies
2. Increased recreational use of the river
3. Settlement of aboriginal land claims in southwest Yukon
4. New planning and management initiatives
5. International recognition of the unique wilderness values of the region
6. Impacts on Alsek watershed upstream

3.1 Research

Our understanding of the Alsek and the surrounding area has been greatly enhanced over the past decade by such research studies as: a river use survey, an environmental evaluation of the Alsek Pass, a visitor's survey, a traditional use survey, a cumulative effects assessment summary, a campground encounter risk assessment survey, a water quality monitoring study, and a goat and grizzly bear monitoring study. A synopsis of the significant research reports is produced below.

3.1.1 Cumulative Effects Assessment Summary

George Hegmann's *Cumulative Effects Assessment of Proposed Projects in Kluane National Park and Reserve (1995)* confirmed some important issues with reference to the integrity of the heritage values of the Alsek. Hegmann's study attempted to demonstrate what can occur to the natural resources of a wilderness area or park when the cumulative effects of a number of proposed projects are considered. For example, what happens to grizzly bear, mountain goat, dall sheep, moose and golden eagles when differing resource users are introduced into a wilderness environment? Hegmann identified three major activities that degraded the wilderness quality of the Alsek River valley in 1995. These included: aircraft traffic up and down the Alsek River valley and aircraft landings and take-offs on Lowell Lake; increased road and trail development into the Alsek Pass area; and, increased river rafting trips down the Alsek from Haines Junction.

Parks Canada, who commissioned the Hegmann study, was soon to impose restrictions on the number of flights into the Alsek River valley and strengthen their system of licensing and monitoring river rafting trips down the Alsek from Haines Junction. These rafters would either "take-out" at Lowell Glacier or would journey

further down the Alsek to Turnback Canyon in British Columbia before “taking-out”. In either case, aircraft is required to airlift the river rafters and their gear back to Haines Junction, or elsewhere.

An identification of long-term effects of other types of activities within the Alsek watershed and the Kluane National Park, in general, were produced in Hegmann’s report. The impacts of these activities on the natural environment, including terrestrial and aquatic resources, was also outlined.

3.1.2 Initial Environmental Evaluation for the Alsek Pass Project

The most recent environmental evaluation of the Alsek Pass project (*Initial Environmental Evaluation for the Alsek Pass Project, 1996*) revealed that the cost of constructing a 5 kilometer road from the Alaska Highway into a proposed day-use facility at Alsek Pass within Kluane National Park Reserve was prohibitive. Road access to the proposed day-use site bore serious environmental concerns. The possibility of flash flooding raised serious doubts about the costs of maintaining the road. The site itself was considered inhospitable – highly exposed to strong winds funneling down the Kluane front ranges. Although this proposed project had some positive socio-economic impacts for residents of the region, the costs associated with constructing and maintaining such a facility and access link out-weighed the marginal socio-economic rewards.

The environmental evaluation also pointed out that increased human access to the Alsek Pass area would have imposed a negative impact on wildlife, notably, grizzly bear. Public pressure against the project was also instrumental in the abandonment of the proposed road and day-use facility.

3.1.3 Kluane Grizzly Bear Study

Since 1992, the ecology and long-term viability of grizzly bears in Kluane National Park have been researched using the combined expertise of Kluane National Park personnel and The Centre for Applied Conservation Biology at the University of British Columbia. The project was designed to study the potential effects of increased access into the Park, the effects of increased activity in the area bordering the Park, and the concerns about the long-term viability of the grizzly bear population.

This annual research project has been collecting baseline data on the grizzly bear’s home ranges, movements, spatial distribution, seasonal habitat use, and population dynamics. It also has monitored and assessed the effects of development on grizzly bears, habitat selection, and bear-human interactions. The findings of each year’s research is produced in an annual report.

Findings to date suggest that increased human activity within the Park and along

its borders will lower the grizzly bear population. Normally, the peak use of the Alsek River valley by grizzly bears coincides with the peak flow of river rafters down the Alsek. This heightens the potential for bear-human conflict.

In an effort to reduce the negative influence of human activities on the resident grizzly bear population, a one-night camping limit has been imposed by the Park managers on river rafting parties between the mouth of the Kaskawulsh River and the Lowell Glacier.

This research group plans to undertake DNA studies of grizzly bears, identify an ecosystem-wide bear management regime, continue to examine human-bear conflicts, identify bear displacements due to human activities (e.g., rafting, camping, hiking), model alpine access and denning areas using GIS (geographical information systems), analyze grizzly bear mortality rates, and explore resource management plans with First Nations.

3.1.4 Alsek River Archaeological Surveys and Traditional Use Study

The Alsek is the only river in the Canadian Heritage Rivers System (CHRS) not recognized in its nomination for its human heritage values. Since 1984, our understanding of human use in the Alsek River valley has increased substantially through such research projects as *Archaeological Surveys in the Donjek, Jarvis, Kaskawulsh and Alsek Valleys, Kluane National Park Reserve (1993)* and *Alsek River / Eastern Kluane National Park Human History and Traditional Aboriginal Use Research (1997)*. The latter project marked a new level of co-operation in the research of the Park's heritage resources. It was initiated and managed by Champagne and Aishihik First Nations' Heritage Office and funded by Parks Canada. Study methods combined bibliographic research, oral research and on-site verification. One of the fundamental objectives of this study was to involve the Champagne and Aishihik First Nations membership in the project.

The traditional use study produces a traditional sites database that provides detailed information on each site's location, size, history, and significance and additional sources of information (oral and written), as well as themes for future interpretation. The Champagne and Aishihik First Nations has demonstrated leadership in compiling the first comprehensive database of ethnographic information for an area within Kluane National Park. This report provides some recommendations on ways to strengthen our understanding of the heritage values of the Alsek River valley and surrounding area, including the production of a booklet identifying First Nations' place names, traditional use and occupancy of the area, and traditional stories of the valley.

With the creation of the Kluane Game Sanctuary in 1943, First Nations residents of

the Alsek River valley, and surrounding area, were prohibited from pursuing their seasonal rounds of hunting, fishing and trapping. The *Alsek River / Eastern Kluane National Park Human History and Traditional Aboriginal Use Research (1997)* enabled members of the Champagne and Aishihik First Nations to refamiliarize themselves or become acquainted with a formerly "lost" traditional territory.



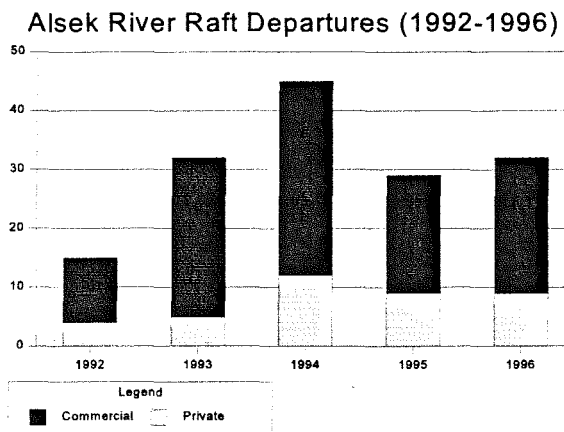
Traditional Use Study: Investigating obsidian sources high above an Alsek River tributary (above) and inventories of more recent structures like an abandoned mining and trapping cabin (below) at Sugden Creek offer clues to tracking human use and occupation of the Alsek River Corridor. A traditional sites database is a key product of this research and will help direct future research efforts

photos: Sarah Gaunt



3.2 Increased Recreational Use of the Alsek

The Alsek, like its major tributary, the Tatshenshini, has experienced a rapid rise in the number of river rafting expeditions since 1986. In the mid-1980s few descended the Alsek to its confluence with the Tatshenshini and on to Dry Bay, Alaska. As the number of river rafters descending the Alsek increased during the late 1980s and into the 1990s, the controversy over whether the giant copper mine at Windy Craggy (B.C.) should proceed or not was being assessed by the Government of British Columbia. Enormous pressure from groups such as Tatshenshini Wild and river rafting interests was being heard in Victoria. The mining/park debate at Windy Craggy sparked international attention in the early 1990s. As a result of this controversy large numbers of tourists, particularly river rafters were drawn to explore the Alsek and Tatshenshini Rivers. By 1994, some 43 rafting permits were issued to parties descending the Alsek (Figure 1). In just three years, the number of permits tripled.



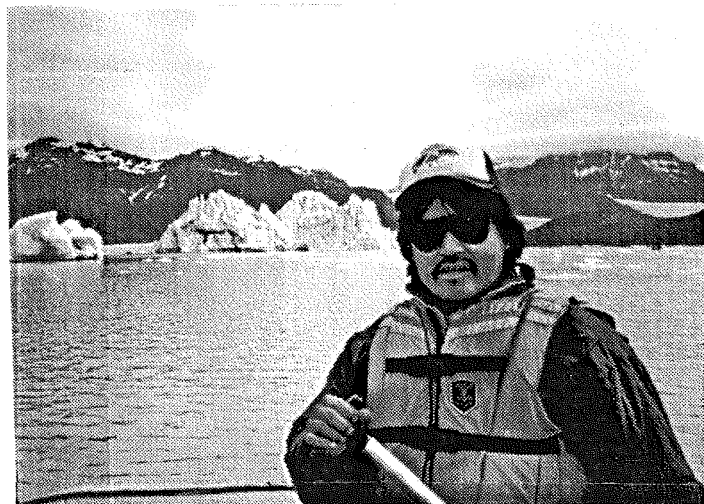
from "Alsek River Raft Use - 1996" (briefing note), Parks Canada

At the moment, Kluane National Park is finalizing a visitors' survey and camping risk assessment of the Alsek River corridor. These are related directly to the river rafting activity that occurs within the corridor each summer.

This increased use of the Alsek and the Tatshenshini by river rafting parties, commercial and private, required management policies and procedures. Parks Canada, the U.S.

As demand for backcountry recreation increases, limits have been placed on rafting, including the number of raft departures, commercial vs private permitting allocations, and closure of a camping area at the base of Goatherd to reduce impact on grizzly population.

photo credit: Michael Jim



National Parks, B.C. Parks, Yukon Territorial Government, and the Champagne and Aishihik First Nations established an inter-agency river rafting management regime to control and monitor expeditions down the Alsek and Tatshenshini Rivers. To date this management system has been a loosely-based cooperative effort, however, this approach may be formalized in the future.

3.3 Final Land Claims Agreement in Southwest Yukon

At the time the Alsek was designated a Canadian Heritage River, aboriginal land claims had not been finalized in southwest Yukon. By 1993, the Champagne and Aishihik First Nations had ratified their land claim agreement with the Government of Canada and the Government of Yukon.

Through the *Champagne and Aishihik First Nations Final Agreement (1993)*, the First Nations affirmed their traditional harvesting rights in Kluane National Park. The Champagne and Aishihik First Nations will co-manage the resources of the Park with Parks Canada. Under the Agreement, the Champagne and Aishihik First Nations have special economic opportunities to participate in such activities as commercial river rafting, the construction of trails, and the construction and maintenance of roads. The Agreement also provides the Champagne and Aishihik First Nations with an opportunity to interpret aboriginal history, including the naming and renaming of traditional sites and areas within the Park.

3.4 Planning and Management Initiatives

The Alsek River and its tributaries pass through many jurisdictions. Its major tributaries in Yukon are the Dezadeash and Kaskawulsh Rivers which join to form the Alsek in Kluane National Park. Once the Alsek flows south into British Columbia, the Tatshenshini, another major tributary of the Alsek, joins the Alsek immediately east of the Alaska border cutting through the high coastal ranges to Dry Bay, Alaska. The entire length of the Alsek in Yukon and British Columbia lies within the traditional territory of the Champagne and Aishihik First Nations.

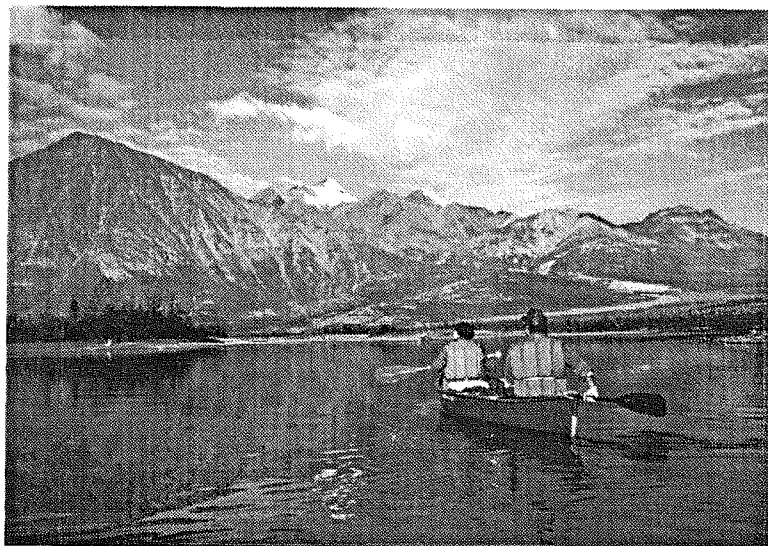
Traditional Place Names
Research and mapping of traditional place names is a crucial part of traditional use research. Aze', shown here, is the Southern Tutchone name for Profile Mountain.

photo: Sarah Gaunt



The Dezadeash River system is a major tributary of the Alsek River. Most of the system lies outside Kluane National Park

photo: Sarah Gaunt



As noted above Kluane National Park will be co-managed by Parks Canada and the Champagne and Aishihik First Nations, per the *Champagne and Aishihik First Nations Final Agreement (1993)*. At the moment, Parks Canada assumes the lead role in the management of the Alsek River as a designated Canadian Heritage River.

In 1995 the Province of British Columbia and the Champagne and Aishihik First Nations signed an agreement to co-manage the newly created Tatshenshini-Alsek Park. Both the Alsek and the Tatshenshini Rivers in British Columbia are being considered for nomination as Canadian Heritage Rivers by the Province of British Columbia. The Champagne and Aishihik First Nations assumes the position that outstanding aboriginal land claims in this area require resolution before any further river nominations are considered.

3.4.1 Kluane National Park Management Plan and Management Board

Parks Canada published a *Management Plan for Kluane National Park Reserve* in 1990. This plan was to be reviewed by 1995. Due to administrative changes in Parks Canada and implementation of the *Champagne and Aishihik First Nations Final Agreement (1993)*, the five-year review provision has been delayed. This review is expected to commence shortly.

The *Champagne and Aishihik First Nations Final Agreement (1993)* specified that the First Nations had a 50% representation on a new Kluane National Park Management Board. This Board will direct the forthcoming park planning and management processes. The Kluane National Park Management Board is now in operation.

Under the *Champagne and Aishihik First Nations Final Agreement (1993)*, the Champagne and Aishihik First Nations have been allocated 25% of the river rafting

opportunities on the Alsek River between Haines Junction and the Lowell Glacier. River rafting permits for this segment of the Alsek River are issued by Parks Canada officials in Haines Junction.

Through the *Champagne and Aishihik First Nations Final Agreement* (1993) a no hunting zone has been established for a three-year trial period along the Alsek River in Kluane National Park.

3.4.2 Greater Kluane Regional Plan

In 1992, the *Greater Kluane Regional Land Use Plan* was published. This planning exercise was conducted prior to the completion of the *Final Agreement* between the Champagne and Aishihik First Nations and the federal and territorial governments. All three parties participated in this preparation of this plan, along with the Council for Yukon Indians and other local First Nations. The Champagne and Aishihik First Nations was the only party to officially ratify the plan. The plan is currently being reviewed by the federal and territorial governments with a view to approval and implementation.

Despite lack of formal approval by the federal and territorial governments, the plan has been used as a guideline for land use in the region. The plan covers most of the upper watershed of the Alsek River.

3.4.3 Tatshenshini-Alsek Park Agreement

In 1996 the Champagne and Aishihik First Nations signed an agreement with the Province of British Columbia to co-manage the newly created 958,000 hectare Tatshenshini-Alsek Park in northwestern British Columbia. The Park was created within a portion of the traditional territory of the Champagne and Aishihik First Nations currently claimed under the British Columbia treaty-making process.

Under the current co-management agreement, the Champagne and Aishihik First Nations gained the right to solely interpret and depict aboriginal history and traditional land use, including the right to use aboriginal place names for physical and human landmarks within the Park. Economic opportunities, including the tendering of Park operational and maintenance contracts, were also granted to the Champagne and Aishihik First Nations.

The co-management regime is being directed by a Park Management Board comprised of equal representation of the Province of British Columbia and the Champagne and Aishihik First Nations. The Board consists of representatives of each government and the Board members operate in the best interests of the Park.

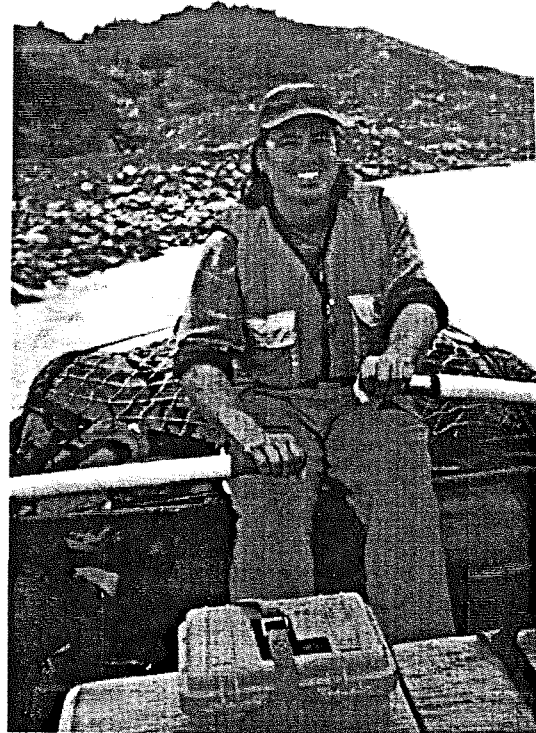
Specific economic development opportunities for Champagne and Aishihik First Nations along the Alsek and Tatshenshini Rivers in British Columbia remain to be

negotiated as part of a final land claim agreement in this region.

3.4.4 International Recognition and Management of the Alsek

In 1979 Kluane National Park Reserve (Yukon) and Wrangell - St. Elias National Park (Alaska) were jointly designated as a World Heritage Site by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). Since then, Glacier Bay National Park and the Tatshenshini-Alsek Park in British Columbia have been added to this site to form the largest protected wilderness area in the world. The Champagne and Aishihik First Nations drew attention to the cultural values of the new Tatshenshini-Alsek Park designation; a first for the inclusion of cultural values with the natural values of this wilderness area.

With increased international attention to the Tatshenshini-Alsek region of British Columbia in the late 1980s and early 1990s, due largely to a proposal to develop one of the world's largest copper mines in the middle of a pristine wilderness area, public pressure mounted at home and abroad to have the Tatshenshini-Alsek region protected from industrial development.



Cooperative management in action. Tatshenshini-Alsek Parks warden trainee takes the oars on a river managers' research trip on the Alsek in July 1996.

photo: Sarah Gaunt

International media attention was drawn to this region by environmental and commercial river rafting interests. River rafting expeditions took prominent politicians, writers, journalists, and photographers down the Alsek and Tatshenshini. These trips assisted in raising the profile among decision-makers of the need to preserve the wilderness values of the region, including the natural values of the Alsek and Tatshenshini.

As a result of the international attention, hundreds of river rafting enthusiasts were drawn to the Alsek and Tatshenshini Rivers. By 1989, Glacier Bay National Park officials required permits of river rafting parties who "took out" at Dry Bay, Alaska, after descending the Alsek and/or Tatshenshini Rivers. Parks Canada, BC Parks, Yukon Government and the Champagne and Aishihik First Nations later recognized the value of Glacier Bay's permit system as a means of properly managing rafting

expeditions down the Alsek River.

As a result of Glacier Bay's river management initiative, Parks Canada, BC Parks, Yukon Government and the Champagne and Aishihik First Nations have participated in establishing annual quotas and identifying allocations for commercial and private river rafting interests wishing to use the Alsek and Tatshenshini Rivers. A set of river management guidelines have been cooperatively developed by agencies sharing responsibility for managing the Alsek and Tatshenshini. One of these management guidelines has been the mandatory removal of human wastes. A repository has recently been built at Dry Bay to dispose of these human wastes at the end of a rafting trip. River management efforts like this will eventually lead to an international river management plan.



River managers of the Alsek and Tatshenshini have met periodically since the early 1990s to discuss issues and management strategies as they relate primarily to river rafting expeditions. Inter-agency participation in the management of these rivers has been an effective tool in engaging the participation of the Champagne and Aishihik First Nations. Inter-agency management trips have been made down the Tatshenshini and Alsek Rivers since the late 1980s.

Interpretive staff representing Kluane National Park, Champagne and Aishihik First Nations, Glacier Bay National Park, Tatshenshini-Alsek Park, Yakutat, Tongass National Forest, and Wrangell-St. Elias National Park meet in Yakutat to discuss interpretation strategies for the region.

Sarah Gaunt

The involvement of a number of agencies in planning and managing the resources of this wilderness region, including the use of the Alsek and Tatshenshini Rivers, pose critical challenges for all agencies in the future, due largely to overlapping jurisdictions at the regional, national and international level. To date, the task of scheduling river rafting expeditions down the Alsek and Tatshenshini, from differing "put ins" and "take outs", remains a fundamental management challenge for all concerned.

3.5 Upstream Impacts on the Alsek River

To date, the impact of a range of human activities in the upper regions of the Alsek watershed have yet to be determined. Concerns over water quality and fluctuating flows remain to be investigated.

3.5.1 Water Quality

The release of sewage from the Village of Haines Junction into the Dezadeash River raised concerns about the possibility of contaminants, such as E. coli, hepatitis D, and Giardia, reaching the Alsek River. Recent water quality studies, carried out under a water quality agreement between the Province of British Columbia, the Yukon Government and the Government of Canada, have demonstrated that the Canadian Water Quality Guidelines have not been compromised on the Alsek and that the integrity of water quality in the designated segment of the river has been maintained.

3.5.2 Aishihik Lake Hydroelectric Generating Facility

During the summer of 1996, the Yukon Energy Corporation drew down the volume of water on Aishihik Lake behind the dam at Otter Falls. The impact of this move on the Alsek River downstream, in Kluane National Park, remains unknown.

For the past two years (1996-97), First Nations and non-First Nations groups have petitioned the Yukon Energy Corporation to maintain a natural range of water levels at Aishihik Lake. To date the Corporation has agreed to do so, however, the Corporation has informed the public that the costs of producing and delivering electricity in Yukon will mount if water levels cannot be drawn down.

4. Summary

This report has reviewed the significant events in the Alsek River valley and surrounding areas over the past ten years and assessed whether or not the Canadian Heritage Rivers standards have been compromised. For the most part, the negative impacts of human activity along the designated portion of the Alsek River (entirely within Kluane National Park) have been marginal. River rafting expeditions, increased air flights up and down the valley, and the occasional hiking/camping party into the Park have had the net affect of encroaching on grizzly bear habitat. Human-bear interaction problems remain one of the more significant issues to be dealt with by river and parks managers.

Future development and settlement in the upper Alsek watershed have the potential to compromise the Canadian Heritage River System's guidelines. The key concerns are associated with water quality and volume of flow.

Cooperative river management regimes have been established in an effort to maintain the natural quality of the Alsek and surrounding areas within Kluane National Park. The Alsek is an international river that spans two countries, a province, a state, a territory and traditional territories of the Champagne and Aishihik First Nations and the Yakutat Tlingit. The inter-agency approach towards managing the Alsek River and surrounding area is anticipated to continue. This

approach is essential if the integrity of the river, as a Canadian Heritage River, is to be realized.

5. Recommendations

The Alsek River in Kluane National Park was designated a Canadian Heritage River on the basis of its natural features. Over the past ten years, preliminary ethnographic and recreation research reports have documented that the Alsek River and surrounding area may have substantive historical and recreational values.

Based on this review of the Alsek River as a designated Canadian Heritage River, the following recommendations are proposed:

1. That additional ethnographic and historic research, using oral and documented sources, be undertaken in the Alsek River valley, with special reference to documenting First Nations' toponymy and traditional use of the area to determine whether the Alsek should be renominated to include cultural heritage values.
2. That the recreational values of the Alsek be reviewed to determine whether the river should be renominated on that basis as well.

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Ray Breneman, Ecological Management Operations Coordinator, Kluane National Park and Reserve, Parks Canada, Canadian Heritage

Tom Elliot, Wilderness Management Coordinator, Yukon District, Parks Canada Canadian Heritage

Sarah Gaunt, Heritage Resource Officer, Champagne and Aishihik First Nations

Don Stone, Consultant to Champagne and Aishihik First Nations

Duane West, Ecological Integrity Coordinator, Kluane National Park and Reserve, Parks Canada, Canadian Heritage

The following appendix is based on two sources: the baseline condition of the Alsek River's nomination values, as reported by the Canadian River Heritage System (CHRS) in 1984; and the *Activity Report Checklists* submitted each year to CHRS by the River's managing agency, Parks Canada. These *Checklists* identified changes and potential impacts to those values from activities in the Alsek River Watershed.

1. CONDITION OF OUSTANDING RIVER VALUES AT THE TIME OF DESIGNATION TO THE CANADIAN HERITAGE RIVERS SYSTEM

1.1. NATURAL HERITAGE VALUES OF THE ALSEK RIVER

Criteria	Baseline Condition of Values in 1984	Identified Impacts on the River and their Mitigation
1.1.1. <u>Representation of Ongoing Glacial, Fluvial and Aeolian Processes</u>	The great diversity of representative glacial, fluvial, and aeolian features concentrated in an undisturbed, natural area of international significance.	Global warming has the potential to accelerate the rate of glacial wastage and/or hasten glacial surges; this could physically impact the morphological structures of the Alsek River valley.
Glacial activity — Lowell and Fisher Glaciers:	<ul style="list-style-type: none"> - The Alsek River is the major south-west drainage conduit for the glaciers in Kluane. - the Alsek Valley glaciers and glacier systems are considered to be internationally significant. - the valley glaciers are the largest and longest in Canada - the Lowell is an active glacier: calving is visible and glacial movement is measurable. - the advance of the Lowell glacier created Recent Lake Alsek and landlocked the Kokanee salmon in Kathleen Lake — a good, observable example of the effects of glacial activity on river morphology and species development. - heavy snowfall here is sufficient to maintain the icefields and glaciers which feed the river from the west side of the valley. - most of the geomorphic features found in the valley are due directly or indirectly to glacial activity. These features include: <ul style="list-style-type: none"> - outlet valley glaciers; - lake beaches created by repeated advances of the Lowell glacier in recent times; - evidence of Recent Lake Alsek extending 84 km up the Alsek and Dezadeash River systems; - outwash covered slopes; - neoglacial lakes and stream terraces. 	

Criteria	Baseline Condition of Values	Identified Impacts on the River and their Mitigation
Braided river channels — Alsek River Source	<ul style="list-style-type: none"> - The braided channel is a very broad, natural channel reaching widths up to 1 km and extending for 16 km downstream from the Alsek Source area near the confluence of the Kaskawulsh, Dusty and Dezadeash rivers near Profile Mountain 	
Aeolian processes — Alsek Dunes	<ul style="list-style-type: none"> - Immense dust and sand storms in the valley have produced the Alsek Dunes along the north-east side of the valley complex, providing an internationally significant demonstration of aeolian processes characteristic of mountain environments. 	
<u>1.1.2. Physiographic and Landscape Uniqueness</u>	The wilderness quality and spectacular beauty of this highly diverse, subarctic, forested environment rated it highly in terms of national significance.	Cumulative impacts of activities outside the designated area and steadily increasing visitor traffic in the valley itself constitute a potential threat to its pristine character.
Lowell Glacier	<ul style="list-style-type: none"> - Spectacular, unimpeded views of the Lowell Glacier are provided along the Alsek corridor. - Deep valley glaciers, common in the upper Alsek, have created deep tributary valleys in the vicinity of the Lowell Glacier. 	
Braided channel pattern — Alsek River Source	<ul style="list-style-type: none"> - This segment of the river is 16 km long, very wide and completely natural - A scenic, broad, natural forested area surrounds the Kluane and St. Elias Mountain regions in this area. - Evidence of Recent Lake Alsek is found here in sand and gravel beaches, alluvial fans, and river terraces. 	
Views of Alsek Pass U-shaped valley	<ul style="list-style-type: none"> - This area is completely natural, with unobstructed views for great distances. 	<p><u>1994-1995</u> Aesthetic quality of views in the Alsek Pass have been degraded due to the spruce bark beetle outbreak in the Kluane Game Sanctuary.</p> <p><u>1995-1996</u> Managers from Parks Canada (CPS) and the Department of Indian Affairs and Northern Development (DIAND), the local First Nations and the Yukon public have decided against large scale forestry interventions in the Kluane Game Sanctuary: they chose instead to allow natural processes to continue.</p>
Views of Icefield and Kluane Ranges, Northern Coast Mountains	<ul style="list-style-type: none"> - Kluane's glaciers are part of the St. Elias Icefields, the largest, non-polar icefields in the world. - The Icefield Ranges are the second highest coastal range in the world and Mount Logan is the tallest mountain in Canada. - The ranges are precipitous with elevations up to 3,000 m. - The designated area is bounded by the viewline of the Icefields to the west and the Kluane Ranges to the east. - The environment is completely natural and views are unobstructed by man-made impacts in all directions. 	<u>Other</u> Flightseeing has increased steadily throughout the 1990s.

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1.1.3. Biotic Uniqueness	The Alsek River valley is home to some of Canada's largest and healthiest grizzly bear populations. Wolves, moose, goats and Dall's sheep are also found here. The rare wolverine and trumpeter swan are also present.	Increasing use of the Alsek River corridor by recreationalists, such as river rafters and hikers raises concerns for how such activities will impact on the habitats, populations and behaviour of large mammals; especially grizzly bears. With the establishment of Tatshenshini-Alsek Park south of Kluane National Park in 1993, these Canadian parks were joined with Glacier Bay and Wrangell St. Elias National Parks in the US to become the largest international protected area in the world. As such, more visitors may be attracted to the region.
Grizzly bear population and habitat	<ul style="list-style-type: none"> - The Alsek valley provides a completely natural, undisturbed habitat for the largest stable population of free-roaming grizzly bear in Canada. - The number of grizzly was estimated at more than 600 individuals in the early 1980's. - Grizzly habitat is protected in a Special Preservation Zone within Kluane. 	<p>1991-1992 Parks Canada's response to concerns about impacts on grizzly bear habitat and numbers was to enlarge Special Preservation Zones for grizzly bears in the 1990 Management Plan and to initiate a grizzly bear study.</p> <p>1993-1994 Parks Canada began to more actively monitor rafting use of the Alsek and discontinued a feasibility study of motorised boat use</p> <ul style="list-style-type: none"> - The Alsek River valley is a "bear corridor", and increased recreational use could potentially impact bear behaviour. This raises public safety concerns at popular campsites in the valley. As well, increased human presence could impact grizzly habitat and numbers. <p>1995-1996 A Cumulative Effects Assessment (CEA) of Kluane National Park/Reserve concluded that increasing, unregulated use of the area could lead to the decline of grizzly populations.</p> <ul style="list-style-type: none"> - Parks Canada relocated a rafting campsite situated on a well-used bear trail at Goatherd Mountain.
Bird Species	<ul style="list-style-type: none"> - Kluane is noted for a high diversity of avifauna. Scoter, merganser, harlequin duck, mallard, teal, snow goose, and sand-hill crane have been recorded, infrequently, on park rivers. Brewer's sparrow, willow ptarmigan, whimbrel, golden plover and Smith's longspur are more common, on tundra in the alpine and sub-alpine areas of the Alsek valley. The region provides natural habitat for golden eagle, hawks and owls. - A portion of the western coastal range and breeding area of the rare trumpeter swan is found in this region. 	<p>1990-1991 The first reporting of nesting trumpeter swans in the Alsek River Watershed was in the Dezadeash Wetlands in 1989. A rare species, the pair nested on the Dezadeash wetlands and raised 2 cygnets. The only previous sighting of trumpeters in Kluane National Park had been at Alder Creek.</p> <ul style="list-style-type: none"> - Increased recreational and other human uses of the watershed and surrounding area raises a variety of concerns for the viability of these fragile populations. There are also concerns that Haines Junction sewage could impact on water quality in the wetlands. (see Management Agency Research and Planning) <p>1993-1994 Two nesting pairs of swans reported on the Dezadeash Wetlands. Their presence may raise public awareness of the natural heritage values of the Alsek.</p> <ul style="list-style-type: none"> - Upstream impacts from the Aishihik Lake hydro facility have raised concerns about potential changes in the vegetation composition and habitat value of the wetlands from fluctuating water levels. - The effects of the above changes in land use could have an impact on bird habitat in the designated area.

Criteria	Baseline Condition of Values	Identified Impacts on the River and their Mitigation
Mammals	<ul style="list-style-type: none"> - Many large mammals, besides grizzly bear, are native to this northern mountain environment. These include: wolf, mountain goat, the rare wolverine, Dall's sheep — part of the single largest group in the world — fox and brown lemming, the latter representing a significant range extension. - The Alsek valley provides part of the critical habitat for wolf and mountain goat populations in this region. 	<p>1993-1994 The Aishihik/Kluane Caribou Recovery project wolf kill likely reduced the resident wolf population in the Alsek Valley.</p> <ul style="list-style-type: none"> - Goathead Mountain is a busy hiking destination. The impacts of human use of the area on the goat population are unknown.
Coastal and arctic vegetation mix	<ul style="list-style-type: none"> - Profile Mountain: Coastal and northern vegetation systems overlap here in the form of middle alpine and subalpine ecosystems, particularly shrub birch (<i>Betula glandulosa</i>) and white spruce krummolz (<i>Picea glauca</i>). The concentrated variety of undisturbed, subarctic vegetation patterns found on Profile Mountain is unique in North America. 	
Coastal and alpine vegetation mix	<ul style="list-style-type: none"> - Goathead Mountain: This vegetation mix is protected within a Special Preservation Zone in Kluane. 	
Lower Alsek Valley plant communities	<ul style="list-style-type: none"> - The lower valley contains a concentration and variety of undisturbed plant communities which are uncommon elsewhere in the Yukon. Several habitats here provide the best representation of these plant species in Kluane. - The lower valley is protected within a Special Preservation Zone in Kluane. 	
Siberian sedge (<i>Carex subulosa</i>)	<ul style="list-style-type: none"> - An almost unique occurrence of this species is found in Alsek Pass, one of only two locations where it is found in North America, the other being at Carcross, Yukon. The plant is native to the semi-stabilised sand dunes near the junction of the Dezadeash, Kaskawulsh and Alsek Rivers. 	

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1.2. RESOURCE INTEGRITY	<ul style="list-style-type: none"> - The Alsek flows uninterrupted for 250 km through northern BC, across Alaska and into the Pacific Ocean. - The environment is pristine and natural. - There are no human impacts on key ecosystem elements. - There are no human impacts on the nominated area's outstanding natural features. Most access to the park's interior is by air charter for scenic viewing tours on sites identified by the park superintendent. A park-use permit is required for overnight expeditions into the park. - The water regime in the nominated area is unimpeded. - No ecological impacts are noted from upstream impoundments. - There are no downstream impoundments. - There are no roads in the river corridor. The only interior road access is a rough track to Alsek Pass suitable for 4-wheel drive vehicles which is used for park interpretive tours only. Travel restrictions may be imposed at any time by the superintendent. - Access to the river is highly restricted. The park interior may be reached by rafting or kayaking the Dezadeash River or travelling the Jarvis Creek and Kaskawulsh rivers downstream to the Alsek, but this latter route is extremely difficult. Access by hiking great distances across the park interior from the Kathleen, Bates and Mush lakes area is also possible. - The only campground is at Kathleen Lake, several km by foot to the Alsek corridor. There are no facilities along the Alsek. - Visitors to the interior are very few, perhaps less than 100 in any year. Major interpretive facilities are located several kms from the river along the highway — at Haines Junction and Sheep Mountain, where together, 64,501 visitors were recorded in 1984. - The aquatic ecosystem appears to be totally natural and intact. - The water is virtually uncontaminated. - The river corridor is 90 km long and is located entirely within Kluane National Park Reserve. As such it has legislative protection under the National Parks Act. - The Kluane Game Sanctuary provides an additional 	<p>1984-1985 Alsek nominated as a Canadian Heritage River (CHR). 1985-1986 Alsek designated a CHR in Haines Junction ceremony. 1993-1994 Tatshenshini-Alsek Park declared a Class A British Columbia Park. 1993-1994 Glacier Bay National Park named as UNESCO World Heritage Site. 1993-1994 Environmental Impact Assessment (EIA) of Aishihik dam. Fluctuating water levels could affect the vegetation composition and habitat value of the Dezadeash Wetlands. Major changes may already have occurred during construction and early operation of the hydro facility. No baseline data exists for pre-dam conditions. 1994-1995 Tatshenshini-Alsek added to the UNESCO World Heritage Site made up of the three other St. Elias Mountain parks: Kluane National Park; Glacier Bay National Park; and Wrangell-St. Elias National Park.</p> <ul style="list-style-type: none"> - All these actions raised the profile of the river system and with it the Alsek. When it was designated, the Alsek was seen as unnavigable and obscure. Now the Alsek is widely, even internationally, known as a prime wilderness rafting destination. <p>1995-1996 Champagne and Aishihik First Nations participated in background studies for the relicensing of the Aishihik Lake facility.</p> <ul style="list-style-type: none"> - The Environmental Impact Assessment (EIA) of the proposal to modify the operations of the Aishihik Power Dam on the Aishihik River, a headwaters tributary of the Alsek, has raised concerns about water levels in the Dezadeash wetlands, specifically about: <ul style="list-style-type: none"> - potential changes in the vegetation composition and habitat value of the wetlands from fluctuating water levels. - The traditionally close relationship between Coastal and Interior cultures who formerly had strong trading partnerships was revitalised by visits and meetings this year. <p>Other¹In the summer of 1994, the Spruce Bark Beetle Outbreak in the region raised significant concerns. The community of Haines Junction has been very involved in decisionmaking on the issue and the latest development (1997) has been the fear that fire will sweep through the subdivisions on the forest edge of town. The plan is to build a firebreak around one of the most threatened areas and perhaps do some selective cutting on the properties themselves.</p> <p>General² Increasing use due to rafting activities is changing the quality of the wilderness aesthetic on the river and development activities outside Kluane National Park may induce significant land use change.</p>

¹ This category addresses other impacts not chronicled in the *Activity Description Forms*, but nonetheless significant.

² This category is made up of a summary and general discussion of the impacts and changes to values over the ten year history of the Alsek as a CHR.

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Resource Integrity (cont'd)	<p>buffer around the park reserve.</p> <ul style="list-style-type: none"> - The location of the Alsek in the sanctuary and in the park reserve has kept it free from human influences such as hunting and fishing, allowing natural processes to continue undisturbed for decades. - Many of the area's outstanding natural values are protected within Special Preservation Zones. The representations of these values — Lowell Glacier, Goatherd Mountain, the Lower Alsek River Valley, Recent Lake Alsek, and the braided source of the Alsek River — are in relatively complete form within the nominated area. - The river corridor is located in the Kluane/Wrangell- St. Elias World Heritage Site established by UNESCO in 1979. Future management direction presented in the 1980 Park Management Plan for Kluane indicates that most of the Alsek Valley is to be managed as a "Special Preservation Zone" with resource preservation as the primary objective. The remainder of the valley is to be managed as a "Wilderness Zone" to preserve the natural resources and wilderness character of the environment. It is therefore unlikely that the Alsek River Valley will be subjected to any park development which would result in negative environmental influences from human impact. 	<ul style="list-style-type: none"> - Access into the backcountry is still fairly restricted. Since mining activity in the park ended in the mid 1970s, the landscape has been undisturbed by industrial development. The old mining roads now provide excellent access by hikers, bicyclists, 4-wheel vehicle drivers. - The trail network, comprised mainly of old mining roads is kept clear of willow, alder and other obstructions by a trail crew. This helps hikers to spot bears from a distance and avoid them. As well, a volunteer Sierra Club crew has, since 1994, built and upgraded trails at various locations in the park, most notably up to the summit of King's Throne at Kathleen Lake and on a Cottonwood Trail diversion project.

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<p>2. WATER QUALITY PARAMETERS</p> <p><u>General</u></p>	<ul style="list-style-type: none"> - The waters of the Alsek River contain slight traces of effluent from Haines Junction and from campgrounds and lodges along some of the river's tributaries, for example, the Kathleen Lake campground. - Contamination from pipeline activities and mining operations on upstream tributaries, and run-off from the highway in the form of PCB's, oil and gas are other sources of concern. - The only other potential source of degradation comes from mining operations on tributaries that originate outside the reserve. Mining operations presently occur on Jarvis Creek, 4th of July Creek, 12th of July Creek, Telluride Creek, Kimberly Creek, Ruby Creek, Garnet Creek, and some tributaries of the Dezadeash River, which flows into the Alsek River. - The effects of contaminants on the Alsek River are being monitored closely by Canadian Parks Service staff; however, little can be done to protect the Alsek tributaries outside the Park Reserve. - At present, the water quality is very high and it appears that the effects of pollution sources on the natural resources of the nominated area will continue to be insignificant. 	<p>1990-1991 CPS study on water quality in Dezadeash River tested for faecal coliforms. None detected.</p> <ul style="list-style-type: none"> - Purpose is to start the collection of baseline data for water quality in the Alsek area in order to monitor natural integrity in the area. Four studies were initiated: Inland Waters/DIAND Water Quality Study; DIAND/Wilfrid Laurier/KNPR Baseline Water Quality Study; Calgary/KNPR Giardia Study. <p>1991-1992 High management priority was put on water quality monitoring in order to ensure the preservation and maintenance in a natural state of the aquatic ecosystems and associated fauna in KNPR.</p> <ul style="list-style-type: none"> - Concerns were raised about the fragility of northern ecosystems to mining, residential and recreational uses. - Giardia is also a potential concern. - Fishing pressures increasing in the area. - The need for pristine wilderness as benchmarks for research and management was highlighted as a motivating factor in these studies. <p>1993-1994 Environmental Impact Assessment (EIA) of Aishihik dam. Fluctuating water levels could affect the vegetation composition and habitat value of the Dezadeash Wetlands. Major changes may already have occurred during construction and early operation of the hydro facility. No baseline data exists for pre-dam conditions.</p> <p>1994-1995 A water quality study was undertaken in a partnership between CPS, Inland Waters and DIAND. Conclusions reached were that:</p> <ul style="list-style-type: none"> - Review of data indicates no concerns. - Need for continued monitoring stressed. <p>1995-1996 Continuing water quality study and monitoring in partnership between CPS, Inland Waters and DIAND Water Survey.</p>
<p><u>Recreational Water Quality and Aesthetics</u></p>	<ul style="list-style-type: none"> - Huge standing waves, swift current, dangerous rapids and winds up to one hundred kilometres an hour make river travel on the Alsek extremely difficult and hazardous. No recreational touring parties have been recorded for the river, but it is estimated that there are one or two kayaking parties on the river, each year. Canoeing the river is virtually impossible, but guided raft tours are currently being considered. For all trips on the Alsek, egress downstream is by helicopter. - Recreational water quality characteristics were determined at the time of designation. <ul style="list-style-type: none"> - fecal coliforms are likely non-existent - aquatic plants do not interfere with boaters and 	<p>1994-1995 Tatshenshini-Alsek Park declared a Class A British Columbia Park and added to the UNESCO World Heritage Site made up of the three other St. Elias Mountain parks: Kluane National Park; Glacier Bay National Park; and Wrangell-St. Elias National Park.</p> <ul style="list-style-type: none"> - These actions raised the profile of the river. When it was designated, the Alsek was seen as unnavigable and obscure. Now the Alsek is widely, even internationally, known as a premiere wilderness rafting destination.

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Recreational Water Quality and Aesthetics (cont'd)	fishermen - Aesthetics: water free from floating debris and scum. - except for natural turbidity, no substances present producing objectionable colour, odour, taste or turbidity.	
<u>Aquatic Life</u>	- The river was not nominated on the basis of aquatic life. The river is muddied by large quantities of glacial debris, which combined with the human activities, appear to influence the size of the river's fish populations. At the time of designation, fishing for Arctic grayling, lake trout and other species was noted for Kluane's rivers and lakes, but no fish species were indicated for the Alsek. CPS intends to measure several parameters to establish a baseline condition for the Alsek against which future improvement or deterioration of the water quality might be tested.	<u>1991-1992</u> Fishing pressures increasing in the surrounding region and source area.

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<p><u>3. ACTIVITIES POTENTIALLY AFFECTING OUTSTANDING RIVER VALUES</u></p> <p><u>3.1.1. Managing Agency Planning</u></p> <p>&</p> <p><u>3.1.3. Managing Agency Research</u></p>	<ul style="list-style-type: none"> - Area governed by 1980 Kluane National Park/Reserve Management Plan which provided for significant increase in access into the park, including motorised access by a public transit system into Alsek Pass and jetboat/hovercraft access to the Lowell Glacier. - A biological resource inventory in place for Kluane. - Over the next 10 or 15 years, the plan was to complete a Resource Description and Evaluation, a Park Conservation Plan, and a Resource Management Strategy for Kluane. - Also planned were monitoring and documenting of the natural evolution of the park ecosystem, evaluation of the results of resource management activity, and determining the effects of human activities. - The Environmental Assessment and Review Process (EARP) was to be applied to all development, use and operational plans and projects in the park. - A visitor services plan was scheduled for completion in 1991. Other than visitor facilities at Haines Junction and Slims River, no facilities were to be allowed. - Land claim negotiations could affect Kluane's borders. 	<p><u>1988-1989</u> Public review of the 1980 management plan for Kluane National Park Reserve identified the Dezadeash/Alsek system as a significant opportunity for water based transportation. The environmental impacts of such activities were to be examined through EARP and activities with a potential detrimental impact were to be abandoned or highly controlled.</p> <p><u>1990-1991</u> Draft Management plan for Kluane National Park Reserve proposed zoning changes which would allow study of the feasibility of motorised boat tours and increased opportunities for aircraft landing at the toe of the Lowell glacier. This was balanced in the plan by the significant increase in size of the Special Preservation Zone for grizzlies in the Alsek River corridor. As well, the Alsek Pass area was targeted for the development of a visitor facility, including an upgraded access road and new hiking trails.</p> <ul style="list-style-type: none"> - Impacts of such projects were unknown on wildlife and plant communities. - Benefits were an increase in access and visitor awareness of the natural heritage values of the area. <p><u>1990-1991</u> Natural Resource Planning was pursued through several proposals for study in the Alsek area.</p> <ul style="list-style-type: none"> - Purpose was to establish baseline data on grizzly population and water quality in the Alsek area in order to monitor natural integrity in the area. Study proposals were submitted for a CPS Grizzly Bear Study; a DIAND Water Quality Study; a DIAND/Wilfrid Laurier/KNPR Baseline Water Quality Study; and a Calgary/KNPR Giardia Study. <p><u>1991-1992</u> 1990 Park Management Plan for Kluane approved. However, the access road at Alsek Pass was delayed because of lack of funding.</p> <p><u>1991-1992</u> Draft Conservation Plan completed and waiting for review.</p> <p><u>1991-1992</u> Grizzly Bear Research Project approved. Contribution agreement signed with UBC.</p> <ul style="list-style-type: none"> - Objective is to determine adequate requirements for grizzly natural integrity in Alsek Valley. <p><u>1991-1992</u> High management priority was placed on research into resource concerns and environmental impacts in the Alsek River. This action was taken in order to meet data requirements for ongoing Park Planning initiatives. The two priorities of this research were to:</p> <ul style="list-style-type: none"> - Format a resource data base for GIS applications. - Prepare a resource inventory and data base. <p><u>1991-1992</u> Another priority identified this year for immediate management attention was water quality monitoring. This was</p>

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Managing Agency Planning and Research (cont'd)		<p>necessary in order to ensure the preservation and maintenance in a natural state of KNPR's aquatic ecosystems and associated fauna. Concerns were raised about the northern fragility of ecosystems to impacts from mining, residential and recreational uses.</p> <ul style="list-style-type: none"> - Giardia also a potential concern. - Increasing fishing pressures in the area as well as the increasing public need for pristine wilderness made collecting water quality data for this wilderness river area a significant undertaking. This data will be necessary in future monitoring of impacts from local uses and activities. As well, the wilderness quality of the river is important as a benchmark for evaluating water quality in other jurisdictions. <p>1993-1994 Grizzly Bear Research continues for third year of six year program.</p> <ul style="list-style-type: none"> - Primary objective of the project is to document the utilisation requirements of grizzlies in the Alsek river valley and the potential impacts of visitor use and access. - Impact of research will be to provide a better understanding of how bears use habitat in the Alsek valley. In this way, it was hoped that conflicts and displacement of bears from critical range is minimised by increased visitor use of the valley. Ongoing research needed. <p>1993-1994 Environmental Impact Assessment (EIA) of Aishihik dam. Fluctuating water levels could affect the vegetation composition and habitat value of the Dezadeash Wetlands. Major changes may already have occurred during construction and early operation of the hydro facility. No baseline data exists for pre-dam conditions.</p> <p>1994-1995 Review of Management Plan called for under CAFN land claim agreement was initiated and will be carried out under the direction of the Co-operative Management Board for Kluane.</p> <ul style="list-style-type: none"> - This new Board will review planning assumptions and solicit public input on changes to the river as a result of increased visitor use since 1989, especially by river parties. - Largest change has been the amount of river rafting activity and aircraft access. <p>1994-1995 Two new studies were also initiated. A Cumulative Effects Assessment Study was undertaken as a pilot project to identify the cumulative impacts of local management and human use activities within and adjacent to Kluane National Park. As well, a contract was let to consultants to review the environmental implications of the proposed Alsek Pass project. These two projects were aimed to:</p> <ul style="list-style-type: none"> - assist in evaluating the possible cumulative impacts and their

Criteria	Baseline Condition of Values	Identified Impacts on the River and their Mitigation
Managing Agency Planning and Research (cont'd)		<p>potential mitigation during the upcoming Park Management Plan review. This was necessary in order to ensure that the ecological and cultural integrity of the Alsek is preserved.</p> <p>1994-1995 A third study on water quality was undertaken in partnership with CPS, Inland Waters and DIAND. Conclusions reached were that: Review of data indicates no concerns</p> <ul style="list-style-type: none"> - Need for continued monitoring recommended. <p>1994-1995 Parks Canada introduced a moratorium on the issue of commercial rafting licences for the Alsek. This was to ensure CAFN had opportunities to schedule their share of commercial trips as per the land claim agreement.</p> <ul style="list-style-type: none"> - Parks Canada implemented more formal trip scheduling guidelines for private and commercial trips in conjunction with CAFN, BC Parks and GBNP. <p>1995-1996 Park Management plan still under review by the newly constituted Kluane National Park Management Board. A scoping document was discussed and the first newsletter was in preparation.</p> <p>1995-1996 Cumulative Effects Assessment completed.</p> <ul style="list-style-type: none"> - <i>A Cumulative Effects Assessment of Proposed Projects in Kluane National Park Reserve, Yukon Territory</i> concluded that increased access such as river rafting and aircraft access have the potential to jeopardise grizzly bear and goat populations along the Alsek River. <p>1995-1996 An <i>Initial Environmental Evaluation for the Alsek Pass Project</i> was prepared by CPS and the Government of Yukon. Tourism was completed.</p> <ul style="list-style-type: none"> - The IEE concluded that development of the project has impacts that are likely to be most severe on grizzly bears. They have already been affected by existing activities and are probably declining. A final screening report is anticipated to bring down a decision not to proceed this year. - These two studies have greatly improved the quality of planning decisions in ensuring the ecological and cultural integrity of the Alsek River corridor. <p>1995-1996 Continuing Water Quality Study and monitoring with Inland Waters and DIAND Water Survey.</p> <p>1996-1997 Planning partners concluded that development of the day use area at Alsek Pass would cause unacceptably high adverse environmental effects. Grizzly bear losses would be unavoidable and mitigation measures would not be adequate to prevent long term impact on grizzly populations.</p> <p>Other CAFN undertakes traditional use and ethnohistory research in Alsek River Watershed.</p>

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<p>3.1.2. <u>Managing Agency Operations and Visitor Use</u></p>	<ul style="list-style-type: none"> - Fire management in the Alsek Valley was being planned. - Search and rescue activities were being extended to include the Alsek valley. - Grizzly bear management to avoid conflicts between park users and bears is a regular part of the Klucane operation. - A long-distance wilderness hiking trail network, using old mining roads, dry stream beds, and gravel bars was being contemplated for the park. This network was to be managed to limit human-wildlife interactions and to protect visitors from natural hazards. Designated primitive campsites were to be developed and access by public transit vehicles provided at several locations. The reservation system was to be used to control use. - Kathleen Lake campground to be expanded. - Air supported visitor activities to be allowed in 1980 park management plan. - Flightseeing encouraged. 	<p><u>1991-1992</u> Unknown impact of introducing aircraft landing at toe of Lowell Glacier. However, it was predicted that the increased ease of access of this change was likely to result in an increase in visitor use by rafters. This would reinforce a trend already well established.</p> <ul style="list-style-type: none"> - Visitation increased from 400 person days in 1990 to 1600 in 1992. <p><u>1991-1992</u> Feasibility testing of hovercraft/jet boat operations from Haines Junction to the Lowell glacier was begun by Parks Canada and local businesses.</p> <p><u>1993-1994</u> Feasibility trials of jet boat/hovercraft tours ended.</p> <ul style="list-style-type: none"> - General integrity values relating to wilderness and solitude were considered to be likely to be compromised by these activities. This could impact on both visitor experience of wilderness and grizzly bear health. <p><u>1993-1994</u> Alsek Pass Road and Day Use Area again being considered by Government of Yukon (Yukon Party), Haines Junction and CPS. Project undergoing environmental review through EARP.</p> <ul style="list-style-type: none"> - CPS recommended that the environmental review needed to address the advisability of increasing access to a known/important bear feeding and travel corridor. <p><u>1993-1994</u> 1993 was the first year that private use met the limit prescribed on the Tatshenshini portion of the river system.</p> <ul style="list-style-type: none"> - On the Alsek commercial use allocations will be fully utilised. - USNPS introduced a private permit system on the Alsek/Tatshenshini. <p><u>1995-1996</u> Visitor Use Survey Study Proposal.</p> <ul style="list-style-type: none"> - Contained both a natural and social science component and will try to identify and characterise visitor expectations for the Alsek River corridor's wilderness character. - Natural science component to evaluate the impacts associated with recreational use of the valley and to complete a corridor wide vegetation evaluation in terms of bear-human risk assessment. - It is expected that the recommendations of the research should enhance the maintenance of the wilderness character of the Alsek. <p><u>1995-1996</u> Parks Canada relocated a rafting campsite at Goatherd Mountain to avoid a well-used bear trail. Parks Canada also terminated day use aircraft landings at Lowell Lake.</p> <p><u>1995-1996</u> River rafters required to remove human waste on river.</p> <p><u>Other</u> Flightseeing has increased steadily throughout the 1990s.</p>

Criteria	Baseline Condition of Values	Identified Impacts on the River and their Mitigation
<p>3.2. EXTERNAL ACTIVITIES</p> <p><u>3.2.1. Mineral Exploration and Development</u></p>	<ul style="list-style-type: none"> - A number of mining interests were located in the river's headwaters outside the park reserve. All claims within Kluane have been eliminated. - Mining operations on upstream tributaries are a potential source of water pollution. 	<p><u>1990-1991</u> Mining exploration on the Windy Craggy site in the adjacent Tatshenshini is ongoing. Survey work and line cutting on the access road was stopped by BC. In January 1990 Geddes Resources released its Environmental Impact Assessment and this triggered the start of intensive campaigns by environmental groups. Tatshenshini Wild was the largest group of environmental organizations ever assembled into a workable coalition. (See Other Government Agencies)</p> <ul style="list-style-type: none"> - Impacts on CHRS area was to increase interest in upper Alsek as an alternative to the Tatshenshini. - This leads to concerns about the impacts of this use on the wilderness integrity of the valley. <p><u>1993-1994</u> British Columbia Government declared permanent protection of Tatshenshini-Alsek as a Class 'A' Provincial Wilderness Park, ending the threat of road and mine development in the Tatshenshini River Valley.</p>
<p><u>3.2.2. Pipeline, Oil and Gas</u></p>	<ul style="list-style-type: none"> - No details were provided at the time of nomination. 	<p><u>General</u> No impacts from oil or pipeline development have been noted in reports, but abandoned pipeline stations and the pipeline right-of-way itself continue to be raised as concerns to water and soil quality in the Dezadeash-Alsek watershed.</p> <ul style="list-style-type: none"> - A series of pipelines built during the construction of the Alaska Highway in the 1940s and during the 1950s left a toxic legacy which included oil spills into Dezadeash Lake and the use of defoliants on the pipeline right-of-way. - As well, the proposed Alcan Pipeline Project in the late 1970s was slated to run along the boundary of Kluane National Park. The project was shelved in 1982.

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3.2.3 Other Government Agencies	<ul style="list-style-type: none"> - No details provided at the time of nomination. 	<p>1988-1989 United States National Park Service (USNPS) approved the first river management plan. Formalised a program in place since 1982. The plan limited the number of commercial trips through the park and called for co-ordination with other governments to achieve a common management plan for the entire river.</p> <ul style="list-style-type: none"> - Benefits included the achievement of a partnership in working towards protective designations that would prevent consumptive uses from deteriorating the wilderness recreational qualities of this river system. <p>1993-1994 Alsek Pass Road and Day Use Area again being considered by Government of Yukon (Yukon Party), Haines Junction and CPS. Project undergoing environmental review (EARP).</p> <ul style="list-style-type: none"> - CPS recommended that the environmental review needed to address the advisability of increasing access to a known/important bear feeding and travel corridor. <p>1993-1994 British Columbia Government declared permanent protection of Tatshenshini-Alsek as a Class 'A' Provincial Wilderness Park.</p> <p>1993-1994 Glacier Bay National Park continued to work with CPS, the Government of Yukon and CAFN to adopt the river management plan.</p> <ul style="list-style-type: none"> - 1993 was the first year that private use met the limit prescribed on the Tatshenshini portion of the system. - On the Alsek commercial use allocations will be fully utilised. - USNPS introduced a permitting system for private trips on the Tatshenshini/Alsek. <p>General River managers, including CAFN meet annually, participate in river management trips meet commercial operators regularly on scheduling and management. There is strong interagency river management occurring.</p>

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3.2.4. <u>Native Land Claims Settlements and Activities</u>	<ul style="list-style-type: none"> - Kluane was under land claims negotiations and would maintain its reserve status until this issue was settled. - The outcome of these negotiations could effect the river with respect to increasing tourism, allowing hunting and trapping (it had been restricted for natives for four decades) and possibly opening up the area to hydro development. 	<p>1993-1994 Champagne and Aishihik First Nations (CAFN) ratified their land claim and self-government land claim agreement. To receive third reading in fall of 1994.</p> <ul style="list-style-type: none"> - Settlement establishes a co-operative management board with 50% CAFN appointed membership. This board will advise on park management and Alsek Canadian Heritage River issues. - Subsistence harvest rights, heritage resources and economic opportunities for CAFN are addressed in the settlement. <ul style="list-style-type: none"> - One economic benefit is the right to 25% of commercial rafting opportunities on the Alsek River in KNP. <p>1994-1995 CAFN Final Agreement proclaimed as law.</p> <ul style="list-style-type: none"> - February 14, 1995, the provisions of the above settlement came into effect. <p>1995-1996 CAFN and BC sign an interim agreement for the co-operative management of Tatshenshini-Alsek Provincial Park.</p> <ul style="list-style-type: none"> - A co-operative management board made up of CAFN and BC Parks members advises on park management and Alsek River issues in BC. - Formalises the role of CAFN in management of entire Alsek River in Canada. - This involvement has already resulted in greater general awareness of the new park's cultural significance. - Increased contact between interior and coastal native peoples has resulted in new opportunities to understand the trade route history. <p>General Of note here is the fact that the Alsek is the only CHRS member with no acknowledged cultural values related to its nomination. CPS and CAFN are working to correct this oversight.</p> <ul style="list-style-type: none"> - Traditional use, ethno-history and archaeological studies are currently being undertaken.
3.2.5. <u>Local Industrial Activities</u>	<ul style="list-style-type: none"> - No details were available at the time of nomination. 	<p>1994-1995 Salvage logging of spruce bark beetle damaged stands in adjacent Kluane region being discussed. Discussions on the issue began in Haines Junction after the extent of the damage became clear in the summer of 1994.</p> <ul style="list-style-type: none"> - The beetle is a natural agent of forest succession, but attempts to manage and control this natural process may induce significant land use change. Road access and industrial scale logging could lead to wildlife habitat fragmentation, increased vehicle access and stream damage in the Alsek watershed. Primary outbreak on Dezadeash.
3.2.6. <u>Local Residents/Private Landowners Actions</u>	<ul style="list-style-type: none"> - Effluent from Haines Junction sewage lagoon raised as an issue. 	<p>1988-1989 A release from the Haines Junction sewage treatment plant was planned for 1991-92. Baseline monitoring was needed in order to verify what the effects were before and after release.</p>

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Local Resident's Actions (cont'd)		1991-1992 Effluent was discharged into the Dezadeash Wetlands. Parameters of effluent were good. There could be Giardia cysts through the lagoon system and into Alsek.
3.2.7. <u>Non-Governmental Organisations/Interests Groups</u>	<ul style="list-style-type: none"> - Co-operative arrangements were to be sought out with public agencies and private organisations for a wide range of activities and services. 	<p>1988-1989 Studies were carried out in partnership with the Yukon Conservation Society during the park management planning process. Studies included vegetation and habitat work.</p> <p>1995-1996 CAFN, the Yukon Conservation Society, and Friends of Aishihik work to raise awareness of the impacts of extreme drawdown on the Aishihik Lake ecosystem. A three year drought has led to unprecedented drawdown in the reservoir.</p> <ul style="list-style-type: none"> - Concerns have been raised that these problems could impact on the Dezadeash Wetlands. The Aishihik problem could help sensitise local residents about environmental issues in the Alsek watershed. <p>Other Sierra Club began sending volunteers to work on new trails and to improve established trails in 1994-1996.</p>
3.2.8. <u>Media Publicity on River</u>	<ul style="list-style-type: none"> - From 1984 the Alsek was included in the CHRS promotional packages. - The designation ceremony for the Alsek received national publicity. - Plaque installed on Dezadeash River in Haines Junction in 1986. 	<p>1991-1992 Joint agency and government brochure entitled <i>Rafting the Tatshenshini and Alsek International Rivers</i> was produced and distributed by governments.</p> <p>Other Countless films, calendars, books, magazine articles and press releases were produced in the media frenzy which accompanied the fight over the Windy Craggy copper mine during 1990-1994.</p> <ul style="list-style-type: none"> - Such publications about the Alsek have also been very numerous.
3.2.9. <u>Other Activities Related to the River</u>	<ul style="list-style-type: none"> - Recreational park use was identified as a potential source of concern with regard to vegetation degradation, wildlife displacement, and disturbance of archaeological resources. However, hiking was not considered to be a significant impact. - Public safety implications of hiking and rafting in bear country were to be examined in an environmental assessment. - Monitoring and, if necessary, corrective action to reduce the impacts of increased visitor use were to be implemented. - Grazing in the valley was identified as an activity which could conflict with the expectations of visitors to the area. 	<p>Other Grazing in the Alsek has been discontinued.</p> <ul style="list-style-type: none"> - In 1996, a woman died after being mauled by a grizzly bear in Kluane National Park. This development resulted in a flurry of local newspaper coverage which raised the question whether it was appropriate to conserve species which constitute a threat to human life.