

DRAFT
KLUANE LAND USE PLAN
1998 UPDATE
SUBJECT TO FURTHER REVIEW AND REVISION

AUGUST, 1991

Revised June, 1992
Updated October, 1998

1998 Update Prepared by:
Policy and Planning Branch
Dept. of Renewable Resources
Government of Yukon
In co-operation with DIAND
and Champagne & Aishihik FN

Letter from the Regional Planning Commission (1991)

This plan is submitted for your consideration on behalf of the Greater Kluane Land Use Planning Commission. The Commission is confident that its work enjoys broad public support, and anticipates an expeditious and clear commitment from government and First Nations to use the plan.

This document makes recommendations for land management policies and practices and should be read in conjunction with the twenty-two sectoral and background reports which detail the known resources of the region. The reports also describe current economic and social conditions in the region, the patterns and types of land use, and delineates areas where the recommendations should be specifically applied.

The Commission's deliberations have been governed by the need to defend the land values and lifestyles appreciated by the residents of the region, while providing for increased economic opportunities essential to their social well-being. We encourage that, where possible, economic development be undertaken at a scale and in a manner whereby the major benefits accrue to the local residents. While recognizing that certain areas deserve maximum protection, the Commission favours more environmentally benign land use practices, which will apply to the whole region, rather than major withdrawals of land from economic use.

Further detailed discussion and planning will be required to address some outstanding management issues. There are a number of land use conflicts in the Kluane Wildlife Sanctuary, and most notably in the Shaw'she/Tatshenshini area, where definite recommendations from the Commission might have interfered with, or prejudiced, ongoing land claim negotiations. In the meantime, until land claim negotiations are finalized, the Commission recommends the urgent adoption of land use policies which will afford a measure of protection for these areas.

The Commission recognizes that land use is a dynamic activity, and that a land use plan will require regular review and revision to reflect changing conditions and attitudes. To this end, we encourage that resources be made available to collect, and keep current, the information on the region which provides the basis for this plan.

The Commission has noted some intangible benefits of the Kluane planning process. The forum has required participants to look beyond the narrow advocacy of sectoral interests, and to search for creative ways to resolve conflicting ideals. The amalgamation of First Nations^{ative} and non-First Nations^{ative} knowledge of, and interests in, the region has been especially valuable, and has impressed upon the Commission that there is no great disparity between the aspirations of either party. The lessons learned during the preparation of this plan can be applied to expedite the process which must surely take place in other regions of the Yukon in the future. The Commission is grateful to local residents for their active participation in the planning process, and for the considerable hospitality shown during our visits to the communities. We commend the Planning Team for their dedication and professionalism, and thank the Policy Advisory Committee for their constant support and sage advice.

As signed in 1992 by Regional Planning Commission: Chair Andrew Williams and members Michael Philips, Paul Birckel, Al Tomlin, Dick Dickson and Joe Johnson

N O T E S T O T H E R E A D E R

M A P F O L I O

Due to financial and time constraints, the Map Folio has not been included in this 1998 update of the Kluane Land Use Plan. Please refer to the Map Folio in the copy of the Plan that was released in August 1991 or contact the Department of Renewable Resources at 667-5634 for copies of the maps.

T A B L E 4: S U M M A R Y O F R E C O M M E N D A T I O N S (P a g e s 1 0 5 - 1 0 9)

This table is a preliminary indication of responsibilities for implementation. Implementation of the recommendations will be set out in detail in the Implementation Strategy that will be prepared following approval of the Kluane Land Use Plan.

1 9 9 8 U P D A T E O F K L U A N E L A N D U S E P L A N

This update was developed by the Department of Renewable Resources, Yukon Government in co-operation with DIAND and the Champagne and Aishihik First Nation. The plan has been revised to correct outdated information. The recommendations and the approach of the plan remain unchanged.

Deletions to the 1992 Plan are shown as a strike-through and additions are underlined. Copies of the original 1992 Greater Kluane Land Use Plan and of the 1998 updated Kluane Land Use Plan (excluding the highlighted edits) are available from the Department of Renewable Resources

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GREATER KLUANE LAND USE PLAN

PART 1: THE NATURE OF REGIONAL PLANNING

1.1 INTRODUCTION

"Kluane" is the Southern Tutchone term meaning "Place for Fishing" or "Many Fish" and the name of the lake from which the Greater Kluane Planning Region takes its name. This document is a land use plan for the region, an area covering some 66,000 square kilometers of the southern Yukon (Map 1). It includes in its borders the 22,000 square kilometer Kluane National Park Reserve. Its boundaries are the Alaska-Yukon border to the west and southwest, the British Columbia-Yukon border to the south, Kusawa Lake to the east, and the Nisling River to the north. The region includes portions of the traditional territories of three participating Yukon First Nations: Kluane, Champagne and Aishihik, and White River.¹ The Kluane National Park and Kluane National Park Reserve have been included in the planning region in order to address its relationship and significant influence on the surrounding area. However, there are no specific recommendations dealing with park management and resources as they are managed under the National Parks Act and the Champagne and Aishihik First Nations Final Agreement.

The plan describes the ways in which land is used in the region, outlines the concerns of residents about land use in the future, identifies current and possible future land use problems, and charts a course of action towards sound land and resource management.

The region is noted for its dramatic and diverse landscapes, from the massive St. Elias Mountains in the west to the broad valleys of the south, and the rolling highlands of the Kluane Plateau to the north. The region contains the highest mountains in Canada, the largest non-polar ice field in the world, the greatest variety of large mammals north of the 60th parallel, and globally significant wildlife habitats. There are two major watersheds: the Yukon, draining northwest into the Bering Sea, and the Alsek, draining south into the Pacific. Dramatic forces have moulded the landscape -- mountain building, volcanoes, glacial surges, and major drainage reversals; the region is one of the most seismically active in North America.

The long history of First Nations ~~native~~ people in this region is very much the story of adaptation to a landscape that was frequently modified by these processes. The region's lakes -- Kluane, Kloo, Aishihik, Kusawa, and Dezadeash -- are key natural areas that have attracted and continue to support human settlement and activity. The area is rich in archaeological and historic features.

For untold generations, the region has been home to the Tutchone, Tlingit, and Tanana peoples. For the last 125 years, it has become home to non-First Nations ~~Indians~~ as well. In that time, change has been rapid: fur trading, mining, big game hunting, and tourism were introduced; highway transport replaced trail networks and water transportation as the major means of

¹ Only the Champagne and Aishihik Traditional Territory is included in the 1998 Plan approval

communication. While new developments brought some opportunities for the inhabitants, they also conflicted with the aboriginal Indian way of life and their extensive use of the land.

Just over half of Greater Kluane's population of 1,3000 is of non-First Nation Indian ancestry, and has been drawn into the region for a variety of reasons. Some are drawn by the natural environment and the inherent attraction of the place, others by its relative isolation and the high degree of personal independence often associated with wilderness environments; to others, Greater Kluane provides not only a home but opportunities for diverse economic ventures.

A number of factors influence the degree of land use conflict evident in the region. There is a growing awareness of the need for environmental protection at a time when demands for industrial minerals and energy are increasing; improved transportation and communication have made its recreation opportunities more accessible to tourists and other Yukoners, putting new pressures on the region's sensitive resources. The centralization of population in Whitehorse, growing from 28 percent in 1951 to 64 72 percent of the Yukon total in 1998~~86~~, tends to dominate the small region of ~~4,000~~ 1,300 people. Anticipating the effects of these pressures, identifying appropriate actions to respond to them, and protecting the unique, ecologically vital landscape is what this document strives to accomplish.

1.2 DESCRIPTION OF REGIONAL PLANNING

Role of the Planning Process

The need for planning generally lies in the argument that sensible management of land and resource use is important to the maintenance of the quality of life in the broadest sense, and that anticipating problems is far less costly and more efficient than dealing with unintended effects when they arise.

The planning process has five closely related roles:

- 1. To identify social, cultural, and economic opportunities and conservation requirements, and to propose a course of action to achieve them.**
- 2. To anticipate and resolve land use problems.**
- 3. To provide a forum for public involvement in the management of a region.**
- 4. To address the potential for accumulated impacts from development.**
- 5. To provide guidance for project review processes.**

How We Proceeded

The first step was to develop broad goals to guide the planning process. This was done by the Policy Advisory Committee (consisting of a representative of the federal government, the Council

for Yukon First Nations Indians, and the Government of Yukon) and approved by the Ministers and the Chair of the Council for Yukon First Nations Indians. (Figure 1 illustrates the structure of the planning process). Land management concerns were then identified in a number of public meetings held by the Regional Planning Commission, between 1988 and 1992. At that time, background information was analyzed and draft recommendations were presented to the public and government agencies for comment. Those recommendations have been reviewed and refined and are presented in this document with supporting background information.

Why Plan for the Greater Kluane Region?

Beyond the argument that sound management of land and resource use makes good sense, there are a number of issues that make Greater Kluane a priority region for land use planning. There has been rapid and accelerating change over the past century~~80 years~~, including mining, highway and hydroelectric development, establishment of a national park reserve, and expansion of tourism, ~~and a proposed natural gas pipeline.~~ The original inhabitants of the region -- the Tutchone, Tlingit, and Tanana peoples -- have had their way of life greatly modified by the type and pace of development and have seldom received benefits from developments within their traditional territories.

While events of the past were a factor in selecting Greater Kluane as a planning region, current issues and opportunities were also important. There was a recognition that the presence of the national park ~~and park reserve~~ and the remarkable beauty of the region presented opportunities that could benefit the region's people if the land was properly managed. Interest in ~~two major mining developments and the construction of a natural gas pipeline~~ is seen as having the potential to create positive economic growth, as well as ~~severe~~ some negative environmental impacts. Wildlife populations have come under stress as the region became more accessible. Highly diverse forms of land and resource use -- wildlife harvesting, mining, tourism, forestry, and agriculture -- are increasingly in conflict.

The land regulation structure in the north is sectoral, inefficient, and not appropriate for dealing with highly integrated land use questions. Land use activity in the Yukon has traditionally been governed by a loose, often ad hoc, approach to environmental concerns. No less than 25 different pieces of legislation (acts of parliament or sets of regulations), as well as a number of special cabinet directives, set out the rules and management responsibilities of the federal government in the north and in the planning region.

Despite the complexity of the current management regime, and the confusion it creates, a number of common themes and understandings are beginning to emerge in the territory. The notion of the Yukon as a frontier is no longer widely held by residents. The historically exploitive approach to land use and resource development is being replaced by a greater awareness and sensitivity to the value of a high quality natural environment. A more integrated approach to management is being instituted. Implementation of the Canadian Environment Assessment Act (CEAA) ~~Environmental Assessment Review Process (EARP)~~ is now interpreted as a legislative policy requirement. Further refinement of CEAA ~~EARP~~ will be implemented under the Development Assessment Process (DAP), to be established as part of a final land claims agreement in 1999 pursuant to the Umbrella

Final Agreement. Equally as important is the demand from all sectors of the population for more involvement and more responsibility in the resource decision-making process.

Perhaps most importantly, the region's First Nations' leaders and people have demonstrated an interest in working co-operatively to plan the protection and wise use of the region's resources in order to bring social and economic benefits to their people.

What Planning Can Accomplish

Yukon land use planning is not a legislated process; its recommendations are not legally binding on any of the parties who participated in the process. However, once the plan is endorsed by government and First Nations, it is expected to provide clear guidelines for land and resource use in the region and if a regional land use plan is approved pursuant to the Umbrella Final Agreement, the Plan has a greater level of authority.

The plan is important in identifying the various interests and issues in the region and emphasizes the relationship between a wide range of land and resource uses. By bringing the public and various parties with land use interests together, a planning process builds consensus regarding the desirable future. A land use plan is essentially a blueprint to guide land use in the future.

There is a strong link between Yukon land use planning and First Nations' Comprehensive Land Claims in the Yukon. The Umbrella Final Agreement identifies various mechanisms for land and resource management including the Development Assessment Process, local Renewable Resource Councils, and commitments to ongoing planning. The Land Use Regional Planning Commission recognizes their importance in carrying out the recommendations in this plan. It is expected that the Greater Klucane Regional Land Use Plan will serve as a guide for these processes.

Culture and Planning

The concept that land is a commodity was introduced with the arrival of Euro-Americans in the Yukon at the turn of the century. The commodity view sees land as property to be parcelled out and owned, separable from its environmental context. This notion is contrary to the traditional views of indigenous peoples, who see themselves as being "of the land". The relatively recent focus on ecology and the interrelationships between all parts of the environment is a promising starting point for reconciling these differing cultural views of land. Cross-cultural land use planning must recognize these differing cultural perspectives and build on the shared values in order to develop a plan relevant to current regional issues.

There are also marked perceptual differences as to what planning is all about. Planning can be defined as the process of organizing in order to accomplish a goal; thus all people, all individuals, and all societies plan. However, the scale and level of formality varies greatly. To First Nations native people, the annual round of land-based activity requires planning, and, although it is a

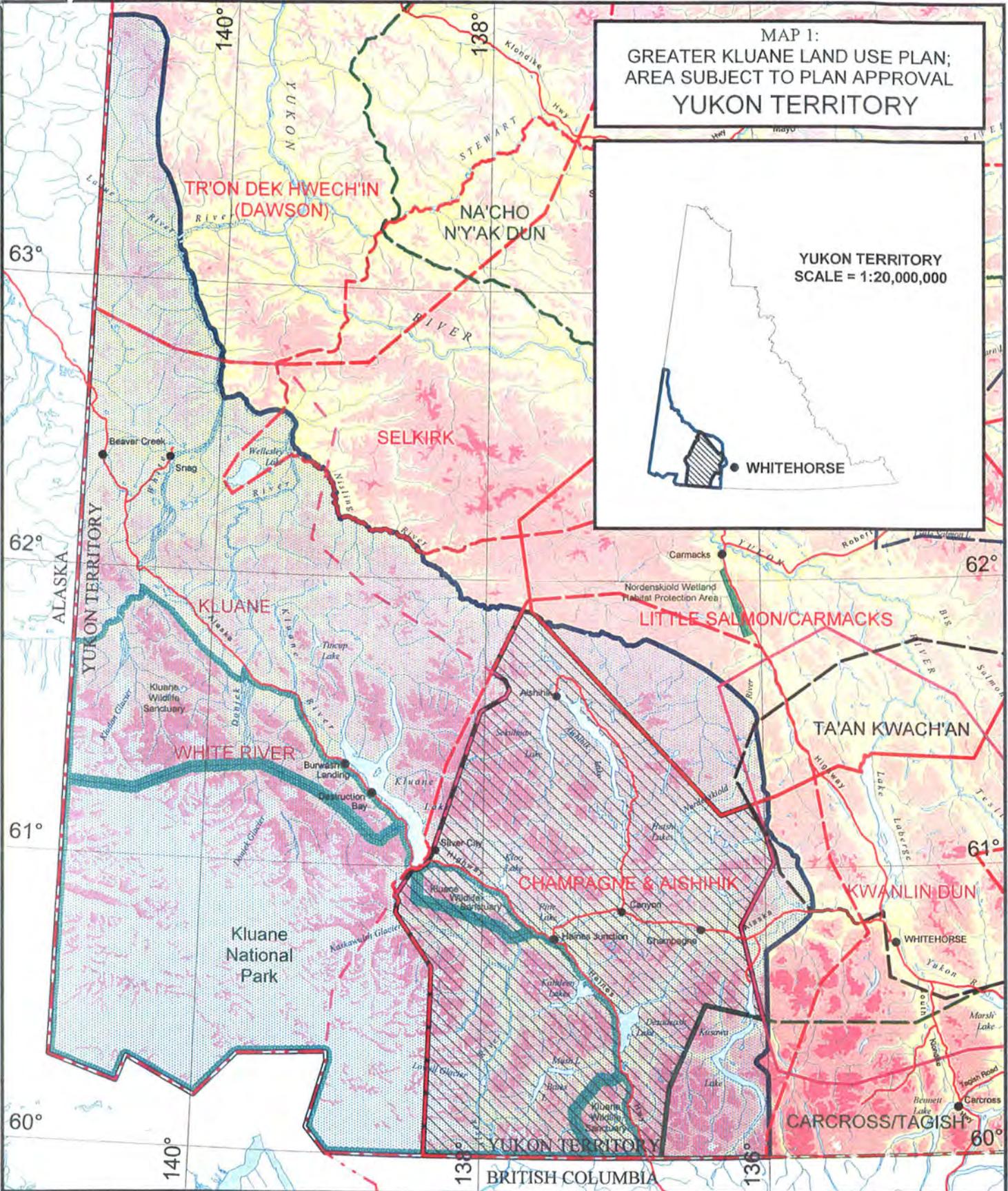
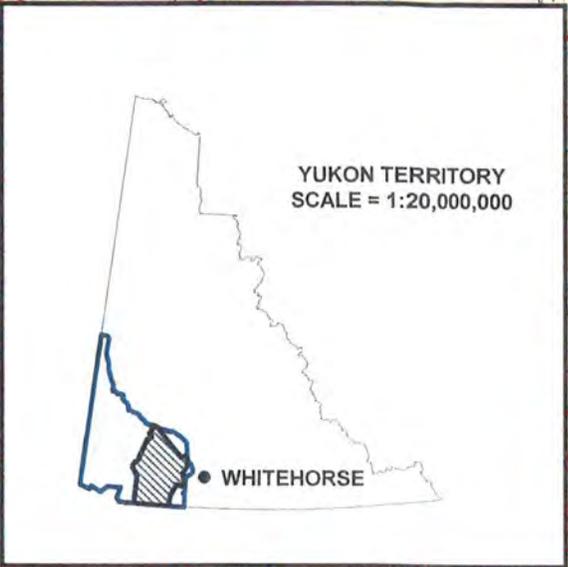
consultative process, it is far less formal than most regional planning processes undertaken in Canada today. For many indigenous people, planning is synonymous with action, whereas in industrialized society, like southern Canada, planning is often a long, highly formal process preceding action. In developing the Greater Kluane Land Use Plan, both cultural perspectives on land and planning were acknowledged as equally important. Community meetings and utilization of local land use information along with formal scientific information were integral parts of the planning process.

Planning and Scale

Planning can occur at various scales ranging from communities to whole nations. The scale of planning is related to the scale on which problems are identified or occur. Planning at the community scale often fails to address the management of resources on which community health in the broadest sense depends.

The region also lies in a much wider context -- the nation and the globe. This is especially seen in the north where events fashioning and shaping communities and regions have come from the outside. In the Yukon, the Klondike Gold Rush, highway constructions, large-scale mining, and tourism are all external events that have drastically transformed the region.

**MAP 1:
GREATER KLUANE LAND USE PLAN;
AREA SUBJECT TO PLAN APPROVAL
YUKON TERRITORY**



DIGITAL DATA SOURCES

Base Map: Digital Chart of the World (DCW), compiled by NATO at 1:1,000,000 (NAD 83)
 First Nations Traditional Territories compiled by the Department of Renewable Resources GIS Unit, from 1:500,000 scale maps provided by Federal Land Claims Office (DIAND).
 The Department of Renewable Resources is not responsible for the accuracy of data obtained from other agencies.
 Compiled using ArcInfo GIS V. 7 and MapInfo GIS V. 4.5
 March, 1998



1:2,000,000

-  Greater Klauane Planning Region 1992
-  Plan Approval Area



PART 2: OVERVIEW OF THE REGION

2.1 NATURAL ENVIRONMENT

The natural and physical character of the region provides important possibilities for, and constraints on, life and development. Animal and fish resources, natural hazards, accessibility, and potential for mineral, hydro power, agriculture, forestry, and tourist development are all dependent on the nature and form of the physical environment. The land has supported human life for at least 8,000 years. The region's mineral deposits attracted people to the region in substantial numbers, and its rugged mountains, broad and dramatic valleys, and scenic lakes and rivers have become the basis for a vital and expanding tourist industry.

The Physical Landscape

Processes that mould the region's landscape can best be described as cataclysmic. Indian legends and myths recount dramatic drainage reversals, glacial surges, and volcanic eruptions long before modern physical scientists interpreted the scene.

Geological Structure and Drainage

In a geological sense the ~~Greater~~ Kluane Region is very young. Tectonic movement (along the Shakwak Trench) and igneous activity are responsible for the region's mountainous character. These same processes are responsible for the mineralization that attracts such interest in the area. Mountain-forming is continuing, while ice and water further modify the landscape. The dominant physical features, which display a ~~southeast~~ Southeast to Northwest alignment, are the St. Elias Mountains, the Kluane Ranges, the Shakwak Valley (containing Kluane Lake), the Coast Mountains, and the Kluane Plateau (see Map 22).

The massive and spectacular St. Elias and Kluane Mountains contain numerous high peaks including Mount Logan, the highest mountain in Canada, and the largest non-polar ice field in the world. Vegetation on the mountain slopes is in distinct zones according to elevation: montane forest, subalpine, and alpine. Vegetation within these zones varies according to bedrock and soil types, exposure of slopes to the sun, and the length of the snow-free period. These dramatic variations in climate, elevation, and vegetation create a range of wildlife habitats which support diverse and abundant wildlife populations. The glaciers of the St. Elias Mountains are the primary source of water for the region's major rivers and their tributaries: the Alsek River, which flows to the Pacific Ocean, and the Yukon River, which flows to the Bering Sea.

The Kluane Plateau is characterized by large, rolling hills with elevations to 900 meters in the Ruby Range and broad valleys which are drained by the Dezadeash, Takhini, Nisling, Nordenskiold, and Aishihik Rivers. The large lakes within the Plateau -- Aishihik, Sekulmun, and Wellesley -- are prominent landscape features. As well, there are a number of smaller upland lakes: Tincup, Gladstone, Ittlemit, Long, Moraine, and Taye.

The Shakwak Trench parallels the spectacular Front Ranges of the St. Elias Mountains and contains major portions of the Alaska and Haines highway corridors from Dezadeash Lake to Beaver Creek. Glacier-fed rivers which drain the Front Ranges have been identified as flood hazard areas. The Trench contains both Dezadeash and Kluane Lakes.

The Coastal Mountains are located to the south of Kluane Plateau. These steep, rugged mountains rise to an elevation of 2,200 meters and are drained by the Dezadeash, Kathleen, Tatshenshini, Klukshu, and Takhini Rivers. The Kusawa, Klukshu, Frederick, Six Mile, and Jo-Jo Lakes and the Tatshenshini River Canyon are important landscape features. As well, there are numerous unnamed alpine lakes.

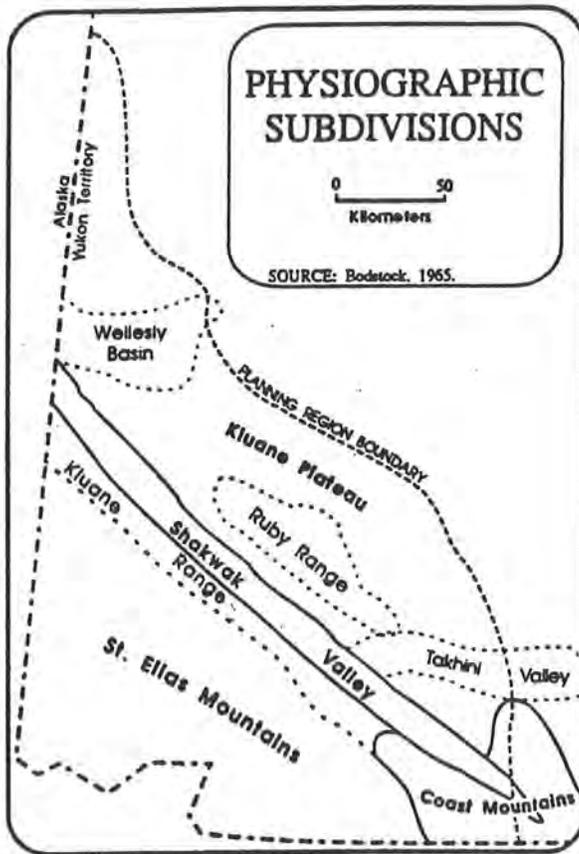
The Kluane Plateau and Coast Mountains are divided by the Dezadeash and Takhini valleys and what was formerly glacial Lake Champagne. This broad valley forms the major east-west arm of the north Alaska Highway.

The drainage pattern of the region (see Map 33) is linked to its glacial history. During the last glaciation -- 10,000 years ago -- a huge lake occupied the present Takhini and Dezadeash valleys and there is historical evidence to suggest that glacial lake formation could again impact on the planning region. The most recent occurrence was in the middle of the last century when the Lowell Glacier surged across the Alsek River valley, creating Alsek Lake. Surveyed beach elevations along the Alsek River indicate that at its highest elevation the present location of Haines Junction would have been 55 meters below water and 15 kilometers of highway would have been inundated. Recent studies suggest that there is a 50 percent probability of lake formation associated with the surging of Lowell Glacier within the next 50 years, but that Haines Junction lies above the probable flood limit. Such a lake would take several years to form and would allow time for an evaluation of the effects of inundation.

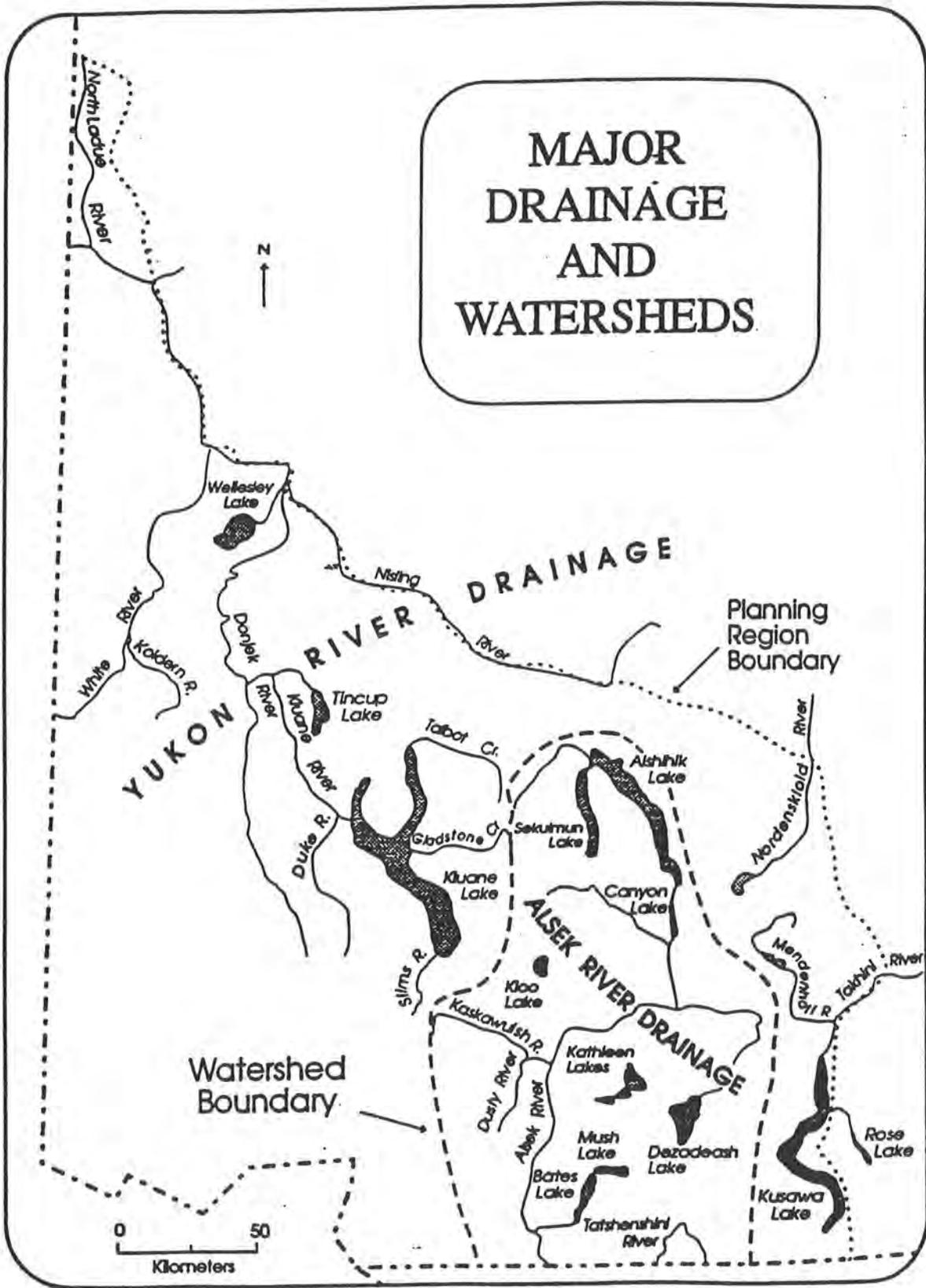
The geologic record also shows that the surface elevation of Kluane Lake has changed considerably during the last 10,000 years. During most of this time, Kluane Lake was smaller and its surface elevation was about 12 meters lower than present. It drained southward via the Kaskawulsh River into the Alsek River system.

The Kaskawulsh Glacier advanced across the valley at its terminus about 2,500 years ago. Outwash gravels accumulated in the valley south of the glacier and reversed the gradient of the Slims River. This reversal blocked the former outlet of Kluane Lake and raised its level. The raised lake overflowed northward and cut the present Kluane River outlet into the Yukon River system.

In 1989, the Kaskawulsh River again captured the drainage of its glacier and intercepted the flow into the Slims River and Kluane Lake. This caused an approximate two meter drop in the level of Kluane Lake. This interception was short-lived and the Slims River is once again receiving the melt waters of the Kaskawulsh Glacier. If the Slims River does not continue to be resupplied by the Kaskawulsh Glacier, Kluane Lake's water supply will stay reduced and the lake level may continue to drop.



MAP 2



MAP 3

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There is an extensive outwash plain west of Haines Junction. Valley bottom soil deposits in the glaciated areas are a mixture of glacial landforms modified by stream flows.

The mountainous nature of the Greater Kluane Region means that subalpine and alpine vegetation covers a huge portion of the region in areas above 1,100 meters. The St. Elias Mountains, which comprise approximately 20 percent of the region, are largely unvegetated. Subalpine tundra is typically composed of willow, shrub birch, and sedge meadows.

Alpine tundra is largely sedge meadows and tussock fields with lichens colonizing exposed rock. Silt-textured material from outwash plains in the Slims and Donjek River valleys is re-deposited by wind to the north and Northeast shores of Kluane Lake. Grasslands occur on these silt deposits and on dry, steep south-facing slopes or salt-affected meadows throughout the region. Wetland vegetation (sedges) occurs in scattered pockets throughout the region. Sedge meadows are associated with, and interspersed by, willow and buck brush. Two of the most significant wetlands are located at the outlet of Kluane Lake and in the Jarvis River valley north of Kloo Lake.

Climate, soil conditions, and topographic relief are major constraints on forestry and agriculture in the region. Nowhere in the region are the conventionally acceptable climatic requirements for grain production or field crops met.

The low productivity of the region's forests is a reflection of climate and topography. Forests are confined to river valleys below 1,100 meters. The most common tree species are white spruce, black spruce, and aspen. White spruce occupy well-drained sites throughout the region on both glacial and fluvial landforms. Black spruce is only common north of Kluane Lake where it occurs on valley floors in association with permafrost conditions. Trembling aspen is found in pure stands on well-drained sites at moderate elevations and on south-facing slopes. Less common tree species include lodgepole pine, alpine fir, and balsam poplar.

Fish and Wildlife

The numerous waterbodies and rivers and the diverse physical environments of the Greater Kluane Region support a variety of fish and wildlife populations. Fourteen species of large mammals, including ungulates and carnivores, inhabit the region. This represents the highest diversity in the world north of the 60th parallel. At least 20 species of small mammals occur, several at either the northern or southern limit of their distribution. Some 118 species of birds are known to nest in the Greater Kluane Region, including uncommon or rare species such as peregrine falcons, gyrfalcons, bald and golden eagles, trumpeter swans, and great grey owls. The region falls on a major migration route and thousands of migrating ducks, geese and swans use its wetlands as resting points. They are concentrated on Kluane Lake in the spring and on Wellesley Lake in the fall. In summer, waterfowl are dispersed widely throughout the region, but in relatively low numbers.

The lakes and rivers of the region provide habitat for a diversity of aquatic populations. Typically, northern fish populations in regions such as Greater Kluane grow slowly and are sensitive to changes in water temperature, oxygen levels, and nutrient status.

The Alsek and Yukon River systems contain freshwater and anadromous fish. Freshwater fish found in rivers and lakes of the planning region include northern pike, whitefish, rainbow trout, arctic grayling, lake trout, burbot, and inconnu. Anadromous fish (which spend part of their life cycle in salt water) found in the region include chinook, sockeye, coho, and chum salmon.

The variety of terrain and vegetation types in Greater Kluane is reflected in the diversity and abundance of wildlife populations. Moose, caribou, and Dall sheep are the most common ungulates.

The planning region has populations of a full range of boreal forest animals including wolf, coyote, red fox, wolverine, lynx, grizzly, and black bears.

Elk and bison are both re-introduced species in the Yukon. In the Greater Kluane Region, elk are located in two areas: the Takhini River valley, and the Hutshi Lake/Nordenskiold River valley.

Formal recorded data on fish and wildlife are incomplete. The knowledge of local residents has been valuable in filling some of the gaps in this formal data and is playing an increasingly important role in management decisions and priorities.

Significance of the Natural Environment

It is readily apparent that the natural environment of the region has had a significant impact on human life; it provides both opportunities and severe limitations. The range of possibilities is limited by climatic constraints, rugged terrain, and natural hazards. Thus, although Greater Kluane is a large region, the actual amount of land available for human use, habitation, and economic activity is severely restricted.

2.2 HUMAN HISTORY

Human Response to Environment

Human occupancy of the Greater Kluane Region goes back at least 8,000 years. When the first non-First Nations ~~Indians~~ entered the White River area 12045 years ago, the pattern of occupancy had already been through several cultural phases. At that time, the region was occupied by Tutchone, Tanana, and Tlingit people.

Pre-Contact

There are many theories and beliefs about the origin of the region's inhabitants. Views range from the possibility that ancestors of today's Yukon ~~Indian~~-indigenous people crossed a land bridge from Siberia to Alaska to the belief that they were born into the land by the Creator. Evidence has been uncovered at various archaeological sites in the Greater Kluane Planning Region which has been used to describe four cultural phases defined on the basis of changes in technology and subsistence

life styles. This information, although incomplete, provides the basis for an understanding of the pre-contact history of ~~Indian~~ indigenous people in the region. Additional study will undoubtedly improve knowledge of the region and its early people.

The earliest site identified -- at Canyon Creek -- dates to over 8,000 years ago. This site reflects the characteristics of the "Little Arm" cultural phase. Research indicates that small bands of nomadic people were primarily dependent on herds of barren ground caribou and bison that roamed the area at that time. They had stone tool technology, producing composite tools using small blades or microblades.

Sites of the following phase, that of the Teye Lake cultural group, are recognized by the appearance of a new stone tool technology, characterized by the production of large side-notched and stemmed spear and arrow points. The people of this cultural tradition are presumed to be related to Athapaskan-speaking ~~First Nations~~ Indians from Alaska and to have entered what is present day Yukon from the northwest. By the beginning of this phase, forests had expanded into the region and sites reflect an adaptation to the new conditions. Several large sites associated with this culture have been uncovered, suggesting that people returned seasonally to certain camps over a period of many years. The land use pattern closely resembles that of Tutchone people in the post-contact period, generally involving summer residence along rivers to exploit fish; fall hunting of sheep, caribou, and moose in upland areas; winter hunting and trapping in valleys, and fishing on lakes; and spring beaver hunting and fishing.

The Teye Lake Culture was superseded by the Aishihik Culture, which flourished in the area from about 1,300 to 200 years before present, possibly in response to the decline of bison in southwest Yukon and the onset of neoglaciation in the St. Elias Mountains. The distribution of sites of the Aishihik phase suggests predominantly small, mobile groups of people pursuing their seasonal round over large areas. The use of native copper to fashion tools and ornaments was an important technological step taken during this period.

The Bennett Lake cultural group takes the historical record of Yukon people into the present century. Although it shared many of the characteristics of the Aishihik Culture, this group acquired European trade goods and began constructing cabin villages which were occupied at least seasonally. A somewhat greater emphasis on trapping furbearing animals characterizes the evolving traditional life style of this period.

The dynamic pre-contact history of ~~Indian~~ First Nation people is one of adaptation to the changing natural environment of the region. Life was nomadic as families and individuals hunted, trapped, collected plants and berries, and fished in many areas. They moved from place to place according to the seasons and availability of resources. In this way, ~~Indian~~ First Nation people were able to obtain what they needed from the land and water.

Variations in the patterns of activities depended on the availability of salmon, freshwater fish, waterfowl, and game. Some areas attracted people from other places in the region because of the abundance of certain species. For example, people from the Klukshu/Neskatahin area were known

as the "Fish People" because of their heavy reliance on salmon. Other tribes travelled long distances to harvest salmon at these places. In other parts of the region, hunting was a main harvesting activity because of the availability of moose, caribou, and other game.

The extensive trail network in the Greater Kluane Region reflects the extent to which people travelled, ranging over wide areas and utilizing the many river valleys. Trails not only connected the harvesting area and campsites, but were also used as trade and barter routes.

The trade and barter system has always been a way of life for the coastal and interior people. Trading was originally developed because of the different natural resources available in two very different coastal and inland ecosystems. The Coastal Tlingit traded such items as fish and seal grease, seaweed baskets, dried clams, cedar chests, and medicinal roots. The Tutchone, in turn, provided products such as furs, sinew, tanned moose and caribou hides, raw copper and obsidian, as well as ochre and lichen used by the Chilkats to dye their blankets.

Between 1830 and 1880, Russians trading on the coast were prevented by the Tlingits from having direct contact with the interior peoples. Instead, the Coastal Tlingits acted as intermediaries, bringing such items as kettles, iron knives, axes, traps, guns, flour, sugar, and tea into the southwest Yukon. Trade primarily occurred at Neskatahin, although the Tlingit went as far north as the White River and Fort Selkirk to exchange goods.

Trade within the region occurred between people travelling from Aishihik along the Donjek River and the Upper Tanana and Han people from the White River area. Furs and native copper from the White River region were brought back and, in turn, bartered to the Chilkats. When Southern Tutchone traded in the Donjek River area, Northern Tutchone would come from Fort Selkirk. At other times, Southern Tutchone would travel to Selkirk. Tagish and Inland Tlingits would visit their trading partners in the areas of Wellesley Lake and Carmacks and along the Pelly Rivers.

The trade system between the Tlingit and interior peoples, and amongst the Interior Athapaskans themselves, was an important factor in shaping land use and patterns of activity. Acquiring products for trade, hunting, drying, and caching food essentially occurred along trade routes, and was an integral part of the life style of the Indian First Nation people of the region.

The close relationship that Indian First Nation people have with the land developed a strong cultural tradition of respect for the environment. In a pre-literate society, landscape information was shared orally and was encoded in the form of myths, place names, and mental maps. Knowledge of the habits and habitats of animal species and strong navigational skills were taught and learned in this way. This detailed knowledge and respect for the land and its resources was a necessary survival tool for the Indian First Nation people.

Post-Contact

Interest in the Yukon became world-wide when news of the Klondike gold discovery reached the outside world in 1897. In the next few years, 60,000 people entered the Yukon. Although the

Greater Kluane Region was not a primary destination, the gold rush irrevocably changed the Yukon and set the stage for further development in the Greater Kluane Region. During the gold rush, Jack Dalton established a pack horse trail over the Chilkat Pass along an important ~~Indian~~ First Nation trading route. This trail was the access route for about 1,500 miners who entered the region en route to the Klondike. After 1900, with the Klondike Gold Rush winding down, mining interest began to turn to the area around Kluane Lake.

The discovery of gold by Skookum Jim and Tagish Charlie on Ruby Creek in 1903, and other discoveries on Burwash Creek in 1904, brought a large influx of prospectors to the region, and, by the end of the year, 2,000 claims had been staked. Bullion City, at the mouth of Bullion Creek, and tent cities on Sheep and Ruby Creeks and at Kloo Lake, initially served as mining communities. However, as the focus of activity shifted, Burwash Landing and Silver City emerged as the biggest settlements in the region. Low productivity from placer mining led to the collapse of the initial rush, with the non-~~Indian~~ First Nation population falling from about 1,200 in 1904 to 40 in 1906. Mining proved to be a sporadic activity characterized by boom-bust cycles, with resurgences in activity in the region associated with the Chisana Alaska Gold Rush of 1913-14 and the discovery of gold on Squaw Creek near Dalton Post in 1927-28. By 1940, only Bullion, Sheep, and Burwash Creeks continued to be worked.

Sport hunting began to assume importance in the region, following the Kluane and Chisana gold rushes, when miners and packers returning to the towns reported an abundance of Dall sheep, valued by trophy hunters for the unusual size of their horns. By 1919, the White River area had become known as the best place on the continent to hunt this species. The big game industry flourished in the 1920s. Its success depended, in large part, on the skills and knowledge of local ~~First Nation~~ Indian guides, who found guiding an ideal complement to their trapping and traditional harvesting activities.

Old ~~First Nation~~ Indian travel routes facilitated access to the region and from the earliest times prospectors and traders relied on the ~~First Nation~~ Indian population for information about land and routeways. New settlements grew up and mining and other forms of part-time employment supplemented the seasonal round of activities. Despite the increasing emphasis on industrial development in this period, the pattern of land use and occupancy did not change much. Hunting was still the dominant way of obtaining food. Trapping was the dominant and most constant component of the region's cash economy and supplied important government revenues.

Some changes that were introduced had far-reaching implications for land use. Most notable of these were the Yukon Quartz and Placer Mining Acts and the Territorial Lands Act. These gave miners the right to stake and work mineral claims wherever they wanted in the Yukon and exempted them from the requirements of land use regulations. This legislation institutionalized the concept that renewable resource values were not as important as non-renewable resource extraction.

The Highway

Transformation of the region has been especially marked over the past 50 years. Completion of the Alaska Highway in 1942 brought rapid all-weather transportation to the region, facilitating access from the south. The impacts of the highway were profound. The influx of military and civilian personnel during the intensive period of highway construction resulted in overuse and depletion of game populations. In response to overhunting, the 26,000 square kilometer Kluane Game Sanctuary was established in 1943.

The creation of the sanctuary placed restrictions on hunting and trapping that particularly affected the people who had traditionally used areas within it. Furthermore, the establishment of the British Columbia-Yukon border restricted First NationIndian people living in Shawsho/Dalton Post and Neskatahin from hunting in their traditional area in British Columbia. As a result, many families moved to Champagne and Klukshu. Low fur prices in 1942 prompted many families to abandon commercial trapping for the first time.

Traditional patterns of settlement changed and land use was modified as people moved to new communities along the highway, including Haines Junction and Beaver Creek. The highway did not extend to First NationIndian communities, such as Hutshi and Aishihik, and government services were only available in the new highway settlements. In particular, the requirement for mandatory schooling forced the movement of First NationIndian people to highway settlements.

New government regulations dealing with the allocation and transfer of trapping rights eroded traditional ties to the land, accelerated the movement to the highway communities, and increased dependence on government assistance programs in the highway settlements. New highway communities provided seasonal employment opportunities which supplemented income from subsistence and land-based activities.

Ultimately, the region's settlement system changed from one that had been dispersed through the valleys and around the major lakes to one that was strung along the highway. By the late 1940s, although traditional activities were still carried on, only a few families lived away from the new communities, spent entire winters on traplines, or engaged in extensive summer meat hunts.

The highway has been strongly associated with development in the region over the past 50 years, facilitating larger scale, more sophisticated mining exploration and making the region increasingly accessible to tourists and recreationists, including those from Whitehorse. The result has been an increase in the use of the natural resources in the region for hunting, fishing, and sight-seeing, and has made a substantial contribution to the economic base of the highway communities. The presence of the Alaska Highway, the establishment of the Kluane National Park Reserve in 1973, the quality of the scenery, and its proximity to Whitehorse have made the region the most prosperous outside the territorial capital.

Recent Human History

Historical transformations within the region should be viewed as a complex layering of experiences, rather than the displacement of old ways by new. The cultural and economic landscape found in the region reflects the interaction of the global cash economy and the persistence of the traditional ways.

~~First Nation~~Indian dependence on the land, although affected by historical events, continues to be an important element of the region's culture and heritage. Seasonal camps and old ~~First Nation~~Indian trails are still part of the living settlement pattern of the region. Tourism and mining are, and will likely continue to be, mainstays of the region's economy. At the same time, the resurgence of ~~First Nation~~Indian culture and the impending settlement of land claims creates new opportunities for growth in the region.

Population, Income, and Employment

The 1997 population of the region was approximately 1,305,000 people, 80.75 percent of whom live in the highway communities. Population statistics are not overly reliable (and are sometimes contradictory) but a fair estimate is that some 45 percent of the population is of ~~First Nation~~Indian ancestry. Haines Junction is by far the largest community and there is an increasing trend towards concentration of population in this community. This is a reflection of its proximity to Kluane National Park and Park Reserve, greater service base and employment opportunities provision of tourist services, and nodal position at the junction of the Haines and Alaska Highways.- In terms of population growth between 1987 and 1997, the region ~~grew~~has grown at a rate faster than the Yukon as a whole, an annual rate of 3.126 percent, compared with 2.1 two percent for the territory (see Figure 2).

insert figure ???

This picture of growth is somewhat misleading. A large proportion of First Nation members live in Whitehorse and would probably return to the region if employment opportunities increased. Population turnover rates are high and 51 percent of the population lived in other locations at the time of the 1986~~last~~ census. Studies of population mobility indicated that the high turnover rate was largely confined to the non-~~First Nation~~Indian population. This high mobility is partly a reflection of the type of employment available in the region (government and seasonal opportunities in tourism and mining).

There is no clear forecast of population trends. At present rates, growth would be nominal.

A lack of significant projected growth in the region does not mean major growth will not take place. A number of externally driven factors, including ~~mine development at Wellgreen or Windy Craggy, construction of the Alaska Highway pipeline, and an increased recognition of the Kluane National Park and Park Reserve~~ and the region as a destination for wilderness tourism could result

in growth of the region's population. A key question is whether communities have infrastructure capable of dealing with major growth, should it occur.

The economic base of northern communities is very complex, involving seasonal employment, trapping income, wild food harvests, and transfer payments, and does not readily lend itself to conventional economic base analysis. Studies have demonstrated dramatic seasonal shifts in the economy of the Alaska Highway communities as tourism and highway maintenance projects ended with the onset of winter. Despite this, Haines Junction has one of the lowest economic dependency ratios in the Yukon, and one of the most stable economic bases.

While seasonal expansion and contraction of the regional wage economy results in a migratory flow of labour, economic activity for much of the First Nation~~Indian~~ population is also highly seasonal and, by conventional standards, highly informal. Harvesting wild food is only now being recognized as an important contributor to the economy and an asset in achieving self-sufficiency.

No formal data exist depicting employment effort in wild food harvests; these data are omitted from the breakdown of community employment. The economy pursued by many First Nation~~people~~~~Indians~~ consists of a mix of seasonal wage employment and wildlife harvesting. Woodcutting and native~~Indian~~ handicraft production are also important to the people of the region. The significance of wild food harvests in the region should not be underestimated. Harvesting of fish and game is also important to non-First Nation~~Indian~~ residents of the region, a reflection of rural values and a means of supplementing store-bought food. Beyond this, country food is very important from the standpoint of taste, nutrition, and social cohesion.

2.3 CONTEMPORARY LAND AND RESOURCE USE

The competition for land that exists in the region today reflects traditional and historic patterns of land use. Since contact between First Nations~~Indian~~ and non-First Nations~~non-Indians~~ in the latter part of the 19th century, economic values of resources has played an increasing role in determining the relative importance of different land uses.

The relatively new concern for the social, cultural, and environmental impacts of use is complex, because the many possible uses within a sector have a corresponding range of impacts on uses within other sectors. For example, grazing as a land use will have one type of impact on wildlife if the lease is fenced and a quite different impact if it is not fenced. This part of the plan will outline the major land and resource interests, and identify types of conflicts and areas of common interest between different land users.

From a sectoral standpoint, there are several broad land and resource uses in the Greater Klwane Region. These include fish and wildlife harvesting, tourism, recreation, mining, forestry, agriculture and grazing, transportation, and settlement. The majority of land uses on this list are renewable resource oriented. Mining is a major non-renewable resource use in the region. Transportation facilities and settlement locations are a special case in that they both determine the way that resources are used and, at the same time, are influenced by resource development choices.

It is important to realize that land and resource users have different degrees of interest in more than one sector. For example, a placer miner in the region is probably a hunter at some time and a tourist at others. Similarly, First Nations may engage in traditional wild food harvests and also be involved in mining and businesses. The points at which many interests coincide in the region are the environment and the economy. These two forces are often perceived to be exclusive of each other, but recognizing interdependence tends to reduce the conflict and emphasize common goals.

Three groups of people are involved in wildlife harvesting in the Greater Kluane Region: First Nations, who have a traditional aboriginal claim to wildlife; residents, who have a history of wildlife use that emphasizes the recreational side of hunting; and non-resident hunters, who also constitute the clientele for big game outfitting in the Greater Kluane Region. Besides outfitting, the other explicitly commercial harvester of wildlife is the fur trapper.

A similar list of users for the fish resource includes the First Nation Indian and domestic food fisheries, the commercial fishery, and the sport and commercial sport fisheries. Both lists show a pattern of traditional, recreational, and economic use of the resource. They also illustrate the way that the economic and recreational dimension of these activities are related. The overlap between traditional, recreational, and economic interests in the use of fish and wildlife has the effect of intensifying the conflicts between the user groups and of making conventional economic analysis inadequate for assessing the relative worth of different resource uses. At the same time, all users of the fish and wildlife of the region recognize their common interest in preserving the natural environment; specifically, the important wildlife habitat of the region.

Tourism is another sector where concern for the natural environment and economics are entwined. It is the preservation of a highly visible economic activity which attempts to balance wilderness values while facilitating their use.

Fish and wildlife are important tourist resources, both from the viewpoint of consumption by fish and wildlife harvesters and viewing by tourists. The same person can be part of many kinds of tourism activity at different times on the same trip. It is difficult, therefore, to target one type of tourist who uses one facet of the natural resource as more desirable than another. Conflict between tourism-oriented land uses and other sectors usually begins where the integrity of the environment is threatened.

Mining has a long history in the Greater Kluane Region. Its requirements for access and local, intense development often place mining activity at odds with renewable resource users and proponents of environmental protection. The privileged position that mining has enjoyed relative to other land uses through the Placer and Quartz Mining Acts has led to opposition from other sectors concerned with environmental protection necessary to support their interests.

In 1998 ~~At the moment, there were~~ are no hardrock mines in production in the region, although at least two projects, the Wellgreen and Canalask sites, ~~are still being considered~~ may go ahead if energy requirements can be met (see Mining Sector). The land use conflicts associated with mining

are often focused on access construction as well as specific mining techniques and environmental considerations. The economic benefits from mining are perceived to outweigh the potential negative impacts of the activity as it is the one economic activity in the region that holds the promise for significant numbers of year-round jobs for relatively long periods of time. These considerations mean that mining will remain an important land use option in the Greater Kluane Region.

Other sectors competing for land -- forestry, agriculture, and grazing -- do not have the social significance or the economic power of the three sectors described to this point. The lower profile of these sectors is related in part to the weak natural base that each has in the region. Forestry potential is limited for many uses due to the harsh climate and long regrowth period. Opportunities for agriculture are also limited by climate to a very narrow range of crops. Compared to agriculture, grazing possibilities are more varied in the region, but the best areas, primarily sedge meadows and willow communities, are found only in scattered pockets.

These sectors exhibit the same characteristic of fish and wildlife use in that land is largely used for these purposes as a substitute for using money to meet some need. Domestic woodcutting is a non-monetary method of acquiring energy. Gardening and greenhousing supplement fresh food requirements, while grazing provides feed for horses.

Woodcutting and grazing uses are important to a wide spectrum of the region's residents. These sectors have a demonstrated economic record in the region. Agriculture in the region is small scale. Local gardeners successfully produce a range of vegetables important to individual households and, to a very limited extent, for sale.

Forests have a special role in maintaining the integrity of ecosystems and have an importance that is greater than their value for processed forest products. The role of forests as a component of wilderness, as habitat for wildlife, as a regulator of drainage, and in prevention of erosion make forests the resource that contributes to the health of all renewable resource uses.

The region's environmental wholeness is central to the region's character. Land and resource uses that alter or are perceived to alter the wilderness nature of the region will be in conflict with fundamental regional interests. Creating conditions for sound land and resource use involves recognizing the primary importance of environmental considerations and in ensuring that proposed land uses either complement or have minimal impact on the environment.

From examination of the natural environment and historical development processes in the planning region, three major considerations, which should guide decisions about future land use, can be identified:

- 1. Extensions to infrastructure generate major changes in both the physical environment and, ultimately, the human environment.**
- 2. Hazards restrict land use.**

3. The natural environment (landscape, wildlife) is the basis of most sustained human activity in the region, be it First Nations~~ative~~ harvesting or tourism. The ability of this environment to absorb modifications or change should be a major factor in determining appropriate land use.

2.4 THE FUTURE

Apart from addressing current problems, planning is concerned with anticipating change, identifying possible problems and opportunities, and developing strategies to deal with them. An understanding of possible future development is essential to the preparation of a plan for the Greater Kluane Region.

Predicting the future in the Yukon is perhaps more difficult than elsewhere, because change in the territory has historically been driven by external events. Broad possibilities for Greater Kluane include:

1. The future will be like the recent past. Population projections for Greater Kluane suggest that nothing will change much in the future; growth will be slow and intermittent with continued high population turnover rates. This ignores the fact that growth in the Yukon is driven from outside and that the reasons there are land use problems in the territory are because growth takes place rapidly and because in the past there was virtually no planning process in place to manage this change.

2. Mining will increase. An increase in mining could result in population growth, economic benefits, and demands for social and community development. In addition, mining development will add pressure on fish and wildlife populations and the environment.

3. The Alaska Highway pipeline will be built. A major consideration within the planning region is the potential construction of the Yukon portion of the Alaska Natural Gas Transportation System (Foothills Pipeline). This would result in short-term employment opportunities and potential long-term environmental impacts. The availability of energy would have a significant influence on future development within the region. (Update: The economics for the natural gas pipeline remain unfavorable in 1998, although Foothills retains the right-of-way and believes that one day the pipeline will be constructed.)

4. Tourism will increase. The flow of tourists into the region is a function both of the attractiveness and promotion of the region, and conditions external to the region. An aging population, uncertainty regarding global travel, and the international image of Kluane National Park and Reserve are all factors that could increase tourism in the region.

The extreme case is that a combination of events could occur in a relatively narrow timeframe, placing enormous pressures on the region.

2.5 DEVELOPING A PLAN

The foregoing analysis provides an understanding of the various processes that have moulded present patterns of land use, along with a sense of the nature of land use conflicts -- real, potential, and perceived -- in the region. Development of goals and principles to guide the formulation of a land use plan for Greater Kluane must consider the physical limitations on resource use and human activity in the region and the perspectives of the region's population.

Regional Perspectives

During the preparation of the Greater Kluane Regional Plan, a great deal of discussion took place about the land and resource issues of greatest concern in the region. Both the First NationIndian and non-First NationIndian populations of the region have been affected by change over the past century -- but in different ways. For the First NationIndian population, the problem has been that of dealing with new land uses and attitudes towards resources that often had an adverse impact on their way of life. For the non-First NationIndian population, the problem has often been one of maintaining viability in an uncertain and often volatile economic environment.

Yukon First NationsIndians have a strong attachment to the land and a perspective on land and land use that differs somewhat from the Euro-American tradition. However, to depict this view as one that opposes growth or development is false. Over the past ~~100~~⁹⁰ years, they have seen their land transformed by industrial society and their way of life eroded as competition increased for land and resources within their traditional territories. They have a strong interest in maintaining their heritage, in revitalizing their culture, in ensuring development will not have an adverse effect on the land base, and in being able to share benefits from economic growth in the region.

Equally, to depict the non-First NationIndian component of the population as solely interested in industrial-type development opportunities is not appropriate. For many, residence in the Greater Kluane Region is a life style choice; it is home, and they have a vested interest in the quality of the physical environment. To those in the region with a primary interest in economic well-being -- and this cuts across all sectors of the population -- the central question is one of maintaining a livelihood in an economic system characterized by relatively high transportation costs and seasonal employment.

Many of the issues identified in the Greater Kluane Region are common to other parts of the Yukon. The need to recognize the value of traditional First NationIndian land uses and subsistence harvesting, for example, is an issue throughout the territory. Other, more site specific, issues were based on different perceptions or concerns about a given area in the planning region.

One of the major objectives of this planning exercise is to bring together the full range of perspectives and ideas on future land use and resource development. In doing so, the intent of this plan is to provide guidance for a wide range of cultural, social, and economic opportunities.

Planning Goals and Principles

Goals and principles to guide the planning process have their roots in accepted attitudes towards the environment and the concerns and interests of the region's population. A concern of interest to all parties is maintenance and enhancement of environmental quality. This is seen in the federal Green Plan, in the Yukon Economic Strategy, and in the territorial government's promotion of sustainable development and initiatives to develop environmental legislation (Yukon Environment Act), as well as in concerns expressed by residents of the region regarding quality of the environment. Of equal concern is that long-term economic opportunities exist in the region and that developments introduced to the region bring regional benefits. These two views are not incompatible. Scenic and wilderness qualities are important components of tourism potential in Greater Kluane; maintenance of wildlife populations is basic to the well-being of the First Nation~~Indian~~ and non-First Nation~~Indian~~ population of the region.

Development of resources or infrastructure to facilitate development must therefore be guided by the following goals:

- 1. Commitment to balanced and sustainable development.**
- 2. Recognition of First Nation~~Indian~~ values and perceptions toward land use and resource development.**
- 3. Promotion and protection of heritage resources.**
- 4. Promotion of employment opportunities for residents of the region.**
- 5. Enhancement of quality of life.**

To achieve these objectives, the following principles guide the plan:

1. The plan and subsequent resource management decisions must provide for cultural, economic, and social development based on both renewable and non-renewable resources; future resource developments must be shown to be economically feasible, environmentally sound, and socially acceptable.
2. Resource management decisions must reflect the importance of traditional First Nation~~Indian~~ resource use.
3. Areas of outstanding ecological, biological, cultural, and physical significance must be fully recognized and given appropriate protection.
4. Local people should receive, to the fullest extent possible, the most direct economic and social benefits from resource use in the Greater Kluane Region.

5. Local and traditional resource users must have the opportunity to participate fully in resource management and policy decisions which affect the region.

Broad Issues and Concerns

The following broad issues and concerns have been identified during this process:

1. Although the Greater Kluane Planning Region covers a large area, the very rugged landscape and associated terrain hazards forces the concentration of settlement activities on a limited amount of land, increasing the potential for land use conflict.

2. Easily accessible areas are especially stressed. As in all regions, resources in the Greater Kluane Region are not uniformly distributed. The result is strong pressure by many different users being concentrated in a few locations.

3. A number of different land users with different goals use the same resources. Different user groups compete for fish and wildlife harvests, both increasing stress on their habitats and populations, and creating friction between groups harvesting wildlife.

4. The land base and way of life of the First Nation Indian population of the region have been transformed by government policies and activities associated with the wage economy, causing social and economic hardships.

5. Development in the region has traditionally been driven by forces external to the Yukon. Currently, there is the prospect that new mines, tourism expansion, or pipeline construction could place further stresses on the region at the same time as they provide opportunities for economic and social development.

General Recommendations

1. Maintenance and enhancement of the region's high quality natural environment is recognized as a prime objective of this plan and a factor that affects all aspects of the economic, social, and cultural well-being of the residents of the region. Any developments proposed within the region must be carefully considered to ensure their compatibility with this important goal.

2. A new, more responsive, timely, and proactive management and decision-making system should be established within the region. That system must provide clear responsibilities for decision-making for residents of the region. The continuing requirements for planning and local involvement in processes such as CEAA/EARP/DAP and local Renewable Resource Councils should be recognized as the basis for this system.

3. Population projections for the region indicate only slow to moderate growth, but there is potential for rapidly accelerated growth as a result of major resource or construction projects in the region. The feasibility and timing of these projects is determined in large part by external market forces. Potential growth from resource development should be accommodated in existing communities in a manner that respects the social and cultural values of the impacted community. In anticipation of this future growth, the capability of community services and infrastructure to meet new demands should be assessed.

4. Any new development along the region's major highways should be located in designated areas in order to prevent ribbon development and, in doing so, to protect the visual quality of the corridors.

5. During the planning process, a great deal of land use information about the planning region was collected. There are still gaps in that data related to fish and wildlife, heritage resources, mineralization, and demographic statistics that are vital to the sound management of the region. It is critical that the collection of this data continue and that it be maintained in a manner that ensures it is current, complete, and accessible to decision-makers and those charged with the responsibility of monitoring the implementation and effectiveness of land use management in the region.

PART 3: SECTOR ANALYSIS AND RECOMMENDATIONS

Although the material presented in this section is on a sector-by-sector basis for ease of reference, a number of the issues, objectives, and recommendations cross over or apply to more than one sector. For example, the issue of protection of the natural environment applies to recreation and tourism use, and is also critically important in maintaining healthy fish and wildlife populations. Activities such as forestry, agriculture, or expansion of the regional infrastructure in turn affect activities in other sectors. The land and resources of the region are the foundation of a cultural heritage thousands of years old. This part of the plan attempts to identify some of the complex relationships among the sectors.

3.1 HERITAGE

Background

There are a number of ways to view heritage. One is as the living core of a culture, essential to its well-being and survival; another is as a resource of interest to tourists. Within the Kluane Region it plays both roles. Given the experience of the last 80-90 years, as the human landscape has been transformed, the region's First Nation~~Indian~~ people see the preservation of their heritage as essential to their survival and future well-being. Language, place names, traditional camps, trails, and gravesites are not museum pieces, but an integral and vital component of living culture. It is centrally important to them that there is no further erosion of their culture and thus an objective of this land use plan is the protection and promotion of heritage resources.

Cultural or heritage resources are the things (such as ~~artifacts~~artefacts and archival documents) and places (such as historic and archaeological sites) that we use to learn about and interpret any region's history. These artefacts and sites provide the information as well as the focus for telling the stories that are important components of a people's culture. In the Kluane Region it is known that people hunted bison thousands of years ago and that trade in copper and obsidian long preceded European contact. Elders recall stories of late 19th century seasonal trading expeditions of Coastal Tlingits inland to Southwest Yukon. The settlements of Neskatahin, Aishihik, Champagne, and Hutshi were important trading centres, as were Snag (Hi Tel Chac), Canyon City, Coffee Creek, Nisling, Klotassin, and Sourdough. Direct trade with the Tlingit occurred as far inland as the White River and Copper City (Ghur Schu Mun). The network of trails throughout the region reflects seasonal patterns of nomadic people and the extent to which Tutchone travelled and traded amongst themselves and with people from places such as Carmacks and Selkirk.

A mid-19th century battle between different First Nation~~native~~ groups, near the outlet of Dezadeash Lake, resulted in the massacre of a number of Neskatahin people. This area remains firmly entrenched as an important historic site in the minds of local First Nation~~native~~ people. Twentieth century stories about favoured hunting sites provide an opportunity to tell of big game guiding and hunting in the Kluane Region, and its one-time importance in the local Aboriginal~~Indian~~ economy. The four villages in the Wellesley Lake (Taku Mun) area, which existed before the highway was built in 1942, are still related in stories and remain important to people in the northern part of the planning region. More recent sites provide a focus for telling the stories of the construction of the Alaska and Haines Highways, and the establishment of Kluane National Park Reserve.

The subject of heritage presents distinct challenges and opportunities to land use planners that transcend resource protection. Opportunities to develop heritage-related interpretive projects, businesses, and visitor facilities hold the promise of an expanded tourism industry in the Kluane Region.

Explanation of Place Names Map

The map on page 33* presents 28 names in the southern Ruby Range between Sekulmun (Tthchal Man) and Kluane Lake (Lu'an Man) which have an Southern Tutchone ~~Indian~~ name as well as an "official" name on the 1:250,000 topographic map sheets.

Southern Tutchone names used in this example would appear to fall into two main categories: (a) places which identify resource locations such as a place to set a fish trap, or a place from which to obtain flat rocks for skin scrapers or ochre for use in making red dye; and (b) places which describe landmarks for guiding one through the landscape such as a "pass that widens then narrows" (12th July Creek) or the "creek running between two mountains" (Gladstone Creek). Little Waves and Big Waves Mountain reflects an aboriginal understanding of the dynamic nature of the landscape in the Cultus Bay vicinity where the former glacial Kluane Lake has left raised beaches resembling "waves".

Later travellers (prospectors, policemen) registered official names for these places ~~places which~~ that, in the case of the Ruby Range area, largely reflect recent events such as the short-lived, early 19th century gold rush history. Dates upon which claims were first staked on various creeks and people associated with staking (4th July, 12th July, Christmas and Hayden) feature prominently in this area. Whilst attempts have been made more recently to include Southern Tutchone names on "official" maps (Kloo and Kluane), often the origin of the name was lost in the transcription (for example, Sekulmun), resulting in a name completely foreign to Native ~~Indian~~ people in the region.

Tutchone people had names for all the geographical features they used (creeks, mountains, lakes, rivers) -- often more than one name -- but rarely ever named a place after a person. These names explain more about the relationship of Indian people to the land than almost any written record. At a time when the Tutchone language is spoken by few young people, place names can be learned from elders and passed on, thereby assisting in the retention of tradition and culture. They also add a richness of understanding to all people living in or travelling through the region.

Heritage Resources

Prehistoric sites are those that predate the arrival of non-First Nation ~~Indian~~ people into the region. They are recognized by the things or artifacts found at them. Most commonly, these are stone tools, the by-products of stone tool making and use, and animal bone from past subsistence activities. Prehistoric sites in the Kluane Region may also feature structures such as hunting blinds, caribou fences, or house structures. Based on the region's lengthy record of human occupation, prehistoric sites are likely the most abundant type of heritage site.

The region's prehistoric sites are of interest to a wide audience, including the public, professional archaeologists, and Yukon First Nations. For the latter group, these sites provide information about the history of their own people and other First Nations. Prehistoric sites tell of the life styles of people, where they camped, what they ate, what tools they used, and who they were related to. Some of the Yukon's more important archaeological sites are in the Greater Kluane Region. Data from sites in the Aishihik area have provided archaeologists with the south Yukon's chronological sequence of human occupation. Two important prehistoric trade materials are also found in the

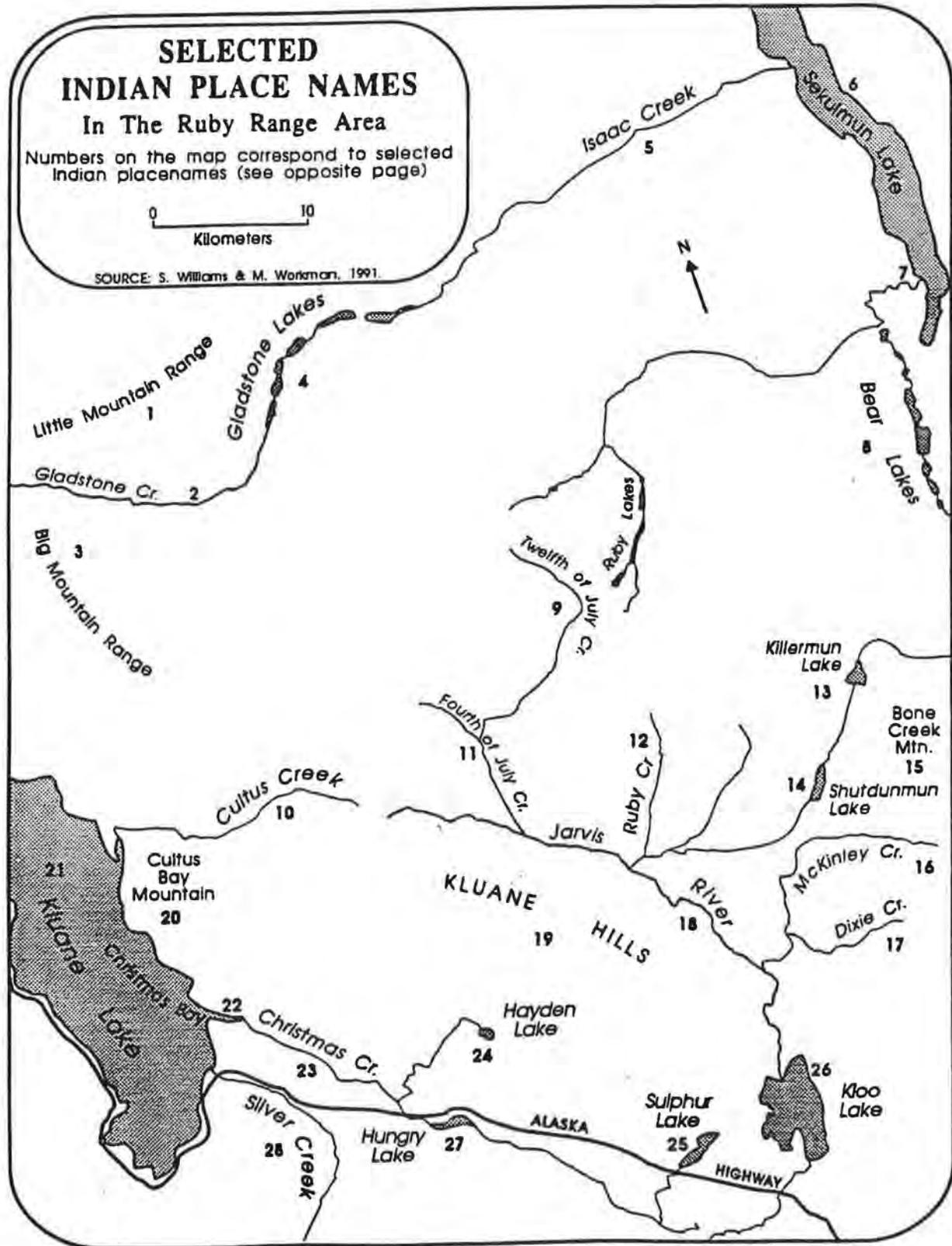
SELECTED INDIAN PLACE NAMES

In The Ruby Range Area

Numbers on the map correspond to selected Indian placenames (see opposite page)



SOURCE: S. Williams & M. Workman, 1991.



MAP 4

MAP 4 EXPLANATION

	<i>ENGLISH NAME</i> <i>(with map number)</i>	<i>FIRST NATION NAME</i>	<i>FIRST NATION</i> <i>TRANSLATION</i>
1	Little Mountain Range	Tayana dhal	The little waves mountain
2	Gladstone Creek	Ttheyi Chu	The creek running between two mountains
3	Big Mountain Range	Tayan Shaw Dhal	The big waves mountain
4	Gladstone Lakes	Ttheyi Man	Lakes between two mountains
5	Isaac Creek	Ttheyi Chua	Small creek running out between two mountains
6	Sekulmun Lake	Tthechal Man	A flat stone scraper Lake
7	Creek that runs from Ruby Lakes into Sekulmun Lake	Thela Shaw Chu Dashe	When the little flint creek joins the big one
8	Bear Lakes	Shar Lu Man	The bear fish lakes
9	Twelfth of July Creek	Chadan	Pass that narrows then widens
10	Cultus Creek	Tlat Kwashaw	The big deep creek
11	Fourth of July Creek	Lu Gha Nji	At the fish place
12	Ruby Creek	Dhal Nigha Chu	Close mountain creek
13	Killermun Lake	(D)zana Man	The muskrat lake
14	Shutdunmun Lake	Atsi Man	My Grandfather's Lake
15	Bone Creek Mountain	Dhala Nadat'u	Sharp pointed mountain
16	McKinley Creek	The Tth'u (Neetl'et Chu)	Rocks falling from high mountain
17	Dixie Creek	Ayitthe Chu	Steep mountain creek
18	Jarvis River	Tsigra Chua	Little ochre mountain
19	Kluane Hills	The Shaw A'an	Big rocks place
20	Cultus Bay Mountain	Tayan Gha Dhal	Small waves mountain
21	Kluane Lake	Lu'an Man	The fish place lake
22	Christmas Bay	Aghath'an	Shoulderblade bone
23	Christmas Creek	Aghath'an Chua	Shoulderblade bone creek
24	Hayden Lake	Atth'at Kwashaw (Tats'at Man)	Big sucker fish lake
25	Sulphur Lake	Kwat'aw Man	Lilly Pad Lake
26	Kloo Lake	K'ua Man	A place where you set a fish trap
27	Hungry Lake	Aghath'an Man	The shoulderblade bone lake
28	Silver Creek	Man Cheti'aya Chu	Where the lake branches off

Kluane Region: copper and obsidian from this area were traded great distances across the western sub-Aarctic in prehistoric times.

Historic period sites refer to those cultural artefacts and edifices built after 1880. According to the Yukon Heritage Branch, sites must be more than 45 years old to qualify as a historic site. More sources of information exist for identifying and interpreting historic sites than prehistoric ones. These sources include historical documents and photographs; local oral history; material remains such as cabins, caches, and other structures; and garbage middens. Unlike prehistoric archaeological sites, which are recognized by the things found at them, historic period sites need not be recognized by the presence of ~~artifacts~~ artefacts or structures because we have these other sources of information.

The region's historic sites record the history of the exploration, settlement, and development of the region by non-First Nation ~~Indian~~ people. They also reveal the history of First Nation ~~Indian~~ occupancy and land use. Many structures such as the Canyon Creek bridge, the Silver City cabins, trading posts, and homesteads are considered worthy of preservation because they represent local historical events; for example, the construction of the Kluane Wagon Road and the Kluane Gold Rush. These sites also have a high interpretative value and provide an opportunity to inform visitors about the region's past.

Historic First Nation ~~native~~ sites would include such places as graves, named land-scape features, old campsites and cabins, important resource areas, points of historical interest, and trails and travel routes. These sites are of particularly high symbolic value to Yukon First Nations because of the physical land spiritual connection to their history. Protection and preservation of heritage sites are vital if First Nations' cultural activities are to be maintained and enhanced. First Nations feel that being able to use their homeland for traditional subsistence and recreational activities remains an important part of their cultural heritage. The Champagne and Aishihik First Nations, for example, consider their historic travel and trading trails an important part of their cultural identity and life style. - These important heritage resources warrant designation and protection with clear management responsibilities for First Nations people.

Since completion of this Plan in 1992, the Historic Resources Act has been enacted. Management responsibilities are clearly laid out in the Act and in management plans arising out of the Champagne and Aishihik Final Agreement.

Resource Management Concerns

Programs for the management of the region's heritage resources are ~~just now~~ being established ~~under with the development of the~~ Government of Yukon's Historic Resources Act, ~~the finalization of the~~ Yukon Comprehensive Land Claims Umbrella Final Agreement, and ~~the development of the~~ Land Claims' First Nations' Final Agreements. These legislative documents will clarify the ownership of and responsibility for the region's heritage resources. Under the Land Claims agreement, First Nations will manage heritage sites found on settlement lands.

The first step in the resource management process is resource identification. The existing documentary information on the locations of the region's heritage sites has limitations that must be recognized. The Yukon Government's 1991 heritage sites information records for the Greater Kluane Region included some 29 historic period sites and scores of prehistoric archaeological sites (Gottardt, 1989; Yukon Heritage Branch: Archaeological Site Files, Yukon Heritage Inventory Files). Within the eastern Kluane area, major clusters of prehistoric sites are recognized at the northwest ends of Aishihik and Sekulmun Lakes, at Canyon area on the lower Aishihik River, at Taye Lake outlet, at the mouth of Gladstone Creek on Kluane Lake, at Kluane Lake outlet and Brooks Arm (Little Arm), in the Champagne-Dezadeash River area, in the Kusawa Lake area, and in the Hutshi area. While some recent site inventory work has occurred, the known distribution of the region's prehistoric archaeological sites reflects past researchers' interests and efforts, rather than resource management concerns. There are numerous potentially important parts of the Kluane Region that have not been adequately surveyed for prehistoric sites.

The Yukon Government's historic site records are limited in their content, rather than geographical, coverage. ~~Up to 1991, To date,~~ the Yukon Heritage Sites Inventory, which is the Heritage Branch's major information file on historic period sites, ~~had~~ only recognized sites with buildings as heritage resources. For the eastern Kluane region, these files list Silver City and the region's major ~~First Nation~~ Indian settlements including (Aishihik, Burwash Landing, Canyon, Champagne, Neskatahin, Hutshi, Kloo Lake, Shawshe/Dalton Post and Kluksu) as historic sites. The oral history of many of these important sites has yet to be recorded. ~~Several~~ Less popular or less permanent ~~First Nation~~ native historic sites, gravesites, and sacred sites are not identified as heritage resources. Similarly, important landscape features, such as the hills around Kluksu that have ~~First Nation~~ native clan history attached to them and ~~several of the~~ the region's old ~~First Nation~~ Indian trails, currently are not identified in the Heritage Sites Inventory.

The ~~Parks Canada~~ Canadian Parks Service's knowledge of heritage sites within Kluane National Park Reserve is also limited. A major cluster of historic gold rush sites and an important obsidian source location have been identified in the park. Park staff, however, have acknowledged that there has been inadequate documentation of prehistoric sites and ~~First Nation~~ native historic sites, such as trapping cabins, within Kluane National Park and Park Reserve (Burnip and Priess, Kluane National Park Reserve Resource Description and Analysis, 1987).

The Council for Yukon First Nations/Indians' Land Claims files feature information on many First Nation/native sites in the Kluane Region. While extensive in its coverage, this database also has its limitations, as the historical time depth of many of the sites and places it records are inadequately documented, and the full story of the place is not available in documentary form. The locational data on the sites in these files are also not accurate enough for land use planning purposes. Although we can now identify some parts of the Kluane Region as being heritage sensitive, we cannot dismiss others as not being so.

While site identification is an important component of the heritage resource management process, it is not the only one. Site significance and sensitivity must also be considered. Site sensitivity refers to the impact on a site of neighbouring or on-site development. Some types of highly sensitive sites, such as gravesites and sacred sites, must be withdrawn from all types of development. Others, such as Silver City, may be suitable for compatible development or enhancement. Similarly, not all sites are worthy of preservation; some smaller prehistoric sites could be studied prior to land uses taking place. The presence of a heritage site does not preclude use of an area. It all depends on the types of land use being allowed and the value of the heritage site in question. Many heritage sites can continue to be used, as they have been for thousands of years, as traditional camping places, which can be a low impact type of land use.

Two important heritage sites are being threatened due to lack of proper management: Silver City and Dalton Post (Shaw'she). Silver City was established in the 1903 Kluane Gold Rush and later became a transfer point between the water route across Kluane Lake and the Kluane Wagon Road. This became the site for a fox farm and later a big game guiding enterprise. In the 1930s, Silver City included a Royal Canadian Mounted Police post and a trading post. In 1942, Silver City operated as a camp for highway construction.

There are a number of buildings at Silver City remaining from the early mining and fur trading period. Unfortunately, the structures are being destroyed because of lack of maintenance or impacted by the intermittent floods that frequent this site. The structures on the site will be lost unless proper management efforts are made.

The Dalton Post site (Shaw'she) represents important aspects of both First Nation/Indian and non-First Nation/Indian heritage in the region and is threatened by unregulated land use. The Champagne and Aishihik First Nations consider this village site important to their cultural identity and are pursuing establishment of a management regime for the site through the Yukon Land Claims Agreement.

The heritage resource management process is a long way from knowing the location and significance of all of the region's heritage sites. The resident community, however, can provide valuable input into the recognition of heritage-sensitive areas in the Greater Kluane Region. They can help determine regional site significance. Local knowledge is an untapped information source that can help fill the information gaps that currently limit the ability of land use managers (for example, Yukon Territorial Government, Canadian Parks Service, Canada or First Nations) to manage and interpret the region's heritage resources.

Existing heritage ~~interpretive~~~~interpretative~~ programs in the Kluane area do not reflect the depth and breadth of the region's human history. Kluane National Park and Park Reserve ~~interpretive~~~~interpretative~~ programs and Yukon Department of Tourism Development's ~~interpretive~~~~interpretative~~ signage until recently have provided little information on the region's First Nations native history or on First Nations native heritage resources prior to 1992. Where such programs included information on First Nations Indian culture, they generally addressed such a theme in the past tense and did not recognize contemporary First Nations Indian life styles/lifestyles. Efforts to rectify past deficiencies are now being made.

Results of research of the region's prehistoric sites are also inadequately reported to the local community and few people understand how these sites relate to First Nations native history. Aboriginal place names could provide another important historical element of great interpretive value. For example, the Southern Tutchone name for the Lowell Glacier, ~~Naludi~~Natuday, translates as "fish stop". The place name relates to the past surges of the Lowell Glacier which blocked salmon from migrating up the Alsek River. Until recently, government authorities have ignored these place names and imposed topographic names that do not reflect local long-term usage by First Nations people. Since 1986, the Yukon Geographic Names the toponymic program has begun to rectify this issue.

The ~~recently passed~~ YTG Historic Resources Act and the ~~Land Claims~~First Nations' Final Agreements will introduce changes to heritage site preservation and interpretation in the Kluane Region. The territorial legislation will provide protection to all formally "designated" historic sites. Most importantly, the Act requires site assessment work in development areas for which there is inadequate heritage site information. The Act, as well as the ~~Land c~~Claims provisions, gives complete protection to highly sensitive sites such as First Nations native gravesites. Under the territorial legislation, Yukon First Nations, like other members of the public, can recommend their sites, whether they be on or off settlement lands, for designation as protected historic resources. The Act recognizes oral history as a valid form of historical research and information. Different heritage preservation values should thus be recognized in the Kluane Region.

The Heritage ~~Subagreement~~Chapter of the ~~Yukon Comprehensive Land Claims~~ Umbrella Final Agreement establishes the priorities for heritage site protection and interpretation in the Kluane Region. This agreement notes that the heritage resources of Yukon First Nations Indian people are underdeveloped relative to non-First Nations Indian heritage resources. It states that this imbalance must be corrected and government program resources shall give priority "to the development and management of Heritage Resources of Yukon Indian Indian People" (Section 13.4.1). The Umbrella Agreement also clarifies the issue of heritage site ownership. First Nations shall own all sites on their settlement lands. Their interest in the sites and artefacts related to their history and culture that are found off settlement lands is also recognized. The Land Claims Agreement gives priority as well to the use of aboriginal place names.

Issues

Issues

1. Jurisdiction over and interests in the region's heritage sites are inadequately recognized at the present time. Site ownership and management responsibilities need to be addressed in order to ensure that the region's heritage sites are adequately recognized and protected. (Dealt with through the CAFN Final Agreement)
2. Despite the fact that the great majority of the region's heritage sites relate to the history of Yukon First Nations, aboriginalIndian values and interests have not been adequately recognized in past territorial and federal heritage resource management efforts.
3. There is inadequate documentation of heritage site locations in the Kluane Region, as well as limited assessment of which sites are most sensitive to development impacts.
4. Because much of the region's aboriginalIndian history, including the story of the region's heritage sites, is unwritten, and those members of the community who know this history are elderly, there is an urgent need to conduct oral history research with First Nations Elders.
5. The region's aboriginalnative gravesites are known to be extremely sensitive to development, yet have not been adequately documented so they can be protected.
6. The sites of Silver City and Shaw'she/Dalton Post (Shaw'she) are known to be extremely vulnerable to impact from unregulated land uses and are currently experiencing considerable pressure. (Dealt with through the CAFN Final Agreement)
7. Heritage resource information, which has the potential to enhance tourism, is presently inadequately interpreted. (This has changed since 1992.)
8. AboriginalIndian history is inadequately represented and often erroneously presented in heritage interpretation in the Kluane Region. (Dealt with through the CAFN Final Agreement)
9. Aboriginal place names are an important component of the region's history. They have often been ignored by government agencies in charge of official place names, who have instead substituted place names foreign to or of little relation to the region's aboriginalIndian history. (Dealt with through the CAFN Final Agreement)

Objectives

To ensure a fair and balanced interpretation of the region's history, using both oral and written forms of documentation.

To ensure that heritage sites (archaeological and historic) are protected and preserved in a manner consistent with the cultural values of the residents of the region.

To ensure that all heritage resources of the region are managed in a manner so as to heighten local resident and visitor awareness of the region's cultural development.

Recommendations

1. Support should be given for the ~~completion and implementation~~ of legislation that ~~which~~ will determine ownership and management responsibilities for the region's heritage sites. The ~~recently passed~~ Yukon Historic Resources Act, as well as the ~~forthcoming~~ Yukon Comprehensive Land Claims Umbrella and First Nations Final Agreements ~~and the proposed federal Archaeological Heritage Protection Act~~, will clarify the issues of jurisdiction over and interests in the region's heritage sites.

2. All heritage resource management schemes should recognize ~~aboriginal~~ aboriginal ~~native~~ heritage values and First Nations' interests in the region's ~~aboriginal~~ aboriginal ~~native~~ heritage sites to ensure First Nations ~~native~~ heritage values are reflected. First Nations should be consulted about what types of places in their traditional territory they consider to be historically significant and worthy of preservation. These would include sacred sites, trails and landscape features with history attached to them, as well as the more obvious sites such as old campsites, cabins, and graves. Some places, such as trails and historically important landscape features, may warrant special management areas for protection.

3. Efforts of the Yukon Heritage Branch, ~~the Federal Department of Communications and the Canadian Parks Canada Service~~ to consult with the area's First Nations in the development of heritage resource management policies and programs should be encouraged and supported.

4. Given that it is impossible to document all the region's heritage sites, priority for further heritage research should be given to those types of sites that are most sensitive and to those areas where heritage sites are most poorly known. Other site documentation should occur as the need arises – that is, when development is proposed.

5. Oral history research with First Nations Elders, concerning the region's history and heritage sites, should be given the highest priority. Research with respect to places which have not been commonly used in recent years, such as Kluane National Park and Park Reserve, should be conducted as soon as possible.

6. Support should be given for a program which will inventory First Nations ~~native~~ burial site locations in the Greater Kluane Region, and record their history. This will require oral history research with First Nations Elders.

7. Steps should be taken to ensure the preservation of the historically important buildings at Silver City. Support should be given to the process of developing a management plan for the Shawshe/Dalton Post (Shaw'she) site.

8. Greater heritage resource interpretation is required to enhance regional tourism programs. First Nation~~Indian~~ history interpretive projects should be given a priority in the Kluane Region. Any tourism development strategies adopted for the region should include programs designed to foster awareness and understanding of First Nation~~Indian~~ heritage resources and culture.

9. First Nations should be involved in the process of public interpretation of their history in order to ensure accuracy and authenticity. First Nations should be given special consideration for any management and ~~interpretive~~interpretative opportunities related to First Nation~~native~~ heritage sites and trails.

10.—Support should be given for aboriginal place names documentation. This will require assessment of existing aboriginal place names data, for the collection of more names, for the process of requesting official place names changes, and for signage and translation of the region's aboriginal place names.

(By 1998, many of these recommendations had been implemented through the Champagne and Aihshik First Nation Final Agreement.)

3.2 SETTLEMENT AND COTTAGING

Background

Important early settlements were located at the fishing sites of Neskatahin, Klukshu, Hutshi, Kloo Lake, and Aishihik. Several villages also served as trading centres; for example, Canyon City, Champagne (Sha Dhala), Burwash Landing and Snag (Hi Tel Chac). Other settlements included Little Scotty Creek, Sourdough, Wellesley Lake, and Duke Meadows. Although most of these locations are no longer used as permanent settlements, First NationIndian people still have a strong spiritual link to them.

The first significant change in settlement patterns during the historic years resulted from the Kluane gold mining period of 1903 to 1904. Silver City was established as the transportation terminus for the wagon road from Whitehorse and tent cities, such as Bullion Creek, came into existence in the early 1900s. The boom was short-lived and within a few years the mining population dropped, marking the first of many population fluctuations that have occurred in the region over the past 90 years. The most recent mini-gold rush occurred in 1975-76 when high gold prices brought a wave of prospectors to the Burwash area.

The construction of the Alaska Highway in 1942 was the most significant influence on regional settlement in historic times. The communities of Haines Junction (Dak_wa_ka_da), Destruction Bay, and Beaver Creek were originally founded as work camps during the construction period and later became administrative and commercial centres. As the new communities grew, many of the traditional First NationIndian villages lost population to the emerging highway settlements.

This chapter provides information on the existing communities and on the future developments that may affect community growth, and sets out direction for accommodating future settlement growth. This chapter addresses both permanent residential settlement and seasonal cottaging.

Population

The Village of Haines Junction is the only incorporated community in the region. There are three unincorporated communities -- Burwash Landing, Destruction Bay, and Beaver Creek -- as well as many small settlements dispersed throughout the region, some seasonal and some permanent (Table 1). They include Kusawa, Mendenhall, Canyon, Kloo Lake, Champagne, Dezadeash, Klukshu, Aishihik, Snag, Scotty Creek, Kluane Lake, Neskatahin, and the south end of Kluane Lake.

Population growth between 1987 and 1997 was 289 ~~over the past 10 years has been at an annual~~ rate of ~~3.1~~ about 2.6 percent per year, slightly higher than the ~~2.1~~ two percent growth rate for the Yukon.- Assuming that the rate of increase remains constant at ~~3.126~~ percent, the population of the region can be projected to be approximately ~~1,800~~ 500 by the year ~~2005~~ 0.

TABLE 1: Population Distribution Greater Kluane Region - 1990 and 1997

COMMUNITY	1990 POPULATION	PERCENT OF REGION 1990 (rounded)	1997 POPULATION	PERCENT OF REGION 1997 (rounded)
Haines Junction	640	57%	830	61%
Destruction Bay	63	5.6%	48	4%
Burwash Landing	66	5.9%	86	6%
Beaver Creek	109	9.7%	140	10%
Community Population Subtotal	878	78%	1104	81%
Rural Areas (estimated)	250	22%	250 (est.)	19%
TOTAL REGION	1,128	100%	1354	100%

SOURCE: YTG Bureau of Statistics (1990 & 1997).

TABLE 2: Community Water and Sewer Systems

COMMUNITY	WATER SYSTEM TYPE	SEWAGE SYSTEM TYPE
Haines Junction	Community water system on upgraded well; Champagne and Aishihik First Nation village connected. Future plans include third well.	Sewage lagoon
Destruction Bay	Individual wells	Some houses connected to sewage lagoon. Future development will be on-site sewage
Burwash Landing	Wells, small piped systems, and some water delivery	None – sewage hauled to Destruction Bay
Beaver Creek	Well	Septic fields and pump out

SOURCE: YTG Community & Transportation Services, 1998 update.

Most of the regional population growth has occurred in Haines Junction, while the other communities have shown varying patterns of growth and decline. The steady increase at Haines Junction is likely related to the growing role of this community as a regional service centre, tourist commercial node, and administrative centre. A major factor is the presence of the ~~park interpretive~~ interpretative centre, ~~and administration and maintenance staff employed by~~ of the ~~Kluane National Park Reserve~~ Parks Canada. There are ~~30~~ 44 employees working for Parks Canada in Haines Junction. In addition, the presence of the park stimulates business in Haines Junction, adding to the demands for land and community services.

~~The factors that may influence population growth rate include increased tourism and changes to metal prices that would result in mine development. There are a number of factors that may influence the population growth rate over the next five to 10 years. They include proposed mine developments, the potential natural gas pipeline, increased tourism, and Bill C-31.~~

~~Both Windy Craggy and~~ The owners of Wellgreen mines ~~each~~ propose a work force of approximately 400 employees. ~~The~~ Both mining developments could locate a portion of the work force in Haines Junction, subject to discussion with the Government of Yukon and the village. There are no plans to locate employees in Burwash or Destruction Bay, although there may be pressure for various types of land in the event that the Wellgreen mine goes into operation. Due to low metal prices and other factors, development of Wellgreen ~~the mines~~ is not considered to be imminent.

Delay in the development of Wellgreen in 1991, was partially ~~is due in part~~ to lack of an adequate source of power for the smelter. The proposed Alaska Highway Gas Pipeline may offer the best potential to meet this requirement. Current information indicates the completion of the gas pipeline is unlikely to occur within the next decade ~~within this decade~~. If both the pipeline and the Wellgreen project proceed, there is potential for major impacts on population and settlement structure of the region.

Reinstatement of non-status First Nations ~~Indians~~ through the Government of Canada's Bill C-31 has resulted in some First Nation members returning to the region. Although the impacts in terms of population growth are far from clear, it is anticipated that this, in combination with the settlement of land claims, may result in growth of the region's population.

Anticipated increases in wilderness tourism are expected to result in a gradual increase in population as this service sector expands.

Community Services and Infrastructure

The potential developments outlined above could result in significant demands on community services and infrastructure and land for residential purposes. In order to guage ~~assess~~ the readiness of communities to accommodate growth, it is necessary to assess the existing community services -
- water, sewer, schools, and developable land.

There are various types of water and sewage systems in the four communities, as shown in Table 2.

Haines Junction is the only community in the region with a water and sewer system sufficient to accommodate any growth. Canyon Creek does not have a local water supply other than creek water. It, and trucks, ~~its~~ water from Haines Junction. This leaves the settlement without a water supply for fire protection.

The entire region is dependent on ground water for community supplies. There is a need therefore to ensure that contaminants do not enter the ground and pollute water sources. Agricultural uses, placer and hard rock mining, and hydroelectric development have the potential to impact water supplies if development takes place without adequate assessment.

There are 24 known garbage dumps dispersed throughout the region. The proliferation of dumps, their design and management, can create conflicts with bears and cause other adverse environmental impacts. ~~Solid Waste Regulations to address site management will be developed in 1998 under the provisions of the Yukon Environment Act. Policy and strategy for solid waste management is being addressed by the Advisory Committee on Waste, established by the Government of Yukon.~~

There are three schools in the region: grades kindergarten to 12 in Haines Junction, an elementary school in Beaver Creek, and the Kluane Lake School serving Destruction Bay and Burwash Landing. The Beaver Creek and Kluane schools could accommodate additional students, whereas St. Elias School in Haines Junction could absorb only a moderate number of additional students ~~a limited expansion in the high school grades.~~

Rural Residential

The Yukon Government's Lands Branch is responsible for disposal and management of Commissioner's Llands, and has the mandate for provision of land for rural residential subdivisions. The Yukon government does not accept individual applications for rural residential land. Although there is limited developed land available in Destruction Bay and Beaver Creek, if there is a demand identified and locally supported, the Government of Yukon will place land on the market.

The Government of Yukon is responsible for land surrounding the communities (Block Land Transfers) and land transferred to YTG for various uses such as agricultural or residential development. The remaining land is under federal jurisdiction. The federal government policy on rural residential disposition is to accept applications on an individual basis. However, only those applications that are beyond 30 kilometers from larger communities, such as Haines Junction, are given consideration. Under the current policy, rural residential use can be approved adjacent to smaller communities such as Beaver Creek, Destruction Bay and Burwash Landing. However, these dispositions could impose high servicing costs and threaten the viability of these settlements. Haines Junction could also be negatively impacted if significant rural residential development is allowed 30 kilometers from the village. In the absence of provisions for taxation of rural

developments, the communities often provide services for a population that does not contribute to the municipal tax base. In addition, if rural residential development occurs within the highway corridor, there could be a negative impact on the wilderness character of the region.

Cottaging

Prior to 1975, cottage lots were provided through the federal government on an individual application basis. Land claim negotiations made the continuation of this impractical and a subdivision approach was adopted that developed approximately 800 lots in the greater Whitehorse area. There is recognition from the Commission, as well as the residents of the area, that the pattern of cottage development that occurred in the Whitehorse area could cause significant negative impacts if repeated in the region. These could include a deterioration of water quality, degraded fish habitat, restricted lakeshore access, and diminished wilderness resource values.

In 1986, the responsibility for the provision of cottage lots was delegated to the Government of Yukon. Lakeshore developments took place on selected lakes in the Yukon, including Pine Lake (Si Mun) in the Kluane Region. Located approximately six kilometers from the Village of Haines Junction, Pine Lake was developed for cottaging in 1989. Nine cottage lots were sold on the north shore, primarily to local residents. A second phase was planned, however remains to be developed. ~~However,~~ the location of this development, so close to the village, raises the issue of whether the lots will encourage year-round residential use rather than the seasonal use they were intended for. A long-term leasing system may have encouraged seasonal rather than permanent use and the element of speculation in land ownership may have been averted.

The Kluane Region is fortunate in having seven major lakes -- Kluane, Dezadeash, Aishihik, Wellesley, Kloo, Sekulmun, and Kusawa -- as well as a number of smaller lakes. However, shoreline areas suitable for either seasonal or year-round residential uses are limited. The accessible lakes are well utilized by the public for recreational, subsistence, and, in the case of Kluane Lake, residential use. The shoreline areas are also areas of high value for other resources. The sites that have physical characteristics suitable for development are often the same areas with high wildlife and heritage values or significant existing public use. Along some shorelines (for example, west shore of Kluane Lake), terrain hazards restrict cottage lot development.

Because no spot applications are accepted for cottage lots in the Yukon, projecting demand is difficult. However, it is estimated that there is considerable demand for cottage lots throughout the Yukon, as well as in the Kluane Region. Indicators of the demand include the high number of applications for the Pine Lake lottery, and the submissions by the Village of Haines Junction in support of future cottage lot development. Community and Transportation Services, the Yukon government department responsible for the cottage lot program, also using the number of applications on file as an indicator of demand (per.com. Land Use Planning, C&TS, 1998).

It has been recognized for some time that a policy is required for the development of cottage lots to address a number of issues, including location of lots along river and lake shorelines and the relationship with other resource uses. Currently there is no policy in place that provides direction on the type of lake suitable for development or the approaches required to assess the other competing resource values.

Issues

1. Preservation of the wilderness and scenic values of the region is an issue. Scattered and/or strip rural residential development may negatively affect the wilderness character of the region.
2. Cottage lot development is particularly contentious in the region because it has the potential to affect highly valued lakeshores and create pressures for further development in remote areas. In addition, if the lots are improperly designed or sited, adjacent water may be polluted, fish habitat impacted, and lakeshore access diminished.
3. Major mining development could have significant impacts on existing communities unless settlement and service requirements are carefully planned. In particular, the pressure to extend services to fringe rural development may burden the economy of small communities.
4. There is a need for long-term protection of community water supplies.
5. The Kluane region is subject to active geological processes, resulting in many areas of hazardous terrain. Concern has been raised regarding the lack of policy to manage development proposed in areas with terrain hazards.

Objectives

To strengthen the communities economically and socially.

To provide opportunities for people to live and work in healthy communities.

To preserve the wilderness areas surrounding the communities.

Recommendations

- 1. Rural residential - Development should take place only in limited planned areas either within the communities or on land immediately adjacent to the communities. Where the land needed for development is adjacent to a community, the land should be transferred to Yukon, included within the community boundaries, and regulated through local jurisdiction.**
- 2. Taxation - Policies should be re-examined to provide equity distribution of infrastructure costs (community facilities, roads, power, schools, etc.), based on a user-pay concept. (The Yukon Government's proposed Rural Services Policy could address this to an extent.)**
- 3. Cottaging - The maintenance of public shorelines and the limiting of access into the hinterland are seen as a key to protecting the wilderness character of the region and opportunities for public recreation. Prior to the planning and disposition of any new cottage lots within the region, a cottage lot policy is required. This policy should be prepared in the**

broader context of a policy on Wilderness Resource Use (see Outdoor Recreation and Tourism) with full public consultation, and should address the needs of other resource users, protection of shorelines, water quality, fish and wildlife habitat, and public access.

4. Solid waste disposal - Long-term waste management strategies and policy should include guidelines for the closure, rehabilitation, and future disposition of garbage dumps and waste sites.

5. Community water supply - All communities within the planning region should identify and establish guidelines for the protection of both surface and ground water sources important to the community subject to the provisions of existing legislation. These water sources should be identified along with means for their protection during the community planning process.

6. Hazard Lands - Policies should be developed to deal with regulations and development approvals in hazardous areas as identified in the terrain hazard mapping prepared for this plan. Until such regulations are implemented, all applications for land should be assessed for terrain hazards and management provisions established that will ensure public safety.

~~7. Until such regulations are implemented, all applications for land should be assessed for terrain hazards and management provisions established that will ensure public safety.~~

3.3 TRANSPORTATION AND COMMUNICATIONS

Background

The extensive system of early trading and travel trails from the Pacific coast to the Kluane interior predate the modern highway system by centuries. These old overland routes provide the key to understanding the history of traditional land use and settlement patterns and served as a base for the early entry and settlement of Euro-Americans in the region. Contemporary highways such as the Haines Road largely follow traditional trails.

The first modern road in the planning region dates from the early 1900s with the construction of the Kluane Wagon Road. This road ran from Whitehorse to Steamboat (Mendenhall) Landing and from Silver City to the head of Kluane Lake. The Alaska Highway was built during World War II.

The region is well-served by the North Alaska Highway and Haines Road (~~Shakwak Highway~~) which connects its major communities to Whitehorse, ~~and to~~ Fairbanks, Anchorage, and Haines, Alaska.

The federal government is responsible for the funding, engineering, and construction, ~~and maintenance~~ of these two highways. Reconstruction of the Haines Road, carried out under the Shakwak Agreement between the governments of the United States and Canada, is ~~largely complete~~. Reconstruction of the north Alaska Highway was in progress in 1998, under the same agreement. The United States provided US \$89 million during 1992 to 1994, which allowed improvements to that portion of the Alaska Highway north of the Donjek River as well as replacement of the White River Bridge. Only small sections of the Alaska Highway are rebuilt to date and, although there is a great deal of work to do, Public Works Canada is able only to provide very general estimates of the work required. Funding for the remainder of the reconstruction, estimated at US \$90 million was approved in 1998.

Maintenance of the Alaska Highway and Haines Road is ~~now the responsibility of the~~ conducted by the Yukon Government, under an agreement between the governments of Yukon and Canada. ~~Significant reductions in federal funding over the last several years has resulted in highway maintenance problems.~~

A continuing ~~Another~~ problem associated with ~~upgrading the highway maintenance~~ is the mapping and reservation of suitable sources of granular resources (earth, gravel, and rock). In 1991, ~~Public Works Canada estimated~~ that an average of 60,000 cubic meters of common excavation material and 15,000 cubic meters of crushed granular material is required per kilometer of road rebuilt. Gravel requirements for maintenance purposes are smaller and occur on a more sporadic basis in response to resurfacing needs and the manufacturing of patching and sanding materials. Crushed material sources are needed at 10 to 20 kilometer distances and lengthy haul distances add significantly to the cost of road construction and maintenance.

Secondary access roads have also been constructed to provide public access for recreation or in support of a specific development project. The Kusawa Lake road provides summer recreation access. Access to the Aishihik Dam hydro project is provided by the Aishihik Road. This road is also quite heavily used by hunters and anglers and for a wide range of recreational and traditional uses. Roads into Snag and Dalton Post, which receive only summer maintenance, are also heavily used.

Many resource roads have been constructed in the region by individuals or companies to access a valued resource such as placer or quartz finds, or wood harvesting areas. All resource roads require a land use permit for construction, although roads constructed on mining claims are not subject to land use permits. Once the Mining Land Use Regulations are enacted, roads on mining claims will be subject to environmental assessment. Up to 1993 the Yukon Government offered funding for resource roads through the Resource Transportation Access Program (RTAP). Although some 70 percent of the ~~recent applications were for funding have been~~ from the mining sector, funding assistance ~~was~~ also available for airstrips, boat docks, and road upgrading in support of tourism, forestry, and other sectors. After abandonment, many of these resource roads are used by local residents and others for back country access. There are currently no regulations regarding the abandonment or permanent ~~closing~~ closure of these roads.

The present system of dealing with back country access often leads to land use or environmental conflict. Unplanned or uncontrolled access has increased hunting and fishing pressure in certain areas of the region to the point where fish and wildlife populations are threatened. Poorly planned or conducted construction over sensitive terrain (for example, the Burwash Uplands) has caused environmental damage that could have been greatly reduced or avoided. An approach to back country access planning, which takes a long-term view of the impacts of not only the construction of a road but the eventual use of the road by the public, could greatly reduce these difficulties. There is potential for new back country roads to have significant positive effects, such as dispersing hunting and fishing pressure and opening new opportunities for recreation and economic development. To achieve those positive results will require close co-operation between all resource users and managers.

Air transport is an important aspect of the region's ~~communication-transportation~~ system. The need for an additional emergency airstrip at Koidern or Bear Flats was identified in 1991, however in 1998 air transportation officials stated that this requirement needs to be re-assessed in consultation with the local First Nations and residents. ~~is recognized.~~ Private airstrips, associated with resource access, are plentiful in the region, but there is no systematic record of either location or status.

Reliable communications are essential for the safety of Yukoners and visitors, as well as a necessary requirement for economic development. Currently, there are 10 microwave repeater sites in the region and three radio broadcast transmitters. The microwave repeaters service the region, as well as providing necessary links to the Alaskan communications system.

~~The Northwestel constructed aion program to 1995 includes property for a new~~ microwave radio repeater site at Canyon Creek, with an access from the Alaska Highway to the radio building and

cable facilities to the dwellings. ~~This project is scheduled for 1991. While not specifically projected in Northwestel's 1990 five-year capital plan,~~ As well, Northwestel extended services to Nygren Subdivision and McIntosh Lodge and constructed cable services in Haines Junction. Although mentioned in 1991 as an other possible project, ~~s could include communications to the settlement at Champagne and to Aishihik Lake~~ has not been extended.

Issues

1. The poor quality of the Alaska Highway, particularly the North Alaska Highway from Jarvis Creek to the Alaska border, is an important issue. The main obstacle to improving the Alaska Highway is the question of who should pay for the upgrading. (This has been resolved through the Shakwak Agreement between Canada and the United States).

2. In order to make repairs to the Alaska Highway, borrow pit reserves are required. Issues surrounding these reserves include possible visual and environmental impacts along the highway corridor and protection of essential gravel sites from alternative development. Land dispositions in areas of critical importance for the highway right-of-way, such as stream confluences, mountain passes, and alluvial fans, will severely restrict transportation routing options.

3. The visual management of the highway corridors of the planning region is of concern. Improper management of corridor elements, such as signage, access development, borrow pit development and abandonment, and commercial and industrial development, can negatively affect the wilderness quality of the highway corridor and, more generally, detract from the experience of tourists who travel the highway.

4. There are several concerns with resource road development and later management of resource oriented access in the region, including the following:

(a) Environmental

- erosion of steep banks and silting of streams, which negatively impacts fish and fish habitat;
- disturbance or destruction of wildlife and wildlife habitat; and
- disruption and/or destruction of rare plant communities.

(b) Safety

- route selection to avoid or minimize terrain hazards; and
- stream crossings, appropriate use of bridges and culverts.

(c) Increased public access

- access to formerly inaccessible areas for hunting, wood cutting, wilderness tourism, and recreation.

(d) Road abandonment

- lack of criteria and policy for road abandonment.

5. The traditional ~~First Nation~~Indian travel and trading trails played a vital role in the history and exploration of the region. In addition to their cultural importance, they are also important from an outdoor recreation and tourism perspective, leading to some of the region's more beautiful and unspoiled country. Many of these routes are still visible on the land and kept open by use. Others are difficult to locate or obliterated by road construction. Careful management and protection of the major old ~~First Nation~~Indian trails is required.

6. Proliferation of utility corridors (hydro lines, pipelines, etc.) is not desirable because of their potential to degrade the high environmental values of the region.

Objectives

To ensure that transportation infrastructure is of a standard capable of facilitating rather than impeding economic growth in the region.

To ensure that the ability to access resources by road is balanced with maintaining a high quality natural environment in the region and the demand for improved back country access.

Recommendations

1. The Government of Canada should pursue the completion of the upgrading of the North Alaska Highway and increase current levels of funding to ensure the highway is maintained at appropriate national safety standards. (Upgrading took place under the Shakwak Agreement between 1992 and 1994 and the remaining reconstruction will be completed under 1998 funding of US \$90 million.)

2. There is a need to establish a proactive approach to the management of access roads in the region. Existing access should be reviewed in terms of its impacts on the natural environment and requirements for resource and recreation access. Management options such as upgrading, hunting or access restrictions, or abandonment should be considered. New access roads should be designed to serve multiple use purposes.

3. The development of additional viewing spots, highway pulloffs with adequate facilities, or access roads to camping or picnicking areas along the Alaska Highway corridor should be encouraged and include full community consultation. Designs should complement not only the natural and aesthetic features of the area, but provide opportunities for heritage and natural feature interpretation.

4. Options for the management of highway signage should be considered in view of the need to preserve the scenic viewscapes of the highway corridors.

5. Funding for resource road construction or upgrading should be allocated only to those projects which have received a thorough ~~review~~review under ~~Resource Transportation Access Program (RTAP) guidelines or~~ through the comprehensive Development Assessment

Process (DAP) to be implemented under the Yukon First Nations Land Claims Agreement. As part of the review process, consideration should be given to the future abandonment of proposed roads or their permanent role in the overall transportation and access system.

6. A formally designated system of major heritage trails should be established within the region and officially recognized as heritage routes. Land use guidelines should be developed for their recognition and protection, with full involvement of Yukon First Nations and other interested parties.

7. An inventory of sand and gravel resources in the highway corridors of the region should be completed to identify and protect long-term supplies for highway construction and maintenance, communities, commercial operators, and the public. Local residents should be given the opportunity to contribute information and participate in this work.

8. All abandoned sand and gravel sites should be reclaimed with the goal of restoring the natural landscape.

9. An additional emergency airstrip between Burwash Landing and Beaver Creek is required. The Aviation and Marine Branch should identify a site, in consultation with local residents, to meet this need and ensure that it is reserved from future dispositions. The Branch should define the priority and timeframe for construction of this facility. (Plan approval will not include the portion of the plan between Burwash Landing and Beaver Creek. Subject to the support of the affected First Nations and Government, this recommendation could be reassessed as part of a Plan review under the provisions of the Umbrella Final Agreement.

10. Wherever possible, utility corridors (combining pipeline, communication, and power corridors) should be established as a means of consolidating routings, thereby reducing the overall requirements for land and lessening negative impacts on the environment. The potential for utility corridors to accommodate multiple uses should be recognized. For example, in isolated areas, corridors should remain open for horse grazing.

11. All reasonable efforts should be made to minimize the number of access roads into wilderness areas for construction of future communications infrastructure.

12. All reasonable efforts should be made to keep communications installations as visibly unobtrusive as possible within the bounds of existing safety regulations.

3.4 ENERGY

Background

Energy needs for the region are met by a variety of sources including wood, oil, and electricity. Wood has been the traditional source of energy and wood stoves are used by residents of many communities for much of their heating. Wood accounted for 20 percent of the region's energy consumption in 1991, although consumption varied somewhat from community to community. There is a need to identify and protect a long-term fuel wood supply in the region in support of these local demands. Imported southern oil is currently the most heavily used energy source in the region. It is used primarily for the generation of electricity, as well as for home and business heating.

Electrical power for heat and light comes from either the power grid originating at the Aishihik or Whitehorse Dam hydro-electric installations or from diesel-powered generators within the community. A number of rural residents, highway lodges, and other businesses generate their own power, normally with gasoline or diesel generators, and are not connected to the overall energy grid or transmission system within the region. In 1991, the Kluane Region used only 1.1 percent of the total electricity generated in the Yukon, or about four percent of the output of the Aishihik Plant.

Given the region's small and widely dispersed population, its energy supply is adequate (although dependence on imported oil is somewhat expensive). However, the energy infrastructure is inadequate to meet demands from expanded industrial activity, such as the Wellgreen mine and smelter operation or Windy Craggy developments, which would require a total of some 3540 megawatts of power.

The demand for energy in the Kluane Region, and in the territory as a whole, is geared to economic development. As discussed elsewhere in this document, control of the territorial economy is largely subject to outside forces, such as world economic and market conditions. This is particularly true of the mining industry, which was by far the largest single power consumer in the Yukon when the Faro mine was operating.

In 1992 the Yukon-wide electrical delivery system was is currently at its limit. -If the Faro mine, or other major mining operations start up, new capacity would have to be considered. New capacity must be added to the system immediately to meet current levels of demand and to provide for the requirements of potential new development. -In response to this need, The Yukon Energy Corporation (YEC) released a five-year strategic plan in 1990 laying out the principles and practices that will control the expansion of power capacity. Although the strategy is out of date, this blueprint for energy development endorsed the objectives of financial responsibility, environmental responsibility, reduced dependency on diesel-generated electricity, development of comprehensive demand side management, and stable and predictable long-term electrical rates. Risk management strategies include the principle that project-related power needs must be paid for

by the benefiting development. In 1998, the Cabinet Commission on Energy released its report, Towards a Comprehensive Energy Policy for the Yukon. The overarching theme of the recent report, was the sustainable development of energy resources. While the 1998 Energy Commission Report sets out policy direction for the next five years, the 1990 Yukon Energy Strategy is still referenced for projections for capacity of the system.

The 1990 strategic plan projected that the Whitehorse/Aishihik/Faro (WAF) system would require 16 megawatts of new capacity by the end of the 1990s. However, with the Faro mine shutdown, there is a 1998 surplus of hydroelectric power. Filling the projected energy demand within the stated objective of environmental responsibility is a priority of the plan. YEC endorses hydroelectric generation as the most effective method in the long term, and specifically endorses small-scale hydro developments as the best option on the WAF grid.

Small-scale micro-hydro plants are mentioned in the YEC strategy as a method of meeting the objectives of environmental responsibility and providing the communities with other than diesel-generated electricity. The strategic plan mentions private micro-hydro developments with the option of selling any excess capacity into the power grid. Putting these principles into practice could mean small hydro developments to supply Burwash Landing and Destruction Bay. This approach, based on the principle that smaller is better, will require careful consideration to determine the impact of multiple small projects and transmission lines. Other small-scale and alternative energy sources, such as wind, solar, and thermal energy generation, have the potential to meet at least a portion of the region's current and future energy requirements.

The objective of managing demand for electricity by encouraging conservation and reducing peak load is environmentally responsible and has the effect of creating new capacity. The effectiveness of this option is not discussed quantitatively in the plan, but benefits include reductions in peak generation requirements and reduction of average consumption.

Projections for future energy consumption in the Kluane Region have not been completed to any degree of detail or reliability. ~~One~~ At the present time, ~~two mineral properties, the Wellgreen site, north of Burwash Landing, and the proposed Windy Craggy mine, located in British Columbia, are~~ remains at the pre-feasibility stage of development and represents a potential 3540 megawatt increase in energy demand for the region. However, in 1998, the mine remained on hold.

The current electrical system in the Yukon could not supply ~~this demand~~ the demand, should the Wellgreen property proceed to the production stage. ~~The Windy Craggy development plans call for on-site generation of power.~~ In the early 1990's, Wellgreen, which has a larger power need, is looking at several options including the use of natural gas or coal-fired thermal generation.

~~A major consideration within the planning region is the potential~~ In 1998, the construction of the Yukon portion of the Alaska Natural Gas Transportation System (Foothills Pipeline) was still being considered. The economics of the line remain unfavorable, although Foothills maintains the right-of-way and believes that one day the pipeline will be built. The routing of the 40-meter wide corridor will roughly parallel the Alaska Highway and would extend approximately 370 kilometers

through the Greater Kluane Planning Region. Haines Junction is the only community in the Kluane Region that could viably tap into the Foothills pipeline.

There are potentially large environmental impacts associated with a major pipeline project of this nature. Permafrost soils, major river crossings (the White, Donjek and Duke, among others) and a 6.5 kilometer crossing of Kluane Lake are a few of the conditions that such a project would have to overcome.

Although there are no concrete proposals for new hydro development within the planning region, a number of projects identified as potential future options could have significant land use impacts in the area. The first of these options would entail upgrading the Aishihik Power Plant by increasing the size of the catchment basin. Various scenarios have been suggested to accomplish this upgrading. All would require construction of new dam facilities and significant manipulation of stream flows or total diversion of some watercourses. By 1998, these options were replaced with the option of increasing power plant capacity with a third turbine.

There has been continuing controversy over the operation of the Aishihik Lake Dam and the impact of fluctuating water levels on the lake's fishery and on rates of shoreline erosion and canal leakage at Otter Falls. Dissatisfaction with the whole development process for Aishihik has sensitized the public to the potential environmental impacts of energy projects. Further investigation of the effects of winter draw-down on the recruitment rates of lake trout, whitefish, and cisco ~~was~~ will be undertaken on Aishihik Lake by the Yukon's Department of YTG Renewable Resources (Fisheries) in the summer of 1991. Many of the studies are linked to the process of relicensing of the Aishihik facility.

A second option involves the construction of dams on ~~both Rose Lake and Primrose River Lakes~~ to provide water through a penstock ~~or installation (diversion tunnel) to one or two a 30 megawatt~~ generating plants with a capacity of 25 to 40 megawatts. Power plants which would be built between Rose and Kusawa Lakes.

Other options have had even more limited preliminary examination and should be considered only as examples. These include potential dam sites on the Yukon River ~~which~~ that could have an impact on the White River watershed. There are also proposed sites on the White, Donjek, Alsek, and Kluane Rivers.

It is anticipated that in the foreseeable future small communities will continue to rely on diesel generation although the prospect of wind generation has been monitored in Destruction Bay since 1995. Although no coal deposits suitable or extensive enough to be used for thermal power generation have been found within the region, the Division deposit, 20 kilometers ~~southwest~~ Southwest of Braeburn, to the east of the planning region, has some future potential.

Issues

1. Energy development and potential impacts on the environment are a major concern in the region. Concerns with the future energy production and supply system include both the immediate impacts from construction and development, and the long-term operation of existing and new facilities.
2. While numerous small energy projects dispersed throughout the region could lessen the need for major new energy development, there is a concern regarding the environmental impacts of a number of small micro-hydro developments, including impacts on fish.
3. The Yukon Energy Corporation's stated user-pay policy for new, large industrial developments, such as Wellgreen, makes energy supply a critical element in development in the region.
4. Preservation of long-term fuel wood sources close to the communities is a concern in the region.

Objectives

To promote energy conservation programs and policies.

To ensure that energy requirements for the region are met in an environmentally responsible manner.

To ensure that the residents of the region have a voice in the development of future energy projects.

Recommendations

1. **The Commission endorses the YEC's initiative of a Yukon energy strategy; however, there is a need to look at a longer time period. The Commission strongly recommends an open public process for implementing the strategy. (In 1998, the Yukon energy strategy is due for review and revision. This recommendation has been met, in part, by the energy report released in 1998 by the Cabinet Commission on Energy.)**
2. **Energy conservation should be encouraged as the most environmentally friendly way to manage the energy needs of the future.**
3. **The Commission suggests that detailed investigation be undertaken to determine the impacts of the Aishihik project on surrounding lands and waters. This environmental assessment should be carried out in connection with a review of the water licence and should address remedial measures to deal with past and current impacts on fish and wildlife populations and habitats, water quality, and shoreline stability. The assessment should also identify and suggest ways of reducing potential future impacts and provide clear guidelines**

for future reviews and licensing of such projects. (A number of studies addressing environmental impacts were completed in the 1990s.)

4. All major energy projects should undergo a more comprehensive and effective review than is currently in place to determine the potential environmental impacts of the project and to prescribe effective measures to mitigate those impacts as required through either the Canadian Environmental Assessment Act ~~Environmental Assessment Review Process (EARP)~~ or the Development Assessment Process (DAP).

5. As an alternative to large-scale hydro power development projects and a means of limiting the impacts of power projects on the environment, smaller scale options, such as micro-hydro generation, and "alternative" power sources, such as wind, solar, or thermal energy based on potential sources of natural gas (Alaska Highway Gas Pipeline), are preferred. The ability of these sources to meet local and community needs should be investigated and should undergo an environmental review that compares their impacts to larger scale power development options. (Wind power is being monitored in Destruction Bay in order to determine the viability of wind powered electrical generation.)

6. Priority should be given to the use of forest resources for energy rather than a wood supply for large-scale pulpwood or sawmill operations (see Forest Resources).

3.5 WATER RESOURCES

Background

Water is an essential element in the region's ecology and an important natural resource. The high quality water resources of the region provide fish and wildlife habitats and water sources for communities. They have a long history as transportation and trade routes, have been utilized for hydroelectric power generation, are widely used for recreation and by the placer mining industry, and are an important part of the region's wilderness character.

As both the Yukon and Alsek river systems have their headwaters in the Yukon and British Columbia and ~~flow through~~ flow through Alaska, joint and international agreements are required to manage water resource use and the salmon fishery in these systems.

The Yukon River Basin Study, initiated in 1980 under an agreement between Canada, the Yukon and British Columbia, was designed to undertake research and to develop a framework for water resource planning. Water metering stations were evaluated in the Kluane region under the agreement as a means to measure water flows in order to assess flood hazards and hydroelectric development potential. To evaluate the potential effects of water resource use and to improve the knowledge of fisheries resources, water quality studies were also undertaken.

It was observed that, in arctic and subarctic regions, dissolved oxygen concentrations become depressed under winter ice conditions. Studies indicated that the initial depression of dissolved oxygen occurs more rapidly than previously expected and that concentration of dissolved oxygen may be reduced to levels which restrict fish populations. Lake outflow areas where ice is late to form and first to leave have been noted as areas of high productivity for fish. It is also noted that the discharge of sewage or disturbance of stream beds during fall and winter could accentuate the depression of dissolved oxygen and have harmful effects on biological communities. Wildlife information was also collected on species most dependent on aquatic and shoreline habitats. The studies indicated that the flood plains of major valleys are the most important units for the survival of many species including aquatic and semi-aquatic furbearers, waterfowl, songbirds, shorebirds, and several raptors such as bald eagles and osprey. Other raptors, upland game birds, and several big game species such as grizzly and black bear, moose, and woodland caribou, make seasonal use of shoreline areas that may be critical to their survival.

The Study Committee recommended that the parties enter into a formal agreement to co-ordinate ongoing planning and management activities. In 1991, in response to this recommendation, the Agreement Respecting Water Resource Management and Information Exchange in the Yukon and Alsek River Basins was signed by Canada, the Yukon and British Columbia.

The federal government is responsible for water management in the Yukon. The Northern Inland Waters Act, 1972 provides for the conservation, development and utilization of water resources in

the Yukon and provides for the establishment of a Water Board to license water use and the disposal of waste in water.

The Yukon Government anticipates increased responsibility for water management through devolution and proposes to develop regulations dealing with effluent discharge, municipal and private sewage, and water resource protection, as well as general water quality and treatment under its Environment Act.

Issues

1. There is a concern that the high quality water resource of the region be recognized as an essential element in the region's ecology and that it be given the highest priority for protection in all resource management decisions.
2. Protection of community water supplies.
3. Management of flood hazards (see Settlement and Energy sections).

Objectives

To highlight the importance of water to the ecology of the region.

To ensure the maintenance of water quality.

Recommendations

- 1. Water allocation and land management decisions should recognize the maintenance of fish and wildlife habitats as being of primary importance in the region.**

Related recommendations are also found in the Energy, Settlement and Cottageing, and Agriculture sections of this plan.

3.6 SUBSISTENCE

Background

Subsistence pursuits continue to be an integral part of the traditional and modern life styles of the region's First NationIndian people. To understand subsistence, it must be recognized as having many components, including the harvesting, processing, distribution, and exchange of local resources such as fish, game, plants, berries, and timber, primarily for domestic consumption. It is also closely associated with such activities as trapping, commercial fishing, and handicraft production, which produce items for sale as well as exchange.

First NationIndian subsistence is identified as a social and economic system of production and distribution, property rights and land tenure, households and extended families, mutual obligations and sharing, and is guided by traditional laws, customs, and cultural beliefs. The maintenance of a subsistence life style and access to the resources required to support that life style is a legally recognized aboriginal right held by Yukon First NationIndian people.

Other Yukoners have a recognized interest in subsistence resource use as a life style choice. This should not be confused with the cultural significance of First NationIndian subsistence and the aboriginal right of First NationIndian people to the subsistence use of resources.

The merger of subsistence and cash income is complex and varies from one household and community to the next. Practically every First NationIndian household in the Kluane Region relies on both subsistence activities and cash income. The essence of the subsistence-based First NationIndian economy lies in its function as an integrating system of cultural and economic relationships.

Subsistence has proven to be a remarkably resilient system. First Nations have adapted to dramatic changes, yet continue to rely on subsistence not only as a means of economic production but also as a strong part of their culture and heritage. There are, however, threats to this system that urgently need to be addressed. One is the increasing competition from other resource users and impacts on habitat. Others are social and economic programs and policies imposed on First Nation communities, which have resulted in reduced subsistence activity and production and, in turn, have negatively affected the social well-being of First NationIndian people in the region. Current subsistence activity is well below historical levels and below the potential of many sub-regions to support such use.

Issues

1. Yukon First NationIndian subsistence is a wide-ranging social, cultural and economic system that is broader than the mandate of any individual government department or agency. An interdisciplinary and interagency approach to subsistence has been absent from government in the past.

2. The resources required to support subsistence activities are under increasing pressure from competing, incompatible land, water, and resource uses such as mining, tourism, and agriculture, as well as by non-First NationIndian and non-resident harvesting activities.

3. First Nations have had little involvement and control of programs and information dealing with subsistence resource use and have viewed such initiatives with suspicion. Resulting programs and policies have often been based on a misunderstanding of the activity and importance of subsistence, weakening the system rather than reinforcing it.

Objectives

Land use and resource management decisions in the Kluane Region must recognize the importance of local First NationIndian subsistence activities.

Recommendations

1. Co-operative research and management programs between government, First Nations, and subsistence participants in the Kluane Region should be established to promote an accurate understanding of subsistence systems and resource requirements.

2. Governments should develop land and resource management policies, in conjunction with First Nations, that acknowledge subsistence, not merely as an activity but as a coherent system of many interrelated components. This includes the formal recognition of the rights, interests, cultural values, and economic benefits of subsistence resource harvesters in the review of land use applications and in social and environmental impact assessments.

3. Non-First NationIndian subsistence should be recognized as a separate activity requiring distinct policies, and not be subsumed under First NationIndian subsistence.

4. Government should adopt an inter-departmental approach to subsistence to ensure that the effects of its socio-economic, as well as land and resource management programs, policies and regulations, are more clearly recognized and are of more benefit to subsistence resource users.

5. Information and data on subsistence for public policy purposes should be obtained on a co-operative basis, with the informed consent of subsistence participants, and be consistent with principles agreed to through a Land Claim Settlement.

The traditional knowledge provisions of the Champagne and Aishihik First Nation Final Agreement meet these requirements to an extent.

3.7 WILDLIFE RESOURCES

Background

Wildlife is a key part of the character of the Kluane Region. The wide variety of terrain, landforms, and vegetation, and marked variations in climate produce a great diversity of habitat types in the region. Fourteen species of large mammals -- including ungulates and carnivores -- inhabit the region, a higher diversity than anywhere else in the world north of the 60th parallel. At least 20 species of small mammals occur, several at either the northern or southern limit of their distribution. Over 150 species of birds have been identified in the region, representing over 70 percent of all bird species occurring annually in the Yukon. The most recent status of selected wildlife populations in the planning area is shown in Table 3.

Moose, caribou, and Dall's sheep are the most common of the seven species of ungulates found in the region. Although widely distributed throughout the region, moose populations have declined significantly in the eastern portion. Dall's sheep inhabit most mountainous areas with about 50 percent of the total Yukon population in the region. One barren ground caribou herd (Fortymile) and three woodland caribou herds (Kluane, Burwash, Aishihik, and Chisana) range within the region (see Map 4). ~~The populations of the Burwash and Aishihik herds are at an all-time low. In 1998, the Aishihik herd was increasing, while the Kluane and Chisana herds suffered a set back~~ (per.com. Farnell, Dept. of Renewable Resources, Nov. 1998). The reason for the low population figures is not established. The Fortymile herd is slowly recovering from a major decline from half a million animals in the early 1900s to a low of 5,000 animals in 1974.

Mountain goats are uncommon in the Yukon, but over 50 percent of the total population is found in the planning region, primarily in Southeast Kluane National Park Reserve and the southern portion of the Kluane Wildlife Sanctuary. Mule deer are recent immigrants to the Yukon and are frequently seen in the Takhini River valley.

Elk and bison both are reintroduced species in the Yukon. In the Kluane Region, elk occupy two areas -- the Takhini River valley and the Hutshi Lake/Nordenskiold River valley (see Map 5). Elk abundance has changed little since their introduction in 1950, but it is suspected that their numbers are too low to absorb years of high natural mortality. The planning region has populations of a full range of predators usually found in the boreal forest. The abundance of wolf, coyote, red fox, wolverine, and lynx is tied closely to that of their prey. Grizzly bear, primarily a herbivore, is of particular significance, with about 10 percent of the Canadian grizzly bear population in the region. Based on estimated habitat suitability, the forested region of the Ruby Range and the southeast St. Elias Mountains (Kluane Wildlife Sanctuary) should contain the highest density of black bears in the Kluane Region.

Grouse and ptarmigan, raptors, and waterfowl are the most thoroughly documented birds of the planning region. Seven species of grouse (including three ptarmigan species) inhabit the region.

**TABLE 3: STATUS OF WILDLIFE POPULATIONS
IN THE KLUANE REGION**

MOOSE	
1991	Population Trends
5900	In 1998, Gov't of Yukon wildlife officials expected the moose population to increase as a result of the wolf reduction program undertaken in the region.

WOODLAND CARIBOU HERDS					
Population of Herds					
Herd	1982	1990	1991	1997	1998
Aishihik	1500 (est.)		785	1200	
Kluane	400 (est.)		143	180	
Chisana*		1660 (est.)			600

*Chisana herd primarily ranges in Alaska.

Population Trend: In 1990-91, local residents expressed the concern that the Woodland caribou herds had been declining for a number of years. The extent of the decline was confirmed by government surveys in 1991 and management steps were taken to reverse the population decline.

SHEEP	
1997	Population Trends
11,600 (unchanged from 1991)	In 1991, local residents questioned the total number indicated for sheep populations in the region. Based on local experience, residents indicated significant decline in sheep populations in some parts of the region (e.g. north Kluane Lake). Government surveys in 1991 differed from these opinions and indicated stable sheep populations. Further sharing of information and coordinated study would improve understanding of sheep population.

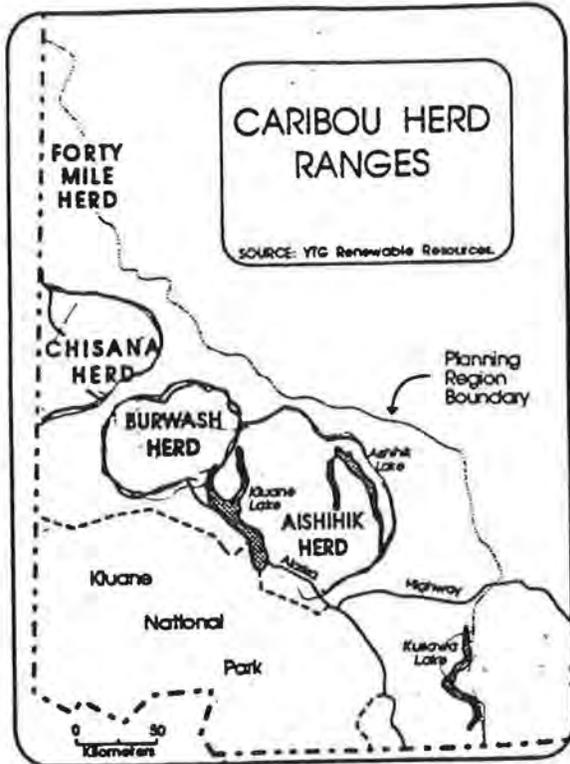
TABLE 3 (con't)

MOUNTAIN GOAT	
1997	Population Trends
1,160 (unchanged from 1991)	

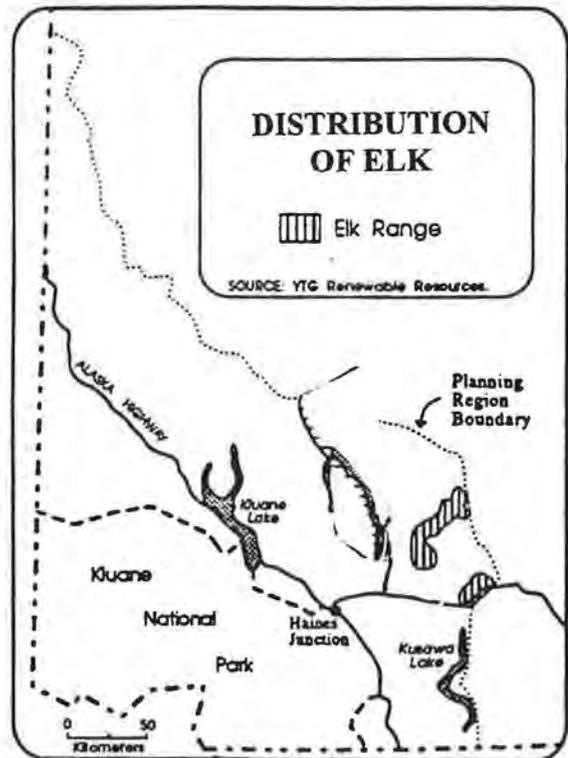
GRIZZLY BEAR	
1991	1991 Population Trends
1,000	In 1991, there was inadequate information to predict trends in the grizzly bear population

DUCKS	
1991	1991 Population Trends
10,000	Stable

TRUMPETER SWANS	
1991	1991 Population Trends
1,000	Increasing



MAP 4



MAP 5

Although known breeding habitats for sharp-tailed grouse are limited in number, they do occur in small pockets throughout the planning region.

Golden eagle densities in the Coast Mountains and Kluane Range are among the highest recorded in North America, indicating the international significance of this habitat. Gyrfalcon nest at moderate densities throughout the mountainous areas of the planning region, nowhere reaching the high densities of the North Slope. Peregrine falcons, listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered, have recovered~~are still slowly recovering~~ from the major declines of the 1960s and '70s. The Donjek and White River valleys have been recolonized by peregrines and currently support a low density. Although neither bald eagles nor osprey are abundant in the region, the central portion has the highest density. Within the region, the Shakwak Trench is a major migration route for waterfowl. Migrating birds use the many wetlands within the trench in the spring and fall. In particular, the outlet of Kluane Lake is rated as nationally significant by the Yukon Waterfowl Technical Committee for its use by thousands of ducks, geese, and swans in spring.

Relative to other areas of the Yukon, few ducks breed in the Kluane Region. The planning region is second only to the Southeast Yukon for breeding Trumpeter swans, which ~~were~~ listed by COSEWIC as threatened but have now recovered and are no longer considered vulnerable. Swans tend to be widely dispersed in low numbers over suitable breeding habitat; however, one area of concentration is the Wellesley Lake basin.

Three groups of people are involved in wildlife harvesting in the Kluane Region. Traditionally and currently, First Nations rely on wildlife for several distinct reasons: wildlife provides a food source of high nutritional value, and the by-products provide materials for clothing, implements, and crafts, as well as for spiritual and ceremonial purposes. Equally important, however, the harvest and use of wildlife is essential to the survival and vitality of First Nations' culture. First Nations' wildlife rights are protected in law and recognized in their land claim. In 1998, Champagne and Aishihik First Nation had a Final Agreement and White River had negotiated its settlement. Resident hunters also rely on wild game for food and recreation, while non-resident hunters constitute the clientele for big game outfitters in the Kluane Region.

Moose, caribou, and sheep are the main species hunted for food by First Nation~~Indian~~ people. Other important food species include gopher, snowshoe hare, waterfowl, and game birds, although, over the past 50 years, dependence on wild food has been modified by the introduction of a wage economy.

Harvesting of game by non-First Nation~~Indian~~ residents of the region and the Yukon is also significant, a reflection of rural values and a means of augmenting store-bought food. The value of wildlife to people in the region cannot be overstated.

The wildlife species of particular importance to the outfitting industry in the region are Dall's sheep, caribou, and grizzly bear. ~~Figure 3 shows that~~ In 1998, guided non-resident hunters accounted for 616 percent of sheep harvested, 62 percent of caribou

was closed to all outfitters. Closures for the Aishihik and Kluane herds were put in place in 1991 and for the Chinsana herd, in 1993.

There is no recent data on grizzly bear. However, the 1991 percent of harvest by guided non-resident hunters was, ~~and 57 percent of grizzly bear, significantly higher percentages than those taken by resident hunters. These figures are similar to the rest of the Yukon, with the exception of caribou. Caribou kills by non-residents are much higher in the region than for the Yukon as a whole, where non-residents account for less than half (47 percent) of the total harvest.~~

In 1991 there were ~~Of the~~ 68 trapping concessions in the Kluane Region, with 58 ~~are~~ held by First Nation ~~Indian~~ people. Three ~~we~~ are group trapping areas, two of which ~~we~~ are held for trapping by elders from the Kluane First Nation and Champagne and Aishihik First Nations. There are also three government-held trapping areas around Haines Junction, Champagne, and Silver City, which are maintained to reduce conflict in populated areas and may be trapped in special circumstances. The number of active trappers fluctuates somewhat. In 1987-88 there were 133; in 1988-89 only 97. Trapping continued to decline into the 1990s, due to lower than average fur prices.

Pressures on wildlife are increasing and competition for game animals is heavily concentrated close to communities, the highway corridor, and accessible back country areas. Present day competition for wildlife resources revolves around hunting and trapping and non-consumptive uses, such as wildlife viewing. The ~~K~~luane Region, due to the relative ease of access to ~~remote~~ areas, offers some of the best opportunities for wildlife viewing in the Yukon. Within the region, Sheep Mountain, Aishihik Lake, and Kusawa Lake all have high capability for wildlife viewing or high wildlife values. Pickhandle Lakes are identified in the Strategic Plan for Wildlife Viewing in Yukon as having significant potential for waterfowl interpretation. Ease of access has also resulted in increased hunting use within portions of the planning region and has undoubtedly contributed, in ~~led, at least in part,~~ to the population declines being seen in some species.

First Nation ~~Indian~~ systems of management rely on an intimate knowledge of wildlife built over generations of day-to-day dependence on wildlife resources. These systems find new forms of expression in provisions for self-government, allocation quotas, and local Renewable Resource Councils under a Yukon ~~L~~and ~~c~~laims ~~s~~ettlement. Government management systems, on the other hand, have been based on the collection of scientific facts and statistics and have not always adequately recognized First Nations information. Since the enactment of the Yukon Land Claims Settlement Act of 1995, there has been considerable progress in cooperative management.

Government policy and regulatory processes, which have waited for scientific proofs and rationale, are now becoming more responsive to the real needs for management by incorporating local knowledge. For example, ~~First Nation Indian~~ residents have long warned of the population decline of the caribou in the Aishihik and Kluane Lake areas. In the early 1990s, ~~Recently,~~ wildlife surveys ~~have documented critically low populations resulting in the Aishihik Caribou Recovery Program, and action has been taken to limit harvests.~~ Clearly, there is a great potential benefit from incorporating the traditional knowledge of the region's ~~First Nation Indian~~ people with the scientific knowledge of government wildlife managers.

Bison ~~have been~~ were reintroduced into the region in 1985 in an effort to establish a free-roaming herd. The transplant has been successful in terms of reproduction of the herd. However, there ~~were~~ are a number of management issues regarding the bison. In the late 1980s, ~~a~~ Approximately 5015 bison from the herd ~~of 130 animals have~~ that numbered 130 at that time, -moved into the Aishihik area and along the Alaska Highway. While this offered viewing opportunities for tourists, the bison caused a traffic hazard. In addition, the bison ~~have~~ damaged fences and local people believed the bison competed for grazing lands and forced other animals out of the area. The traffic hazard issue was dealt with by capturing the bison and moving them to a game ranch. By 1998, the herd in the Nisling River area had increased to 400 but no longer posed a traffic problem. More research and discussion with local residents will be required to determine the relationship between bison and other wildlife in the area. In the future, any such introductions of new or reintroduced species will require more local involvement in the ~~necessary~~ management decisions. The result could produce more responsive management decisions that would better serve people with concerns and an interest in wildlife.

The area presently known as the Kluane Wildlife Sanctuary was traditionally used by Tutchone people long before it was designated a game sanctuary in the early 1940s. It has always been considered an important wildlife area for Dall's sheep, grizzly bear, moose, caribou, and mountain goats. While the legal right for ~~First Nation~~ Indian people to hunt and fish in the sanctuary has been firmly established, this right ~~has never been fully exercised~~ had not been fully exercised from 1943 to early 1990s. -By limiting their harvesting activities, ~~First Nation~~ Indian people ~~have~~ effectively managed the area for wildlife production over time. ~~Today~~ In 1991, the Kluane Wildlife Sanctuary ~~was~~ considered a seed area for wildlife.

In comparison, mineral exploration and development have been allowed to continue within the Kluane Wildlife Sanctuary without adequate provisions for environmental protection. Key habitat areas for sheep, caribou, and moose in the Burwash Uplands and Wellgreen area have already been affected. In 1991 ~~Currently~~, there ~~were~~ are no limitations to access development by mining exploration companies on mineral claims in the wildlife sanctuary. This not only raises serious concerns over the future viability of local wildlife populations, but also contradicts the intent of creating a "wildlife sanctuary" in the first place.

While the Kluane Wildlife Sanctuary is a major area for wildlife, there are key habitats throughout the region. ~~Areas with significant wildlife values are shown on the Wildlife map (see map folder).~~ Key habitats are areas which wildlife use for critical, seasonal life functions (for example, ungulate winter ranges, waterfowl nesting and staging areas, mineral licks). Protection of key wildlife habitat is essential to maintain healthy populations. In order to ensure the maintenance of key habitat areas, they require protection from all development or, alternatively mitigation of the impacts of activities. While mitigation measures in response to one or two developments may be successful, it is important to realize that the cumulative effects of development cannot always be mitigated.

Issues

1. Populations of several species including moose, caribou, and sheep are low and declining in the region. The causes of the declines are not completely documented, but are likely due to various natural factors and in some cases, to high harvest pressure combined with high levels of predation. Low populations result in conflict among different user groups, reduced success in developing wildlife viewing opportunities, and reduced recognition of the importance of key habitat protection.
2. Access construction creates disturbance that continues for years after the original purpose of the road is gone. The most common impact of road access on wildlife is over-hunting. The problems associated with access are discussed in Transportation and Communications.
3. There is a concern regarding the need for a fair and equitable harvest allocation for local and traditional users. Resource allocation reflects social and economic priorities. The interests of consumptive users (traditional harvest, commercial guided hunting, resident hunters) and non-consumptive users (wildlife viewing) must be weighed in allocation decisions. First Nations have an aboriginal right to harvest wildlife that is protected by law and recognized in their land claim. Resident hunters are also heir to a hunting tradition. Big game outfitters provide hunting opportunities for non-residents. The role of wildlife viewing in support of tourism is increasingly recognized and may affect resource availability for consumptive use.
4. There are concerns over the achievement of sustainable harvests. High harvest pressure, conflict over harvest allocation, and relatively slow population recovery rates dictate the need for intensive management of harvest levels to maintain populations in the region.
5. Although in the ~~recent past few years there has been more cooperative management~~ an increase in local consultation, there is inadequate continued work is needed on integration of local and traditional knowledge with scientific information. This integration of information is a basic requirement for management.
6. Habitat degradation and destruction is due primarily to land and resource development. Impacts of development include displacement from home ranges, direct destruction of habitat, restriction of movement, and fragmentation of range. Land ~~alienations~~ alienation reduces the size of trapping and outfitting concessions and may, depending on the activities associated with the land use, eliminate the most productive and accessible wildlife habitats.
7. Disturbance of wildlife through increased proximity to humans is an issue in the region. An increase in human presence in an area creates problems of keeping animal/human incidents to a minimum (for example, bears and garbage, or wolves and domestic livestock).
8. Disturbance of key habitats generally has greater impacts on populations than disturbance of other habitats. The tools of appropriate habitat management are mitigation of the impact of an activity, or, in critical cases, outright prohibition of an activity.

9. The information on key wildlife areas within the region is incomplete.

Objectives

To maintain and enhance the diversity and abundance of wildlife populations through the maintenance of sufficient high quality habitat and the implementation of wildlife management programs that reflect both First NationIndian and non-First NationIndian knowledge.

To meet the needs of all wildlife users and recognize the importance of traditional wildlife.

Recommendations

1. Wildlife management efforts in the region should focus on restoring low populations to levels compatible with habitat capability.

2. There should be greater participation of Yukon First Nations and local residents in wildlife management. The principles outlined in the Land Claims-Umbrella Final Agreement and the existing and future, that will lead to the establishment of local Renewable Resource Councils, will improve that involvement. In the interim, prior to Final Land Claims Agreements, government, First Nations, and local residents should begin discussions on ways to improve local involvement in decision-making. (In 1998, Kluane and White River First Nations had not finalized their agreements.) In order to ensure that the mechanisms established to improve local involvement in management are effective and meaningful, a full range of management options or mechanisms must be available for consideration. Those options should include control of access into the back country, the changing of the dates of harvesting seasons, establishment of quotæ systems where harvesting pressure is high, and closures of areas to hunting.

3. Work to identify key wildlife habitat and the appropriate level of protection for these should continue. This work, and further wildlife management studies conducted in the region, should involve local residents and First Nations, as well as territorial and National Park managers, and people who directly rely on the resources, such as guides and trappers, in order to ensure that the design of studies and field programs, as well as the preparation and communication of reports, best reflects local knowledge and understanding of wildlife issues.

4. Key habitat areas should be designated where special management provisions are required to protect and manage wildlife habitats. Outside these designated areas, habitat

should be managed through the review of all applications for land and the establishment of appropriate terms and conditions to preserve the habitat values.

5. The Commission supports work underway by the Yukon Department of Renewable Resources to develop standard terms and conditions to ensure wildlife interests are considered in the review and construction of road developments. This important work should continue and will provide industry with a clear understanding of wildlife management requirements prior to beginning developments.

6. The potential for wildlife viewing to enhance tourism opportunities is recognized. The establishment of 0.5 kilometer no-hunting corridors to protect populations along the Alaska Highway and Haines Road and the reintroduction of depleted species (for example, sheep to Pickhandle Mountain) are recommended. (1998 studies determined that Pickhandle Mountain has a mountain goat, not a Dall's sheep population.)

3.8 FISH RESOURCES

Background

The Kluane Region has a diverse fisheries resource, with anadromous (going from the sea up rivers to spawn) and freshwater stocks present throughout the Alsek and Yukon River systems.

Three species of salmon -- chinook, sockeye, and coho -- are found in the Alsek drainage. Kokanee (landlocked sockeye salmon) is a rare species found only in Frederick, Kathleen, and Sockeye Lakes. The Tatshenshini River and its tributaries are migration routes for Pacific salmon and provide spawning, rearing, and over-wintering habitat. Important spawning locations include Neskatahin and Klukshu Lakes for sockeye salmon, and the Klukshu, Blanchard, and Takhanne Rivers for chinook salmon. Chum and chinook salmon are found in the Yukon River drainage. Chum salmon spawn in the Kluane River and its tributaries, Kluane Lake, and the Nisling and White Rivers. Chinook salmon occur in both the Takhini and Nordenskiold drainages, and spawning sites are documented on the Takhini.

A number of species of freshwater fish are also found in tributaries of the Alsek and Yukon River systems. These include northern pike, whitefish, rainbow trout, arctic grayling, lake trout, and burbot. A population of rare "Squanga"-type whitefish is found in Dezadeash Lake, along with lake whitefish.

There are five fisheries within the region: Aboriginal Indian food, sport anglers, commercial sport anglers, commercial, and domestic.

The Aboriginal Indian food fishery is widely distributed because people fish wherever they camp or stay to trap and hunt. Almost all fish-bearing waters receive some level of subsistence use. As in the past, families and individuals consistently return to certain areas, focusing on various species of fish at certain times of the year. Fish are harvested by setting nets, gaffing salmon, using fish traps, and applying modern methods.

Throughout the region there are numerous traditional harvesting sites which continue to be of great importance to the Aboriginal Indian food fishery. These sites include Neskatahin and Klukshu, and the Nordenskiold and Tatshenshini Rivers, as well as sites on Kusawa, Sekulmun, Wellesley, Dezadeash, Aishihik, Kluane, and Hutshi Lakes. Other areas of importance are in the Pickhandle Lake/Koidern River area.

The Tatshenshini salmon provided a base for a relatively large population at Neskatahin and Klukshu for thousands of years, attracting people from throughout the region for the only sockeye runs in the Yukon. The fishery is of continuing importance to the Tutchone and Tlingit people, especially at Klukshu. In recent years, the early sockeye run, upon which most of the Aboriginal Indian food and sport fishing pressure is exerted, has experienced a serious decline,

possibly due to over-fishing by Alaskan and foreign commercial fishermen, loss of habitat, disruption of migration patterns, or some combination of these factors.

Sport fishing is defined as the use of a rod or line with hook to capture fish. Both anadromous and freshwater species are sport fished.

Chinook, sockeye, and coho are fished on the Tatshenshini, Blanchard, and Takhanne Rivers from June to October. Shawshe/Dalton Post is the most popular sockeye salmon angling location in the region. Chinook is sport fished on the Takhini River. Concerns with over-fishing of chinook have prompted total sport fishing closure during the spawning period. Sport fishing of salmon in the White and Donjek Rivers is negligible.

The Little Klukshu and Upper Nordenskiold Rivers and the Dezadeash River system are no longer utilized by salmon. These areas have been alienated by beaver dams and glaciers.

The planning area offers resident and non-resident anglers a wide variety of freshwater fishing opportunities. Lake trout, arctic grayling, and northern pike are the most popular species. Sport fishing activity is highest from June through August.

Accessibility generally dictates fishing pressure. Areas receiving high use include Kluane, Aishihik, Dezadeash, Kusawa, and Pine Lakes, and the Takhini, Kathleen, Koidern, and Jarvis Rivers. The Kathleen River, in particular, is heavily sport fished for rainbow trout. Other lakes generally utilized for remote sport fishing include Dog Pack, Frederick, Jo-Jo, Long, Sekulmun, Teepee, Tincup, Tchawsahmon, Toshingerman, and Stevens. Resident anglers ice fish on Kloo, Kluane, Pine, and Rainbow Lakes.

Commercial sport fishing involves guide operators who cater to highway traffic on accessible lakes, usually from a highway lodge, and guide operators who offer aerial or boat access trips to remote lakes or streams.

A commercial sport fishing outfitter is located on the Tatshenshini River, downstream from Shawshe/Dalton Post. This operation targets chinook salmon within the Tatshenshini, Blanchard, and Takhanne Rivers in July. ~~A Haines Road lodge within the vicinity of Dezadeash Lake also targets salmon fishing at Dalton Post and provides guided fishing excursions to lakes in the area, including the Kluane National Park Reserve.~~ Commercial fly-in fishing operations are also located on Wellesley, Kluane, Long, Tincup, and Dog Pack Lakes. Special gear and catch restrictions apply on Wellesley Lake to conserve trophy lake trout.

Clients must obtain sport fishing licences and, therefore, adhere to catch limits and fisheries' regulations. However, there are no acts or regulations by which fish camp operators can apply for exclusive or preferred use of the lake on which they are located, or for certain rights to the fish resource of that lake. As well, resource assessments are not required to determine the capability of the lakes, and lake quotas are not applied to these kinds of operations.

Commercial fishing is defined as harvesting fish for sale, trade, or barter. Domestic fishing is defined as fishing for personal or family consumption. The licence is distinct from an Aboriginal Indian food fishery licence which authorizes an Aboriginal Indian to fish solely for food.

Gill netting is the primary method used for commercial or Aboriginal food domestic fishing; however, there is some use of burbot "set" lines.

Commercial fishing in the study area is restricted to Kluane Lake. Lake trout is the targeted species, although catches of whitefish and burbot are common.

Commercial and domestic quotas are combined. Holders of either of these licences must cease fishing once the quota for the lake is taken commercially.

Issues

1. A number of the region's lakes and rivers sustain more than one user group. These users, either singly or in combination, may exert more than sustainable pressure on the fish resource. For example, increasing use of remote upland lakes for commercial sport fishing purposes raises the issue of allocation between wilderness resource users.

2. Accessibility generally dictates fishing pressure. At present, the lakes and rivers receiving the greatest amount of use have road access. New road access and unregulated development activities in previously remote areas could lead to increased fishing pressure or development that may negatively impact the fisheries resource.

3. It is believed that the species composition of certain lakes is changing. On Kluane Lake, for example, lake trout are sought by the commercial and domestic fishery, anglers, and Aboriginal Indian food fishery. Coarse fish populations, such as suckers and whitefish, appear to be growing. This situation may be attributed to increased harvesting of trout and a lesser interest in coarse fish which, in the past, were of particular interest to Aboriginal Indian people for dog food.

4. Intensive sport fishing pressure at Shawshe/Dalton Post, in combination with other recreational activities, has effectively displaced First Nation Indian use of this old village site. (This issue is being resolved through the provisions of the Champagne and Aishihik Final Agreement.)

5. Discharged sediment from operating placer mines may have had negative impacts on fish habitat and populations within the Jarvis River/Kloo Lake system. Discussion to date of impacts from sediments originating from placer operations on fisheries resource values has largely focused on the potential for impacts on the receiving streams. Concern remains regarding the potential for negative impacts on fish habitat and populations downstream of the receiving waters.

6. The existing and proposed energy developments in the Kluane Region have the potential to negatively affect fish populations and habitat. The various waterways which have been identified for potential development include the Aishihik and Sekulmun basins, and Rose and Primrose

Lakes, as well as the Yukon, White, Donjek, and Kluane Rivers (refer to Sector 3.4, Energy, for more detail).

7. The potential for shoreline developments to disturb or alter fish habitat or migration patterns is a concern in the region.

8. It appears that there may be potential for salmon enhancement on the Little Klukshu, Upper Nordenskiöld (Hutshi Lakes), and Dezadeash Rivers. The restoration and reintroduction of salmon populations could greatly increase the harvesting opportunities for all user groups.

9. Incomplete or unreliable data make fisheries management decisions difficult. Good information is required to effectively manage the resource.

Objectives

To ensure effective management and sustainable use of the fisheries resources of the Kluane Region.

Recommendations

1. In consultation with local residents and First Nations, government should establish a policy dealing with the use and management of shoreline areas within the planning region. The policy must address requirements for aquatic habitat protection.

2. The Commission recommends that a comprehensive fisheries allocation policy be developed in consultation with local residents and First Nations. The policy should address the capability of lakes to sustain fishing pressure and the allocation of the fisheries resource between users; it should be completed prior to issuing any permits, leases, or titles for land to be used for fishing or wilderness lodges. The policy should determine the nature and capacity of the fishery to support such uses.

3. The Commission recognizes the lack of available information from which to derive such a policy and recommends that detailed fisheries information be collected as soon as possible. Continued efforts to utilize local knowledge in developing management recommendations are supported.

(Study of rainbow trout in Kathleen Lake was completed by the CAFN)

4. Government should investigate the potential for enhancement of formerly important, traditional salmon fisheries on the Little Klukshu, Upper Nordenskiöld, and Dezadeash Rivers. This work, which could include rebuilding or reintroduction of salmon populations to their habitat, should be carried out in close consultation with local residents with knowledge of the fishery. The enhancement and rehabilitation of existing salmon fisheries should be a priority for management within the region.

5. Throughout the planning region, identification and protection of spawning sites should be a priority for management. A full range of protective measures to safeguard both the spawning habitats and populations should be considered by managers. Harvesting should be closely monitored at these sites and consideration should be given to closing these areas to fishing during critical spawning periods.

6. The impact of the fluctuating water levels of Aishihik Lake should be monitored and studied. Mitigating measures may be necessary to reduce the impact of changing water levels on fish habitats. (Several studies have been completed since 1992)

7. While the new Yukon Fisheries Protection Authorization (YFPA) will affect study results examining the issue of downstream impacts of placer sediments on fisheries in the Yukon, the Kluane Planning Region should be assessed for any unique characteristics that warrant special consideration.

8. A fish study should be completed on the Alsek River system to determine the reasons for the low returns on the early sockeye salmon run.

3.9 FOREST RESOURCES

Background

The forests of the region play an important role in the overall ecology of the area and provide a range of biological and socio-economic benefits. They support a wide range of game and non-game animals and, by regulating drainage and stabilizing river channels, maintain water quality and fish habitats. The relatively undisturbed character of the region's forests also contributes to its wilderness character. In these ways, forests continue to play a key role in sustaining traditional harvesting activities as well as providing opportunities for recreation and wilderness tourism.

Seventy-six percent of the region's land base is non-forested. Of the portion that is forested, 83 percent is rated as having low productivity. These stands are scattered throughout the region in low-lying areas and adjoining uplands, and provide important habitats as well as sources of fuel wood. There are relatively large areas of low-productivity sites with stands of mature timber. At present, these stands could support increased harvesting, especially for fuel wood and chipping material.

The relatively small areas of good (one percent) and medium (three percent) forest productivity are scattered in low-lying areas and river valleys, particularly the Dezadeash, Takhini, Nisling, Nordenskiöld, and White. Most of these better lands are in the northern part of the region around Beaver Creek. Stands in these areas have potential uses as saw logs, fuel wood, or pulpwood.

Despite generally low growth rates and timber volumes per unit area, forest resources play a number of important roles in the region. Fuel wood is an important energy source for the region's communities, particularly Burwash Landing and Haines Junction, offsetting the high costs of fuel oil or electrical heating.

Fuel wood harvesting also provides a continuing source of employment and income for several local commercial harvesters. Relatively easy access and an abundance of fuel wood along the north Alaska Highway spreads harvesting over a large area. Land within a 10 kilometer radius around Haines Junction is reserved specifically for the use of local residents for fuel wood and other personal uses.

In 1998, there were four sawmills in the Greater Kluane Planning Region: ~~two~~ one in Canyon, one in the Haines Junction district, and two in the Beaver Creek area. They generally operated on a custom basis, filling specific orders for local residents of the region. The Champagne and Aishihik First Nations own and operate a chipper mill, utilizing waste wood from the community's truss plant and wood from the Canyon Creek burn.

The region has relatively low lightning strike occurrence and low harvesting pressure. As a result, in 1992, there were large volumes of mature timber, particularly between Dezadeash Lake and Haines Junction, and north of Mile 1118 on the east side of the Alaska Highway. ~~This raises~~

concerns over the region's susceptibility to large forest fires. In 1998, the region from the White River Traditional Territory to Marshall Creek east of Haines Junction, experienced major forest fires. One of the fires, threatened homes in the MacIntosh subdivision north of Haines Junction.

-A direct relationship between relatively low moose, caribou, and sheep populations and the presence of large areas of old growth spruce forest has been observed. Prescribed burns have been suggested as a means of improving habitat; however, such a causal relationship has not been clearly demonstrated. Based on this understanding, the 1998 fires could lead to improved habitat and increased wildlife populations.

In addition to the extensive fires, the Kluane region suffered from a spruce bark beetle infestation that affected the area north of Haines Junction. These natural occurrences resulted in a decrease of the merchantable timber in the region. A 1998 assessment by Northern Affairs Forest Services, estimated the annual allowable cut at only 1,500 cubic meters of green sawlogs. This figure is tentative at this time.

The Spruce Bark beetle infestation, led to calls for forest management planning and increased cutting and in 1998, Northern Affairs, Forest Services, initiated a forest management plan in co-operation with Champagne and Aishihik First Nation, the Government of Yukon and the Alsek Renewable Resources Council.

Since the early 1990s there ~~There~~ has been discussion of expanded commercial logging operations in the region by private interests. Large-scale pulpwood or saw log harvesting has the potential to compromise the key objectives of maintaining a healthy forest base for habitat protection and for soil and water conservation. In addition, the scattered nature of the stands, their low productivity, and the long time required to grow new forests, combined with a lack of local markets and great distances to existing markets, make large-scale commercial harvesting economically impractical.

Issues

1. Potential impact from timber harvesting on fish and wildlife habitats, water quality, and scenic and wilderness resources.
2. Protection and management of accessible sources of fuel wood and saw logs for local communities.
3. The need for local involvement in decisions about the use and management of local resources.

Objectives

Management and maintenance of forests in the interest of the ecology and environment of the Kluane Region.

Utilization of timber to satisfy local and Yukon needs, to the extent that this is compatible with an overall goal of conservation.

Recommendations

- 1. Forest harvesting should be carried out on a sustainable basis with priority given to meeting the fuel wood and small-scale saw log needs of the regional and greater Yukon markets.**
- 2. Protection of wildlife and wilderness values should be given priority over large-scale harvesting based on export markets.**
- 3. Forest management plans should be required prior to any significant increase in harvesting. Plans should address the need for silviculture, soil and water conservation, and forest fire management; ensure adequate protection of fish and wildlife habitats; and maintain scenic and wilderness resource values.**
- 4. When future demand for fuel wood requires special management, community woodlots should be established to ensure accessible supplies for local residents.**
- 5. Single-use applications for land within highly and moderately productive areas should be reviewed for their impact on the forest resource base.**
- 6. Government should develop a fire management plan for the Kluane Region in close co-operation with First Nations and other residents of the region. The plan should give consideration to the use of controlled burns for habitat enhancement.**

3.10 AGRICULTURE

Background

Small-scale cultivation and gardening have been successfully practised in the Kluane region for many years, although no large-scale commercial farming operations are found today. Before the Second World War, ~~the Kluane Region had little role in Yukon agriculture, which was concentrated~~ in the major river valleys close to the Klondike gold fields. In 1943, however, an agricultural research substation was established at Mile 1019, just outside Haines Junction, which provided information on Yukon agriculture for the next 27 years.

The lessons of the Mile 1019 Experimental Farm are unclear but provide a summary of the problems of agriculture in the Yukon, as well as the regional problem with this activity. On the capability side, data from the substation show that oats and barley matured successfully for seven consecutive years from 1952, a remarkable achievement given the poor agricultural climate of the region (Canadian Department of Agriculture, 1965). The problem with such data is that they do not take into account the high capital cost of the experimental techniques used to deal with low soil moisture, productivity, and harsh climatic conditions. Given the high costs of inputs such as fertilizer, the costs of irrigation (both monetary and potential salinization of soil), and the distance to markets, agriculture will remain a minor component of the regional economy.

The minimum amount of precipitation required to support crop production is generally recognized to be between 305 and 381 millimeters. On average, Haines Junction receives 293 millimeters of precipitation during the growing season and Aishihik 256 millimeters.

Compared to the upper Yukon River valley or the Klondike River valley, the Takhini and Dezadeash River valleys, identified as the most suitable in the region for agricultural development, experience significantly lower summer temperatures. Cereal crop production requires at least 1,000 growing degree days above five degrees Celsius. The average for Haines Junction is about half the number of days required to successfully produce cereal grains under natural conditions. These conditions, combined with the rugged topography of the region, pose significant physical constraints to agriculture.

Pursuing agriculture (or not) in the Kluane Region involves evaluation of the possible impacts of the activity on other ~~factors~~ resources in the region. Key factors are the potential impacts of agriculture on wilderness values, wildlife populations, habitat, and heritage. Fringe development around communities tends to create pressure for municipal services and scattered development ~~places~~ places a great strain on resources to meet infrastructure requirements.

The land in the region most capable for agriculture/cultivation, as measured by the Canada Land Inventory classification, is in the Takhini and Dezadeash River valleys. The land is rated Class 5, the lowest rating that is considered arable agricultural land, with the major restriction being climate. Much of the land in the Takhini and Dezadeash valleys is identified as highly and moderately

significant wildlife habitat for elk and muskrat. ~~In 1992~~ ~~Currently~~, approximately 300 hectares were devoted to agriculture in the region ~~are devoted to agriculture~~.

It is difficult to quantify the demand for agricultural land in the region, but analysis of the agricultural land applications received by the Yukon government since 1982 indicates low demand.

Only a small percentage of all agricultural applications for the Yukon came from the Kluane Region. The bulk of land applications in the region are for the Takhini and Dezadeash valleys immediately adjacent to the Alaska Highway. The pattern of agriculture in the region is part-time operations financed by non-agricultural work. It is probably that this "life style" approach is the only feasible option for agriculture in the region.

Large-scale (over 10 hectares), commercially-oriented farming operations are not viewed as economically viable or environmentally acceptable within the region. However, small-scale ventures, such as market gardening, may be acceptable on a limited land base and within close proximity to communities. For those pursuing the benefits of a "rural life style", a form of planned rural residential disposition would be preferable to scattered, unplanned agricultural land dispositions where provision of public infrastructure would be costly.

Issues

1. There is the potential for agricultural development to conflict with wildlife resources. The potential loss of wildlife habitat to agriculture is a concern in the planning area, especially as the best agricultural areas also provide some of the most productive wildlife habitats. Changes in hydrology, related to irrigation, may degrade fish or waterfowl habitat. Drainage from fertilized fields has the potential to change the nutrient status of adjacent water bodies.

Agricultural activities may attract wildlife, especially predators such as bear and wolves, but also ungulates such as moose and mule deer. Such conflicts typically lead to the destruction of the intruding animal.

2. Agricultural development will alter the wilderness values of the region and has the potential to restrict access to the back country for trapping and recreation.

3. Important archaeological sites are located on potentially productive bottom land along rivers. Agricultural development may destroy or disturb such sites unless mitigative procedures are in place.

4. The current practice of spot applications for land is seen to be used more for the establishment of unplanned rural residential holdings than for creating viable farm enterprises.

5. Development outside municipal boundaries inevitably leads to pressure to extend services such as power, road maintenance, and school busing. Equitable taxation arrangements for the provision of municipal-type services for areas outside village boundaries are a concern in the region and the territory.

6. The introduction of game farming and fur farming in the region may compromise wildlife populations through the transmission of diseases, parasites, or crossbreeding of wild and indigenous stocks. This is a vital concern in the region.

Objectives

The priority in the Kluane Region is to maintain and protect the outstanding diversity of wildlife populations, wildlife habitats, and wilderness opportunities. Development of agriculture should be subordinate to this priority.

That agriculture remain as a life style option for the region's residents within a rational and equitable land disposition system for rural residential and agricultural land.

Recommendations

- 1. Large-scale commercial agricultural operations (parcel sizes greater than 10 hectares) should not be established within the planning area, with the following exception: expansion beyond the 10 hectare maximum to existing farming operations in the Takhini River valley may be considered, provided that those farms have demonstrated agricultural viability. (The Government of Yukon, in its 1998 Implementation Plan, intends to modify this recommendation and allow a range of parcel sizes, providing the allocation of agricultural land is conservative, and there are only a limited number of larger parcels for economically viable operations.)**
- 2. The current practice of spot applications for agricultural land should be immediately discontinued in the planning region.**
- 3. As an alternative to the spot application process, planned agricultural areas could be investigated within the Takhini-Dezadeash area to determine whether the soil and climate is conducive to the type of intended agricultural activities. Any detailed planning process designed to evaluate and identify suitable areas for agricultural use must involve input from local residents and First Nations. The process must clearly demonstrate that other priority resource values are protected. For example, wetlands, critical wildlife habitat (including game corridors) forest land, archaeological and heritage sites, and back country access for recreational and traditional First Nation ~~Indian~~ harvesting must be protected.**
- 4. In order to effectively deal with the question of providing municipal services to agricultural development areas, the Yukon Government is encouraged to confer directly with the Village of Haines Junction and the Association of Yukon Communities in designing effective taxation arrangements. These arrangements must ensure that development occurring outside current municipal boundaries does not cause a drain on existing municipal services and budgets.**

5. In recognition of the significant wildlife values in the Kluane National Park and Park Reserve and Kluane Wildlife Sanctuary, and because of the potential impacts on wildlife and wildlife habitat, game farming should not be established in the region. Instead, a natural habitat zone should be created within the Kluane Region to provide a buffer between areas where game farming may be permitted and the areas of high wildlife value in Kluane. This restriction may be reassessed following review of the Yukon's game farming policy, and greater experience and knowledge of game farming in the Yukon.

3.119 GRAZING

Background

Europeans introduced horses into the Kluane Region in the 1890s. Since that time, horses have been widely used for hunting, guiding, and travelling. They are the most important domestic grazing animal in the region, with pack horses providing the most appropriate means of transport and access to the back country. Grazing lands have an important economic dimension in support of big game and wilderness outfitting industries in the region. However, grazing capabilities are limited, largely confined to the lower, wetter areas (sedge meadows, willow/buckbrush) or areas with fire history.

In 1997~~89~~, there were 920 grazing leases, totalling 1,597,040 hectares, in the planning region. The leases range in size from ~~56 to 90649~~ to 1500 hectares. In 1998, 3,125 ~~An additional 7,600~~ hectares of land ~~was~~are under application for grazing leases and there ~~was is~~ also a considerable amount of free-range grazing within the region. The 199~~87~~7 agricultural census indicated there were approximately 40040 horses and 29 head of cattle in the region. Most of the horses in the survey belonged to game and wilderness outfitters and to First Nations people. Grazing (based on 1998 ~~estimated~~ feed costs for 40040 horses for six months) contributes between \$250,000 and \$350,000 ~~\$114,000 and \$343,000~~ to the regional economy.

Prior to 1987, grazing lease agreements between the Government of Canada and the animal owner stipulated the general character of the grazing regime, but "adequate containment" of animals on leases was not required. However, in 1987 a grazing policy, administered by the Yukon Departments of Community and Transportation Services and Renewable Resources specified adequate containment of animals as a condition of the lease. In the same year, the Highways Act was changed to make it an offence for uncontrolled animals to range within 33 meters of the highway centre line. The thrust of both the grazing policy and the Highways Act amendment was to make the animal owner, rather than the highway user, liable if a vehicle accidentally struck a domestic animal.

The need for containment radically changed the character of grazing in the region and the Yukon. Lease terms were increased to a maximum of 30 years to facilitate financing arrangements to cover the cost of fencing. Proper management of the grazing area is critical for confined animals to ensure that adequate forage is available to support them within the lease boundary. Fencing of the grazing area constrains multiple use of the area. Access for other uses is permitted but, at the same time, fences restrict free movement across the lease. Generally, they change the perception of wilderness and foster a sense of ownership on the part of the lease holder. The Pounds Act was established to ~~monitor and enforce the containment requirements on leased areas and to ensure that proper stocking rates were being followed~~ ensure public safety by allowing the Government of Yukon to apprehend livestock outside proper containment. At the present time, no pound areas have been designated in the region.

Management of grazing lands is further complicated by the issue of jurisdiction over land. Most of the land in the Yukon is under federal jurisdiction. Prior to the issuance of grazing rights by the Yukon Government, land must first be transferred from the federal government, a process that can take in excess of six months. Although there is support within YTG for issuance of a lesser form of tenure than a lease for certain applications, a shorter term permit or licence of occupation can only be issued on Commissioner's Land. Both governments have been reluctant to support numerous spot land transfers for this type of short-term purpose. The mechanisms available to properly manage grazing lands, particularly the options for tenure, are closely related to jurisdiction.

There is no requirement for fencing in the back country although the "adequate containment" rule still applies. The area that the animals graze must demonstrate natural containment features such as river or lake barriers, high surrounding ridges, or, if the lease is isolated enough, sheer distance from traffic corridors. Back country leases must also demonstrate sufficient carrying capacity and good grazing management practices to meet the requirements of the grazing policy.

The 1987 policy stipulated that the carrying capacity of the lease (the number of domestic animals that can use the lease and leave adequate forage for wildlife) be calculated based on site inspections and forage sampling. The policy made no attempt to define minimum acceptable carrying capacities.

Range improvements are not explicitly dealt with in the policy. However, lease holders are required to submit written proposals for improvements to the ~~Territorial Lands Branch~~ Agriculture Branch. An approach to range improvement is currently being considered by Government of Yukon agencies which specifies the types of range improvements that may be allowed. The policy also allows for community held and managed grazing leases but does not specify the types of management structures that may be acceptable for such areas.

Issues

1. A major issue is the appropriate amount of land to be devoted to grazing in the region, recognizing legitimate demand and the limited suitability of the land base. The amount of land required for grazing varies with the productivity of the vegetation being grazed.
2. The region's productivity for grazing is generally low. The demand for the limited grazing lands available is high near the communities and the highway corridor. Larger tracts of land are required to support animals where the productivity is low and this increases the competition between domestic animals and wildlife.
3. Long-term tenure arrangements are perceived to complicate multiple-use management and to tie up the limited land resources in the region. Multiple-use management of land, although it is a stated principle of the current grazing policy, is complicated by the containment requirement of the policy. Fencing is the most visible structure of grazing lease tenure and gives the impression of a form of exclusive tenure -- one that excludes multiple use. Concern is expressed that grazing activity and fences will negatively affect:

- (a) wildlife movement, wildlife habitat, and increased competition between wildlife and horses for scarce natural forage;
 - (b) the overall wilderness character of the region; and
 - (c) traditional or outdoor recreational activities.
4. Free-range grazing that is not accommodated in the current grazing policy has a long and successful history in the region and can be a positive means of meeting the need for grazing lands in the back country.
 5. The competition for limited grazing lands from reintroduced or exotic species requires careful management and full consultation with residents of the region.

Objectives

To provide grazing land in support of traditional, recreational, and commercial tourism uses while minimizing the environmental, recreational, or cultural impacts of grazing.

The development of multiple-use management strategies to allow access to grazing land and to encourage a wide variety of activities on grazing land.

To ensure adequate containment of animals in highway corridors while minimizing the impact of grazing structures on the wilderness character of the region.

Recommendations

- 1. The granting of long-term grazing leases should be discontinued in the region. Shorter-term permits or licences, issued for periods of not more than five years, are preferred.**
- 2. The grazing policy should be reassessed to address the issues of range improvement and the relationship of fencing costs to shorter-term tenure options.**
- 3. The government approach to grazing land management should allow for range improvement on sites where this type of management is deemed to be appropriate.**
- 4. Locally managed and jointly used pastures should be investigated as an alternative to individual grazing areas.**
- 5. Methods for setting a minimum acceptable carrying capacity for grazing leases should be co-operatively developed in consultation with government, Yukon First Nations, and local horse breeders.**

6. Open-range grazing should be allowed under permit in areas where the grazed animals will not be a safety hazard along the highways. The fencing of grazing areas in the back country, away from highways, should only be permitted to restrict the movement of grazing animals to ensure adequate management of the grazing area.

7. Grazing areas along designated trails should be identified and left available for public grazing on an informal basis, and should not be alienated for other purposes (see Heritage, Tourism and Outdoor Recreation).

8. Prior to any introduction of exotic or non-indigenous wildlife species (elk, bison, etc.), there must be thorough study and local consultation.

3.12 OUTDOOR RECREATION AND TOURISM

Background

The outdoor recreation and tourism sectors rely on a common resource base consisting of a spectacular range of natural features, a wide diversity of wildlife habitats, and a rich cultural heritage.

There are a number of groups who use the region for tourism and recreation: tourists, who primarily pass through the region en route to Alaska; destination tourists from outside the Yukon; and Yukon and local recreationists.

In 1991, highway travellers numbered approximately 170,000 annually and constitute the majority of the visitors to the region. Although highway travel is significant, 1991 data indicated that only 84,000 stopped in the region for much more than gas and groceries. In 1991, tourists spent minimal time in the region, with the average length of stay 1.1 days for bus travellers and 1.8 days for passengers arriving in the Yukon by air. Highway travellers passing through the region spent most of their time in Alaska. The information on highway travellers will be updated in a Kluane Regional Tourism Plan to be prepared in 1998.

While in the region, the highway traveller is sightseeing. The view from the highway is an important feature, as are interpretive centres and historic sites and museums.

The destination travellers ~~were~~ are a much smaller segment of the visitors, comprising about 1,000 in 1988. Most arrived by air and spend about 10 to 12 days in the region. Primary market origins include the U.S. West Coast and Europe. The destination traveller represents a high market return for the region: 1,000 visitors generated about \$2.3 million in tourism revenues in 1988. In contrast, about 78,000 highway traveller parties (approximately 155,000 to 170,000 visitors) generated about \$8.4 million in tourism revenues (Department of Tourism, Kluane Region Development Plan, 1991).

The wilderness destination traveller comes to the region for white water activities, fishing, big game hunting, climbing, mountain biking, and guided back-country trips. The non-consumptive activities have potential for growth. Currently, the most established wilderness activities are rafting on the Tatshenshini River, climbing or skiing trips into Mount Logan, and big game hunts into the back country.

The Yukon Environment Act (1991) makes provision for the adoption of wilderness management plans. Once further studies identify areas with significant wilderness recreation value, protection could be provided under this legislation.

The region is also extensively used by local and Yukon recreationists. The most important recreational activities for Yukon visitors and local recreationists are fishing, camping, and hiking.

Popular recreation areas include Kusawa Lake, Takhini River, Pine Lake, Dezadeash Lake, Shawshe/Dalton Post, Million Dollar Falls, Tatshenshini River, Kluane Lake, the Burwash Uplands, Koidern River, Snag Creek, Small Lake, and various areas within Kluane National Park Reserve.

The concept of recreation is broadly based. It is generally recognized to include activities which bring refreshment and renewal to mind, body, and spirit. For many people, this means exercise and adventure, snowmobiling, cross-country skiing, fishing, hunting, hiking, horseback riding, canoeing, berry picking, and camping. For most First Nations/Indian people, the pursuit of outdoor recreation activities is often a part of their intimate relationship with the land and the water and includes traditional fish and wildlife harvesting and gathering in their region. The "recreation" element of these activities may be considered stronger today than historically, but most First Nations/Indians still rely on the meat, fish, berries and waterfowl to supplement their purchased food supplies. The old First Nations/Indian villages and campsites, such as Kluane, Wellesley, and Aishihik Lakes, while no longer supporting permanent populations, are still very much alive and are often visited by families who once lived in these areas.

One of the most significant areas for all recreation users is the part of the region west of the Alaska Highway and the Haines Road. It encompasses the Kluane Wildlife Sanctuary and the Kluane National Park and Park Reserve, an area ~~currently marketed by the Canadian Parks Service~~ Parks Canada as "Yukon's premier accessible wilderness area". The Kluane Ranges front for the massive St. Elias Mountains, where the highest peak in Canada (Mount Logan) is located. Extensive ice fields and numerous valley glaciers plunge eastward and northward through the Kluane Ranges. These magnificent ranges, ice fields, valley glaciers, braided streams, alpine lakes, and an assortment of unusual geological and geomorphic features, in addition to diverse flora and fauna, provide a strong magnet for those seeking a wilderness recreation experience. Kluane National Park and Park Reserve includes a significant number of natural features and the potential to become a world class destination area.

All the travellers entering the region by vehicle pass through spectacular viewsapes. The route from Whitehorse to Haines Junction passes through the historic village of Champagne and the gold rush site at Canyon Creek. The Kusawa and Aishihik Lake roads provide access into wilderness areas, and a range of recreational opportunities including canoeing, hiking, fishing, backpacking, and wildlife hunting and viewing. The Haines Road provides a vital link with the northwest corner of British Columbia and the port city of Haines, Alaska. ~~It is within the Kluane National Park Reserve.~~ There are several hiking trails beginning at the highway and fishing, canoeing, and camping are available within the park. The popular Mush-Bates and Cottonwood trails, as well as Kathleen Lake, are accessed from the Haines Road. Outside the park, the Dezadeash Lake and River system, and the recreational opportunities on the Kathleen and Tatshenshini Rivers attract increasing numbers of recreationists and tourists. The Haines Road summit in British Columbia also provides excellent access to cross-country skiing and snowmobiling and attracts many Yukon recreationists who pass through the region on the way to the summit.

The Alaska Highway, from Haines Junction, passes along the front ranges of the Coastal Mountains and skirts the edge of Kluane Lake. This is one of the most scenic routes in the Yukon, and possibly one of the most scenic-panoramic in Canada. The highway passes the historic McIntosh Lodge, where visitors can access the park, en route to the Alsek River. Kloo Lake, the site of an old First Nation Indian village, can be viewed in the distance from the highway as the traveller approaches Kluane Lake. Silver City, an early gold rush site at the head of Kluane Lake, features historic buildings. The Sheep Mountain Interpretive/Interpretative Centre and the Kluane Museum of Natural History at Burwash Landing are popular stops for tourists. Beaver Creek is the last community before the highway leaves Canada.

Although it has remarkable cultural and historic features, currently there is a lack of interpretation of the resources that make the region unique. Interpretation is a cultural process involving our perception of the land, its natural resources, and its people. The scientific view of geology, plants, or wildlife may not always coincide with the oral traditions of the people whose ancestors lived in the region for thousands of years. There could be a much greater merging of these two perspectives than currently occurs. While the geographic splendour of the Kluane area attracts many visitors, an understanding of the human experience in this landscape can allow visitors to come to terms with Kluane as they see, hear, feel, and learn about it.

There are numerous opportunities for heritage interpretation which could be important in fostering an understanding of First Nation Indian and non-First Nation Indian use of the region. Carefully developed and managed interpretation of the human as well as the geographic history could be a considerable attraction for tourists visiting the region.

Until recently, heritage interpretation concentrated on the gold rush era, ignoring the First Nation Indian heritage. First Nations are eager to participate in the development of interpretive facilities and programs that would strengthen the public's knowledge of their use and occupancy of their homeland.

Another area that is currently lacking in the region is an integrated approach to the development of access roads and trails in the region. The degree of available access greatly influences the type and amount of use an area receives. Highway sites, such as Silver City, receive heavy use from highway visitors, whereas less accessible areas, such as Kusawa Lake, receive significant resident recreational use. Resource roads are sometimes developed without consideration of the impacts on the wilderness resource, while areas that could benefit from upgrading of existing road and trail access remain unavailable to the visitors travelling through the region.

There are few attractions along the region's highways that encourage travellers to extend their visits. The highway corridors lack adequate pulloffs and interpretive signage, while the existing pulloffs do not have the necessary sanitary facilities.

Commercial tourist use is the most visible and widespread economic activity in the region. All communities provide tourist services including accommodation, gasoline, food, and souvenirs. In 1991, there were 22 commercial highway facilities with 550 units and 375 recreational vehicle

sites. The commercial sector is augmented by nine Government of Yukon campgrounds and two recreational day use sites at Kusawa Lake and Otter Falls. There are a number of hunting, fishing, and wilderness outfitters. Commercial tourist facilities are largely concentrated in Haines Junction and constitute the major economic base of the community. Other commercial nodes include Champagne, Canyon, Burwash Landing, Destruction Bay, and Beaver Creek. Highway commercial activities are also located along the highway between nodes. Should this trend continue, the scenic corridors could be severely compromised and the tourism industry impacted.

Kluane has the potential to become a world class destination area which takes advantage of the exceptional scenic, wilderness, and cultural resources and offers related outdoor recreational and educational opportunities. There is significant market potential to attract more tourists seeking a wilderness destination. At the same time, this potential can be complemented by creating or improving opportunities to better serve highway travellers and encourage them to stay longer in the region. Realizing and taking advantage of this potential will require the development and improvement of products and services for these markets. An effort will be required to make the shift to adventure tourism although that shift is not expected to replace the highway tourism market. Local residents, and especially First Nations, have expressed strong interest in tourism-related businesses and possess many of the skills necessary to be successful as the market changes from recreational vehicle traffic to destination tourism. Furthermore, adventure tourism activities are complementary to the traditional life styles and subsistence pursuits of the local people.

Issues

1. There is a concern that the expansion of tourism and recreational land use may conflict with the preservation and maintenance of natural, cultural, and heritage features and values in the region.
2. Although there was not a great deal of discussion during the early 1990s regarding the potential impact of increased wilderness tourism on the region's resources and the life style of its residents, it was clearly a concern. Concerns were also expressed about the relatively large allocation of game to non-residents and the potential impact of guided commercial sport fishing on the limited carrying capacity of the region's lakes. Concerns were expressed that training and economic assistance be available to local residents so that they can benefit from ~~development~~ wilderness tourism opportunities.
3. Visual disturbances can alter people's perceptions of wilderness. Visual disturbances from mining, forestry, and access roads may affect the tourism and recreation sectors ~~which~~ that rely heavily on maintaining the wilderness resource.
4. There is a need to balance the scenic values and integrity of the highway corridor with the need to maintain high quality commercial tourism facilities.
5. There is a need to provide back-country access for tourists and recreationists, while recognizing that access into wilderness and high recreational areas is both an opportunity and a constraint. A

delicate balance is required between improving access to the region and maintaining high quality wilderness resources.

6. The northern portion of the Alaska Highway is badly in need of repair. This constitutes a severe impediment to highway tourist development. It is a problem that can seriously damage the region's image as a world class tourist destination. (This issue has been dealt with through the Shakwak agreement and subsequent highway upgrading.)

7. Limited pullouts and inadequate facilities at existing pullouts lead to misuse of unregulated areas (for example, gravel pits) and create a negative impression of the region.

8. There are inadequate recreational developments to support the growing interest in back-country wilderness pursuits (for example, package tours, trail rides, etc.)

9. Old First Nation~~Indian~~ trails could be destroyed or needlessly impacted unless properly identified and managed.

Objectives

To preserve and protect the wilderness character of the region on which the outdoor recreation and tourism sectors rely.

To highlight the importance of accurately reflecting the cultural and historical diversity of the region in any interpretive initiative.

To ensure that communities are able to take advantage of economic opportunities associated with outdoor recreation and tourism, and that benefits flow to the local people.

Recommendations

1. Establishing the Kluane Region as a destination area for tourism should be considered one of the highest priorities for the plan. Steps should be taken to support destination tourism, subject to the principles set out in this plan.

2. In maintaining the wilderness character of the region, the visual quality of the highway corridor must be considered in the review of all land use proposals. New highway commercial development should be supported only within commercial nodes and existing communities. New commercial nodes may be designated following full public consultation and with consideration of the scenic viewsapes and the wilderness values of the region.

3. Tourism development strategies adopted for the region should include programs to foster awareness and understanding of First Nation~~Indian~~ heritage resources and provide for the full involvement of, and a clear role in decision-making for, local residents. Government initiatives that address the need to improve the delivery of outdoor recreation services and/or

introduce interpretative programs (highway signage and/or interpretative facilities) should be carried out in close consultation with First Nations and local interests.

4. The traditional ~~First Nation~~ Indian trails and routes should be properly managed and tourism opportunities for local interests which focus on the traditional trail systems ought to be encouraged.

5. Land dispositions and uses related to wilderness recreation purposes for hiking, hunting, fishing, skiing, canoeing, snowmobiling, wildlife viewing, and other back country activities should meet the following guidelines:

(a) The development must be sensitive to the area's natural resources and cultural history.

(b) The area must be capable of sustaining the proposed recreation use and associated facilities.

(c) Proximity and compatibility of new and existing uses must be considered. This may require maintenance of sufficient separation between uses in order to retain the wilderness aspects which the operation is promoting.

(d) If access is essential, there should be minimal impact of important resources and subsistence activities. New, single-purpose access roads are not encouraged.

(e) Areas surrounding lakes and along rivers should generally remain in a natural state. Developments permitted near shorelines should be carefully planned to ensure preservation of environmental and wilderness qualities (see Settlement and Cottaging, Fish Resources).

6. Tourism should be supported through the following initiatives, subject to public consultation and management studies:

(a) Development of trail networks, easily accessible from the Alaska Highway.

(b) Encouragement of locally developed and operated tourism enterprises, consistent with the overall approach in this plan.

(c) Support for the tourist industry in terms of appropriate marketing and training.

(d) Development of a "pack in/pack out" educational and promotional package for the region.

(e) Government should place an emphasis on the development of locally operated commercial wilderness enterprises.

7. In order to provide sound management of wilderness resources over the long term, a policy is required to address management and tenure of commercial wilderness operations and related developments. This policy should address the guidelines set out above and complement the lakeshore guidelines proposed under Settlement and Cottaging.

8. High priority should be given to the establishment of a quality system of interpretative sites and rest stops throughout the region to serve highway travellers. These sites should be developed in consultation with First Nations and local interests.

3.13 MINING

Background

The planning region has a long history of placer and hardrock mining activity and has the potential to contribute significantly to the region's economy.

Approximately 38 creeks are documented gold producers. Of these, ~~six~~^{eight} placer operations ~~were~~^{are} currently in operation in 1997. The most significant production between 1990 and 1997 has been from the ~~Moosehorn Swamp~~^{and Scottie Creek operations camp} in the northwest part of the planning area and the ~~4th July~~^{Gladstone Creek camp} on the east side of Kluane Lake. Between 1990 and 1997 ~~in 1988~~, production from these areas was ~~19,955 and 9,646~~^{5,583 and 1,075} coarse ounces, respectively. ~~Ten~~^{Four} other placer operations produced ~~3,525~~^{paid royalties on 171} coarse ounces over the same seven year period. In 1988, production in the planning region represented 3.3 percent of the Yukon total and in 1997 production represented 1.4 percent. (1997 figures provided by Mineral Resources, DIAND).

In 1991, ~~there were~~^{are} 270 mineral occurrences ~~presently~~^{presently} inventoried within the planning region. This information, together with geological mapping, suggests a number of areas with relatively high potential for the discovery of economic mineral occurrences. The best demonstrated hardrock potential seems to lie in the Kluane Ranges southwest of the Denali Fault (Shakwak Trench). The geological formations of this area contain known deposits of copper, nickel, and platinum group elements (including unusually high proportions of rhodium), with the potential to be economic. Large deposits of copper, cobalt, and gold, similar to the Windy Craggy deposit in British Columbia, may also be found in the Kluane Ranges. There is also significant potential for lode gold deposits throughout the planning region, although no potentially economic deposits are yet known.

There has been no hardrock production since the 1973 shut-down of the Wellgreen underground operation. ~~However, new interest in these property includes~~^{has been spurred by} encouraging findings of platinum, palladium, and other platinum group minerals which supplement the nickel-copper ore. A 1989 pre-feasibility study indicated reserves adequate to support 13 years of operation of a 10,000 tonnes per day open pit mine. The pre-feasibility studies suggest that the low grade ores will require a mill and on-site refinement to produce a high grade nickel-copper matte for shipment. A smelter is currently the proposed refinement process. An important aspect of this development, and a significant constraint, is the projected power requirement of approximately ~~3520~~ megawatts for the entire process.

The Canalask deposit on the east bank of the White River contains a drill indicated reserve of approximately 400,000 tonnes grading 1.35% nickel ~~approximately 400,000 tonnes of high grade nickel~~. (Mineral Resources Division, Yukon Government, 1998). Its development is directly linked to Wellgreen because it is only economically feasible if its concentrate can be refined at an established facility.

The Division deposit, located about 20 kilometers southwest of Braeburn on the Klondike Highway, has potential reserves of some 552.5 million tonnes of low volatility bituminous B and C coal as obtained through a drill indicated estimate by Cash Resources, 1997 (Mineral Resources Division, Yukon Government, 1998). It would provide a possible source of metallurgical coal for the proposed Wellgreen smelter, as well as a potential thermal power source.

The mining industry is a potentially strong and positive option for strengthening and diversifying the economy of the planning region. However, placer and hardrock mining prospects overlap areas with high renewable resource values, particularly within the Kluane Ranges and Wildlife Sanctuary. This indicates a need to give special attention to environmental management.

The current system of environmental management in the Yukon is changing rapidly and dramatically. In order to protect a wide range of environmental values, all aspects of mining exploration and development work will require careful evaluation under C.E.A.A. and the evolving Development Assessment Process for the Yukon. There is a need for close co-operation between industry, government, First Nations, and the public in the development of this system to foster understanding and a stable regulatory system where the rules are clear to everyone. If the region is to realize its full potential, based on the development of both renewable and non-renewable resources, such a system must allow for orderly exploration, development, and abandonment of mining claims.

Issues

1. Mining activity in the Yukon has traditionally been governed or regulated by a very loose, often ad hoc, approach to environmental concerns. The 1906 Yukon Placer Mining Act and the 1924 Yukon Quartz Mining Act provide a system for the disposition of placer and mineral rights but do not adequately deal with environmental management of mining activity on mineral claims. (The Yukon Quartz Mining Act and the Yukon Placer Mining Act were amended in 1995 to enable the passage of land use regulations for mining activities. The subsequent Mining Land Use Regulations (MLUR) are expected to be enacted in 1999.)
2. There is concern that exploration activities, such as the development of all-weather access roads, and the use of techniques, such as mechanical trenching, will negatively impact wildlife habitat, traditional land uses, and recreation and wilderness tourism areas.
3. The mining industry cannot easily predict the location of economic mineral deposits. As such, it requires access to as much land as possible in order to carry out effective exploration programs. The maintenance of access to lands for staking and exploration is a key issue to the industry.
4. There is a lack of policy to address the abandonment of hardrock mines. The establishment of procedures and standards for mine abandonment, including provision for security deposits, are seen as an essential component for resource management. (In 1998, any new mine developments were required to have an abandonment plan prior to being issued a water license.)

5. Similarly, there are concerns over the lack of policy to address abandonment of placer activities, particularly as they affect clean-up of waste. The Guidelines for the Design and Construction of Stream Channels of Yukon Placer Mined Streams, prepared by the Placer Implementation Review Committee, addresses the reclamation of stream channels but does not establish requirements for the reclamation of other aspects of placer mining operations.

Objectives

It is intended that clear standards and procedures for the environmental management of all phases of mining activity be established to provide a positive operating environment for the industry.

Recommendations

1. **The Commission recognizes the work of the ~~recently formed~~ former Yukon Mineral Advisory Committee, which ~~was~~ ~~has been~~ formed to advise the Minister of Indian and Northern Affairs, Canada ~~Indian Affairs and Northern Development~~ on revisions to the current mineral management regime in the Yukon. It is recommended that an initial step in the development of a new approach to the environmental management of mining activity should be amendments to the appropriate legislation. Specifically, these are required at the earliest possible date to ensure that environmental conditions can be applied to mining claims. (Mining Land Use Regulations are expected to be enacted in 1999.)**

2. **The use of low-impact mineral exploration methods, such as prospecting, geological, geophysical, and geochemical surveys, winter roads, hand trenching, and helicopter-supported drilling, should be supported in the Schedule of Assessment Credits and encouraged throughout the planning region. In areas identified as having special management requirements, these exploration methods should be mandatory (see Wildlife). Government should attempt to identify areas requiring special management proactively in areas of current or anticipated mining or exploration activity, in order to provide industry with a clear understanding of operating requirements. (In 1998, low impact methods are rewarded in the Schedule of Assessment Credits.)**

3. **Any proposal for the permanent withdrawal of an area from mining should include an assessment of mineral potential and give consideration to the long-term social, economic, and environmental benefits of conservation or development options. Areas requiring further study to determine appropriate means of protection and management are addressed in Section 4. (In 1998, mineral assessments are carried out prior to withdrawals)**

4. **Completion of a hardrock mine abandonment policy, currently being developed by the Northern Affairs Program, DIAND in co-operation with the Yukon government, should specify standards and procedures for mine abandonment and should be given high and urgent priority. On an interim basis and until such time as a mine abandonment policy is in place, new hardrock mining proposals should receive approvals based on formal**

abandonment agreements. (The Mining Land Use Regulations (MLUR) include requirements for abandonment)

5. A policy should be developed to address the abandonment of land-based placer activities, including waste removal, which are not addressed by the guidelines for stream reconstruction developed by the Placer Implementation Review Committee. (MLUR provisions could apply to abandonment of land-based placer activities.)

6. The Commission notes that the Arctic Environment Strategy (AES) provides funds for the clean-up of abandoned waste on federal Crown land and recommends that clean-up of old placer mining sites be made a priority, including those on Squaw, Arch, and Beaver Creeks. (Funding under AES ended in 1996/97)

7. Mine abandonment policies should require progressive reclamation of areas affected by mining activities through all stages of the mining operation, including exploration and development. (MLUR could apply to these activities once the regulations are enacted.)

8. Legislation should be strengthened to ensure that security deposits can be required in conjunction with abandonment plans. Security deposits should be required for mineral developments where there is evidence of potential long-term environmental risk. (In 1998, financial security can be required under the Water License for most mining operations.)

9. Government agencies with legislated responsibility for resource management should examine all current and potential future funding and incentive programs for mineral exploration and development to ensure that financial benefits are strictly tied to strong commitments and requirements for environmental protection. (Since approximately 1992, the Yukon Mining Incentive Program has linked financial benefits to environmental protection)

PART 4: AREAS REQUIRING FURTHER STUDY

There are a number of areas within the Kluane planning region where the combination of resource values and use pressures suggest the need for area specific recommendations. These include the Kluane Wildlife Sanctuary, Kusawa Lake, the Ruby Range, Wellesley Lake, and the Dezadeash Lake and River system.

The pressures apparent in the Kluane Wildlife Sanctuary, discussed below, have received relatively greater attention during the preparation of this plan and require resolution as a high priority. Due to ~~In view of the~~ ongoing land claim negotiations in 1991, it ~~was~~ has not ~~been~~ possible to address area specific management issues in a conclusive manner. However, interim and mitigating measures have been recommended and processes proposed to resolve outstanding issues in the ~~S~~anctuary following ~~First Nations'~~ final agreements, (Champagne and Aishihik First Nation settled its land claim in 1995 and initiated several of the recommendations.)

Other areas within the region, while not receiving the same attention as the ~~S~~anctuary, are also the centre of land use issues that will require resolution. Issues relate to the level of development or protection suitable for these areas as well as the conflicts between various resource uses, including recreation, fish and wildlife harvesting, mining, and tourism. In order to resolve the resource conflicts and provide clear direction for the future use of these areas, there should be a more detailed level of integrated management discussion than has been possible under this regional plan.

Options for more detailed management include further planning or, alternatively, less formal approaches, such as development of policy and management guidelines for these areas. In carrying out this more detailed level, the responsible agencies should consider the overall direction given in the Greater Kluane Regional Land Use Plan and policies and programs recommended in the plan, as well as the provisions of existing legislation, such as the Yukon Environment Act and established park planning processes.

Kluane Wildlife Sanctuary

Background

The Kluane National Park Reserve was initially withdrawn from development in 1942 by federal Order in Council. In 1943, the Yukon Territorial Council created the Kluane Game Sanctuary, covering the same territory, for the purpose of conserving game. This effectively withdrew 26,235 square kilometers of land from all hunting and trapping activities. Revisions to boundaries were first made in 1944 to exclude land thought to be more valuable for mineral development and as a concession to big game outfitters who had been established in the sanctuary for some years (see Map 1 for park reserve and sanctuary boundaries).

The designation of the park reserve and ~~S~~anctuary occurred without consultation with the Tutchone people of the area whose principle means of livelihood had depended largely on those traditional lands for hunting and trapping. This resulted in considerable hardship and bitterness

amongst the ~~aboriginal~~aboriginal people of Kluane, Klukshu, Shaw'she/—(Dalton Post) and Champagne (Sha Dhala).

The announcement of the ~~present-day~~ Kluane National Park Reserve was delayed until 1972, mainly because of known mineral occurrences in parts of the park reserve. It was not until 1976, with the proclamation of the Kluane National Park Reserve under the National Parks Act, that Tutchone hunting and trapping rights were restored. In addition, through a Supreme Court appeal in 1982, it was also recognized that First Nation~~Indian~~ people had a traditional right to hunt and trap on lands which had become part of the Kluane Game Sanctuary.

When the park reserve boundary was proclaimed in 1976, concerns were raised that some of the most biologically productive and unique habitats had been deleted. These included the Klutlan Glacier, the Wolverine Plateau, the St. Claire and Generec watersheds, the Donjek and White Rivers, Koidern, Pickhandle and Teepee Lakes, the Burwash Uplands, and the Tatshenshini and Klukshu Rivers. In response to these concerns, the Minister of Indian~~Indian~~ and Northern Affairs, Canada ~~and Northern Development~~ stated that the proclamation was preliminary and that a final decision would be made pending further geological surveys and land claim negotiations. (In 1998, the Klutlan Glacier and Pickhandle Lake were identified as Special Management Areas under the proposed White River Final Agreement.)

In 1980, the park reserve received international recognition with the establishment of a World Heritage Trust Site covering the Kluane National Park Reserve and the Wrangell-St. Elias National Park in Alaska. The sanctuary area was not included in this designation as legislative protection is required for designation as a World Heritage Site.

As a result of the creation of the park and sanctuary, Tutchone people were displaced from a large part of their traditional territory. They are seeking resolution of outstanding aboriginal rights in their land claims negotiations through partnerships in economic development and land and resource management. Given the priority and sensitivity of these negotiations, it ~~was~~ beyond the ability of this planning process to address land management issues in the Kluane Game Sanctuary (renamed the Kluane Wildlife Sanctuary in 1982) in a conclusive manner. In 1998, only Kluane First Nation has yet to negotiate a Final Agreement.

Resource Values and Use

Areas near glaciers are normally of great biological diversity and productivity and this is true for the Kluane Wildlife Sanctuary. Extreme variations in elevation, the dispersal of highly mineralized glacial silts by wind and water, and the variety of elevation and maritime-influenced micro-climates combine to create a wide diversity of plant and animal habitats (see Wildlife).

The sanctuary is also recognized as having some of the most favourable geology in the Yukon for the exploration and discovery of economic mineral deposits, particularly within the formations underlying the Kluane Ranges (see Mineral Resources).

The sanctuary comprises three discontinuous parts -- north, central, and south -- each section separated by the Kluane National Park Reserve. The north area is recognized for its significant mountain goat, caribou, grizzly bear, and sheep populations and unique habitats, such as the fragile alpine tundra areas of the Burwash Uplands and the periglacial forest of the Klutlan Glacier. The forested area of the glacier is noted for its abundant and diverse wildlife populations which include raptors, woodland caribou, and grizzly bear. The scenic slopes of the Kluane (Front) Ranges provide a spectacular backdrop to Kluane Lake.

Prior to the establishment of the sanctuary, the northern portion had become famous for big game outfitting during the 1920s. It is increasingly recognized for its non-consumptive wilderness tourism opportunities, such as wildlife viewing, hiking, and horseback riding. Sightseeing flights from Burwash Landing and Beaver Creek into the park and sanctuary are growing in popularity for tourists travelling the Alaska Highway. Both the Yukon Government and the ~~Canadian Parks~~ Canada Service have expressed an interest in pursuing park development in the area of the Klutlan Glacier. (The Klutlan Glacier was identified as a Special Management Area in 1998)

Hardrock mining activity at Quill Creek (Wellgreen) and on the Burwash Uplands has raised concerns regarding the environmental management and long-term use of the north sanctuary. In the late 1980s, On the Burwash Uplands, unregulated road construction and trenching in permafrost areas of the Burwash Uplands areas has disfigured a scenic alpine meadow with high recreational and wildlife values. Exploration activities have also negatively impacted the scenery of the Wellgreen area. There are concerns regarding the potential for longer-term accumulated impacts from mineral and associated infrastructure developments, such as tailings ponds, a refinery, and power generation.

The central portion of the sanctuary comprises the eastern slopes of the Kluane Ranges between Kluane Lake and Haines Junction (Dakwakada) and has a history of mineral exploration. It includes Mt. Archibald, Mt. Decolei (Naday Gan), and Mt. Cairnes. The area also provides accessible examples of glaciers and glacial activity including flood plains, an ice cave, glacial lake beaches and sand dunes, and supports a viable grizzly bear population.

The Jarvis River, which drains much of this area as well as the southwestern slopes of the Ruby Range, flows through this section of the sanctuary and into the park reserve. The area is used by local residents for snowmobiling, cross-country skiing, hiking, camping, fishing, and wildlife viewing. In the late 1990s, A recent planning study undertaken by the Yukon Government and the ~~Canadian Parks~~ Canada Service ~~has~~ explored opportunities for an interpretative centre and improved public access to the park through the lower Dezadeash River valley on the southern boundary of this portion of the sanctuary. The study concluded that the access road would conflict with a grizzly bear habitat.

Within the southern portion of the sanctuary, the Tatshenshini River is a significant landscape feature. It supports one of the most important and accessible sources of anadromous fish in the Yukon, including the only sockeye and coho salmon fishery aside from the largely inaccessible runs on the Porcupine River. It also supports the most intensive aboriginal ~~native~~ food fishery (on

its tributary, the Klukshu River) and the most significant sport fishery for salmon in the territory. The salmon also attract and support a high density of grizzly bears.

The Tatshenshini River flows from its headwaters in British Columbia, through a series of scenic canyons within the Yukon, then passes again through British Columbia and into Alaska. The river and this portion of the sanctuary is widely recognized for its cultural, recreational, and wilderness values and is under increasing pressure from river rafters, kayakers, sportfishers, and campers. The upper section of the river, which contains class 3 and 4 rapids, is used by increasing numbers of rafters and kayakers. The white-water rafting trip to Dry Bay in Alaska is now attracting international destination travellers. The area has also been the site of long-standing, though limited, placer and quartz mining activity. Within the sanctuary, access to the river is limited by the canyon, forcing a concentration of use at the ancient First Nation Indian village of Shaw'she (Dalton Post).

Resource management concerns are focused on the immediate land use conflicts at Shaw'she and the longer-term interest to protect the wilderness character and destination tourism value of the area from the perceived impacts of placer mining and developments related to mining.

Issues

1. It is a matter of importance to the Southern Tutchone people that the plan recognize their cultural heritage in the Kluane National Park Reserve and the Kluane Wildlife Sanctuary and that the plan does not prejudice sensitive land claim negotiations in these areas.
2. There is concern and agreement that current environmental management mechanisms and policies do not adequately protect the high quality wildlife, recreation, scenic, and wilderness resource values of the Kluane Wildlife Sanctuary. The Burwash Uplands and the Tatshenshini River are given as examples of areas requiring immediate attention to management and protection. (A management plan for the Tatshenshini River is expected to be completed in 1998/99
3. The limited access at Shaw'she (Dalton Post) creates serious land use conflicts. Intensive use of this site by sportfishers, river rafters, kayakers, and campers is responsible for the deterioration of this traditional fishing village and heritage site.
4. There is a concern that placer and hardrock mining poses a threat to the wilderness character, salmon fishery, and tourist destination value of the Tatshenshini River. Increasing use of the river for commercial rafting and the early 1990s proposal to develop a mine at Windy Craggy, involving a bridge over the Tatshenshini River in British Columbia, ~~has~~ focused the attention of environmentalists from the Yukon and worldwide who called for protection of the river.
5. The impact of mining exploration activity on the fragile environment of the Burwash Uplands has raised concerns regarding protection of this area and the need for immediate changes to legislation to facilitate its management (see Mining, Recommendation 1).

6. The prospect of a large mineral development at Wellgreen and surrounding areas raises the broader issues of conservation and development. Some people are concerned that large-scale mine development and associated infrastructure may negatively affect the region's air and water quality and the life styles enjoyed by its residents. Others feel the natural environment of the sanctuary warrants complete protection from development as proposed in the original parks designation and cite its value as a wilderness area in light of environmental impacts worldwide from population growth and development. Others support mining provided it is adequately regulated to manage all phases of development, from exploration to abandonment, in order to provide employment opportunities and economic development in the region.

Objectives

To protect areas of special natural resource and heritage interest for the long-term benefit of present and future generations.

To ensure that further consideration of resource management issues is given to the three areas of the Kluane Wildlife Sanctuary following land claim negotiations.

Recommendations

1. Prior to the completion of the remaining First Nation final land claim agreements, the entire Kluane Wildlife Sanctuary should be recognized as an area requiring special management (see Mining, Recommendation 2). No new single-purpose exploration roads should be allowed. Roads required for mineral exploration and development should only be considered when they serve multiple-use purposes or when exploration results indicate the presence of economic mineral reserves. A proposal for road development to an area with economic mineral reserves should only receive approval if long-term social and economic benefits can be demonstrated and any negative environmental impacts from the proposal can be mitigated to a level acceptable to residents of the region and the Yukon.

2. The southern portion of the sanctuary, excluding those settlement lands agreed to in the Champagne and Aishihik final land claims agreement, should be managed as a park. A park management plan should be developed jointly with the Champagne and Aishihik First Nations which addresses the protection of the wilderness character of the Tatshenshini River. The management plan should also address multiple issues related to: the aboriginal Indian food fishery; sport fishing; the regulation of recreational use of the area; the protection, interpretation and management of heritage resources; and mining. In 1995, the Champagne and Aishihik Final Agreement identified the Tatshenshini as a Heritage River and, a management planning process is underway.

3. In order to protect the heritage values at Shaw'she (Dalton Post), interim measures, including no camping and restricted vehicular traffic, should be implemented prior to finalizing the Champagne and Aishihik First Nations' land claim agreement. Measures were implemented to restrict vehicular traffic and camping at Shaw'she.

4. A mine abandonment plan should be required for the ~~current~~ mining operation on the Burwash Uplands, including a security deposit to ensure that the existing exploration road is reclaimed to a satisfactory level.

5. Following the completion of First Nations final agreements affecting the north sanctuary, more detailed planning should be undertaken to identify special requirements for management.

6. Following completion of First Nations final agreements affecting the central sanctuary, consideration should be given to the need to reconsider the national park reserve boundary in light of final land selections, as well as wildlife, tourism and recreation, and mineral resource management requirements.

7. Given the extraordinary wildlife, recreation, and wilderness tourism values within the Kluane Wildlife Sanctuary and their growing importance to the region's economy, special management arrangements, including prohibitions from mineral staking, exploration, and development, should be considered as an option in more detailed planning processes for specific areas within the three sections of the sanctuary, following completion of land claims negotiations.

Any proposal for the permanent withdrawal of an area from mining should include an assessment of mineral potential and give consideration to the long-term social, economic, and environmental benefits of conservation or development options.

PART 5: APPROVAL, IMPLEMENTATION AND REVIEW

~~The process for final approval and implementation of the Kluane Plan is illustrated in Figure 4. A number of essential components of the approval process are highlighted and explained in further detail in this section. They include the approval, implementation, monitoring, and review of the plan.~~

The plan reflects the best understanding of land and resource issues in the region to date and suggests a course of action to deal with them. The regional planning process has provided an opportunity for local people to provide policy direction and advice to government agencies having responsibility for land and resource management. It is intended that the plan and its recommendations, once approved, will be used by government agencies, industry, First Nations, and the public to guide the land use and management processes in place within the region.

The details of how this plan will be used or implemented will require strong statements of commitment that reflect understanding and agreement between the parties involved in developing the plan, including the public.

APPROVAL

The Greater Kluane Land Use Plan has been developed through an open public process with the joint involvement of the federal and territorial governments and First Nations. In order to implement the recommendations developed under this plan, endorsement by all ~~three~~ parties is required. The final draft plan ~~was~~ will be forwarded from the Greater Kluane Regional Planning Commission in 1991 to the federal Minister of ~~Indian~~ Indian Affairs and Northern Development, the territorial Yukon Minister of Renewable Resources, and the Chair of the Council for Yukon First Nations ~~Indians~~ and the affected First Nations for their review and approval.

~~At the same time as review and approval of the plan proceeded, the document was also be circulated to the public for their information. At this point in the process, the Kluane Commission ceases to be the focus of public response or comment on the document. It is expected that public response to the document, if directed to government and First Nations, would be considered in their review and approval of the plan.~~

The Commission recommends that a joint public statement announcing the approval/adoption of the plan be issued by the Governments, the Council for Yukon First Nations and the affected First Nation(s), within six months of the date of transmittal of the document from the Commission.

IMPLEMENTATION

Following final co-ordinated approval of the plan, a jointly prepared implementation strategy is expected to be issued. This strategy will, in effect, be the official response and indication of how

the plan would be put into effect. It is expected that government and First Nations will carry out the action necessary to implement this plan within their areas of responsibility.

The Regional Planning Commission recommends that a co-ordinating committee be formed, with representation from the two governments and First Nations, and given the responsibility to prepare the implementation strategy.

A summary of recommendations and a preliminary indication of the agency responsible for implementing each recommendation is included in this section. More detailed direction regarding implementation of the plan should be set out in the implementation strategy. The strategy should identify specific agency responsibilities, as well as costs and timing for implementing the plan recommendations.

The plan is expected to be implemented through current and new policies and programs, legislative changes, and, in some cases, further studies. Policy review and development would include preparation of a wilderness policy, shoreline guidelines, and review of the grazing policy; **legislative changes would be required to ensure stronger environmental regulation of mining and development activities; current programs would be expected to use the plan's recommendations in the review of land use applications. Further study would be required to deal with the management requirements in areas such as the Kluane Wildlife Sanctuary.**

The Commission recommends that the detailed implementation strategy be prepared and issued publicly within three months of approval/adoption of the final plan.

MONITORING

There is a requirement for ongoing assessment and evaluation of the effectiveness and appropriateness of the plan. The parties involved in the preparation of this plan have a stake in ensuring its effectiveness. This includes not only governments and First Nations, but the public as well. There is a need to ensure that processes established for the ongoing assessment of the plan include the public and provide opportunities for their input and involvement.

REVIEW

As issues and the understanding of the region change, the Kluane plan can be expected to require review and amendment. There must be continued commitment to ensuring that the process for reviewing or changing land and resource management direction and priorities in the future is open and public.

The co-ordinating committee, consisting of the ~~three~~ parties involved in the preparation of this plan, should meet to discuss the need to review the plan within one year of the first Final Agreement. As the Plan was not approved when Champagne and Aishihik reached an agreement, this did not occur. ~~of the signing of the first Band Final Agreement in the region.~~

Regular formal review of the plan should be undertaken no less than once every five years. More frequent formal reviews may be undertaken depending on changing circumstances within the region, with the agreement of the parties to the process.

In keeping with the open public process established to complete the plan, the process for reviewing or amending the plan should be open to all parties, individuals, and agencies with an interest in the region. The responsibility for carrying out the amendment and plan review process should rest with the co-ordinating committee proposed above. The approval of amendments would be at the discretion of Ministers and affected First Nations.

Table 4 provides a summary of the recommendations contained in this plan, indicates the party or parties responsible for their implementation, and, in some cases, specific agency responsibilities are identified. In 1998, a draft Implementation Plan was prepared, setting out the Yukon Government's commitments to Plan implementation. It is intended that the 1998 draft Implementation Plan subsequently incorporate the responsibilities of Canada and CAFN, and, following joint approvals, replace the Implementation Plan in Table 4.

Six types of recommendations have been identified: policy, policy study, priority, program, planning study, and legislative change.

Recommendations that are referred to as policy are intended to provide policy direction to agencies with jurisdiction for management. These recommendations will not normally have an implementation cost associated with them.

Policy studies refer to areas where study is required to develop a policy. The lead and participating agencies are identified. Some cost would be associated with these recommendations.

Priority indicates that a recommendation is a suggested priority for the agency noted in the summary or that the recommendation is a fundamental part of this plan. Priority recommendations may require re-evaluation of current program priorities by the lead agency noted.

Recommendations that suggest agencies undertake specific actions under existing programs are noted as such. These program recommendations will normally have costs associated with them and it will be necessary to seek new sources of funding.

Further planning studies have been recommended where more detailed resource analysis is required. These will require the participation of all parties to the regional planning process and require funding.

Recommendations suggesting legislative change have also been made.

TABLE 4 SUMMARY OF RECOMMENDATIONS

The following table was developed by the Regional Planning Commission in 1991, and is a preliminary indication of the implementation of the Plan. Following Plan approval, the Governments of Yukon, Canada, and Champagne and Aishihik First Nation are expected to prepare a detailed Implementation Strategy setting out how the Plan will be used and the priority projects.

RECOMMENDATION TYPE	DESCRIPTION	IMPLEMENTING AGENCY
HERITAGE		
1. priority	-support for completion and implementation of legislation to determine ownership and management responsibilities for heritage sites.	FIRST NATIONS YUKON/CANADA
2. policy	-heritage management processes should ensure native heritage values are reflected.	YUKON/HERITAGE REN. RES. CANADA/CPS
3. policy	-government agencies should consult with First Nations in the development of heritage management policies and programs.	YUKON/ FIRST NATIONS
4. priority	priority for heritage research should be given to most sensitive and least known sites.	" "

6. program	-inventory of burial sites.	FIRST NATIONS YUKON
7. priority	-preservation of Silver City; management plan for Dalton Post	YUKON/HERITAGE REN.RES.
8. priority	-Indian history interpretation a priority in regional tourist programs.	YUKON FIRST NATIONS
9. policy	-First Nations involvement in interpretation of Indian history.	FIRST NATIONS YUKON
10. program	-support for aboriginal place names documentation.	YUKON/HERITAGE FIRST NATIONS

SETTLEMENT

1. policy	-rural residential in planned areas adjacent to communities.	YUKON/C&TS
2. policy	-incorporate user-pay policy into community taxation policy.	" "
3. policy study	-develop cottage lot policy.	YUKON/C&TS REN.RES.
4. policy	-waste management strategies should include guidelines for closure, rehabilitation and future disposition.	YUKON/C&TS
5. policy	-communities should develop guidelines for the protection of water sources.	YUKON/C&TS COMMUNITIES
6. policy study	-develop management policy for hazardous areas.	CANADA/NAP
7. policy	-prior to policy development land applications should be assessed for terrain hazards.	YUKON/CANADA FIRST NATIONS

TRANSPORTATION AND COMMUNICATION

1. policy	-upgrading of North Alaska Highway.	CANADA
2. policy	-integrated approach to resource road development.	YUKON
3. policy recommendation	-additional highway pulloffs for viewing and interpretation.	YUKON/TOURISM C&TS
4. policy study	-consider options for highway signage to preserve scenic viewscapes.	YUKON/TOURISM
5. policy	-funding for road development tied to environmental review.	YUKON/C&TS

6. policy	-establish system of designated heritage trails.	YUKON/HERITAGE FIRST NATIONS
7. program	-identify sand and gravel for highway, communities, commercial, and public.	YUKON/CANADA
8. policy/program	-reclaim abandoned sand and gravel sites.	YUKON/CANADA
9. policy	-establish emergency airstrip between Burwash and Beaver Creek.	YUKON
10. policy	-consolidate development of infrastructure in corridors to allow other uses.	YUKON/CANADA
11. policy	-minimize access roads into wilderness.	YUKON/CANADA FIRST NATIONS
12. policy	-minimize visual impacts of commercial facilities.	YUKON/C&TS

ENERGY

1. policy	-open public process for implementing YEC energy strategy.	YUKON ENERGY CORP.
2. policy	-energy conservation encouraged.	YUKON
3. program	-detailed investigation of Aishhik hydroelectric project.	YUKON/CANADA FIRST NATIONS
4. policy	-support for environmental reviews.	YUKON/CANADA FIRST NATIONS
5. policy	-smaller scale and "alternative" power sources should be considered.	YUKON
6. policy	-priority given to the use of forests for fuel wood over large scale pulpwood and sawmilling operations.	YUKON/CANADA

WATER

1. policy	-water allocation and land management decisions recognize primary need to maintain fish and wildlife habitats.	YUKON/CANADA
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SUBSISTENCE

1. programs	-establish cooperative (First Nations/government) programs to develop understanding of subsistence systems and resource requirements.	FIRST NATIONS YUKON
2. policy	-subsistence should be recognized as an integrated system.	YUKON/CANADA

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| 2. policy | -subsistence should be recognized as an integrated system. | YUKON/CANADA |
| 3. policy | -government should adopt an interdepartmental approach to the management of subsistence. | " " |
| 4. policy | -non-Indian subsistence should be recognized as a seperate activity requiring distinct policies. | " " |
| 5. policy | -data on for subsistence policy purposes should be obtained on a co-operative basis. | FIRST NATIONS
YUKON/CANADA |

WILDLIFE

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|------------|--|-------------------------------|
| 1. policy | -management efforts should focus on restoring low wildlife populations. | YUKON |
| 2. policy | -greater Indian and local participation in wildlife management processes. | YUKON/CANADA
FIRST NATIONS |
| 3. program | -support for program to identify key wildlife habitat areas. | YUKON |
| 4. policy | -key habitat areas should be designated when special management provisions are required. | YUKON |
| 5. program | -support for program to develop standard terms and conditions for habitat protection. | " " |
| 6. policy | -establish .5km no hunting corridor along Alaska and Haines Highways. | " " |

FISH

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|-----------------|--|---|
| 1. policy study | -develop policy to address management of shorelines. | YUKON/C&TS
REN.RES./DIAND
FIRST NATIONS |
| 2. policy study | -develop fisheries allocation policy based on capability of lakes to sustain fishing pressure. | YUKON/REN. RES. |
| 3. priority | -program of information collection utilizing local knowledge. | YUKON/ REN. RES.,
CANADA/DFO |
| 4. study | -investigate potential for salmon fisheries enhancement. | CANADA/DFO |
| 5. priority | -protection of spawning sites a management priority. | YUKON, REN. RES.,
CANADA/DFO |
| 6. program | -monitoring to assess impact of fluctuating water levels on fish. | YUKON/REN. RES.
YEC |
| 7. study | -IRC study to address stream linkage issue in region. | YUKON/REN. RES.
CANADA/EMR |

FOREST

- | | | |
|------------|---|---|
| 1. policy | -forest harvesting to be carried out on a sustainable basis with priority to meeting local and Yukon needs. | YUKON/CANADA |
| 2. policy | -protection of timber harvesting over timber harvesting for export. | YUKON/REN. RES.
CANADA UNTIL
DEVOLUTION |
| 3. policy | -forest management plans required prior to increased harvesting. | " " |
| 4. policy | -community woodlots if and when needed. | " " |
| 5. policy | -single-use applications for land on high and medium forest production lands should be reviewed for impact on forest resource base. | " " |
| 6. program | -government should develop a fire management plan and give consideration to use of controlled burns for habitat enhancement. | " " |

AGRICULTURE

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|-----------------|---|-------------------------|
| 1. policy | -maximum agricultural parcel 10 hectares; exemption for Takhini River valley. | YUKON/CANADA |
| 2. policy | -discontinue disposition by spot application. | YUKON/C&TS |
| 3. policy/study | -disposition of lands for agriculture should be in planned areas only, identify suitable areas. | YUKON/C&TS
REN. RES. |
| 4. program | -review taxation requirements to ensure agricultural development does not unfairly drain community budgets. | YUKON/C&TS |
| 5. policy | -no game farming. | YUKON/REN.RES. |

GRAZING

- | | | |
|-----------------|---|-------------------------|
| 1. policy | -no issuance of long-term grazing leases; short-term leases and permits preferred. | YUKON/C&TS
REN. RES. |
| 2. policy study | -reassess grazing policy to address relationship of tenure to fencing cost requirements and range improvements. | YUKON/REN.RES. |
| 3. policy | -grazing policy should allow for range improvements. | " " |
| 4. policy study | -consider locally managed pastures as alternative to individual grazing areas. | " " |
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|-----------------|---|------------------------|
| 4. policy study | -consider to locally managed pastures as alternative to individual grazing areas. | " " |
| 5. policy study | -determine methods of establishing carrying capacity standards. | " " |
| 6. policy | -open range grazing should be considered as an option in backcountry areas. | YUKON/REN.RES.
C&TS |
| 7. policy | -grazing areas along designated trails should be designated and left available for public grazing on an informal basis. | YUKON
FIRST NATIONS |
| 8. policy | -study and consultation required prior to introduction of non-indigenous species. | YUKON/REN.RES. |

OUTDOOR REC/TOURISM

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|--------------------|---|--|
| 1. policy/programs | -establishing Kluane Region as tourist destination as priority. | YUKON/TOURISM
COMMUNITIES |
| 2. policy | -maintain wilderness character of region and visual quality of highway corridor. | YUKON/CANADA
FIRST NATIONS |
| 3. program | -tourism development strategies should include programs to foster understanding of Indian heritage. | YUKON/HERITAGE
FIRST NATIONS |
| 4. program | -support for locally developed tourism initiatives which focus on traditional trail systems. | YUKON/TOURISM
HERITAGE
FIRST NATIONS |
| 5. policy | -guidelines for wilderness recreation development | YUKON/TOURISM
REN.RES/CANADA
NAP/FIRST NATIONS |
| 6. program | -support for wilderness tourism specified. | YUKON/TOURISM |
| 7. policy study | -to direct and co-ordinate use of wilderness resources. | YUKON/REN.RES.
CANADA/NAP |
| 8. program | -establishment of adequate highway pulloffs and facilities | YUKON/C&TS
TOURISM/REN.RES. |

MINING

- | | | |
|-----------------------|---|--------|
| 1. legislative change | -to ensure land use regulations can be applied to mineral claims. | CANADA |
| 2. policy | -low impact mineral exploration techniques encouraged throughout the region and supported through Schedule of Assessment Credits. | CANADA |

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|-----------------------|--|--------------|
| 4. policy | -development of a mine abandonment policy is a priority. | " " |
| 5. policy | -development of a placer mine abandonment policy which addresses land based activities and waste removal. | " " |
| 6. program | -apply Arctic Environmental Strategy to placer waste clean up. | " " |
| 7. policy | -abandonment policies should require progressive reclamation at all stages of development. | " " |
| 8. legislative change | -to ensure that security deposits can be required in conjunction with abandonment plans. | " " |
| 9. policy | -government agencies with responsibility for resource management should be involved in the review of mineral incentive funding programs. | CANADA/YUKON |

**KLUANE WILDLIFE
SANCTUARY**

- | | | |
|--------------------------|--|--|
| 1. policy | -prior to completion of land claim agreements, and prior to further study, the Kluane Wildlife Sanctuary should be recognized as an area requiring special management (see Mining Recommendation 2). | CANADA |
| 2. policy/planning study | -the southern part of the sanctuary, excluding the land selections agreed to in the Champagne and Aishihik First Nations land claim agreement, should be managed as a park. | CANADA/YUKON
FIRST NATIONS |
| 3. policy | -interim measures should be taken at Shaw'She (Dalton Post) to protect heritage values. | YUKON/CANADA
FIRST NATIONS |
| 4. policy | -a mine abandonment plan should be required for the mining operation on the Burwash Uplands. | CANADA |
| 5. planning study | -more detailed planning should be undertaken in the north sanctuary following completion of First Nations final land claim agreements. | CANADA/YUKON
FIRST NATION |
| 6. policy | -consideration should be given to the need for further study in the central section of the Kluane Wildlife Sanctuary. | CANADA (Parks
Canada)/ YUKON
FIRST NATIONS |
| 7. policy | -prohibitions from staking should be considered as an option in areas of the three sections of the sanctuary as needed to adequately manage resource values. | CANADA/ YUKON
FIRST NATIONS |

**RESEARCH REPORTS PREPARED UNDER THE
GREATER KLUANE LAND USE PLANNING PROGRAM**

1. Agriculture in the Champagne and Aishihik Traditional Territory,
Don Stone, 1990.
2. Agriculture and Grazing, Greater Kluane Planning Region,
J. MacPherson and A. Hodgson, November, 1989.
3. Background Report on Wildlife,
Yukon Renewable Resources, December 1989.
4. Communications Infrastructure,
Esse Human Resources, 1989.
5. Demography and Development Trends in the Kluane Region 1976 to 1988,
D.R. Carruthers and Associates, April 1988.
6. Energy Baseline Information Kluane Region,
David Nairne & Associates Ltd., October, 1989.
7. Fisheries Research,
Northern Biomes Ltd., March 1989.
8. Grazing Potential for Selected Areas in the Greater Kluane Planning Region,
Yukon Renewable Resources, Agriculture Canada, Western Rangeland Consultants, 1989.
9. Greater Kluane Mineral Inventory - Phase II: A Review of Potential Mine Development in
the Greater Kluane Study Area During the Period May, 1989 to May, 1984.
Archer Cathro and Associates (1981) Ltd., May 1989.
10. Issues and Terms of Reference.
11. Kluane Terrain Hazard Mapping Study, Phase I Report,
Thurber Consultants Ltd., July 1989.
12. Kluane Terrain Hazards Mapping Study, Final Report,
Thurber Consultants Ltd., October 1989.
13. Land and Resource Concerns Pertaining to Economic Development,
Read and Associates, May 1990.
14. Lands, Settlement and Municipal Infrastructure Report,

- Community and Transportation Services, Lands Branch, March 1990.
15. Resident Recreation Survey,
Yukon Renewable Resources, March 1990.
 16. Recreation Sector Report,
Yukon Renewable Resources, 1989.
 17. Sector Report on Transportation,
Yukon Community and Transportation Services, Transportation and Capital Development
Branch, February, 1990.
 18. Some Important Wildlife Areas in the Champagne Aishihik Traditional Territory,
Ken Jingfors Consulting, May 1990.
 19. Summary of Comments - Greater Kluane Land Use Plan,
Yukon Land Use Planning Office, 1989.
 20. Summary of Historic and Prehistoric Resources in the Kluane Planning Region (Revised),
R.M. Gottardt, 1989.
 21. The Forest Resource in the Greater Kluane Land Use Planning Area, Yukon Territory - A
Preliminary Report,
Christine Boyd, INAC Forest Resources, December 1989.
 22. Wetlands Research in the Kluane Region - An Assessment of Waterfowl Habitat and the
Distribution of Waterfowl in the Kluane Planning Region,
Canadian Wildlife Service, June 1989.

MAP FOLIO

The map folio has not been reproduced for this printing of the Plan as the information is out of date and reproduction of the maps was costly. Copies of the maps may be viewed at the Policy and Planning Branch, Department of Renewable Resources. Alternatively, updated maps showing key wildlife habitat, merchantable timber, agricultural capability and topography for the Dezadeash Valley are available for viewing from the Department of Renewable Resources.

The maps ~~contained in this folio have been~~ produced in 1992 were prepared as a general overview of the land use patterns and resource values in the Greater Kluane Planning Region. They are derived from more detailed mapping and descriptive information collected during the preparation of this plan. As such, they should be used in conjunction with the written material in this document to provide the reader with a general picture of the region. They should not be used as the basis for detailed analysis of area specific land use issues. The short map abstracts that follow illustrate the research material and more detailed mapping upon which these maps are based and which should be referred to for specific land and resource management questions. When examined in combination, the generalized maps point out a number of key relationships, such as the modern influence of the Alaska Highway on land use and development, and the traditional relationships between travel routes and trails and wildlife habitats. In this regard, the maps are designed to provide a general feel for the region and not extensive knowledge about it.

Wildlife

The map is based on original research conducted by the YTG Department of Renewable Resources for the Greater Kluane Planning Commission. The research identified critical and significant habitat areas on the basis of their importance for various species at different seasons of the year. The original mapping produced under that research project was at a scale of 1:250,000. The map presented in this folio is a much generalized interpretation of that data. It is not meant to be used to indicate area specific sensitivity or habitat significance. It does, however, provide an indication of the overall character of the planning region in terms of its importance to wildlife and the quality of the habitats present.

Historic and Archaeological Resource

This map provides an indication of the type of historic and archaeological information that is available for the region. The report map has been prepared from research and mapping carried out by a number of individuals and agencies and summarized by the YTG Heritage Branch. The map is not meant to be the definitive statement on the heritage resources of the region; not all known trails are mapped, nor are all sites that may be under specific land claims discussion. It is meant, however, to emphasize the fact that the region has had a long and intricate human history. It is well-travelled, well-settled, and well-known by the ~~First Nation~~ Indian people as a homeland thousands of years old. A great deal of additional work will be required in order to fill the gaps in knowledge suggested by this map.

Mineral Potential and Activity

This map provides an indication of those areas in the Greater Kluane Planning Region with known mineral potential and current or historic mining and mineral exploration activity. It is based on the review of research on the geology of the area and on the inventory of known mineral occurrences in the region. The generalized presentation of this information (scale 1:1,000,000) limits its use to general discussions of potential and projected future mining activity.

Existing Land Use Pattern

This map indicates the pattern of certain types of land use and development in the region. It is based on file and map research completed by land managers in the federal and territorial governments. The land uses shown normally require some sort of land tenure agreement with government in order to occur and are therefore relatively simple to map. The limitation to this type of mapping is that it does not account for the many informal land use activities occurring in the region, such as back country recreation by individuals, or the extensive patterns of traditional First NationIndian use. The patterns of use shown indicate the significant influence on the Alaska Highway on the development of tourism and recreation facilities, and upon both agriculture and mining which benefit from highway access. The number of commercial wilderness operations mapped also indicate a high level of interest and use of the area's resources.

Forest Productivity

The forest resources of much of the Kluane Planning Region were inventoried and mapped at the same time as this plan was being prepared. Those inventories represent the most complete and up-to-date information on the region's forests. The generalized forest productivity map was prepared from original 1:50,000 digital inventory maps supplied by Forest Resources (NAP) and shows the scattered pattern of forest resources within the planning region.