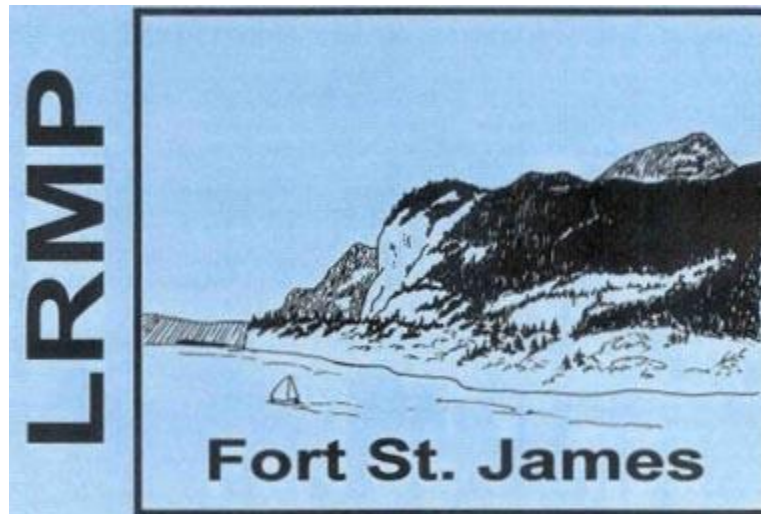


# Fort St. James Land and Resource Management Plan



File: 31090-25-03

March 30, 1999

Dear Reader:

Re:

***Approval and Direction to Implement  
The Fort St. James Land and Resource Management Plan***

On behalf of Cabinet, we are pleased to approve the Fort St. James Land and Resource Management Plan (LRMP) and direct participating ministries to implement the plan.

The LRMP is intended to guide ongoing resource management activities including designation of new provincial parks and planning for forest development. The Omineca-Peace Interagency Management Committee is charged with ensuring that the plan is implemented, monitored and reviewed.

We would like to thank members of the LRMP table for the considerable dedication and effort that they brought to the table in developing this plan for the management of land and resources in the Fort St. James LRMP area. The table has demonstrated that diverse interests can work together to develop consensus on future management of land and resources. Their cooperative approach and commitment in negotiation at the community level are exemplary for other Land and Resource Management Planning processes. We encourage table members to continue to participate in plan monitoring.

Your ongoing interest and involvement will ensure that the Fort St. James LRMP continues to guide resource management activities and provide sustainable development in the Fort St. James LRMP area.

ORIGINAL SIGNED BY

Dan Miller

Minister of Energy and  
Mines

ORIGINAL SIGNED BY

Cathy McGregor

Minister of Environment, Lands  
and Parks

ORIGINAL SIGNED  
BY

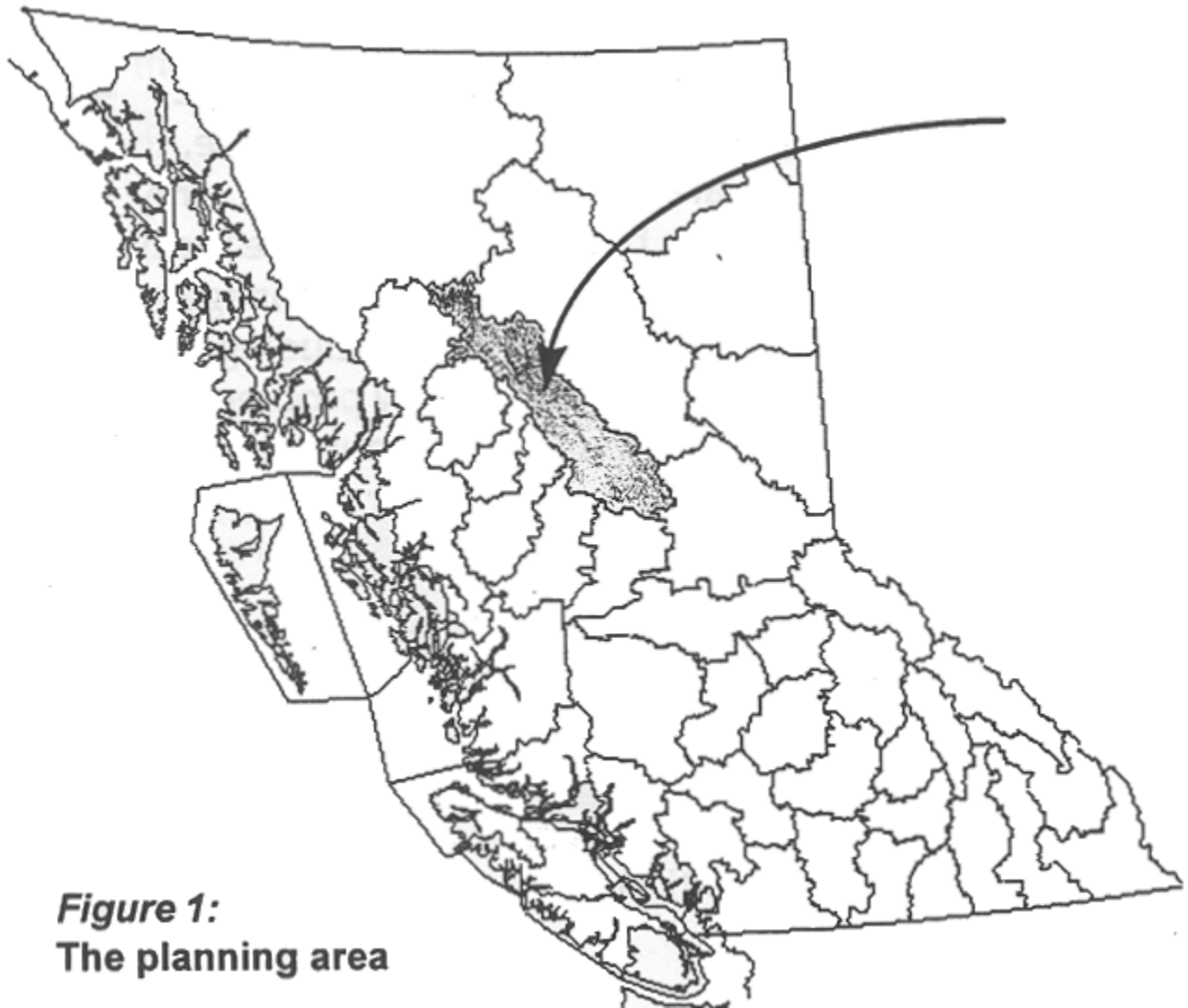
David Zirnhelt

Minister of Forests

## Executive Summary

The Fort St. James Land and Resource Management Plan (LRMP) officially began on October 21, 1992. The key successes of this plan include:

- ➔ increased certainty for resource development industries while clearly stating what considerations need to be made for other resource values in development planning.
- ➔ the development of an innovative Caribou Strategy which represents agreements recommended in adjacent planning areas (i.e., the Omineca and Stuart River Protected Areas).
- ➔ a strong commitment to Co-ordinated Access Management Planning for the relatively unaccessed northern half of the planning area.



**Figure 1:**  
**The planning area**

The development of this LRMP is coming at a time when roaded access and forest development occurs just to the south of the midpoint of the district, and when much of this district is still in pristine condition. This plan highlights the resource management opportunities and challenges as forest development moves north towards these largely undeveloped areas, and recommends pro-active integrated resource management, instead of reactive issue management.

#### Setting The Stage — the Fort St. James Plan Area

There are 3.174 million hectares in the Fort St. James plan area, currently supplying approximately 3 million cubic metres of timber annually, and generating 131 million dollars in stumpage (1997). An increase in this harvest level is expected in the near future. The plan area supports a population base of approximately 4,000 people. Although the population base is small, the resources in this area support regional and

provincial economies in guiding, tourism, mining, the forest industry, agriculture, fisheries, and service sectors.

### Who Was Involved

Participation in this Land and Resource Management Plan has fluctuated, averaging roughly 30-40 participants throughout the seven-year process. The LRMP Table worked with an open-door policy and interest based negotiations, and was not sector-based like many other planning processes.

An overall goal of the LRMP is to develop land use plans with the co-operation and participation of First Nations living, working and having traditional territories within the LRMP area. Working Group members identified the need to address issues and concerns of First Nations communities, as they apply to the resources within the planning area. Representatives of several First Nations attended early meetings but other priorities, primarily treaty negotiations, resulted in that participation dropping off as the LRMP process continued.

The key issues for local participants were the stability of the community of Fort St. James, and integrated resource management. The key issues for regional participants were integrated resource management strategies that considered management for caribou, the stability of the Prince George Timber Supply Area, tourism and guide outfitting, and opportunities for mineral exploration.

### What Resulted

The Fort St. James Land and Resource Management Plan divides a 3.174 million hectare landbase into 36 Resource Management Zones (RMZ's), which fall into five categories:

- ➔ **Settlement/Agriculture RMZ** — This category represents < 1% of the LRMP landbase, and designates lands within the zone are that are currently used or proposed for farming, and/or are used or proposed for settlement in an Official Community Plan, Crown Land Plan, or LRMP. Management on these lands integrates Crown lands with the historic pattern of settlement and agriculture in the planning area, and management of natural resource values and resource development is compatible with this.
- ➔ **Resource Development RMZ** — Representing 32% of the landbase, these are lands with existing or future potential for intensive resource development. These are managed with consideration of other resource values and within the guidelines of specific zone objectives and strategies. Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrate resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.
- ➔ **Multi-Value RMZ** — Representing 45% of the landbase, these lands are managed to integrate a wide range of resource values. Access within these zones is relatively unrestricted, with the exception of specific areas that are recommended for special management considerations.

- ➔ **Special Management RMZ** — Representing 16% of the landbase, these lands are managed for a wide array of resources, but in general indicate the need for more sensitive resource management. Resource development (including roaded access development) may proceed as long as impacts on other resource values are minimized and resource values are maintained.
- ➔ **Protected Area RMZ** — Representing 6% of the landbase, Protected Areas are established in perpetuity so that the ecological systems they encompass can continue to evolve with a minimum of intervention.

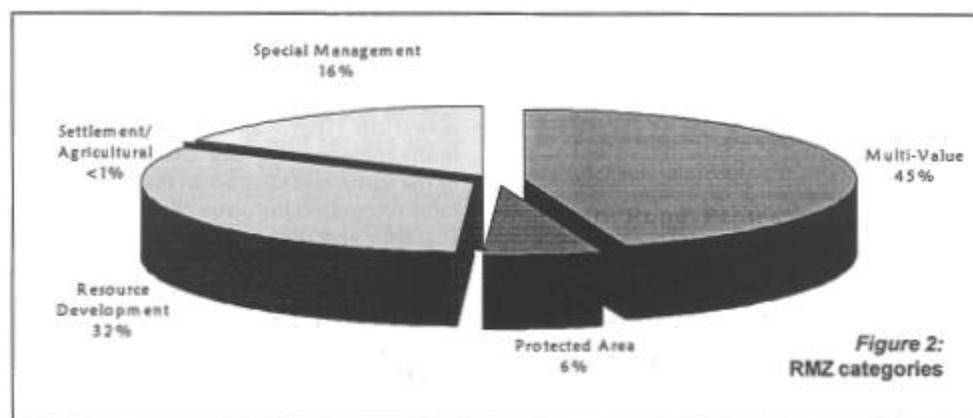
The Protected Area System comprises a family of Protected Areas. The system, rather than individual areas, provides for the diversity of ecosystems, special features and outdoor recreation opportunities and experiences sought.

In Special Management and Multi-Value Resource Management Zones the RMZ label is complemented by resource management intent statements that clarify and provide sensitive management for identified significant resources.

Two areas in this plan have been recommended as special management subzones. These areas are:

- ➔ a corridor of roughly 250 m on either side of the Sustut River, with no resource extraction, to protect the Class 1 Classified Waters of the Sustut River (Lower Sustut Resource Management Zone).
- ➔ the Upper Jake Creek Watershed subzone, with no forest harvesting except for forest health purposes (Squingula Resource Management Zone, subzone A).

These two areas represent less than 1% of the landbase (24,649 hectares), and less than 0.1% of the available timber volume in the planning area.



## Protected Areas

The LRMP Table was able to reach consensus on twenty-two Protected Areas, representing 5.9% of the landbase, or roughly 187,000 hectares. The original target for new and existing Protected Areas in this planning area as established by the Land Use Co-ordination Office was 5.8% (plus or minus 0.25%), or roughly 184,000 hectares.

Therefore the Fort St. James LRMP is within the target proposed by the Land Use Co-ordination Office.

The Protected Areas recommended in this plan include:

**Stuart River Protected Area** (5,575 hectares) — Key values include a small elk population and a migration corridor for sockeye salmon.

**Mt. Pope Protected Area** (1,944 hectares) — Key values include mule deer winter range, Douglas-fir representation, some unique plant and animal species associated with limestone rock formations, and significant recreation values.

**Fleming Protected Area** (41,590 hectares) — Key values include wetland complexes that serve as a stopover for migrating waterfowl and high wildlife values.

**Mudzenchoot Protected Area** (637 hectares) — A dry meadow complex with some unique plant species.

**Blanchet Protected Area** (24,099 hectares) — Key values include significant caribou over-wintering and calving areas, suitable mountain goat habitat, and excellent representation of alpine flora.

**Nation Protected Area** (18,732 hectares) — Key values include the Nation Lakes canoe route and associated visual and recreation values.

**Omineca Protected Area** (6,707 hectares) — The broad U-shaped valley provides significant riparian habitats and recreation values, as well as connectivity with the proposed Protected Area in the Mackenzie planning area.

**Damdochax Protected Area** (8,097 hectares) — Key values include very important wildlife habitat, a wetland riparian complex that provides significant habitat for grizzly bear and moose, and the terminus for a small but significant run of sockeye salmon.

**Upper Sustut-Thumb Protected Area** (77,486 hectares) — The inaccessible basaltic escarpment called “the Thumb” affords good habitat for mountain goats. The remainder of the area provides large tracts of pristine wilderness, with habitat for caribou, grizzly and black bear. The Asitka and Sustut rivers have migrating populations of salmon and steelhead.

These Protected Areas are significant in that some represent large, functional units of habitat and wilderness. Many of the Protected Areas recommended in this plan also complement Protected Areas or Special Management Zones recommended in adjacent planning areas (i.e., the Omineca and Stuart River Protected Areas).

This plan has the foresight to recognize the recreation and tourism values of Protected Areas, and the growing importance that tourism is playing in northern economies. A further thirteen small Goal 2 Protected Areas are also identified, forming 2 separate chains along the long, narrow lakes in this planning area, setting the stage for a “Shuswap of the North” recreational boating experience.

Mineral claims and associated access were excluded from Protected Areas to allow for potential mine development. These mineral claims were calculated into the Protected

Area landbase, with the recommendation that expired claims be then included in the Protected Areas.

## Forestry

Several elements of recommended management are key for the forest industry. Zones in closer proximity to the mills and Fort St. James are slated for future intensive resource development. Many of the remaining Special Management and Multi-Value zones will require a greater consideration of the integration of other values in development planning.

The Caribou Strategy has developed the process for better decision-making, with minimal impacts on harvest anticipated. Suitable protective measures will ensure the future of Douglas-fir at the northern limits of its range.

## Recreation

The plan recognizes and provides direction for integrating resource management with the Classified Waters of the Sustut and Kluatantan rivers. The LRMP table recognized the value of recreation to the character and economy of the planning area in their recommendations for Protected Area status. Direction recommended in this plan for the Middle and Stuart rivers is complementary to provincial directives on heritage river designation.

## Fish and Wildlife

The Fort St. James LRMP recommends a Caribou Strategy that reduces risk to caribou by deferring harvesting in four unaccessed Caribou Management Areas for 5 years, until more comprehensive access planning and Forest Development Plans can be submitted. This Caribou Strategy provides a clear outline of assessments required in Forest Development Plans, and recommends the development of a local advisory group to provide advice on caribou management. The strategy also recommends joint approval (MELP/MoF/MEM) of portions of Forest Development Plans within Caribou High, Medium and Corridor Caribou Management Areas.

The Damdochax Protected Area and the Upper Jake Creek Special Management Subzone will provide important habitat for grizzly bears, but no Grizzly Bear Conservation Areas have been recommended because proposals were not available from BC Environment to be considered during the planning process.

The fisheries and lake management proposed in this plan strikes a balance between fisheries and recreation values, and strives to maintain values inherent to wilderness recreation experiences.

## Minerals

The Fort St. James Land and Resource Management Plan recommends objectives, strategies, and caveats for flexibility for minerals that are stronger than in some other plans. However, access, wildlife and fisheries management direction will require some

innovative approaches to mineral resource activities (i.e., non-roaded access for early exploration in site-specific cases). There is now a clearer indication of the other resource values that must be addressed during the approval processes for mine development.

The Nation Protected Area, as developed by the Working Group, has a significantly lower impact on the mineral sector than the original Protected Areas proposal as presented by the Regional Protected Areas Team (RPAT).

## Access

The Fort St. James Land and Resource Management Plan provides a commitment to Co-ordinated Access Management Planning in the northern third of the district. The comprehensive Access General Management Direction acknowledges that access management will be required in Caribou Management Areas.

## Agriculture

The Fort St. James LRMP is committed to identifying and designating land for agricultural expansion on lands both within and outside of the Agricultural Land Reserve, thus recognizing the long-term economic and social benefits of agriculture. Expanding agricultural operations and range tenures will implement strategies that recognize and sustain other resource values.

## Socio-Economic Assessment and Environmental Resource Analysis

Drafts of the Socio-Economic Assessment and Environmental Resource Analysis have been prepared and were presented to the Fort St. James LRMP Working Group. Working Group members have reviewed both documents.

The quantifiable socio-economic implications of the Base Case and Fort St. James LRMP arise primarily from potential future timber supply impacts. The socio-economic and environmental implications for other sectors/values are more difficult to quantify because they mainly relate to longer term potential (e.g., possible mineral development, future wildlife populations, etc.), rather affecting existing amounts of identified resources (e.g. the Timber Harvesting Land Base) in the short term. The impacts for all sectors and values will likely occur gradually over several decades.

A summary of the Socio-Economic Assessment and the Environmental Resource Analysis is included as Chapter 5 of this document.

## Implementation, Transition and Monitoring

The Fort St. James Land and Resource Management Plan provides recommendations towards the implementation of the plan, including phase-in provisions to ensure continuity of operational plan activity.

Technical studies recommended in this plan, with their corresponding reports and recommendations, will be implemented when and where needed and possible. There is



little currently identified methodology or funding in place to achieve many of the objectives. Nonetheless, industrial activity will proceed in a controlled and responsible manner. However, the implementation plan will task the resource ministries to complete inventories, studies, and planning in a timely manner, and in accordance with available resources.

Throughout the implementation of this LRMP, access must be addressed to include and respect all resource users, while recognizing the intent of sound environmental management. Clear, concise wording must identify the rights and processes for individuals or parties with verifiable interests and intentions within the various Resource Management Zones. The intent is to ensure responsible resource management, not to preclude industrial activity or public access to provincial resources. The Ministry of Forests, Ministry of Energy and Mines and Ministry of Environment, Lands and Parks will incorporate the direction of this Land and Resource Management Plan in decision-making, but are also bound by the other considerations of their legislation and mandates.

The LRMP is a living document, subject to continuous scrutiny, change and interpretation. No single use, with possible exceptions such as Protected Areas, or identifiable environmental values such as riparian areas, will have the effect of placing portions of the landbase in a state of perpetual reserve. The concept of responsible multi-use must be enforced.

A combination of annual implementation reporting and independent audits is recommended to provide feedback to the public and LRMP participants regarding the successes and challenges of implementing this plan. Co-ordinated Access Management Planning and focusing research dollars on caribou will be the primary focus of the implementation plan.

## Summary

The Fort St. James Land and Resource Management Plan provides management direction that reflects a local vision for how the landbase should be managed. It increases certainty for resource development industries, while stating what considerations need to be made for other resource values in development planning. It provides guidance on management for environmental resource values, lowering risk to caribou, grizzly and fisheries. It is a world-class example of local participation in Land Resource Management Planning, providing direction for integrated resource management.

## 1.0 The Planning Area



### 1.1 Introduction

The Fort St. James Land and Resource Management Plan (LRMP) covers a relatively isolated and sparsely populated area of approximately 3.174 million hectares. The planning area follows the boundaries of the Fort St. James Forest District, one of eight forest districts that make up the Prince George Forest Region.

Fort St. James is the oldest established community west of the Rocky Mountains. The town was founded in 1806 as a fur trading post. Simon Fraser brought the North-West Company (later the Hudson's Bay Company) to the shores of Stuart Lake and the surrounding area, naming the territory New Caledonia. All routes led to Stuart Lake Post, as New Caledonia became the administrative centre of the northern fur trade. Area trading posts, including Stoney Creek, Fraser Lake and Fort Babine, sent their furs to Stuart Lake Post for accounting and subsequent shipping to the east.

The discovery of gold in the Omineca region in the 1850's brought thousands of hopefuls rushing into the Fort St. James - Manson Creek area. New roads and transportation routes for miners improved access to the more remote portions of the area. In-town services grew, hotels and boarding houses flourished. By 1890 transportation to and from the Fort was made even easier with the introduction of the Skeena River steamship route, which enabled goods to be transported by water from the Pacific Ocean as far east as Hazelton, then by portage and canoe to Stuart Lake and into Fort St. James.

The quest for gold continued well into the first part of the twentieth century. Claims for silver, gold and lead had been staked by the early 1920's, but access continued to be a concern. The province was urged to improve existing roads and to build new ones. In 1936 the province started work on a main road into the operating mines of the Manson

Creek area and built the North Road, which continues to be one of the main access routes through the planning area.

By 1938 a mercury claim had been staked at Pinchi Lake. The mine operated from 1940 to 1944 and was, at that time, the only mercury producer in the country. The mine re-opened in 1967, and operated until 1975.

Logging has always been an important activity in the planning area. The provincial government set up an office of the Ministry of Forests in the 1930's to administer work in the forests. In the 1940's and 1950's several locally-owned sawmills employed area residents and loggers. During the 1960's several large company-owned sawmills set up continuing operations in the vicinity of Fort St. James.

Construction on the BC Rail-Dease Lake extension in the 1970's allowed harvesting to begin moving northward. The rail line, which goes as far as Minaret, was re-opened in 1991. This opened access to the most northern part of the forest district, increasing the annual harvest and solidifying forestry as the dominant economic activity in the planning area.

## 1.2 Biophysical Description

The planning area presents a diversity of landscapes, from the rolling landscapes of the northern interior plateau in the southern portion of the district to the extremely mountainous and largely unroaded landscapes of the north.

Mountain ranges in the planning area include the Frypan, Driftwood, Sicintine, Groundhog and Mitchell ranges. There are also significant peaks such as Goldway Peak, Sustut Peak and Notchtap Peak.

The area is best known for its series of lakes and rivers, many of which are highly valued for tourism and recreation. Large lake systems include the Trembleur, Stuart, Takla, Inzana, Pinchi, and Tezzeron systems, which are tributary to the Fraser River Basin. Other significant lakes include the Nation Lakes (Tsayta, Indata, Tchentlo, and Chuchi), Great Beaver, Grassham, Cunningham, Kazchek, Kloch, Takatoot, Witch, Carrier, Tetana, Motase, Sustut, Johanson, Canyon, Slamgeesh, and Bear lakes.

The LRMP area covers parts of the headwaters of three major river basins: the Skeena, the Fraser, and the Peace. The first two drain to the Pacific Ocean while the Peace River flows, via the Mackenzie River, to the Arctic Ocean.

The Skeena Basin covers the northwestern portion of the planning area and is drained not only by the Skeena River, but also by its main tributaries; the Slamgeesh, Squingula, Sustut, Mosque, Dutu and Kluatantan rivers.

The Fraser Basin covers the southern portion of the LRMP area and provides access to the northern part of the planning area. The commanding features of the Basin are Takla Lake and its major tributaries, the Driftwood, Kotsine, and Sakeniche rivers. Takla Lake is drained via the Middle River into Trembleur Lake, which in turn is drained into Stuart Lake by the Tachie River. Stuart Lake is drained out of the planning area by the Stuart

River, which joins the Nechako River before connecting with the main body of the Fraser River at Prince George. The Middle and Stuart rivers have been designated as provincial Heritage Rivers.

Two additional tributary rivers join this main drainage pattern before it leaves Stuart Lake. The Kuzkwa River flows into the Tachie River, and the Necoslie River flows into Stuart Lake near the Stuart River outfall. A small subset of the Fraser Basin, lying on the eastern edge of the planning area, is drained by the Salmon River and its main tributary, Whitemud Creek.

The Peace Basin covers the eastern portion of the planning area and is drained primarily by the Omineca and Nation rivers and their tributaries. The lower reaches of the Omineca flow into the Williston Lake Reservoir, to the east in the Mackenzie area. The upper reaches of the Nation River are slowed by a series of long lakes aligned generally with the direction of flow. These waters also subsequently flow rapidly through a series of gorges before reaching the Williston Reservoir.

The Stuart-Takla river system produces provincially significant salmon runs. It is a predominantly wild salmon fishery, composed of sockeye and chinook. A Salmonid Habitat Management Plan was developed in 1992 for the Stuart-Takla river system. The Driftwood River is the main kokanee spawning stream, and also sustains the largest number of sockeye spawners. Together with the Middle and Tachie rivers, the Driftwood River accounts for 80% of sockeye spawning in the planning area.

Upper Sustut River steelhead use high elevation habitats which are usually thought of as being poor quality. The Sustut River is a Class 1 Classified Water, which means angling use is specially regulated. A combination of high natural resource values (water quality, natural beauty of the landscapes, wildlife, and remoteness) results in uncrowded conditions and exceptional fishing, attracting anglers from around the world to the Sustut River.

White sturgeon and Arctic grayling are two uncommon fish species found in the LRMP area. Arctic grayling populations were once abundant in the Nation River, but have declined significantly over the past twenty years. Little Calais and Calais Lakes have been stocked with grayling, in an attempt to maintain genetic stock. (Refer to Appendix 3 for a list of red-listed and blue-listed species, or acquire the most current list from the BC Conservation Data Centre.)

**Table 1 Ecoregion Representation in the Planning Area**

<b>Ecoregion</b>	<b>Ecoregion</b>	<b>Percentage of Planning Area</b>
<b>Fraser Basin</b>	Babine Upland	27.1%
	Nechako Lowland	11%
<b>Omineca Mountains</b>	Manson Plateau	22.8%
	Southern Omineca	7%
	Mountains	27.8%

	Eastern Skeena Mountains	
<b>Skeena Mountains</b>	Northern Skeena Mountains	1.8%
<b>Boreal Mountains &amp; Plateaus</b>	Southern Boreal Plateau	0.2%
	Cassiar Ranges	2.3%

Eight ecosections, including five with significant representation, divide the LRMP planning area: Babine Upland, Nechako Lowland, Manson Plateau, Southern Omineca Mountains, Eastern Skeena Mountains, Northern Skeena Mountains, Southern Boreal Plateau, and Cassiar Ranges.

Within the LRMP's eight ecosections there are five vegetation or biogeoclimatic zones:

- Sub-Boreal Spruce (SBS)
- Engelmann Spruce-Subalpine Fir (ESSF)
- Interior Cedar-Hemlock (ICH)
- Alpine Tundra (AT)
- Boreal White and Black Spruce (BWBS)

(See Table 1: Ecosection Representation in the Planning Area, and Table 2: Biogeoclimatic Zones, Variants and Sub-Variants in the Planning Area.)

The LRMP planning area supports an abundance of wildlife. Resident mammals include moose, mule and white-tailed deer, elk, cougar, sheep, mountain goat, black and grizzly bear, coyote, wolf and woodland caribou. The area is home to approximately 13 furbearer species, including (but not limited) to beaver, otter, mink, muskrat, fisher, wolverine, and marten. Some 173 bird species are found within the planning area, with 52 species described as winter residents. Owls, cavity nesters and perching birds are widespread, as are waterfowl and some species of shorebirds. The area is home to a number of blue-listed wildlife species, including grizzly bear, trumpeter swan, fisher, great blue heron, and American bittern. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre.)

The planning area contains a diversity of important wildlife habitat for large mammals, birds and furbearers. Numerous lakes and extensive wetlands, particularly in the southern end of the planning area, provide riparian habitat.

Wetland habitats are extensive throughout the Babine Upland and Nechako Lowland ecosections. High elevation ecosystems also provide important habitat, and account for 47% of the landbase within the LRMP area. Old-growth Douglas-fir provides important wildlife habitat even though it is at the very northern borders of its natural range. There

are several threatened or rare plant associations listed in this planning area. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre.)

Valuable winter range for moose is found in association with the Manson Plateau and Southern Omineca Mountains ecozones. High value ranges have been identified in the lower reaches of the Driftwood River, the Omineca River from Old Hogen downstream, the Middle, Sustut and Stuart River riparian areas, the Tezzeron Lake/Pinchi area, the Great Beaver Lake/Salmon area, and in the Fleming Lake/west end of Takla Lake area. Valuable habitats for mule deer have been identified in association with old growth Douglas-fir types, particularly those on south-facing slopes, such as Mt. Pope and along the north shore of Stuart Lake. Valuable habitat for elk is found on the south-facing slopes and in the valley bottom along the Stuart River.

<b>Table 2</b>  <b>Biogeoclimatic</b>	<b>Biogeoclimatic Zones, Variants and Sub-Variants in the Planning Area</b>
<b>Subzone/Variant</b>	<b>Description</b>
<b><u>Sub-Boreal Spruce (SBS)</u></b>	
<b>SBS dk</b>	characteristically dry and cool, dominated by prickly rose, purple peavine, devil's club and oakfern. There is no subalpine fir.
<b>SBS dw3</b>	characteristically dry and warm, dominated by Douglas-fir, saskatoon and false sarsaparilla
<b>SBS mc2</b>	characteristically moist and cold, dominated by subalpine fir, black huckleberry and five-leaved

	bramble
<b>SBS mk1</b>	characteristically moist and cool, dominated by soopolallie, velvet-leaved blueberry, kinnikinnick and dwarf blueberry
<b>SBS mv3</b>	characteristically moist, very cold
<b>SBS wk1</b>	characteristically wet and cool
<b>SBS wk3</b>	occurs in the valleys of the western Omineca Mountains, at elevations below 1100 m. The climate is wet and cool, dominated by devil's club and oakfern.
<b><u>Engelmann Spruce-Subalpine Fir (ESSF)</u></b>	
<b>ESSF mc</b>	characteristically moist and cold
<b>ESSF mv1</b>	characteristically moist and very cold, dominated by white-flowered rhododendron, with no devil's club and little to no oakfern on wetter sites
<b>ESSF mv3</b>	characteristically moist and very cold, dominated

	by black huckleberry and white flowered rhododendron. Occurs above approximately 1100 m and below the Alpine Tundra.
<b>ESSF mv3c</b>	characteristically moist and cold, dominated by knight's plume, bunchberry and heart-leaved arnica
<b>ESSF wv</b>	characteristically wet and very cold
<b><u>Boreal White and Black Spruce (BWBS)</u></b>	
<b>BWBS dk1</b>	characteristically dry and cool, dominated by white spruce or lodgepole pine
<b><u>Interior Cedar-Hemlock (ICH)</u></b>	
<b>ICH mc1</b>	characteristically moist and cold
<b><u>Alpine Tundra (AT)</u></b>	
	there is no sub-zonation within the AT zone. Alpine vegetation typically occurs in a complex mosaic of communities.



Forests are mostly lodgepole pine and spruce, with balsam at higher elevations and scattered patches of aspen. There are some areas of Douglas-fir, particularly along the shores of Stuart Lake. A history of frequent wildfires has left a mosaic of forest ages. Old and mature balsam stands are found in the northern portion of the planning area, and are also associated with some patches of Douglas-fir elsewhere.

There is an ecological reserve at Takla Lake, consisting of Douglas-fir at the northernmost tip of the species' range. The majority of the stands are young, but there is some old-growth along the lakeshore.

Timber harvesting to date has concentrated on the southern portion of the LRMP area, in areas around the larger lakes, and along valley bottoms in old age class spruce, with increasing emphasis on lodgepole pine-dominated stands. Historical lack of access, mountainous terrain and a predominance of less preferred tree species, such as balsam, have limited harvesting in the north.

The Fort St. James planning area has significant mineral values, including significant mineral potential, mineral occurrence inventory including deposits with well defined reserves, existing mineral and placer tenure holdings, and a history of significant levels of exploration and development activities.

There are 277 documented mineral occurrences located in the district. Of these, one is an intermittently producing jade mine in the Ogden Mountain area, and several are small scale seasonal gold operations. Twelve occurrences are developed prospects (mineral deposits with defined reserves), 31 are prospects (occurrences of mineralization with some indication of dimension and value), and 17 are past producing mines, most of which are placer gold. The remainder are classified as showings where mineralization has not been sufficiently defined to permit a resource estimation.

This pattern of occurrences is consistent in the areas surrounding the planning area. There are 36 documented mineral occurrences immediately adjacent to the Fort St. James LRMP area. Of these, eleven are developed prospects, including the Mount Milligan gold-copper project, eight are prospects, and two are past-producing mines.

Maps of the mineral metallic and industrial mineral assessments, documented mineral occurrences, and existing tenure, show the locations of the mineral values. An assessment of the mineral values within the Fort St. James LRMP area was produced, describing the known and potential mineral values of the land base. Discovered mineral deposits comprise the known value component of this assessment. Resource value predictions or estimations based on mineral occurrences, past production, exploration expenditures and expert knowledge comprise the potential value component of the mineral assessment. Mineral assessments classify tracts of land from lowest (1) to highest (10) value. Metallic and industrial mineral (nonmetallic and non-fuel minerals) values are assessed separately. The assessments summarized in the Resource Management Zone descriptions of the Fort St. James LRMP area were completed by the provincial Geological Survey Branch, and were based on a refined version of an assessment process used by the United States Geological Survey.

### 1.3 Social and Economic Description

The Fort St. James planning area's population of 4015 (1996 census) is centred mainly in the communities of Fort St. James, Tachie, Yekooche Village, Middle River, Takla Landing, and Bear Lake.

The largest centre is the community of Fort St. James (population 2,209 @ 1996 census). Located on Highway 27 along the southern shores of Stuart Lake, Fort St. James is a service centre for the smaller communities and remote residences scattered throughout the planning area. Community services include provincial government offices (government agent, Ministry of Environment, Ministry of Forests), federal government (Canada Post, Human Resources Canada, Royal Canadian Mounted Police), elementary and high schools, post-secondary education, municipal government and health care services.

The population of the Fort St. James District makes up less than 5% of the total population of the Prince George Timber Supply Area (TSA). While the overall population of the planning area decreased by 2.3% between 1986 and 1991, the population of the town of Fort St. James increased by 2.1% between 1995 and 1996, just slightly less than the provincial average of 2.5%.

First Nations communities contribute significantly to the economic and community stability of the LRMP area. First Nations presently comprise approximately one third of the population of the Fort St. James LRMP area (1996 census). This may be an underestimation due to the nature of the census process. There are seven First Nations communities (the former or alternate name of the community is in brackets): Yekooche (Portage/Nancut), Nak'azdli (Necoslie), Binché (Pinchi), Tl'azt'en (Tachie), Dzitl'ainli (Middle River), Takla Landing, and Bear Lake.

The Nak'azdli Band has 1,262 members and sixteen reserves. The band maintains an office on their land immediately adjacent to town, offering health, housing and other services. Nak'azdli operates a value-added mill (Tl'oh Forest Products) near Fort St. James. Yekooche, on Stuart Lake, has approximately 200 members. The Takla Lake Band has 479 members, many living in the community at Takla Landing. The band operates the Takla Development Corporation. A majority of the members of the Tl'azt'en Nation live at Tachie. The community operates Tanizul Timber, which holds a 25-year renewable Tree Farm Licence, #42, the only Tree Farm Licence in the planning area. Tl'azt'en owns Teeslee Forest Products and operates a sawmill in a joint venture with Northwood Pulp and Timber. There are also small First Nations communities at Bear Lake and Dzitl'ainli.

Communities in the Fort St. James planning area depend heavily on the forest industry. In 1997-1998 2.9 million cubic metres of timber were harvested in the forest district, representing about 32% of the Prince George Timber Supply Area. An estimated 40% of the labour force are directly or indirectly involved in some aspect of forestry, including logging, woodlands, silviculture and milling (as compared to 15% for the Prince George District and 27% for the Vanderhoof District). Forestry is responsible for 46% of basic employment and 39% of basic incomes in the LRMP area, with approximately 1,000 direct jobs in harvesting, processing, silviculture and non-rail transportation.

There are presently six sawmills and two value-added operations in the planning area, while over fifty logging and silviculture contractors operate in the district. The current net outflow of fibre from the Fort St. James Forest District is estimated at approximately 1.507 million cubic metres. More wood is transported out of the district than remains within its boundaries, a situation that is a major cause for community economic development concern. Estimates indicate that 55% of all wood harvested within the Forest District is destined for processing outside the district.

Construction of the BC Rail Dease Lake extension in the 1970's brought harvesting to the Leo Creek and Lovell Cove areas. Re-opening the line in 1991 increased access to the most northern parts of the forest district, and timber harvesting jumped in the district from 1.8 to 3.0 million cubic metres.

The forest sector contributes significantly to provincial and federal government revenues. General stumpage fees of \$131.5 million were paid in 1997.

There are currently no major operating mines in the plan area. There are, however, significant mineral values including mineral deposits with well-defined reserves. There is jade production on an intermittent basis in the Ogden Mountain area, and a number of placer properties that produce gold on a seasonal basis. Exploration and development in search of new mines is presently the major element of mining in the planning area. Mineral exploration and development and small scale mining accounts for 3% of basic employment in the plan area. Mineral exploration and development will continue to be an important component of this district's economic profile.

The extent of exploration and development of mineral occurrences in the planning area places the Fort St. James planning area in a very favourable position for future mine development. The 277 documented mineral occurrences indicate high potential for metallic and industrial minerals. High mineral values and infrastructure development in oil and gas potential exists in the northern portion of the plan area. The potential for geothermal energy is lower than in other parts of the province. Opportunities for hydroelectric development also exist.

The agricultural land resource is characterized by a low level of development, as most current agricultural enterprises in the area are small in size and non-intensive in production. The sector generates about \$1.6 million each year.

Guide outfitting and trapping are growing contributors to the local economy, and important activities for First Nations. Numerous traplines cover the entire planning area. Four hundred trappers were registered in the planning area in 1993, including First Nations trappers. Some rely on trapping for a portion of their income, while others participate for recreational or traditional purposes. The entire planning area is covered by trapline tenure, the exceptions being private land and reserves. A large portion of the landbase supports healthy furbearer habitat.

Licensed guides and outfitters operate within the planning area, each of whom have an average annual client base of 15-35 individuals. All non-residents are required to use the services of a guide outfitter when big game hunting. Several guide outfitters have expanded from primarily hunting expeditions to include fishing and non-consumptive wildlife viewing.

**Table 3: Employment in the Plan Area**

<b>Employer</b>	<b>% of Basic Employment</b>
Forestry	46%
Public Sector	23%
Other (Service)	10%
Agriculture	9%
Tourism	8%
Mining	3%
Guiding and Trapping	<1%

The planning area is known for its numerous lakes and related recreation opportunities. Tourists and summer residents arrive seeking wilderness-based experiences, including sports fishing, guided hunting, and wildlife viewing. Roaded recreation activities are mainly limited to the southern portion of the planning area, largely due to the remoteness and limited access as one moves northward. The exceptions are those commercial lodges that provide a wilderness setting. Tourism lodges are located throughout the planning area, and are accessible by road, boat or air. There are exceptional guiding opportunities for wildlife, hunting, angling and wilderness experiences.

The Ministry of Forests currently maintains 60 recreation sites, most of which receive heavy local use. The Ministry of Forests also maintains the Mt. Pope, Green Lake, Kazchek Falls, Shass Mountain, Tsilcoh Falls and Kazchek Lake recreational trails. Provincial parks in the area tend to receive more non-local use. Camping, boating, fishing and hunting are among the most popular recreation activities, while more specialized pursuits include cross-country skiing, snowmobiling, iceboating, canoeing, sailing, and hiking.

While the majority of those using recreational facilities are residents of the Prince George Forest Region (including Vanderhoof and Prince George) there is a steadily increasing flow of tourists from outside the planning area. Visitors to the area are increasing annually by an estimated 15%. In 1993 the Travel Information Centre in Fort St. James welcomed 2,331 visitors. Approximately 25 to 30% of those visitors were European, 10% American, and 10% were from out-of-province.

#### 1.4 First Nations

The Fort St. James LRMP area encompasses parts of the traditional territories of four aboriginal peoples, and is the subject of four land claims. The Carrier and Sekani interests are represented by the Carrier-Sekani Tribal Council, whose comprehensive claim includes all of the LRMP area, as well as other areas. The Gitxsan claim originally included the area northward from Bear Lake, but later expanded to include Bear Lake and the northern portion of the Driftwood River. The Tahltan comprehensive claim, by

the Association of United Tahltans, extends into the northern tip of the Fort St. James LRMP area, from 15 kilometres north of the confluence of the Mosque and Skeena rivers.

The Carrier First Nations living in the Fort St. James area are the Takla Lake Band, the Tl'azt'en Nations, Nak'azdli First Nation and Yekooche First Nation. Carrier traditional territory is associated with the lake and river systems which support abundant salmon resources. Some Carrier people established themselves around Fort Connelly on Bear Lake, but most Carrier traditional territory lies southward, and includes Takla Lake and the Stuart Lake and Trembleur Lake drainage systems.

The salmon fishery was the rationale for the location of summer villages, which were situated at the outlets of lakes and at the mouths of salmon rivers. Salmon were taken mainly in weirs and traps. There was a reliance on a wide range of game including caribou, deer, sheep, goats, grizzly bear, black bear, beaver, muskrat and rabbit. Since the 19th century trapping of beaver, muskrat, mink, marten, lynx, wolverine, wolf and bear has been important. Many plant species were used for food and medicines, including virtually all edible berries, lodgepole pine cambium, and the bulbs, leaves and shoots of many other species.

The Carrier cultural landscape is characterized by camps and villages at the outlets of lakes, at the mouths of rivers, and at lakeside sites with good southern exposure. Extensive trail networks linked Carrier settlements to each other and to food collecting locations. Concentrations of trails are found at portages between lake and river systems, along streams, and over mountain passes.

Several Sekani bands traditionally used the northern and eastern areas of Fort St. James LRMP area. The Yutuwichan extended westward to Takla Lake, and later became part of the Fort McLeod Band and probably part of the Takla Lake Band. The Sasuchan, who occupied Bear Lake and the northern third of the Fort St. James LRMP area, split into several groups that joined different bands. One Sasuchan group remained at Bear Lake and became the Fort Connelly Band.

There are no Gitksan settlements in the Fort St. James land use planning area. The Gitksan claim to the northern third of Fort St. James LRMP area is based on their trade with Fort Connelly on Bear Lake and on traditional areas. A separate group called the T'lotona, or Long Grass, was formed through Gitksan intermarriage with the Sasuchan Sekani. They ranged over the grassy plateau country at the headwaters of the Skeena River.

The northern part of the Fort St. James LRMP area is substantially different from the Gitksan heartland on the middle Skeena River, where abundant salmon resources are the major factor in aboriginal settlement and land use. The Gitksan cultural landscape here probably consisted of small seasonal camps located on or near trails.

Tahltan use of the far northern portion of the LRMP area is similar to the Gitksan use. The LRMP area is the southern periphery of Tahltan traditional territory. Two Tahltan summer fishing villages have been identified at the headwaters of the Skeena River. Other Tahltan sites in the planning area have not been recorded.

Prior to 1805, when James MacDougall made a hurried stop at the Carrier village near the present town of Fort St. James, First Nations had no direct contact with Europeans nor their culture and traditions. Some Russian, Spanish and English trade goods had filtered into the area through the traditional trade between the Carrier and coastal tribes.

## 2.0 Process

### 2.1 Overview

Over 70 concerned people responded to an open invitation in October of 1992 to participate in a new approach to Land and Resource Management Planning for the Fort St. James Forest District. Many of those same people remained actively involved and committed to the principles of community involvement in local Land and Resource Management Planning throughout the LRMP process.

The Fort St. James LRMP Working Group developed from that first meeting. It was decided at an early stage that membership and participation would be open to anyone who wished to attend, rather than elected or appointed sectoral representatives. The members of the Working Group represent a diversity of values, interests and experiences associated with the planning area, its resources and its people.

Working Group meetings were held monthly. Initially one day meetings were the norm, but as work progressed on developing and defining resource management zones the group decided to go to a two-day meeting. Whether one or two days in length, meetings were generally a mix of information sessions, small working group discussions, and full group discussions and consensus building. Several working group members travelled from the more remote regions of the planning area to attend meetings, sometimes taking a full day or two before reaching Fort St. James.

Resource management zone descriptions, objectives and strategies were developed by subcommittees. Working Group members were free to choose the zones and areas in which they were interested or had experience in, contributing a wide and varied base of knowledge on the resources and areas they were most familiar with. The subcommittee work was then submitted to the Working Group for negotiation and consensus building.

### 2.2 Principles for Participation

The planning process was guided by the standards and principles outlined in Land and Resource Management Planning: A Statement of Principles and Processes (1992). Working Group members worked to respect and consider all resource values, and approached the process openly. The group strove for consensus between the public, user groups and the resource management agencies.

### 2.3 Vision

The aim of the Fort St. James LRMP Working Group was to produce a strategic resource plan that would promote and encourage community stability, and that would:

- ➔ be the result of comprehensive integrated Land and Resource Management Planning, identifying and considering all resource values, along with social, economic and environmental needs.
- ➔ provide a forum for shared decision-making by interest groups, the public, aboriginal peoples and government agencies that is based on consensus.
- ➔ result in an overall land use strategy for Crown land that embraces the principle of sustainable development. The intent was to encourage resource development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- ➔ manage renewable natural resources on a sustainable basis so that the supply of the natural resource products available to future generations is not diminished below the sustainable supply. Within a sustainable resource management framework, the total benefits derived from natural resources should be optimal.
- ➔ manage the natural resources of the area to provide as many benefits as possible to the people of the region, as well as to the province.
- ➔ maintain biodiversity, so that the diversity of species is not diminished over time.
- ➔ maintain habitat requirements of species-at-risk, so that these may be stable components of the ecosystems of which they are a part.
- ➔ recognize the wild qualities of the northern portions of the planning area, and retain this unique character through proactive integrated resource management and improved consultation with stakeholders and First Nations.

This LRMP recognizes that in order to manage resources to optimize benefits to society, the following will be necessary during resource planning:

1. Identification of the uses that might be made of the resources in the Fort St. James planning area.
2. Identification of measures required to maintain biodiversity.
3. Designation of a combination of uses that will be sustainable, that will maintain natural biodiversity and that, within these constraints, will optimize benefits to the people of British Columbia.

This plan recognizes that resource development is a fundamental component of the economic and social structure in this planning area, and in the province of British Columbia. At the same time, the LRMP accepts that there will be times when certain resource development activities may not be compatible with the maintenance of other resource values. This plan was developed within the province's existing political and social framework, and supports the continuation of resource development, including some activities that may pose risks to the collective values on the land base. The value of this plan is to influence the direction of resource development in order to lower these risks and optimize the benefits to the people of British Columbia.

## 2.4 Objectives

In order to achieve this vision the Working Group developed the following objectives to direct the planning process:

- ➔ promote co-operation and understanding, develop working relationships amongst equal participants, and seek consensus when developing recommendations on the management of resources. Where consensus cannot be reached the areas of disagreement will be documented and handled through the dispute resolution process.
- ➔ use integrated resource management planning principles to identify issues, select and evaluate resource use scenarios, and develop and recommend management strategies for resource sustainability.
- ➔ assemble and use current resource and socio-economic information in the development of the plan. If information proves inadequate to address a resource issue, plan preparation will continue. The final plan will identify information gaps for subsequent plans.
- ➔ develop a planning process with flexibility to allow for incorporation of new provincial initiatives in integrated resource planning.
- ➔ recommend a mechanism for ensuring that the final plan will be implemented, monitored and updated.

## 2.5 Decision-Making

The Working Group developed several tools which enabled them to complete the Fort St. James LRMP plan: a definition of consensus and a format for dispute resolution. The table retained the right to manage its own process, and to change any of the terms of reference.

Participants were expected to represent the interests of their agency or group or individual values, and ensure that the alternatives or solutions proposed during the planning process were acceptable to their respective communities. Participants were encouraged to work towards a plan that would be acceptable to all interests.

## 2.6 A Definition of Consensus

Consensus was defined as the agreement of all participants on a package of issues and solutions. Some of the concepts developed by the working group for the LRMP process included:

- ➔ Participants may not agree with each part of the package in isolation, yet agree to the full package.
- ➔ Participants will not agree to anything that they do not believe will be supported by their constituency.
- ➔ When initial agreement is achieved, it is understood that some of the participants will have to take the agreement back to their constituents or to a higher decision making authority for ratification.
- ➔ Once consensus for the overall package is reached it is assumed to be binding.

Working group participants agreed to abide by the following principles of consensus:

- ➔ The purpose of negotiations is to agree.



- ➔ Participants agree to act in good faith in all aspects of the process.
- ➔ Participants accept the concerns and goals of other as legitimate and will listen carefully, ask questions and educate themselves regarding the interests of others, whether they agree with them or not.
- ➔ The focus of negotiations is on interests and concerns, rather than positions and demands.
- ➔ Participants commit to fully explore issues, searching for solutions in a problem solving atmosphere.
- ➔ Participants agree to make a good faith attempt to share information on matters related to the shared decision making process, in order to facilitate the broadest possible consideration of options and solutions. All suggestions and offers will be regarded as tentative until full agreement is achieved.
- ➔ Participants are obliged to avoid stonewalling.

The Working Group developed principles and mechanisms for resolving disputes. Some of the concepts developed by the participants include subcommittee, third party mediation and referral of issues to the Interagency Management Committee for resolution.

## 2.7 Interests and Issues

The Working Group represented the range of interests in the community, including:

- ➔ forestry
- ➔ mining
- ➔ tourism
- ➔ recreation
- ➔ the environment
- ➔ wildlife
- ➔ guiding and outfitting
- ➔ angling guiding
- ➔ trapping
- ➔ fishing
- ➔ community economic development
- ➔ culture and heritage
- ➔ agriculture and range

If, at any time during the process, working group members noted that any one of these interests and issues was not represented that representation was sought. From that representation the following issues and concerns were developed to be considered during the LRMP process :

- ➔ aboriginal participation

- ➔ access management
- ➔ aesthetics
- ➔ air quality
- ➔ biological diversity
- ➔ co-ordination of planning
- ➔ enforcement
- ➔ fish and wildlife resources
- ➔ guiding and trapping
- ➔ angling guiding
- ➔ heritage resources
- ➔ high elevation forests
- ➔ local economic stability
- ➔ linear developments (transportation and transmission corridors)
- ➔ mineral resources and exploration
- ➔ pesticide use
- ➔ resource sustainability
- ➔ riparian area management
- ➔ agriculture and range
- ➔ site rehabilitation
- ➔ soil productivity
- ➔ soil stability
- ➔ timber values
- ➔ water quality
- ➔ wilderness resources

## 2.8 Public Participation

One of the cornerstones of the LRMP process is public participation.

All Working Group meetings were open to the public. Meetings were advertised as such and, from time to time, members of the community would attend and sit in on discussions and presentations. In several cases a casual interest in the meetings led to more formal involvement of individuals in the planning process.

Meetings were held in various community locations, in an attempt to make them as accessible as possible to those people who wanted to attend. Initially meetings were held on Saturdays, in order to enable those people who worked full-time during the week to attend. Once meetings went to a two-day format they were held on Friday and Saturday.

Minutes and related materials from monthly meetings were mailed to members of the Working Group, and to a mailing list of approximately 300 interested community

members, B.C. residents and government staff. Planning process updates, related information and notices of meetings were included with the minutes, in an attempt to make sure that anyone interested in the LRMP had the same information as members of the Working Group.

A variety of methods were used throughout the length of the planning process to keep residents of the planning area updated on the progress of the LRMP. Working Group members attended information sessions, spoke at community meetings, and staffed booths at open houses and trade shows. A newsletter, published periodically between 1994 and 1998, updated both Working Group members and the public on progress and issues. The community newsletter was distributed free to all households and businesses in the planning area, and was sent to the appropriate business, First Nations and government offices. A separate monthly newsletter was produced for Working Group members as a means of providing them with information needed for the LRMP meetings. Special single-issue newsletters and brochures were produced and distributed. Summaries of the monthly meetings were published from time to time in the Caledonia Courier.

The Working Group regularly invited members of the public and resource agency representatives to contribute knowledge and experience to the resource management zone working groups. Presentations on topics suggested by the Working Group were held during lunch breaks on meeting days, and ranged from biodiversity and the needs of furbearing animals, to tourism lodge operations in the more remote regions of the planning area. The majority of these presentations were made by members of the Fort St. James community.

## 2.9 First Nations Involvement

An overall goal of the LRMP is to develop land use plans with the co-operation and participation of the First Nations communities living, working and having traditional territory within the LRMP area. Working Group members identified the need to address issues and concerns of First Nations communities as they apply to the resources within the LRMP area. The Working Group also recognized a general lack of knowledge about First Nations needs, issues, culture and concerns, and their implications for the LRMP. To those ends the Working Group sought participation from First Nations communities within the LRMP area.

Representatives of First Nations living in the LRMP area (Na'azdli, Takla Landing, Yekooche and Tl'azt'en Nation) were invited to sit at the table, and several of them did so in the initial months. Regular participation dropped off after the first year. The table was advised, through correspondence and personal contact, that priorities for the Carrier Sekani First Nations were the treaty process and associated negotiations. Some Gitksan representatives participated in subcommittee work on the northern resource management zones.

First Nations communities were kept informed of the progress of the LRMP through regular correspondence and mailing of meeting minutes and draft plans.

## 2.10 Implementation, Transition and Monitoring

The intent of the Fort St. James LRMP is to provide guidance on the majority of the social and environmental objectives that form the foundation of operational planning. Additional technical guidance will be provided by landscape unit planning and resource agency policy. Operational plans provide a description of forest resources and the location, timing and type of forest practices which will manage, use and conserve these resources. Examples of operational plans are Forest Development Plans and Management Plans.

Flexibility to apply strategic direction in site-specific operational activities is required by resource managers to include technical expertise and biophysical circumstances. Because mineral occurrences are site-specific in nature, flexibility is required in the interpretation and application of the objectives and strategies in this document, in the context of mineral development.

Operational plans should be consistent with the Fort St. James LRMP after it is approved by government. This means that the practices described in operational plans should be tailored to be consistent with the intent of the Fort St. James Land and Resource Management Plan and follow the policy guidance within the document.

While the Fort St. James LRMP may have objectives that will result in more stringent forest practices than required in the *Forest Practices Code of British Columbia Act*, it does not direct less than the minimum requirements of that code. The *Forest Practices Code of British Columbia Act* introduces a number of new forest management and planning approaches and redefines others. Information about the *Forest Practices Code of British Columbia Act*, including guidebooks for forest management, can be obtained at any Ministry of Forests or Ministry of Environment, Lands and Parks office.

## Transition

To ensure continuity of operational plan activity this LRMP recommends phase-in provisions. These provisions should allow a smooth transition from operational plans in effect at the time the LRMP is approved, to operational plans which reflect this LRMP.

Licensed resource tenure holders have generally been involved in a substantive way during the development of the Fort St. James LRMP. However, they require some time and opportunity to design and institute forest management practices that will ultimately be consistent with the general intent of this plan. The LRMP will be utilized in forest development planning where field assessments have not yet been completed. It is therefore expected that generally by the year 2000 all Forest Development Plan submissions in the Fort St. James Forest District will be consistent with the Fort St. James LRMP.

It is recognized though, that existing planning and pre-harvesting planning investments will mean that in some resource management zones the District Manager may direct timber harvesting and silviculture practices to apply the innovative strategies recommended by this LRMP in the latter years of that Development Plan. Guidance on these recommended forest practices will be forwarded to licensed tenure holders by the District Manager for incorporation of the principles into Forest Development and Management Plans. It is intended that there will be guidance developed on visual

management planning requirements, modified harvest (including aggregate harvest areas, selective cutting and small block design), planning requirements, Douglas-fir and comprehensive hardwood (including aspen) management strategies. There may be additional guidance developed by the Designated Environment Official from the Ministry of Environment, Lands and Parks.

## **Implementation and Monitoring**

The Fort St. James Land and Resource Management Plan provides recommendations towards the implementation of the plan, including phase-in provisions to ensure continuity of operational plan activity.

The LRMP implementation plan tasks resource ministries to implement the strategies of the LRMP plan in a co-ordinated and strategic manner, and in accordance with available resources.

Technical studies recommended in this plan, with their corresponding reports and recommendations, will be implemented when funding and resources permit. There is currently no identified methodology or funding in place to achieve many of the objectives and strategies. It must be clearly identified that industrial activity will proceed in a controlled and responsible manner, as opposed to being subjected to continuous requests for non-essential information, often delaying the process. However, the implementation plan will task the resource agencies and others to complete inventories, studies, and planning in a timely manner, and in accordance with available resources.

Throughout the implementation of this LRMP, access must be addressed to include and respect all resource users, while recognizing the intent of sound environmental management. Clear, concise wording must identify the rights and process for individuals or parties with verifiable interests and intentions within the various Resource Management Zones. The intent is to ensure responsible resource management, not to preclude industrial activity or public access to provincial resources. The Ministry of Forests, Ministry of Energy and Mines and Ministry of Environment, Lands and Parks will incorporate the direction of this Land and Resource Management Plan in decision making, but may be bound by the other considerations of their legislation and mandates.

As per existing Ministry of Forests policy, the Ministry of Environment, Lands and Parks will have direct involvement in present and future timber supply reviews. Through this LRMP, and other planning processes, the Ministry of Environment, Lands and Parks will provide a rationale for achieving landscape level biodiversity considerations (such as ecosystem networks, old-growth management areas, wildlife habitat and sensitive areas) that may be incorporated in future timber supply determinations. For example, this LRMP recommends extended stand rotation in caribou management areas.

The LRMP is a living document, subject to continuous examination, change and interpretation. No single use, with possible exceptions such as Protected Areas or identifiable environmental values such as riparian reserves, will have the effect of placing portions of the landbase in a state of perpetual reserve. Protected Areas will

remain perpetually in reserve from industrial extraction activities such as mining and logging. The concept of responsible multi-use must be enforced.

The Fort St. James LRMP will be implemented through strategic and operational plans (i.e., Landscape Unit Plans, Park Management Plans, Forest Development Plans) administered and approved by respective resource ministries. However, government resource agencies should be cohesive in their interpretation and implementation of this plan.

The term of the LRMP will be 10 years with a mid-term review at year five, and the major public strategic planning process to renew this document beginning in year eight.

A combination of annual implementation meetings, reports and independent audits is recommended to provide feedback to the public and LRMP participants, regarding the successes and challenges of implementing this plan.

Annual meetings will focus on reports by the resource agencies on the implementation and monitoring of the LRMP. Field trips will enable participants to see how the plan is working "on the ground". All public comments and requests for adjustments to the plan will be reported. This material will generally be referenced for the review in year eight, for the renewal of the LRMP process. If required, a major amendment process may be initiated. Further direction on what constitutes a major amendment to the plan will be provided by the Resource Management (RMD). It is anticipated that treaty settlements resulting in revised land use patterns may require such amendments.

Annual implementation meetings will be widely advertised and LRMP participants, resource agency staff and interested public will be encouraged to attend.

Annual implementation reports will require field work and office auditing in addition to personal interviews. Reports should focus on all levels of management — from silvicultural prescriptions through to development plans and landscape management plans. The results of periodic updates to resource inventories will also be provided.

Analytical tools such as Geographical Information Systems (GIS) should be used wherever feasible to monitor the implementation of this LRMP.

An independent audit of LRMP implementation could be conducted by an independent facilitator/assessment professional, through telephone and personal interviews with LRMP participants, resource agency staff, resource users and the general public. Review of operational plans would also provide insight into the success of LRMP implementation. The Interagency Planning Team would retain an audit professional to prepare this report and present the assessment at the following annual implementation meeting.

## **Interpretation and Appeal**

From time to time the public or agencies may become concerned about how the plan is being interpreted or about specific land and resource practices that are resulting from it. In all instances of concern, the issues will be dealt with in the same spirit of co-

operative consensus building that the plan was developed with. The Interagency Planning Team should be the first avenue for interpretation on the intent of any section of the LRMP.

Where the public or agencies raise concerns with specific resource management practices that are occurring in the LRMP area they should raise the issue directly with the affected resource agency which is mandated to manage those specific values. Where there is an existing review or appeal process the concern will be dealt with through that process. For example, concerns over forest road construction could be dealt with under the *Forest Practices Code of British Columbia Act*.

The objectives and strategies in this LRMP are deliberately strategic, and there will be latitude for interpretation by local agency managers. It is important for all agencies to have a common understanding of the range of interpretation so that licensees receive consistent advice. Where a concern is raised over the interpretation of land use objectives and strategies the concern should be addressed directly to the affected agency(s). The responsible manager will respond to the concern in writing, consulting with the Interagency Planning Team where necessary.

If the matter is not satisfactorily resolved, the concern will be forwarded to the Interagency Management Committee for resolution. The Interagency Management Committee will determine if the decision is consistent with the intent of the approved plan. If it is, no further action will be taken. If it is not, the agency responsible will be directed to revise the decision to be consistent with the intent of the plan.

## 2.11 LRMP Timeline

	WINTER	SPRING	SUMMER	FALL	HIGHLIGHTS
<b>1992</b>				LRMP process begins	October 21: first public meeting of the Fort St. James LRMP
<b>1993</b>	➔ Working Group organization	➔ Resource Unit Sub-Committee	➔ General LRMP Goals developed		March: consensus building workshop

	<ul style="list-style-type: none"> <li>➔ Terms of Reference developed</li> <li>➔ Issue identification</li> </ul>	<p>work</p> <ul style="list-style-type: none"> <li>➔ Community issues presentations</li> <li>➔ General LRMP Objectives developed</li> </ul>			
<b>1994</b>	<ul style="list-style-type: none"> <li>➔ Goal Statements</li> <li>➔ Issues and Concerns</li> <li>➔ Protected Areas presented to Working Group</li> <li>➔ Independent facilitator brought in to assist with the process</li> </ul>	<ul style="list-style-type: none"> <li>➔ Work begins on the Areas of Interest</li> </ul>		<ul style="list-style-type: none"> <li>➔ Identification of preliminary RMZ boundaries</li> </ul>	LRMP workshop : June August field trip
<b>1995</b>	<ul style="list-style-type: none"> <li>➔ RMZ work begins</li> <li>➔ Areas of Interest map presented by</li> </ul>		<ul style="list-style-type: none"> <li>➔ Agreement on draft RMZ boundaries</li> </ul>		Agreement on draft RMZ boundaries



	RPAT				
Resource Management Zone work continues					
<b>1996</b>	<ul style="list-style-type: none"> <li>➔ Review of Areas of Interest</li> <li>➔ 1st draft of the LRMP Plan document completed</li> </ul>				Plan is produced in publication format
Resource Management Zone work continues					
<b>1997</b>	<ul style="list-style-type: none"> <li>➔ Independent facilitators brought in to work with the process</li> <li>➔ Development of organized feedback procedures</li> </ul>	<ul style="list-style-type: none"> <li>➔ Confirmation of proposed Protected Areas</li> <li>➔ Production of maps</li> </ul>	<ul style="list-style-type: none"> <li>➔ Working Group uses feedback and critical issues formats to work towards final version of LRMP plan</li> </ul>	<ul style="list-style-type: none"> <li>➔ Work begins on implementation plan</li> </ul>	November : IPT begins work on implementation plan.
Resource Management Zone work continues					
<b>1998</b>	<ul style="list-style-type: none"> <li>➔ Recommended document finalized</li> <li>➔ Draft Socio-Economic Assessment and Environmental</li> </ul>	<ul style="list-style-type: none"> <li>➔ Final Socio-Economic Assessment and Environmental Analysis presented to</li> </ul>	<ul style="list-style-type: none"> <li>➔ Public review</li> <li>➔ Implementation Plan compiled</li> </ul>	<ul style="list-style-type: none"> <li>➔ IAMC and ADM presentation</li> <li>➔ Implementation Plan compiled</li> </ul>	Agreement -in- Principle reached.  ADM Presentation

	ental Analysis presente d and reviewed by Table  ➔ Public Review	Table  ➔ Agreem ent-in- Principle reached .			
<b>19 99</b>	March 11 Governm ent approval of Plan	May 28 First meeting of Monitori ng Table	Implemen tation on- going	Implemen tation on- going	Governm ent approval of Plan

### 3.0 General Management Direction

**The intent of this Land and Resource Management Plan is to provide direction for the sustainable management of land and resources on Crown lands. The recommended management direction in this plan is subject to Federal and Provincial legislation and policies. Where objectives seem to be at variance with the site-specific application of legislation and policy, the statutes will identify the process for decision making.**

The Fort St. James Land and Resource Management Plan provides greater certainty for resource-based industry and tourism operations by providing guidance for responsible land and resource development. This section details recommendations for general resource management that applies across the plan area. Subsequent sections detail descriptions of the resource values in each resource management zone, and recommend objectives and strategies for each zone.

Within the Fort St. James Land and Resource Management Plan management direction is presented in the form of intent, objectives and strategies. Intent statements capture the essence of the resource management direction and, collectively, they outline the balances that must be achieved.

Management direction is written at two main levels:

- ➔ General Management Direction
- ➔ Resource Management Zone

Overall management direction for each Resource Management Zone consists of General Management Direction plus site-specific objectives and strategies. Where there is no site-specific objective or strategy for a particular resource value reference has been made to General Management Direction. A cross-reference between the General Management Direction and the specific Resource Management Zone direction is necessary in order to gain an accurate understanding of the Working Group's full intent.

Strategies are identified by bullets (●) and accompany most objectives. Strategies may be further subdivided, as indicated by diamonds (◆).

The Resource Management Zone labels and intent statements provide a very brief overview of the resource values and how they might be managed in comparison with other resource management zones. Zone labels should not be misconstrued to stand alone, nor should they be used without the context of all management objectives and strategies. The labels will not be used to model, or set, biodiversity emphasis options under the *Forest Practices Code of British Columbia Act*. Setting biodiversity objectives that are more strategic than those for forest stands will be done in the landscape unit planning process.

## General Management Direction

### 3.1 Community Stability and Development

The community of Fort St. James is highly dependent on the forest industry, with the public and service sectors, tourism, mining, and agriculture completing the list of employers and employment opportunities.

Given a high dependence on natural resources, sustainability of these resources is a primary interest of the Fort St. James LRMP Working Group, along with jobs and community stability. This plan recognizes the importance and value of industrial resource development to the local area, region and province. Natural resources should be utilized to maintain or increase jobs in the forest, mining, tourism and agricultural industries. Resource-based industries should be maintained or enhanced within the concept of sustainable development. The importance and value of industrial resource development should be addressed in lower level planning and permitting processes.

Key issues for local participants in this LRMP were the stability of the community of Fort St. James, and integrated resource management. Key issues for regional participants were integrated resource management strategies that considered management for caribou, the stability of the Prince George Timber Supply Area, tourism and guide outfitting, and opportunities for mineral exploration.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Community Stability and Development in the planning area:

Objective — Endorse community development activities that diversify the local economic base. Re-manufacturing, value-added wood processing and the production of a variety of dimensional lumber and mining products in the local area are desirable. The expansion of tourism operations and service sector businesses are also endorsed. Multiple products or values from development are encouraged.

Objective — Promote community stability in the Fort St. James LRMP planning area.

- ➔ Provide comparative analysis of potential employment gains and losses in the Fort St. James planning area to the Chief Forester for consideration when determining the Allowable Annual Cut for the Prince George Timber Supply Area.
- ➔ Approach decreases in harvest levels in the Prince George Timber Supply Area in a systematic, incremental way wherever possible, to maintain community stability for Fort St. James.
- ➔ Recommend to the Chief Forester that future decreases in harvest levels in the Prince George Timber Supply Area be approached with the stability of small communities in the LRMP planning area in mind, and in a systematic, incremental way, wherever possible.
- ➔ Involve the public, forest licencees and municipal governments at any opportunity where there are implications for community stability.

Objective — Endorse forestry related programs that continue and promote employment opportunities in the Fort St. James planning area.

Objective — Facilitate the identification and promotion of opportunities for partnerships of industry, community, and First Nations to enable a diversified and stable local economy.

Objective — Manage the development of resources according to the principles of sustainability for all renewable resources, with consideration given to minimizing or mitigating negative impacts on associated resources.

- ➔ Make opportunities for public participation in operational level planning and as appropriate in review and permitting processes.

Objective — Utilize natural resources to maintain or increase jobs in the forest, mining, agricultural and tourism industries in the planning area.

- ➔ Support employment programs that provide and enhance skill levels in forest resource management.
- ➔ Explore opportunities to facilitate the training of forest workers through Forest Renewal BC and other appropriate funding bodies.
- ➔ Facilitate opportunities to increase the security of wood supply for local mills.

- ➔ Facilitate opportunities for mining exploration and development.
- ➔ Facilitate opportunities for agricultural industry.
- ➔ Facilitate opportunities to develop the tourism sector.
- ➔ Encourage decisions in resource tenuring and resource development planning which maintain a sustainable timber supply and local employment.

### 3.2 Biodiversity

Biological diversity (or biodiversity) is the diversity of plants, animals and other living organisms and the processes which bind them. The guidance for managing biodiversity is based on the assumption that managing ecosystems to closely resemble ecosystems established through natural processes will increase the probability that all native species and ecological processes will be maintained. Not all elements of biodiversity can be, or need to be, maintained on every hectare.

**The management intent of this LRMP is to maintain, in perpetuity, all indigenous species across their historic ranges in order to maintain viable populations and ecosystems for present and future generations. Resource development can be compatible with this intent.**

Conservation of biodiversity depends on a three part, co-ordinated strategy which includes:

1. Management of biogeoclimatic representation at a provincial scale through a system of Protected Areas.
2. The provision of a variety of habitats at a landscape scale, through strategic direction such as the Land and Resource Management Plan and Landscape Unit Plans.
3. Management practices that provide for important ecosystem attributes at a site-specific scale.

Protected Areas have been recommended to be established as part of this plan, with a goal of protecting representative examples of biogeoclimatic variants and associated site series.

Tremendous variation in forest types and ecological composition can be found across the planning area. The variation in forest types across the landscape is affected by many factors, but one of the major factors that affects the differing pattern of forest types is the regime of natural disturbance. In the Fort St. James planning area natural disturbances that replace tracts of existing forest stands are primarily wildfires and pest infestations (insects), but windstorms, landslides and floods are also natural processes

that can be “stand-initiating”. Wildfires, ranging in size from small spot-fires to extensive forest fires, burned thousands of hectares in the planning area.

Consequently, the natural disturbance regimes have resulted in a landscape mosaic of even-aged forests in all shapes and sizes. For the purposes of classifying and understanding the different regimes of natural disturbance that give rise to the variation in ecological composition across the landscape, five “Natural Disturbance Type” (NDT) classifications have been established, based on the type and frequency of stand-initiating disturbances. Five Natural Disturbance Types (NDT) classifications (1 through 5) exist across the province. Within the plan area, only NDT 1, 2, 3, and 5 are found.

**Table 4 Natural Disturbance Types in the Planning Area**

<b>NDT</b>	<b>Description, area in the plan area, and percentage of total plan area</b>
<b>NDT 1</b>	Ecosystems with rare stand-initiating events (51,597 ha, 1.63%)
<b>NDT 2</b>	Ecosystems with infrequent stand-initiating events (971,853 ha, 30.62%)
<b>NDT 3</b>	Ecosystems with frequent stand-initiating events (1,614,001 ha, 50.85%)
<b>NDT 4</b>	Ecosystems with frequent stand-maintaining fires. Not found in the planning area (0 ha, 0%)
<b>NDT 5</b>	Alpine tundra and Subalpine Parkland ecosystems (536,359 ha, 16.90%)

The regime of natural disturbance found in an area has implications for management purposes. Managing resource development to closely mimic natural disturbances can only be achieved through an understanding of the historical patterns of those natural disturbances.

The abundant forests of the Fort St. James area are comprised primarily of lodgepole pine, subalpine fir (balsam) and spruce trees. There are also pure deciduous types (i.e., aspen), which have important wildlife habitat characteristics. Alpine forest and sub-alpine park land are also represented in this land base.

Douglas-fir has local importance, although it is a less common species. The planning area is the northern extreme of Douglas-fir’s North American range. With a thick bark to provide armour against the destructive forces of fire, Douglas-fir trees are capable of

withstanding many natural wildfires. Their majestic crowns often tower above younger pine stands — testimony to their capacity to flourish for decades. This longevity provides important ecosystem values and gives Douglas-fir prominence when discussing the biodiversity of the Fort St. James area.

There are several threatened or rare plant associations listed in this planning area. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre.)

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Biodiversity in the planning area:

Objective — Maintain the natural distribution and abundance of plants, animals and ecosystems across the plan area.

- ➔ Manage for seral stage distribution as identified by biodiversity emphasis options within landscape units.
- ➔ Allow natural succession of vegetation complexes that are not tree-dominated (i.e. meadows, seepage areas, bogs, willow-sedge wetlands, alder wetlands, willow-dogwood wetlands, avalanche chutes and swamp lands), as appropriate.
- ➔ Allow some areas of natural succession in burned areas, as appropriate.
- ➔ Identify and develop management plans for key areas providing high stand-level biodiversity.
- ➔ Link important wildlife habitats and movement corridors to maintain connectivity across the landscape (Forest Ecosystem Networks, or patches) as appropriate.
- ➔ Manage for stand-level biodiversity by providing variation in stand density, species distribution and stand structure on a site-specific basis.
- ➔ Identify red-listed and blue-listed plant associations found within the planning area, and manage to ensure their conservation.

Objective — Maintain (and enhance where appropriate) populations of animals, plants and ecosystems at-risk.

- ➔ Inventory and map red-listed and blue-listed animals, plants and ecosystems within the plan area and provide periodic updates as new information becomes available.
  - ◆ Develop management plans to maintain at-risk species and habitats.

Objective — Develop resource management practices to maintain biodiversity.

- ➔ Incorporate current biodiversity guidelines into forest development plans, silviculture prescriptions and stand management prescriptions.
- ➔ When re-vegetating disturbed sites, use appropriate plant species that will prevent erosion but will not out-compete native species.
- ➔ Maintain structural forest attributes at the stand level and at the landscape level.
- ➔ Plan forest harvesting activities that mimic natural disturbance patterns.

- ➔ Establish management strategies to conserve sensitive species.

<b>Table 5 Forest Cover in the Planning Area</b>		
<b>Species</b>	<b>Total Area (ha)</b>	<b>%</b>
Balsam	748,169	24
Deciduous	123,796	4
Fir	28,280	1
Hemlock	2,393	<1
Non-forested	1,059,779	33
NSR*	54,099	2
Pine	672,848	21
Spruce	484,534	15
<b>Total 3,173,898</b>		
* Not sufficiently restocked		
A more detailed forest cover may be obtained from the Fort St. James Forest District Office		



Objective — Manage Douglas-fir within its natural range.

- ➔ Develop and implement a district management strategy for Douglas-fir and its associated plant and wildlife communities.



- ➔ Determine the natural range of age classes and geographic distribution to develop a Douglas-fir management strategy.
- ➔ Maintain a range of seral stages across the landscape.

### 3.3 Air Quality

Fort St. James has an abundance of clean, fresh air. Air quality however, can be affected by seasonal slash burning or windrow burning, road dust, forest fires, and emissions from industrial operations.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Air Quality in the planning area:

Objective — Maintain or improve air quality.

- ➔ Where appropriate, allow the judicious use of prescribed fire.
- ➔ Develop and implement an effective smoke management plan which incorporates public health, safety, aesthetic and environmental concerns.
- ➔ Promote the use of efficient technology for wood waste incineration, or alternative utilization of wood waste, to decrease airborne emissions.
- ➔ Endorse monitoring industrial emissions to meet provincial air quality standards and smoke regulations.

### 3.4 Soils

Soil forms the building block on which most other natural resources rely. Healthy soils ensure productive forests, healthy ecosystems and thriving agricultural crops.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Soils in the planning area:

Objective — Maintain the viability and productive capability of the soil resource.

- ➔ Apply broad terrain hazard assessment principles (appropriate for the proposed activity) across the planning area to identify where detailed terrain hazard assessment is required for resource development planning.
- ➔ Manage activities in areas with sensitive soils and/or sensitive terrain, to minimize impacts.

Objective — Manage activities by planning to minimize site degradation.

- ➔ Select techniques that will minimize the risk of blowdown in forest openings (i.e., openings such as cutblocks, campgrounds, mine sites).
- ➔ Employ resource extraction techniques that will minimize site degradation to meet site-specific objectives.
- ➔ Maintain the viability of ground cover vegetation to minimize surface erosion and where necessary, revegetate disturbed areas with appropriate plant species.

- ➔ Minimize site disturbance by using only as much area as is necessary for roads and landings, with consideration to safety factors.

### 3.5 Water

An abundance of fresh water is a defining element of the environmental and social character of the Fort St. James Land and Resource Management Plan area. Local water bodies provide abundant and diverse recreation and tourism opportunities, as well as drinking water and habitat for the myriad aquatic species that inhabit the area.

Water resources in the plan area form part of three large but distinct watersheds. The Skeena and the Fraser Rivers drain to the Pacific Ocean, while the Nation Lake/Omineca system flows to the Arctic Ocean.

Area lakes and rivers were the main transportation route for local First Nations and early fur traders, forming 333 kilometres of navigable waters (as defined by the Canadian Coast Guard). It is possible to travel approximately 290 kilometres to the northwest from Fort St. James completely by water, via Stuart Lake, Tachie River, Trembleur Lake, Middle River, Takla Lake, and further to other tributaries such as the Driftwood River.

**The intent of this LRMP is to maintain or enhance the quality and quantity of ground and surface water to maintain aquatic and fish habitat, and domestic and community watershed values.**

Fort St. James is also linked to areas to the south by water, via the Stuart River, Nechako River and eventually to the Fraser River, and to the east via the Omineca River. Prior to the development of roaded access the rivers, lakes and their associated portages and trails were used for trade and travel within the planning area, and to gain access to other surrounding locales.

As living organisms rely on a source of fresh clean water for survival, water quality is of concern. Water quality issues in the planning area concentrate on lakeshore development, levels of recreational activity on certain lakes, water pollution, and the effects of surface erosion and sediment transport into water courses.

The intent should be addressed in resource development plans and site-specific prescriptions with objectives and strategies to maintain water quality.

The "Salmonid Resource Analysis for the Fort St. James Land and Resource Management Plan" (Skeena Basin and Fraser Basin) are two reports from the Department of Fisheries and Oceans which provide information on Enhanced Watershed Management that may be utilized for resource development planning and review.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Water in the planning area:

Objective — Manage the cumulative effects of resource development on watersheds to an acceptable level.

- ➔ Watersheds will be prioritized for planning and restoration based on past and future forest operations, aquatic resources which may be at risk, and impact hazards such as potential sediment sources and changes in hydrologic regime.
- ➔ Planning will identify potential impact assessment issues for the watersheds identified in the priority list. These planning methods will be used at both landscape and operational planning levels.
- ➔ Water quality and aquatic ecosystem objectives will be defined in terms of measurable attributes. These objectives will then serve as standards or goal posts so that the impact of development on aquatic resources can be monitored and assessed.
- ➔ Develop watershed management strategies which address water demands, fisheries low flow rate requirements, water runoff rates (water retention) and water extraction.
- ➔ Consider distributing timber harvesting activities throughout a range in elevations to maintain or improve hydrological conditions.
- ➔ In cutblock design, consider the effects on hydrological regimes (i.e., consider strategies like selective cutting in high elevations to meet a hydrological objective).

Objective — Manage human activities to maintain or enhance water quality (i.e., minimize water pollution).

- ➔ Support inventory projects to identify sources of water pollution and make recommendations for corrective measures.
- ➔ Provide opportunities for the development of water quality and quantity monitoring sites throughout the planning area.
- ➔ Support remediation projects on a priority basis.
- ➔ Use enforcement resources effectively to increase compliance with health regulations (i.e., sewage treatment and disposal, industrial waste)
- ➔ Endorse access to water sources with appropriate licensing.
- ➔ Increase public education projects focusing on water quality.

Objective — Manage resource development activities to maintain domestic water quality.

- Utilize vegetation management practices that maintain domestic water quality.

Objective — Rehabilitate impacted watersheds to improve water quality and watershed values.

- ➔ Complete Watershed Overview Assessments (sediment source surveys, gully and channel assessment and terrain stability) to identify areas in need of special management or restoration.
- ➔ Incorporate watershed assessment recommendations in resource development plans and site-specific prescriptions.
- ➔ Develop sediment control strategies where necessary for incorporation into resource development plans.
- ➔ Conduct more detailed watershed assessments as appropriate to develop a prioritization of watershed restoration work.
- ➔ Support watershed restoration projects on a priority basis.

Objective — Manage lakes for water quality, fisheries, wildlife, recreation values and other resource users.

- ➔ Prioritize lakes requiring a Lake Management Plan.
- ➔ Develop a Lake Management Plan for lakes that integrates resource values.
- ➔ Recommend lake classification in accordance with the *Forest Practices Code of British Columbia Act*.

### 3.6 Fish and Fish Habitat

**The management intent of this LRMP is to maintain the natural physical and biological diversity and abundance of fish populations and aquatic habitats across the planning area. The LRMP supports effective management of riparian areas, especially adjacent to fisheries sensitive zones. The plan also supports enhancing fish habitats and populations where appropriate, and where opportunities exist.**

Fish have long provided one of the cornerstones defining the physical and social character of the Fort St. James Land and Resource Management Plan area. Fish are important to the local economy as a source of tourism, as a source of recreation, and have high cultural significance for First Nations peoples.

Watercourses in this area are very diverse, ranging from large rivers such as the Stuart, to small streams, and from clear deep lakes to nutrient-laden marshes. This variety of water bodies provides an essential diversity in aquatic habitats, from main channel spawning area to seasonal flood plain off-channel rearing areas.

The lakes and rivers of the area support a wide variety of fish species. Various trout and char (lake trout) species, whitefish, Arctic grayling, burbot, kokanee, sturgeon and various coarse fish species inhabit the waters of the planning area. In addition, anadromous species such as steelhead, sockeye, chinook and coho salmon spawn and initially rear in the waters of the planning area.

The geographical area encompassed by the Fort St. James planning area represents approximately seven percent of the Fraser River Basin, yet supports nearly one-quarter of the Fraser River sockeye salmon spawning population, representing the second largest run of sockeye in the province. The longest sockeye run in the world is from the Fraser River on the Pacific Coast to the Driftwood River. The early and late run Stuart sockeye provide a significant contribution to provincial commercial as well as in-river First Nations fisheries. Chinook salmon, while considerably lower in spawning numbers, form an integral part of the upper Fraser River chinook population which is an aggregation of many discreet stocks that contribute to the early season nearshore troll fisheries.

The northern part of the plan area forms part of the Skeena River basin. In this area, the salmon run consists of unique stocks of upper river coho salmon, steelhead, a significant run of pink and sockeye salmon, and one of the three largest chinook salmon stocks in the Skeena watershed. The three Skeena chinook populations, exceeding 5,000 spawners (including the Bear River stock) represents, on average, approximately 75% of the total Skeena chinook spawning population. All of these stocks in this northern portion of the watershed provide important contributions to the commercial and First Nations fisheries, as well as to the recreational/sport fisheries.

Fish species at risk within the planning area include sturgeon, Arctic grayling and bull trout. These species are designated as red-listed (endangered/threatened) or blue-listed (sensitive/vulnerable) by the BC Conservation Data Centre. (Refer to Appendix 3 for list of red-listed and blue-listed species, or acquire the most current list from the BC Conservation Data Centre).

This intent requires that water quantity and quality conditions, and productive riparian areas are maintained to support viable fish populations. Careful management maintains the productivity of streamside and lakeside riparian areas, and is instrumental in maintaining water quality, functioning aquatic habitats and healthy fish populations.

The Department of Fisheries and Oceans has conducted research within this area and developed management recommendations. The "Salmonid Resource Analysis for the Fort St. James Land and Resource Management Plan" (Skeena Basin and Fraser Basin) provide information on Enhanced Watershed Management that may be utilized for resource development planning and review.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Fish and Fish Habitat in the planning area:

**Objective —** Use conservation and enforcement activities effectively to manage fish and fish habitat.

- ➔ Assess how conservation and enforcement resources can be used more effectively/ efficiently.
- ➔ Conduct fish and fish habitat inventories to identify fish populations and fisheries habitat that require protection and specific management actions.
- ➔ Encourage public participation in the development and implementation of fish management priorities and plans, and provide periodic updates as new information becomes available.
- ➔ Increase resources (i.e., signage, public education programs) for public education focusing on fish and fish habitat management and conservation.

Objective — Conserve valuable aquatic habitat.

- ➔ Identify valuable fish habitats, including flood plains, off-channel sites, non-natal tributaries, spawning habitats, and other areas of biological significance.
- ➔ Develop appropriate management strategies to maintain valuable spawning habitats and incorporate these management strategies into resource development plans and site-specific prescriptions.
- ➔ Support projects to maintain (or enhance where appropriate) valuable fish habitats.

Objective — Maintain the viability of salmon populations and habitat.

Objective — Manage to enhance populations of red-listed and blue-listed fish species where possible.

- ➔ Conduct population and habitat inventories and mapping for red-listed and blue-listed fish species in the Land Resource Management Plan area (see Appendix 3 for species listing).
- ➔ Support research to determine habitat and water quality requirements of red-listed and blue-listed fish species.
- ➔ Develop management strategies where possible to enhance populations of red-listed and blue-listed fish species. Incorporate these recommendations and management strategies into resource development plans and site specific prescriptions.
- ➔ Support projects to monitor and maintain (or enhance where appropriate) populations of red-listed and blue-listed fish species.
- ➔ Increase public education focusing on the conservation of red-listed and blue-listed fish species.
- ➔ Identify and address the maintenance of existing high quality bull trout habitat. Special emphasis should be given to stream headwaters.

Objective — Maintain populations of sensitive genetic fish stocks or fish species.

- ➔ Identify sensitive genetic fish stocks or fish species within the plan area.

- ➔ Endorse the designation of sensitive or unique genetic fish stocks or fish species as 'regionally important fish'.
- ➔ Identify sensitive or key habitats for 'regionally important fish' and develop management strategies to conserve these habitats.
- ➔ Manage lake trout (char) populations in the plan area by:
  - ◆identifying sensitive lake trout habitats
  - ◆developing a lake trout management plan
  - ◆identifying lakes with a potential for supporting a lake trout hatchery
  - ◆endorsing the establishment of lake trout hatchery programs, where appropriate and where opportunities exist.
  - ◆inventorying shorelines to identify sensitive lake trout spawning habitats.

Objective — Manage potential effects of resource development activities on fish populations and fish habitat.

- ➔ Prior to development, conduct foreshore inventories and designate Fisheries Sensitive Zones (FSZ's) where appropriate, on waterbodies adjacent to proposed timber harvesting or major mine development activities.
- ➔ Identify important aquatic habitats and develop appropriate management strategies for inclusion into resource development plans and site-specific prescriptions.
- ➔ Provide strategies to maintain stream attributes (hydrology, water quality, channel stability and riparian condition) and sensitivities in resource development plans, operational plans and site-specific prescriptions.
- ➔ Where appropriate, apply the "Land Development Guidelines to Residential And Industrial Developments" to manage potential impacts on aquatic habitats.
- ➔ Where a development is likely to affect the low-flows required by fisheries, the Ministry of Forests and the Ministry of Environment, Lands and Parks will review management strategies to ensure that development adequately reflects the need to maintain or restore long-term flow needs (This is covered by the *Forest Practices Code of British Columbia Act* for forest development but is also appropriate to water licences and resource development).
- ➔ Include strategies in resource development plans to ensure that low-flow requirements are met during resource development activities.
- ➔ Where resource development activities have impaired fish habitat, rehabilitation works are recommended.

Objective — Rehabilitate degraded watersheds to improve fish habitat.

- ➔ Identify areas with potential barriers to fish passage and support projects to rehabilitate the areas.
- ➔ Identify opportunities for fish habitat development, improvement or restoration and support these projects on a priority basis.

Objective — Using caution, consider establishing a brook trout fishery in the Land and Resource Management Plan area.

- ➔ Identify lakes with a potential for establishment of a brook trout population.
- ➔ Using extreme caution, determine the suitability (based on inventories) of potential sites for establishment of a brook trout population. Consider the biodiversity values of non-fishbearing lakes prior to entertaining fish stock introductions.
- ➔ Where appropriate, endorse establishing a brook trout population in the most suitable lakes, based on technical information and public consultation.

### 3.7 Wildlife Habitat and Populations

The landbase of the Fort St. James plan area provides habitat for an abundance of wildlife species. This diversity of wildlife draws tourists and recreationalists to the area, provides a source of income to trappers, guide outfitters and tourism operators, and provides sustenance through hunting for many aboriginal and non-aboriginal families throughout the area.

**The intent of this LRMP is to maintain or enhance the diversity of wildlife habitats and populations within the planning area.**

To successfully carry out the recommended management of wildlife habitat and populations in the planning area, biophysical mapping of the planning area should be carried out. Proper biophysical mapping of the planning area would assist in answering many of the “where” and “how much” questions surrounding wildlife management strategies.

In addition, specific recommendations have been made to manage for caribou, deer, moose and grizzly bear. Species at-risk within the planning area are designated as red-listed (Extirpated, Endangered or Threatened) or blue-listed (Vulnerable) by the BC Conservation Data Centre (Refer to Appendix 3 for list of red-listed and blue-listed species, or acquire the most current list from the BC Conservation Data Centre).

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Wildlife Habitat and Populations in the planning area:

Objective — Increase enforcement capability and practice effective conservation and enforcement for all resource users.

- ➔ Encourage the placement of conservation officers in the Fort St. James Forest District Office.



- ➔ Improve the level of public participation in the development and implementation of Fish and Wildlife management priorities and plans by meetings, dialogue, and written notices, that allow for sufficient response time, prior to approval of plans.
- ➔ Recommend the development of a 'Wildlife Watch' program.

Objective — Manage for the integration of wildlife populations and habitat requirements with resource development.

- ➔ Identify, survey and map valuable wildlife habitats and provide periodic updates as new information becomes available.
- ➔ Develop a management plan that identifies factors affecting wildlife habitat and populations, and that prescribes measures to ensure functional wildlife habitats are maintained.
- ➔ Encourage the maintenance of important habitat elements such as coarse woody debris and wildlife trees when commercial timber harvesting activities are proposed.
- ➔ Where appropriate, encourage wildlife habitat enhancement with consideration of prescribed fires as a tool.
- ➔ During mineral exploration and major mine reclamation plans, consider the provision of habitat elements such as coarse woody debris and wildlife trees.
- ➔ Manage riparian and wetland habitats in a manner that reflects their values and site sensitivities by:
  - ◆increasing the level of public understanding of the values of these habitats.
  - ◆minimizing access within or adjacent to wetlands.
  - ◆ensuring effective visual screening around wetlands.
  - ◆recommending the posting of appropriate speeds for motorized vessels and vehicles in areas with sensitive aquatic and riparian habitats, to minimize aquatic habitat destruction.
  - ◆managing riparian areas to ensure that their physical and biological attributes are perpetuated over time. This may require reclamation or rehabilitation for approved development activities.



## Species at Risk

Objective — Maintain (and enhance where appropriate) populations of species, plants and ecosystems at-risk.

- ➔ Inventory and map red-listed and blue-listed animals, plants and ecosystems within the plan area and provide periodic updates as new information becomes available.
- ◆ Develop management plans to maintain at-risk species and habitats.

## Grizzly Bear

Although grizzly bears are found throughout the entire planning area, Grizzly Bear Conservation Areas will not be proposed by the Ministry of Environment, Lands and Parks, with associated implications prior to the completion of this plan. As effective stakeholder consultation will not be completed by this LRMP, the Working Group recommends that full public stakeholder consultation be undertaken in a future process.

Objective — Maintain or enhance grizzly habitat and populations.

- ➔ Complete grizzly bear habitat mapping in areas of concern to assist in the management of industrial and recreational activities in proximity to, and within, important grizzly bear habitat.
- ➔ Manage for a mosaic of habitat types and characteristics (vegetation, age class and spatial distribution) in accordance with the 'Natural Disturbance Type' to ensure the continued existence of adequate seasonal foraging sites for grizzly bears with adjacent cover.
  - ◆ Reduce habitat fragmentation by providing FEN's or movement corridors required by grizzly bears.
- ➔ In high grizzly habitat suitability areas:
  - ◆ endorse access management planning, with the intent of deactivation of non-essential secondary roads and minimizing the amount and duration of new roaded access.
  - ◆ where important habitats are identified in valuable grizzly bear habitat areas (i.e., seepage sites, riparian floodplains, meadows, fens, wetlands and avalanche chutes), ensure that a management zone is established to provide for bedding habitat, thermal regulation, visual screening and security cover. The degree of cover required adjacent to some of these habitat types will vary depending on the presence of conifer trees within them.
  - ◆ timing elements of resource development in the proximity of valuable grizzly habitat will be considered.
- ➔ Minimize grizzly displacement from preferred habitats (i.e., riparian areas, avalanche chutes, seeps and/or springs).

- ◆ Create irregular edges and leave cover between cutblocks and roads, and within cutblocks, where possible.
- ◆ Where feasible, locate roads to avoid valuable grizzly habitat. Road locations close to valuable habitat should avoid a clear line of site between the road and the habitat.

Objective — Minimize conflicts in human/bear interactions.

- ➔ Improve communication and education of backcountry users (industrial, recreational) to ensure human/bear safety by:
  - ◆ monitoring (over time) the numbers and timing of human/bear encounters to assist in developing management strategies.
  - ◆ educating backcountry users (industrial and recreational) about bear encounters and how to avoid/react to them.
  - ◆ increase education of industrial workers about the value of live grizzly bears and healthy populations of grizzly bears.
  - ◆ educate pilots and other aircraft personnel about the potential impacts of repeated harassment of grizzly bears.
  - ◆ post educational signs along access routes in known high grizzly use areas.
- ➔ Endeavour to schedule human activities (timber cruising, mineral exploration, recreation) to avoid coinciding with concentrated seasonal grizzly bear use in high grizzly bear use areas.
- ➔ Resource agencies should consult with BC Environment when approving industrial camps, and communicate any information about bear populations which may minimize human/bear conflicts.
- ➔ Incinerate and/or remove garbage from bush camps (do not store garbage at bush camps).

## Deer

Objective — Maintain (and enhance where appropriate) deer populations and habitat.

- ➔ Identify, survey and map important mule deer winter ranges, such as south-facing slopes with mature Douglas-fir cover. Provide updates as new information becomes available.
- ➔ In Douglas-fir stands providing known deer winter range:
  - ◆ endorse developing and implementing plans to integrate mule deer habitat requirements.
  - ◆ consider forest management and silviculture systems that provide mule deer habitat and perpetuate Douglas-fir habitat.
- ➔ Minimize vegetative management (i.e., herbicide, intensive silviculture) in riparian habitat and known mule deer winter ranges.
- ➔ Identify, survey and map the overlap between mule deer and white-tailed deer habitat ranges.

## Moose

Objective — Maintain (and enhance where appropriate) moose populations and habitats outside of areas managed for caribou.

- ➔ Identify, survey and map important moose winter range, and provide periodic updates as new information becomes available.
- ➔ Identify valuable moose habitat and, where feasible, establish effective forest buffers to maintain the thermal, visual, and hydraulic characteristics of the habitat.
- ➔ Within riparian management areas, endorse maintaining the amount and distribution of deciduous forest cover found in unmanaged stands.
- ➔ Manage for suitable density of forage vegetation in known moose range and feeding areas. Where appropriate, reduce or adjust stocking standards to reflect these values.

## Mountain Goat

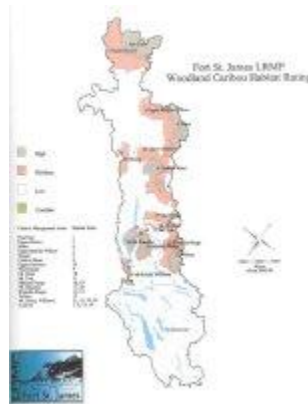
Objective — Manage alpine habitats and adjacent areas to maintain mountain goat populations.

- ➔ Identify, survey and map goat habitat.
- ➔ Identify and provide movement corridors between mountain ranges to prevent fragmentation of populations.
- ➔ Avoid or minimize broadcast burning on high elevation blocks to reduce impact on subalpine goat habitat.
- ➔ Retain open mature and old forest stands in goat winter range areas below the treeline (i.e., steep bluffs, cliffs).
- ➔ Harvesting adjacent to goat habitat should mimic natural openings.
- ➔ In mountain goat habitat, endorse access management planning with the intent of deactivating non-essential roads and minimizing the amount and duration of new access.
- ➔ Timing elements of resource development in the proximity of valuable goat habitat will be considered.

Objective — Mitigate impacts of access to mountain goat habitat.

- ➔ Where practical, locate main haul roads away from identified mountain goat habitat.
- ➔ Manage motorized vehicle access on secondary roads in proximity to identified mountain goat habitat.
- ➔ Design cutblocks and roads adjacent to goat habitat to reduce access to mountain goats and reduce visual exposure of mountain goats.
- ➔ Where possible, maintain appropriate buffers around identified mountain goat habitat features.

## Caribou



Woodland caribou (*Rangifer tarandus*) in this area inhabit a variety of ecosystems. The Takla herd of approximately 100 animals utilize the Mitchell-Blanchet and Sidney Williams mountains and seem to spend most of the year at high elevation alpine areas (generally above 1300 metres), and in subalpine forests of engelmann spruce and subalpine fir.

The caribou of the northern and eastern portions of the planning area tend to be seasonally migratory due to climatic conditions and dispersal patterns generally associated with larger herds. The Spatsizi herd, numbering about 3000, utilizes summer range in the Upper Skeena drainage. The Upper Finlay herd has been reported to utilize summer range in the Birdflat meadows. The Chase herd, numbering between 600 and 700 animals, utilizes the Upper Sustut, Upper Omineca and Cariboo Heart Range for calving and summer range. The Wolverine herd (250-300 animals) utilizes the Valleau-Kwanika areas during calving, summer and rutting seasons. Core winter ranges for these herds are located in the Mackenzie Forest District.

Woodland caribou in the planning area migrate alone or in small groups, and tend to have large home ranges. They use primarily alpine and subalpine habitats during the summer with some use of lower elevations. Primary winter habitats include mature lodgepole pine or pine/spruce forests with terrestrial lichens. Caribou in the Sidney-Williams and Mitchell-Blanchet areas are an exception, in that they mainly utilize arboreal lichens in the winter months. The Chase herd also makes use of the engelmann spruce-subalpine fir zone and arboreal lichens in the winter.

During the winter, wet meadows are used when snow depths are low or moderate. In periods of deep snow caribou move to higher elevations and forage on terrestrial lichens on wind-blown alpine areas. Caribou also use alpine slopes with low snowpack during the winter months. In the spring, caribou use lowland sites and migration corridors to feed on green vegetation. Caribou cows often return to the same calving area year after year, primarily higher elevations (in the ESSF and Alpine biogeoclimatic zones) on steep, north slopes with heavy snowpack.

Caribou herds are stable or slowly declining, but are sensitive to a number of common pressures. Caribou may abandon an area of use if it is systematically disturbed by resource development over a long period of time. Forest development activities often

cause a reduction of the caribou's primary winter food source and habitat fragmentation, as regeneration of lichens may take from 50 to 100 years. The primary cause of mortality is predation by bears (especially grizzly bears), wolves, wolverines and hunters. Improvement of habitat for moose during forest development activities causes an increase in moose populations, which often results in an increase in wolf populations and an associated increase in predation on caribou.

Roaded access development has implications for increased poaching pressures and harassment, as well as acting as travel corridors for predators.

High, medium, low and corridor caribou habitat areas have been mapped (at a 1:250,000 scale) for the Fort St. James planning area.

**The intent of this Caribou Management Strategy is to perpetuate caribou and their habitats within the Fort St. James LRMP planning area.**

**This plan recognizes that this intent may not be realized for all herds within the planning area, and that the management direction in this plan presents risks to individual herds, particularly those which utilize the middle third of the planning area. However, this plan strives to lower these risks by adopting a sensitive approach to resource management in important caribou areas. Within Caribou Management Areas any development activities should be compatible with caribou populations and habitat objectives.**

**This LRMP supports further research and inventory as a top priority within the Fort St. James planning area.**

### **High Value Caribou Habitat:**

- ◆identifies good presence and current use and/or contains an abundance of high capability habitat
- ◆contains commonly-used calving areas or good calving habitat (i.e., ESSF near timberline, subalpine and alpine, rocky outcroppings, north slopes, and steeper terrain in these habitats)
- ◆contains critical or important early winter (November to December) and/or late winter (January to March) habitat
- ◆contains good spring (April to May) habitat, summer (June to August) and fall (September to October) habitat used as r

### **Medium Value Caribou Habitat:**

utting areas.

- ◆ contains moderate capability habitat for spring, summer and fall use
- ◆ contains some calving areas
- ◆ serves as connective and migration corridors between caribou ranges (i.e., valley bottom riparian habitat)
- ◆ contains high or low elevation forests adjacent to high caribou habitat, with some early winter use.

### **Low Value Caribou Habitat:**

- ◆ contains low capability habitat for winter, spring, summer and fall use
- ◆ experiences low current or historical use by caribou
- ◆ may serve as movement corridors between ranges
- ◆ may contain seasonal use that is presently unknown, such as spring valley bottom foraging for new herbaceous growth.

### **Corridor Caribou Habitat Areas:**

- ◆ serve as connective and migration corridors between caribou ranges (i.e., valley bottom riparian habitat).

Caribou Management Areas have been designated to encompass combinations of high, medium and corridor caribou habitats.

This LRMP provides the following General Management Direction for the management of caribou. This management strategy is dynamic, with strategies and map areas likely to change over time as information is gathered and research studies are completed.

Objective — Manage existing caribou habitat and populations in the Fort St. James planning area.

- ➔ Develop and implement a Caribou Management Strategy in co-ordination with adjacent planning areas.
- ➔ Within Caribou Management Areas, restrict the introduction of animals that pose proven health risks to caribou (i.e., domestic sheep).

Objective — Maintain current caribou populations and habitat by reducing risk through carefully controlled resource development.

### **Management STRATEGIES for Specific Caribou Management Areas**

- ➔ Mt. Blanchet — No resource development activities within this Caribou Management Area, where it overlaps the Blanchet Protected Area.
- ➔ Upper Birdflat-Willow — No resource development activities within this Caribou Management Area, where it overlaps the Upper Sustut/Thumb Protected Area.
- ➔ Upper Omineca — No resource development activities within this Caribou Management Area, where it overlaps the Omineca Protected Area.

- ➔ Fire Flats, Sustut, Upper Skeena and Upper Birdflat-Willow — No forest development harvesting until 2002 and until the following has occurred in these Caribou Management Areas:

- ◆Co-ordinated Access Management Planning has determined appropriate access closures and management to minimize impacts of forest development on caribou.

- ◆Available data is utilized to determine habitat areas. A data collection program is designed and implemented to refine the boundaries of habitat for caribou.

- ◆Forest planning cells that have significant timber volumes and provide lower quality caribou habitat have been evaluated and delineated. In these limited areas, explore innovative forest planning and development which is compatible with caribou habitat values. Any future forest development planning should provide the assessments required for forest development planning in all other Caribou Management Areas.

Within these four Caribou Management Areas, where forest harvesting poses unacceptable risks to caribou and/or where timber values are low, this LRMP plan recommends that forest development and harvesting be avoided.

## **ALL OTHER CARIBOU MANAGEMENT AREAS**

- ➔ Forest operational planning will continue, providing the general management direction given by this document is followed.
- ➔ Recommend that the Ministry of Forests and Ministry of Environment, Lands and Parks establish and model 'high' biodiversity emphasis objectives for caribou management areas. This information would be considered in future landscape planning.
- ➔ Maintain the seral stage distribution close to the natural seral stage distribution where possible.

## **Forest Development Planning**

- ➔ Complete total resource use plans prior to development.
- ➔ Utilize the most "up-to-date" caribou habitat mapping in operational resource development planning.
- ➔ Provide the following assessments for forest development planning for Caribou Management Areas, to make more informed decisions in development planning:
  - ◆known baseline data on caribou populations to assess impacts of development
  - ◆strategies to meet biodiversity objectives set in landscape unit planning
  - ◆access management and control strategies
  - ◆lichen assessments, in accordance with methodology acceptable to MELP.
  - ◆known caribou movements
  - ◆identify caribou habitats that are used for the following purposes: calving areas, ranges during specific seasons, connective and lowland migration corridors, mineral licks, and high elevation balsam forests adjacent to areas used for any of the above purposes.



- ➔ Prioritize harvesting of age class eight and nine mesic pine stands.
- ➔ Focus on silvicultural and harvesting systems that perpetuate terrestrial and arboreal lichen retention and recovery. Consider partial cutting (i.e., small patch) of balsam stands to maintain arboreal lichens.
- ➔ Where necessary, encourage extended stand rotations and minimize forest fragmentation.
- ➔ Prioritize development planning to areas that caribou are not currently utilizing.
- ➔ Jointly approve portions of Forest Development Plans within the high, medium and corridor Caribou Management Areas. Joint approval shall occur between the Ministry of Environment, Lands and Parks, and the Ministry of Forests.

## General Forest Management

- ➔ Reassess caribou habitat areas prior to each Timber Supply Review with attention to migration and connective corridors.
- ➔ Support the designation of identified sensitive caribou habitat (i.e., calving areas, mineral licks) identified and agreed to by the Ministry of Environment, Lands and Parks and the Ministry of Forests as a Sensitive Area or Wildlife Habitat Area under the *Forest Practices Code of British Columbia Act*.
- ➔ Outline strategies to address caribou values in Fire, Fuel and Pest Management Plans, and co-ordinate these with adjacent planning areas.

## All Resource Development

- ➔ Endeavour to schedule development activities and field work to minimize impacts at times of greatest caribou use.
- ➔ Co-ordinate resource development to limit activity in sensitive caribou use areas (i.e., calving areas, mineral licks).
- ➔ Utilize appropriate plant species and seeds for re-vegetation. When revegetating disturbed sites use species that will not out-compete native plant species.
- ➔ Utilize appropriate vegetation management in riparian habitat and areas being managed for caribou, with the intent of reducing conflicts between different habitat requirements of caribou and moose, and thereby not encouraging increased moose populations that may result in greater predation of caribou by wolves.
- ➔ Conduct an independent monitoring program that monitors impacts of resource development against baseline data on caribou populations and directs adaptation of resource planning.
- ➔ For mineral resource development, a detailed mines referral process may be requested by the Ministry of Environment, Lands and Parks.

Objective — As a priority, implement further research on caribou in the planning area.

- ➔ Refine the identification and mapping of caribou distribution and potential caribou habitat throughout the Fort St. James planning area.

➔ Focus research on:

- ◆ maintenance and/or enhancement of lichen dominated habitats, including the identification of appropriate tree stocking densities, site preparation and silvicultural practices
- ◆ predator/prey relationships
- ◆ impacts of recreational use
- ◆ access related implications
- ◆ seasonal caribou movements and habitat use in relation to access development, cutblock patterns and timing of harvesting activity, and mineral exploration and development.

- ➔ Actively pursue research dollars through current government funding sources (i.e., Forest Renewal BC).
- ➔ Support a traditional knowledge project to map and inventory caribou habitat and use in the Fort St. James planning area.
- ➔ Develop public participation in caribou research in the planning area (i.e., questionnaire, regular meetings between biologists and interested members of the public, wildlife surveys).
- ➔ Co-ordinate research with adjacent areas (Lakes, Cassiar, Kispiox, and Mackenzie planning areas).

Objective — Recommend the development of an advisory group that includes agency staff, independent researchers, stakeholders and the public, and that has the following tasks:

- ➔ Compile scientific study and assessments.
- ➔ Condense scientific literature to plain language available to Forest Licensees, public and resource ministries.
- ➔ Explore funding sources for research/monitoring which will provide operational management direction.
- ➔ Initiate and direct research and recommend the incorporation of new knowledge into resource planning.
- ➔ Act as a resource to LRMP tables and resource ministries.
- ➔ Design the establishment of a monitoring committee and program to assess impacts of resource development against baseline data.

### 3.8 Trapping

Trapping has a long-standing history within our planning area and is an important activity for First Nations and other resource users. There are currently over 400 registered trappers within the Land and Resource Management Plan area. Many trappers depend on trapping for income, while others participate for recreational and cultural purposes. Species of furbearers managed within the plan area include marten, beaver, wolverine, fisher, coyote, squirrel, black bear, wolf, lynx, mink, otter, weasel and fox.

**The intent of this LRMP is to encourage decisions in resource development planning which maintain the viability of outdoor/nature-based wilderness tourism and commercial guide outfitting. This LRMP will facilitate the integration of these values with operational resource planning.**

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Trapping in the planning area:

Objective — Maintain the qualities of opportunities for trapping in the planning area.

- ➔ Improve communication and consultation between government resource agencies and major tenure holders and the trapping tenure holders by:
  - ◆referral, dialogue and written notices that allow for sufficient response time, prior to approval of industrial activity within their tenure areas.
  - ◆working toward stable, longer-term forest development planning to assist trappers in assessing, integrating and planning their operations.
  - ◆resource developers and trappers must make efforts to communicate concerns and co-operate to ensure minimal impact to each others' operations. Strategies to communicate concerns and develop co-operation between resource developers and commercial trappers must be applied consistently across the planning area.
  - ◆initiating a 'Wildlife Watch' co-management program that also includes First Nations, community and other interest groups.
- ➔ Increase the viability of, and provide certainty and longevity for, commercial trapping operations.
- ➔ Encourage the identification of campsites, cabins, trail development and valuable use areas for consideration in planning resource development activities, recognizing the potential confidentiality of location information.

Objective — Where there are opportunities, enhance furbearer/wildlife habitats.

- ➔ Include furbearer habitat objectives in forest development plans and silvicultural prescriptions, considering implications for fire protection (fire hazards) and silvicultural systems.
- ➔ Encourage stand level structural diversity and maintenance of coarse woody debris by:

- ◆ considering leaving slash piles as small mammal (i.e., marten, vole, hare) habitat where appropriate.

- ◆ retaining or considering enhancing coarse woody debris to optimize furbearer habitat where available. Develop a range of strategies to accomplish this.

- ◆ future process and study should be undertaken to identify the appropriate amount and area distribution by landscape unit.

- ➔ Establish wildlife tree patch retention and connective corridors to reduce forest fragmentation.

- ➔ In areas with overstocked regeneration, consider a strategy to avoid spacing a portion (i.e. 10-20%) of the area and accept it as habitat enhancement. An example would be in areas containing Commandra Blister rust.

- ➔ Consider the seral stage habitat required by different furbearers and ensure available habitat for healthy populations of furbearers throughout the stand rotation.

- ➔ Consider designing road allowances to provide crossing for dispersal of marten and other furbearing species which typically avoid open areas by:

- ◆ retaining suitable forest cover in various locations on at least one side along main haul road.

- ◆ narrowing the cleared right of way where safety is not an issue.

- ➔ Identify important furbearer habitats and provide periodic updates as new information is known.

- ➔ Evaluate wildlife values found in large burns (200 ha. and over) before planning silvicultural activities.

- ➔ Consider a strategy to reduce salvage, spacing, planting and weeding in areas of high-value furbearer/wildlife values.

### 3.9 Guide Outfitting

Guide outfitting has a long-standing history within our planning area and is an important activity for First Nations and other resource users. There are currently 12 licensed guide outfitters within the Land and Resource Management Plan area. The guide outfitting interests value 'wilderness experience', hunting, fishing and other nature-based activities. Some guides have expanded their operations and successfully marketed non-hunting activities such as guided hikes, backcountry skiing, trail rides and wildlife viewing. Guide outfitting operations depend upon the management of wildlife species and their habitats and co-ordination of resource development activities with other resource users.

**The intent of this LRMP is to encourage decisions in resource development planning which maintain the viability of outdoor/nature-based wilderness tourism and commercial guide outfitting. This LRMP will facilitate the**

## **integration of these values with operational resource planning.**

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Guide Outfitting in the planning area:

Objective — Maintain the qualities of opportunities for guiding in the planning area.

- ➔ Improve communication and consultation between government resource agencies and major tenure holders and the guide outfitting tenure holders by:
  - ◆referral, dialogue and written notices that allow for sufficient response time, prior to approval of industrial activity within their tenure areas.
  - ◆working toward stable, longer-term forest development planning to assist guides in assessing, integrating and planning their operations.
  - ◆resource developers and commercial guides and outfitters must make efforts to communicate concerns and co-operate to ensure minimal impact to each others' operations. Strategies to communicate concerns and develop co-operation between resource developers and commercial guides, outfitters and trappers must be applied consistently across the planning area.
  - ◆initiating a 'Wildlife Watch' co-management program that also includes First Nations, community and other interest groups.
- ➔ Manage for the visual character of wilderness-based recreation, including angling, hunting and wildlife viewing.
- ➔ Increase the viability of outdoor/nature-based wilderness tourism interests and provide certainty for, and longevity of, commercial guide outfitting operations.
- ➔ Encourage the identification of campsites, cabins, trail development and valuable use areas for consideration in planning resource development activities, recognizing the potential confidentiality of location information.
- ➔ Strive to retain the wild qualities important to guiding and outfitting in areas that are highly valued for those operations.

### 3.10 Access

The Fort St. James planning area covers a huge expanse of land, with land-use demands from a wide variety of resource uses and users. This variety of demands necessitates an access management plan that provides an equally diverse range of access opportunities. Understandably, a backcountry skier accessing a remote lake has far different access expectations and requirements than does a recreational snowmobiler or a timber licensee planning to harvest a remote stand of timber. Also, some species of wildlife are more sensitive than others to the effects of access. It is by recognizing this variety of resource values, uses and users that multiple access requirements can be identified and managed.

This LRMP recognizes that access for industrial activities is an acceptable land use. Government licensed and authorized resource users will have access to lands outside of Protected Areas.

The Fort St. James LRMP makes reference to access management for recreation opportunities and experiences, at the general management objectives level and within specific resource management zones. It is recognized that specific resource developments may not be precluded, and that recreation values may change for periods of time as roads for resource development are built and deactivated.

**The intent of this plan is to integrate and co-ordinate access requirements of all resource users. This plan will provide direction on the access requirements of a variety of resource users, while minimizing impacts on other resources and resource users. Operational resource development planning should consider the guidance contained in the Fort St. James LRMP.**

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Access in the planning area:

Objective — Co-ordinate access management throughout the plan area.

- ➔ Co-ordinate access management to address the interests of all resource users, and utilize the direction provided by this document.
- ➔ Develop and implement CAMP (Co-ordinated Access Management Planning) as directed in individual RMZ's.
- ➔ Increase public education that focuses on access management (i.e., improve signage).

Objective — Manage access to alpine habitats.

- ➔ Minimize roads into alpine habitats.
- ➔ Consider timing elements of resource development near alpine areas to minimize the duration of operations.
- ➔ Within alpine areas, ensure recreational traffic use of only designated trails where they exist.

Objective — Integrate multiple access requirements of all resource users to minimize impacts to wildlife populations and habitat requirements.

- ➔ Identify and manage those areas that require special access management or rehabilitation.
- ➔ Minimize access (both amount and duration) to areas with sensitive wildlife populations and habitats.
- ➔ In areas with sensitive wildlife species and/or habitats, deactivate roads to an appropriate level once development operations and active needs have ceased.
- ➔ In areas where unnecessary current access is negatively impacting sensitive species or habitats, deactivate or control access on these routes to an appropriate level.
- ➔ Avoid resource and public mainline loop road development.
- ➔ When locating roads, consider the management intent of the Forest Ecosystem Networks/ movement corridors.
- ➔ Manage access within valuable ungulate winter range (i.e., restrict recreational vehicular access).
- ➔ Consider non-roaded methods of access for the exploration stage of mining and for the development of other resources, where a need is identified and in site-specific areas.
- ➔ Avoid use of Alsike Clover when seeding cutblocks and roadways because of its potential toxicity.

Objective — Manage access to areas with terrain that is sensitive to site degradation by vehicles. Terrain sensitivity to site degradation may include alpine/subalpine terrain, wetlands and designated recreational trails (designated for hiking).

- ➔ Use signage and education to meet the objective.
- ➔ In sensitive terrain, permit recreational travel on identified hard surface roads and trails only.
- ➔ Emphasize non-roaded methods of preliminary exploration.
- ➔ Upon completion of industrial activities near fragile ecosystems, deactivate roads to minimize off-road vehicle damage to those ecosystems, and, where deemed appropriate, endorse motorized vehicle access restrictions.

Objective — Manage access within Caribou Management Areas.

- ➔ Deactivate and establish access control points to limit access to identified sensitive caribou habitats (i.e., calving areas, mineral licks) in forest development planning.
- ➔ Prior to timber harvesting or mine exploration and development, establish signs to advertise future access management. Signs should detail caribou use and provide rationales for access management.
- ➔ Advertise any access management through user groups and the media.
- ➔ Educate the public and industrial users about impacts on caribou by snowmobile and ATV use, and promote responsible use of these vehicles.

- ➔ Limit recreational vehicle (including snowmobiles and ATV's) access or manage for seasonal recreational vehicle access closures to caribou winter ranges and caribou calving areas during years when caribou are present.
- ➔ Limit the amount and duration of road development, and minimize the distance and duration of time for which a road is ploughed, while facilitating industrial operations.
- ➔ Minimize road width and design road length to minimize line-of-sight without compromising driver safety.
- ➔ Roaded access for mineral exploration into currently non-roaded areas will be developed when it can be demonstrated that planning has addressed all resource values, and that such access is a justifiable option for further development. Avoid development of new roads during early stages of mineral exploration. A detailed mines referral may be requested by the Ministry of Environment, Lands and Parks.
- ➔ Implement a higher proportion of permanent and semi-permanent road deactivation (vs. temporary deactivation) for secondary roads, as soon as possible once development operations and active needs have ceased.

Note: The Working Group has discussed the potential of a bridge crossing one of, or a combination of the Sustut, Skeena and Bear Rivers, so the south sides of these rivers can be accessed. A specific crossing location was not chosen due to the complexity associated with this decision. The Working Group recommends that this decision should be made by senior-level government officials, based on detailed technical information. An on-site assessment of alternative locations should be a part of this decision-making process.

### 3.11 Forest Stands

The majority of this large planning area is covered in forest lands; it is no surprise that sustainable management of these forests is one of the primary interests of this LRMP. The vast tracts of timbered lands support not only a multitude of wildlife species and excellent recreational opportunities, but they also provide the focal point that drives the local economy.

This LRMP seeks to provide management direction that recognizes the interests of all forest users, and provide opportunities for sharing these resources through integrated management strategies.

The *Forest Land Reserve Act (FLR Act, 1994)* is similar to the *Agricultural Land Reserve Act*, in that it is intended to secure the commercial forests in order to foster both economic and social stability for the associated communities and the Province. The establishment of this reserve will be one of the implementation items of this plan, as it provides one of the key components to the Provincial Land Use Strategy. This FLR designation will be compatible with the LRMP recommendations and areas such as Protected Areas, settlement lands and private properties will be excluded.



**The intent of this LRMP is to manage for sustainable forest stands and to strive for a sustainable forest industry. To achieve this end, the plan advocates the practice of good stewardship of the forested lands, based upon sound ecological principles.**

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Forest Stands in the planning area:

Objective — Maximize the value of forest stands and their benefit to society and contribute to a sustainable, long term supply of timber over the Timber Supply Area.

- ➔ Practice good forest stewardship based upon sound ecological principles.
- ➔ Work to continually improve practices and policies affecting the stewardship of forest stands (adaptive management).
- ➔ Endeavour to increase and improve public knowledge of forestry and ecological principles.
- ➔ When resource-uses conflict, identify the 'best use' of those lands (i.e., arability suitability study to determine boundary between Agricultural Land Reserve and Forest Land Reserve).
- ➔ Incorporate current levels of knowledge on natural processes, such as natural disturbance patterns, into forest management strategies and prescriptions.
- ➔ Minimize the impact of resource development on hydrological regimes.
- ➔ Maintain representative old-growth forest stands distributed across the landscape.
- ➔ Provide for coarse woody debris, dispersed across the landscape in a variety of sizes.
- ➔ To enable better integration of interests at lower levels of planning, consider mapping other resource values on forest development maps (i.e. permanent lodges on the 5-year Forest Development Plan maps).
- ➔ Protected areas, corridors and non-operable types will contribute to seral stage distribution and old-growth retention to meet biodiversity objectives.

Objective — Maintain opportunities for timber harvesting and forest management.

- ➔ Maintain a sustainable supply of timber by emphasizing basic silviculture. Consider intensive silviculture practices where appropriate and where compatible with other resource values.
- ➔ In Caribou Management Areas, develop innovative harvesting systems to achieve a sustainable long-term supply of timber, while maintaining caribou habitat values.

- ➔ Design cutblocks and utilize alternate, low impact silviculture systems to maintain visual quality objectives.
- ➔ Practice innovative harvesting methods in riparian management zones to maintain the integrity of the riparian areas. Consider best management practices as outlined in the riparian guidebook.

Objective — Minimize losses to forest resources from damaging agents through aggressive and prompt fire and pest management, where and when appropriate.

- ➔ Inventory managed stands for pests and diseases and develop practices to minimize or prevent further loss of timber value.
- ➔ Identify, survey and map defoliator species (i.e., two year cycle budworm).
- ➔ Consider research projects for defoliator species (i.e., two year cycle budworm).
- ➔ Select techniques that will minimize the risk of blow-down in forest openings (i.e., cutblocks, campgrounds, mine sites).
- ➔ Salvage damaged or killed timber where and when appropriate, in a timely manner, with consideration for other resource values.
- ➔ Ensure that beetle salvaged wood is efficiently transported/removed (before beetle flights) and utilized to avoid further pest outbreaks.

Objective — Actively manage forest health to maintain or enhance forest productivity and sustainability.

- ➔ Complete forest health assessments for forest development planning to address management of infested timber while evaluating the extent of the susceptible forest type.
- ➔ Actively manage for the prompt establishment and long-term maintenance of healthy plantations.
- ➔ Encourage research on management of forest pests.
- ➔ Monitor, evaluate and pro-actively manage forest health to ensure recognized forest values are maintained.
- ➔ Improve the accuracy of unsalvageable loss figures for input into Timber Supply Analysis.

Objective — Manage beetle populations while maintaining natural forest attributes.

- ➔ Inventory all bark beetle infested areas and develop a plan to pro-actively manage them, where appropriate.
- ➔ Develop and implement long-term strategies for maintaining beetle populations at endemic levels.
- ➔ Consider the social and economic aspects, in addition to scientific processes, when developing forest health management plans.
- ➔ Provide opportunities for community and stakeholder involvement in decision-making on beetle management issues that will affect the viewscape of communities and the back-country within the planning area.

Objective — Optimize timber production through sound forest stewardship and implement silviculture strategies designed to produce a broad spectrum of timber products, consistent with the intent of the resource management zone and recognizing other resource values.

- ➔ Promote excellence in silviculture and harvesting practices.
- ➔ Aim for reduced free-growing delay on harvested land.
- ➔ Increase basic stocking standards where appropriate, to higher levels than currently prescribed.
- ➔ Enhance the productive capacity of forest stands through appropriate silviculture systems.
- ➔ Where technically and economically feasible, use cost-effective, intensive silviculture treatments, including; spacing, commercial thinning, fertilization, competitive brush control and pruning.
- ➔ When setting objectives in landscape unit planning, consider the availability of mature timber and other management priorities when determining the priority cutting ages. Evaluate the feasibility of rotation at the culmination age of the productive forest land base.
- ➔ Where they constitute a component of the natural stand, consider deciduous trees an acceptable component of new stands. Additional direction on stocking standards may be provided by the District Manager.
- ➔ Utilize high quality seedlings, while maintaining genetic diversity.

Objective — Endeavour to maintain Douglas-fir where it naturally occurs.

- ➔ Endeavour to establish Douglas-fir on suitable sites.
- ➔ Consider maintaining the Douglas-fir component of a stand during harvesting and reforestation activities.

Objective — Ensure sustainable forest development.

- ➔ Define clear management objectives, regulations, standards and guidelines for all forest related resources.
- ➔ Improve forest land inventories including surface erosion potential, terrain hazard, soils and hydrology information.
- ➔ Consider clearcutting-with-reserves (to maintain ecosystem attributes such as wildlife trees, retention patches, riparian management) as one of the primary harvesting techniques for even-aged as well as mature and old stands, unless other resource values require an alternate approach.
- ➔ Encourage growth-and-yield research in stands to refine site-productivity and growth potential information and incorporate this information into forest management.
- ➔ Encourage innovation in forest stewardship.
- ➔ Avoid the use of Alsike Clover when seeding cutblocks and roadways because of its potential toxicity.

Objective — Through research and modelling, identify opportunities for improving utilization of timber resources to maximize value and employment.

- ➔ Investigate the volume of wood fibre available in the planning area through modelling various logging utilization standards, with consideration of other resource values.
- ➔ Investigate the regulatory, technological, economic and ecological constraints to improving utilization. Identify the most suitable manufacturing technologies to process additional wood fibre. Develop a management plan to incorporate/manage these constraints and/or values, provide incentives, and ensure provision of appropriate training, operating and marketing strategies.
- ➔ Inventory problem coniferous forest types, and investigate how to deal with grain, taper, excessive knots, variable log lengths, and how to maximize wood recovery to produce a variety of products. Use volume age curves to estimate the potential short and long term harvest levels of these problem coniferous forest types.
- ➔ Investigate parcels of land between 500 and 3,000 hectares in size (large enough to model), in which wildlife concerns, recreation concerns, and biodiversity concerns are moderate or low. In these areas, while still respecting other values, concentrate efforts on enhancing timber production.
  - ◆Improve yields in these timber production areas to reduce the area that is needed to sustain current harvest levels.
  - ◆Strive to reduce free-growing delay.
  - ◆Increase basic stocking standards, where appropriate.

Objective — Research the utilization of deciduous timber types with consideration to other resource values.

- ➔ Identify the most suitable manufacturing technologies to utilize deciduous species.
- ➔ Investigate the regulatory, technological, economic and ecological constraints to utilize deciduous stands.
- ➔ Inventory the deciduous-dominant forest cover types to determine stand loss factors (i.e., decay, waste and breakage) and available volumes.
- ➔ Investigate forest cover types that could be silviculturally converted to coniferous forests through removal of a portion of the deciduous component, with consideration of habitat values.

### 3.12 Minerals and Energy

#### Minerals

**The intent of this plan is to confirm that mineral and energy exploration and development and related access are acceptable uses of the landbase outside of Protected Areas, while**

**integrating other resource values within the existing regulatory framework, and subject to the management objectives and strategies of this plan.**

Large portions of the planning area have significant industrial and metallic mineral values. There is significant metallic and industrial mineral potential; a large mineral occurrence inventory, including deposits with well defined reserves; tenure; and, past and present exploration and development activity. There are also coal values in the district. The extent of the exploration and development of the mineral values places the Fort St. James LRMP area in a very favourable position for future mine development. The high mineral values and infrastructure developments in adjacent planning areas also enhance development opportunity in this area. Mineral exploration and development will continue to be an important component of this area's social and economic profile.

Mineral exploration and development are temporary uses of the land and comprehensive review and approval processes exist for mining proposals. Only relatively small areas of land are used for project site development, but access to a large land base is required for exploration. This plan confirms that mining and related roaded access development are acceptable uses of the land outside of Protected Areas within existing regulatory framework and approval processes. Advanced exploration and development activities clearly have impacts at site specific areas and this plan directs that the impacts of advance exploration and development will be accommodated through the implementation of the Fort St. James LRMP. Averaged over time and across all zones, these localized impacts will have minimal effect on other resource values.

Because mineral occurrences are site-specific in nature, flexibility is required in the interpretation and application of the objectives and strategies in this document, in the context of mineral development. Resource management will recognize the time-limited nature of mining operations and of most impacts from these operations. The comprehensive review and approval process for mining proposals will provide direction on the requirements for reclamation of disturbances, and mitigation of impacts to other resource values.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Minerals and Energy in the planning area:

Objective — Maintain opportunities and access (including roaded access) for mineral exploration and development across all resource management zones except for proposed Protected Areas and other areas excluded under the Mineral Tenure Act. (i.e., no staking reserves, cultivated land).

- ➔ Integrate mineral exploration and development activities with other resource user activities.

- ➔ New access for mineral or energy development will be co-ordinated with the access requirements of other resource users as much as possible.
- ➔ Accommodate localized impacts of advanced stage exploration and development activity (i.e. numerous drill sites) within existing legislation and the intent of this plan.
- ➔ Ensure subsurface resource potential and the hidden nature of the resource are considered in subsequent planning.
- ➔ For proposed major mine developments, LRMP objectives will be addressed by the provincial Environmental Assessment Process.
- ➔ For small mine and quarry development, LRMP objectives will be addressed by the multi-agency regional mine development review process.
- ➔ Ensure that conditions of permits and licences related to access apply appropriate road standards.
- ➔ Manage impacts to visual quality by mineral exploration and development activities through the established mineral review and permitting processes.
- ➔ Conduct mineral exploration activities in a manner sensitive to wildlife.
- ➔ Minimize site disturbance during exploration in areas of sensitive wildlife habitat.

Objective — Address impacts from past mining activities.

- ➔ Identify un-reclaimed mine sites, exploration roads and exploration camps at abandoned or closed mines. Establish a priority list for reclamation, and carry out reclamation as funds are available.

## Energy

Oil and gas potential has been assessed within two sedimentary basins in the planning area. There is good and moderate potential for oil and gas in the Bowser-Whitehorse Basin located north of the Takla Lake area. There is only poor potential for gas in the Nechako-Chilcotin Basin located in the southern portion on the LRMP area. Coal bed methane is assessed as low and unknown. The potential for geothermal energy is low compared to other areas of the province. Hydroelectric opportunities also exist.

Objective — Maintain opportunities and access for exploration and development of energy resources.

- ➔ Allow exploration and developments of energy resources within the appropriate regulatory framework.
- ➔ Integrate exploration and development activities with other resource user activities.



### 3.13 Agriculture and Grazing

Arable lands and agricultural operations are located in the southern portion of the planning area where soils and climate are favourable. The Stuart, Necoslie and Ocock river valleys have silty clay soils left from glacial-lacustrine soils (lakebeds), which are well suited for agriculture.

Agriculture adds to the economic stability of Fort St. James. In general, the agricultural land resource is characterized by a low level of development, as most current agricultural enterprises in the area are small in size and non-intensive in mode of production. Agricultural operations, including mixed farming and livestock production, are generally located in the Fort St. James and Necoslie Resource Management Zones.

The most common products are domestic and game farmed livestock, feed grains and vegetables. The frost-free period of 60 to 90 days, with a low heat-unit accumulation, limits production to cool season crops. Despite climatic limitations, forage crop production forms an integral component of almost all farms and is an important practice for soil conservation in the area. There is good potential for forage crops, and some increased agricultural development and intensification. There is some grazing activity, with permits managed through the Forest Service. The growth of developing agricultural lands in the local area over the past twenty years was facilitated by agricultural lease policies, and grazing opportunities on Crown lands. Not all of the arable lands are included in the **Agricultural Land Reserve**.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Agriculture and Grazing in the planning area:

Objective — The Land and Resource Management Plan Working Group encourages agricultural expansion on arable lands both within and outside of the **Agricultural Land Reserve (ALR)**, and recommends that integrated land use be accommodated whenever possible and feasible. This objective provides direction for the Fort St. James Land and Resource Management Plan area, where it is appropriate and consistent with the intent of each Resource Management Zone.

- ➔ Map arable lands with high potential for agriculture, in the vicinity of the **Agricultural Land Reserve** and settlement areas, utilizing field reconnaissance surveys. Use this information to identify and zone Agricultural Development Areas for future development that are compatible with agricultural lease policies.

- ➔ Defer areas of Provincial Forest that are primarily CLI (Canada Land Inventory) Class 5 arable, or better quality, from a Forest Land Reserve until the arability field reconnaissance has been conducted, and the referral parties and the Ministry of Environment, Lands and Parks agree to localized land use. The field work and referrals which will take place after the Land and Resource Management Plan process are operational or 'finer scale' planning.
- ➔ Allow agricultural operations to expand, providing they qualify under the agricultural lease policy. Utilize habitat capability and suitability mapping along with arable land inventory in assessing applications.
- ➔ Support the use and intent of the **Agricultural Land Reserve (ALR)**.
- ➔ Range tenure holders should apply range and livestock management practices that ensure sustainability of browsing and forage resources for livestock, moose, elk, and deer, as outlined in grazing management plans.
- ➔ Consider past management practices in the issuance of grazing permits.
- ➔ Foster co-operation in agriculture land development for biodiversity, recreation, and woodlot management. Range use plans and agriculture lease boundaries should recognize other resource values.
- ➔ Encourage implementing strategies to maintain and/or enhance wildlife and aquatic habitat in future land development.

### 3.14 Tourism

Tourism operations in the planning area are diverse both geographically and in the products and services they offer. In general, though, the tourism activities can be broadly considered in two categories:

*i. those that primarily provide support services and are located close to the community of Fort St. James, such as accommodations (motels or 'bed and breakfast'), fully developed private sector and provincial parks, non-profit operations such as the ski-hill, and other businesses such as restaurants. Tourists are also attracted by the National Historic Site and museum.*

*ii. those that are generally found outside of Fort St. James and offer destination and wilderness opportunities such as lodge accommodations, guiding services and outfitting.*

The types of tourists who are attracted to the planning area are as diverse as the types of activities that they can pursue. Some tourists come to the area on their own and use their own transportation and equipment. Some tourists come as members of bus tours or other organized tours. Others come seeking a full range of services, such as lodge or resort accommodation, equipment and transportation. Interest in "full service" outdoor experiences and wilderness-based tourism has been growing steadily in the recent past. Catch and release fly-fishing is practised by a growing number of anglers, and is a growing niche and a special experience offered by tourism operators. Values that are important to wilderness-based tourism operations include: recognition as business entities, scenery, wildlife, water quality and fisheries.

The LRMP Working Group recommends that wilderness tourism operators be considered separate and distinct from trappers and members of the general public, and be



recognized as licensed and tenured commercial users of the working forest. It is recognized that timber harvesting and wilderness values are not mutually exclusive.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Tourism in the planning area:

Objective — Manage for a variety of tourism recreation experiences across the landscape and within each Resource Management Zone.

- ➔ Identify visual management areas, to manage the aesthetic characteristics of wilderness-based tourism recreation (including angling, hunting, wildlife viewing and water-based recreation).
- ➔ Endorse the diversification of tourism opportunities where appropriate.
- ➔ Identify, survey and map heritage and existing trails/sites, documenting their existing value(s), seasonality of use and type of use (i.e., hiking, bicycling, ATV use, motor biking, horseback riding, snowmobiling and snowshoeing).

Objective — Maintain the quality of tourism activities.

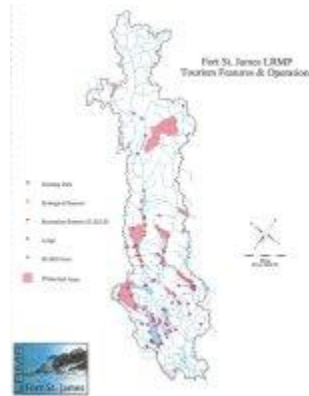
- ➔ Provide access to tourism areas that are consistent with the recreational experience of the site (i.e., good road access to a boat launch, trail development along a portage route).
- ➔ Consider 'sound sensitive' areas when conducting resource development and tourism activities.
- ➔ Consider 'sensitive recreational experiences' in resource development and tourism activities. Use public participation to determine appropriate types of adjacent buffers (i.e., strip harvesting along a viewscape).
- ➔ Address effects of tourism activities on ecological integrity (i.e., wildlife disruption, damage to plant communities, water quality).
- ➔ In tourism planning, consider compatibility of existing values relative to present and potential trail and site uses and users.

Objective — Maintain opportunities for tourism operations and development.

- ➔ Develop a Tourism Plan that recognizes and provides for a variety of tourism opportunities. Where appropriate:
  - ◆ maintain opportunities for diversification.
  - ◆ maintain opportunities for current operations.
  - ◆ ensure new tourism developments consider other resource uses.
  - ◆ where appropriate and determined by public demand, encourage the development of new accommodations.
  - ◆ ensure new or secondary access considers the management intent of the area.
- ➔ Prior to the development of a Tourism Plan, develop interim management strategies which recognize the above-noted strategies.

Objective — Increase communication and consultation levels between tourism operations and other resource users.

Objective — Evaluate Commercial Backcountry Recreation (CBR) proposals with environmental, economic, and social criteria consistent with provincial legislation, policies, and local planning processes.



### 3.15 Recreation

Recreation opportunities abound within the Fort St. James planning area. This area supports an abundance of natural resources, spectacular views, a rich cultural history, and the entire spectrum of access opportunities — all of which attract visitors both globally and locally.

In addition to supporting area tourism operations, the recreation values of the planning area provide important sources of year-round enjoyment for the local residents. These values contribute significantly to the Fort St. James economy.

Lake-based recreation is currently the major focus of many recreational pursuits. This importance is reflected through the development of a lakes table for each individual Resource Management Zone. Recreational access to some of the lakes is also addressed in individual Resource Management Zones.

BC Classified Waters contribute significantly to BC's world class fishing reputation. The Classified Waters licensing system was created to preserve the unique fishing opportunities provided by these waters. Within the Fort St. James planning area, the Lower Sustut River (September 1 - October 31) and the Kluatantan River (year round) are Classified Waters.

The resource attributes associated with Classified Waters to be considered in the implementable objectives and strategies include, but are not limited to:

1. good water quality
2. very good fisheries
3. uncrowded angling experience
4. pristine or near pristine river viewscape

5. minimal or no disturbance caused by visual modifications and resource extraction activities

These resource attributes should be recognized in development plans.

The Fort St. James LRMP makes reference to access management for recreation opportunities and experiences, both at the general management objectives level and within specific resource management zones. The intent of the direction is to give guidance for recreational opportunities and experiences over the term of this plan. It is recognized that specific resource developments may not be precluded, and that recreation values may change for periods of time as roads for resource development are built and deactivated. Recreation values will be addressed in all resource development plans as directed at the Resource Management Zone level.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Recreation within the planning area:

Objective — Manage for a variety of recreational experiences across the landscape and within each Resource Management Zone.

- ➔ Identify visual management areas, to manage the aesthetic characteristics of wilderness-based recreation (including angling, hunting, wildlife viewing and water-based recreation).
- ➔ Endorse the diversification of recreation and tourism opportunities where appropriate (both commercial and non-commercial).
- ➔ Identify, survey and map heritage and existing trails/sites, documenting their existing value(s), seasonality of use and type of use (i.e., hiking, bicycling, ATV use, motor biking, horseback riding, snowmobiling and snowshoeing).
- ➔ Promote appropriate use of Forest Service Recreation Sites during hunting season.

Objective — Assess needs for new recreational trail/site development, in consideration of other resource values.

- ➔ Assess the potential for promoting or restricting certain areas for ATV and snowmobile use.

Objective — Maintain the quality of recreational activities.

- ➔ Provide access to recreational areas that are consistent with the recreational experience of the site (i.e., good roaded access to a boat launch, trail development along a portage route).
- ➔ Consider 'sound sensitive' areas when conducting resource development and recreational activities.
- ➔ Consider 'sensitive recreational experiences' in resource development and recreational activities. Use public participation to determine appropriate types of adjacent buffers (i.e., strip harvesting along a viewscape).

- ➔ Address effects of recreational activities on ecological integrity (i.e., wildlife disruption, damage to plant communities, water quality).
- ➔ In recreation planning, consider compatibility of existing values relative to present and potential trail and site uses and users.
- ➔ Address the maintenance of the resource attributes and recreational experience associated with Classified Waters in resource development plans.

Objective — Manage recreational opportunities on identified lakes.

- ➔ Complete a lakeshore classification, using guidance from the Lakeshore Classification Guidebooks (which includes assessment of recreation values) and incorporate direction from this Land and Resource Management Plan.
- ➔ Promote appropriate access to lakes.
- ➔ Maintain opportunities for recreational lot development on appropriate lakes, including those that are neither sensitive nor remote.
- ➔ Maintain the ability to access private lots.

### 3.16 Visual Quality

Soaring mountain ranges, jewel-like lakes, sweeping forests and an abundance of natural resources distinguish the Fort St. James planning area, creating a visual backdrop for resource management activities. This spectacular visual quality is a main attraction for residents and tourists alike, providing a base for many local tourism operations.

Central Interior coniferous forests are naturally subject to alteration by fire, windthrow, insect infestations and other occurrences, but in today's managed forests timber harvesting is the primary cause of visible changes on the landscape. The creative integration of sound forest management within scenic areas will provide both challenges and opportunities to the resource-based industries. It is also recognized that situations such as forest pests require management practices that may affect scenic quality.

**This LRMP intends that visually important areas with tourism, recreational or other significance be managed in a manner that recognizes those values.**

One of the tools for setting parameters for visual quality is the establishment of Visual Quality Objectives (VQO's) under the *Forest Practices Code of British Columbia Act*. The Working Group recognizes that the designation of visual quality objectives is a technical exercise, and has decided to defer their establishment to the operational planning level.

The LRMP recognizes that there may be situations in which circumstances such as forest pest infestations, fires or major windthrow events, may require re-assessment of visual requirements. Establishment of a 'master VQO' means that a range of visual

quality objectives within the viewscape of a lake or road will exist (due to topographic variations), with an emphasis towards one type of VQO designation. Specific recommendations regarding visual sensitivity around lakes and other areas are made within the management objectives for each zone.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Visual Quality in the planning area:

Objective — Manage for visual quality. (This LRMP intends that visually important areas with tourism, recreational or other significance be managed in a manner that recognizes those values.)

- ➔ Identify visually sensitive areas and develop visual quality objectives for the plan area. Special emphasis should be placed on resource activities adjacent to proposed Protected Areas, complementing future Management Plans for Protected Areas.
- ➔ Identify and assess visual values and integrate these into resource management practices.
- ➔ Where established, Visual Quality Objectives (VQO's) will apply to commercial timber harvesting and should guide incidental timber cutting associated with other resource user activities.
- ➔ For those lakes and rivers that currently do not have Visual Quality Objectives (VQO's), consider the potential high scenic value in resource management operations and prioritize them for the establishment of Visual Quality Objectives (VQO's).
- ➔ Address the maintenance of the visual quality associated with Classified Waters in resource development plans.

### 3.17 Heritage and Culture

The rich cultural and heritage resources of the Fort St. James planning area reflect past and present uses by both aboriginal and non-aboriginal people.

Three categories of cultural and heritage resources are evident:

1. archaeological sites containing physical remains of past human activity
2. historical sites often consisting of built structures or localities of events significant to living communities
3. traditional use sites which often lack the physical evidence of human-made artifacts or structures, but maintain cultural significance for living communities.

Archaeological investigations over the past 30 years have resulted in the recording of 69 archaeological sites within the planning area. Sites have been identified at Fort St. James and the headwaters of the Stuart River, along portions of Stuart Lake, Takla Lake, the Driftwood and Skeena rivers and at Chuchi Lake. The locations and significance of many more unrecorded sites are preserved through memory and native oral traditions.

Historical sites of interest date from the early fur trade and homestead period to much earlier points in time. Along the shores of Stuart Lake canoeists can find evidence of numerous prehistoric pictographs, or trace Simon Fraser's route with the date of his arrival in New Caledonia etched in rock. The original Fort St. James, established in 1806 by Simon Fraser, is an important historical site in the plan area. The construction of the Fort marked the beginning of Hudson Bay fur trading activities in the Central Interior. For a time the Fort was not only the main fur trading post in the area, but was considered the capital of New Caledonia. First Nations' fish and fur trading trails were well established throughout the area by this time, running from the Skeena River to the Alberta plains.

More recent historical sites include the Sowchea Creek settlement and homestead sites, and Theodora Stanwell-Fletcher's cabin at Tetana Lake on the Driftwood River. Theodora and her husband John produced an important faunal monograph for the B.C. Provincial Museum. **Some Accounts of Flora and Fauna of the Driftwood Valley Region of NW BC**, (published in 1943), is still considered a good historical biodiversity reference for the area.

First Nations traditional sites may represent a number of different uses or significance. These sites may be sacred, representing a past event of cultural significance, or may be of a more legendary nature. Resource use sites include areas used for hunting, fishing and berry picking. Examples of these sites include stone circles once used as fire hearths, trees in which salmon skins which previously held oil still hang, and underground caches.

Natural heritage resources in the plan area include paleontological sites (containing fossils), ochre beds and lava pits. Many of these sites are still used today by First Nations for cultural and spiritual purposes.

This plan is consistent with the *Heritage Conservation Act*, and the *Forest Practices Code of British Columbia Act*, which provide guidance for the incorporation of assessments of archaeological sites and traditional uses into operational and local level plans.

**The Land and Resource Management Plan Working Group recognizes the importance and the fragility of cultural and heritage sites, and recommends the management intent to identify sites, and work together with First Nations, historical and government groups to inventory and maintain the area's cultural and heritage resources.**

It is the intent of the Working Group that the recommendations contained within this plan will avoid infringement on treaty and aboriginal rights. In addition to the application of policies which facilitate identification and protection of aboriginal rights,

this plan recommends that full consideration be given to aboriginal interests and concerns when interpreting and implementing the plan. First Nations' input will be requested through plan review and operational plan referral processes.

The following recommendations have been developed by the Working Group to provide General Management Direction for managing Heritage and Cultural resources within the Fort St. James planning area:

Objective — Identify and manage for heritage and cultural features.

- ➔ Manage impacts to archaeological sites through the application of existing regulation, policy and legislation.

Objective — Provide opportunities for continuance of traditional activities.

Objective — Recognize First Nations cultural values.

- ➔ Support traditional use studies (these studies map and inventory traditional territories and associated cultural and resource uses, including trails, travelling camps, fishing sites, resource gathering areas and historic village sites).

### 3.18 Protected Areas

The Fort St. James LRMP Working Group direction is consistent with direction provided in the Protected Areas Strategy (PAS) and by the Resource Management Division (RMD). In June of 1995 RMD directed the seven LRMP tables in the Prince George Forest Region and the Mackenzie Planning Table to recommend an aggregate 9% of the region for Protected Area status. The Fort St. James LRMP was later directed to work towards a figure of 5.8% (184,000 ha), refining the original areas of interest put forward by the Prince George Regional Protected Areas Team (RPAT). Prior to completion of the Fort St. James LRMP only 0.023% (732 ha.) of the land base was protected in four Provincial Parks.

The Protected Areas system comprises a family of protected areas. The system, rather than individual areas, provides for the diversity of ecosystems, special features and outdoor recreation opportunities and experiences sought. As such, not all uses are appropriate or compatible within every Protected Area.

An individual activity, service or use may not be appropriate within all areas of a Protected Area. Individual Protected Areas may be zoned to provide optimum protection to Protected Area values. Zones within Protected Areas will range from areas which exclude public access in order to protect fragile and vulnerable ecosystems and sensitive, rare or endangered species, to zones which accommodate and/or enhance recreational and cultural opportunities and experiences.

Protected Areas are established in perpetuity so that the ecological systems they encompass can continue to evolve with a minimum of intervention. Active management/habitat manipulation may be acceptable when the structure or formation of ecosystems is seriously altered, and manipulation is the only possible or best alternative available to restore ecological integrity.

Use of Protected Areas will be encouraged where appropriate and where consistent with the principle of maintaining ecological integrity, in order to realize the recreational, educational, cultural, tourism and health benefits that Protected Areas can provide. Compatible activities and uses should draw their meaning from association with, and direct relation to, the natural and cultural resources of the Protected Area. All uses of Protected Areas must be assessed in regard to their impact on the ecological systems and the key natural, cultural and recreational values of particular interest.

Land use activities and traditional cultural uses that have changed a landscape and have acquired significance in their own right will be recognized and respected.

The Protected Areas Strategy respects aboriginal rights and interests that exist in British Columbia. Aboriginal peoples may use Protected Areas for sustenance activities and traditional ceremonial and spiritual practices, subject to conservation objectives.

Developments within Protected Areas should be fully compatible with the principles of maintaining ecological integrity and minimum intervention with natural processes. Developments should directly complement and be integral to the opportunities being provided and complement the purpose, objectives and role of the particular Protected Area. Intensive recreational and tourism developments should occur in adjacent areas outside of Protected Area boundaries, wherever possible.

Recognition and special consideration will be given to existing tenures, licences, authorizations, and public use where uses are compatible with the objectives for which the area was established. Uses which have been approved for continuation in Protected Areas will be fully respected.

Protected Areas are not islands. They exist as part of larger ecosystems and cultural landscapes. Therefore management decisions, both inside and outside of Protected Areas, should be co-ordinated and integrated to the greatest extent possible while recognizing that resource development activities outside of Protected Areas are appropriate and necessary.

Protected Areas are a public trust and opportunities for the public to provide input into the planning and management of the Protected Areas system and individual Protected Areas must not be abridged. Planning and management should be done in partnership with key public stakeholders and government resource agencies, with BC Parks being the lead agency.

Protected Areas management plans will be established through an open public process, with BC Parks co-ordinating the consultative process. Table 6 details many of the activities that are compatible with Protected Areas.

Once the LRMP has been approved by Cabinet, the Protected Area boundaries are approved as well. Legal designation occurs through a Cabinet Order-in-Council and is then proclaimed by the Lieutenant-Governor. Jurisdiction is then transferred to BC Parks. There can be a time lag from Cabinet approval to proclamation.



When the Park Act is next debated in the Legislature those Protected Areas which have been designated as Provincial Parks will be converted from Order-in-Council status to Legislated status. This strengthens their protection for the long term.

The following recommendations have been developed by the Working Group to provide General Management Direction for Protected Areas in the planning area:

**Objective — Manage Forest Health within Protected Areas.**

- ➔ Preclude all commercial timber harvesting (including salvage operations) in Protected Areas. In the event of a severe forest health situation, BC Parks should consult with the Ministry of Forests to develop management strategies considering all other values identified in this LRMP.
- ➔ Continue to monitor forest health by the Ministry of Forests in co-operation with BC Parks.
- ➔ Future Parks management planning processes are expected to provide further clarification to forest health management strategies during implementation of this Plan.

**Objective — Manage existing mineral tenures within Protected Areas.**

- ➔ Mineral claims that lie within proposed Protected Areas will be excluded from the Protected Area and remain open for exploration. These areas, upon forfeiture of the claim(s) will then be included in the Protected Area.
- ➔ Only other uses compatible with Protected Areas will be recommended.
- ➔ Preliminary exploration activities should continue to be accessed by helicopter or non-roaded methods.
- ➔ Road and other linear development proposals to access mineral properties excluded from Protected Areas designated by the Environmental Land Use Act should minimize impacts on Protected Area values. Access control, to allow the use of roads by mineral tenure holders only, is necessary.
- ➔ If mines are developed on tenures excluded from Protected Areas, full compliance with the mine development review process will be required. The BC Environmental Assessment and Federal Environmental Review Processes should recognize the identified values in the Protected Areas.

**In areas adjacent to Protected Areas, the intent of this LRMP is to manage resource development to recognize and consider the intended objectives of the adjacent protected area and any Park Management Plans for that area.**

The Fort St. James LRMP Working Group recommends seven large and 15 small (Goal 2) Protected Areas, for consideration under the Protected Areas Strategy. Areas

recommended by the Working Group for protection achieve provincially established criteria for representation.

Descriptions of each Protected Area are included in this plan. Statistical information from each Protected Area has been pulled from the descriptions and put into tables:

- ◆resource values
- ◆lakes and recreation values

Tables are available in the **Technical Appendices** which are bound as a separate document, but constitute a part of the Fort St. James LRMP.

**At the July 1997 meeting the Working Group reached consensus on seven large and 15 small (Goal 2) proposed Protected Areas, totaling 5.9% of the LRMP land base, thereby meeting the objectives of the Protected Areas Strategy.**

The Goal 1 Protected Areas recommended in this plan are:

- ➔ **Stuart River Protected Area** (5,575 hectares) — Key values include a small elk population and a migration corridor for sockeye salmon.
- ➔ **Fleming Protected Area** (41,590 hectares) — Key values include wetland complexes that serve as a stopover for migrating waterfowl and high wildlife values.
- ➔ **Blanchet Protected Area** (24,099 hectares) — Key values include significant caribou over-wintering and calving areas, suitable mountain goat habitat, and excellent representation of alpine flora.
- ➔ **Nation Protected Area** (18,732 hectares) — Key values include the Nation Lakes canoe route and associated visual and recreation values.
- ➔ **Omineca Protected Area** (6,707 hectares) — The broad U-shaped valley provides significant riparian habitats and recreation values, as well as connectivity with the proposed Protected Area in the Mackenzie planning area.
- ➔ **Damdochax Protected Area** (8,097 hectares) — Key values include very important wildlife habitat, a wetland riparian complex that provides significant habitat for grizzly bear and moose, and the terminus for a small but significant run of sockeye salmon.
- ➔ **Upper Sustut/Thumb Protected Area** (77,486 hectares) — The inaccessible basaltic escarpment called “the Thumb” affords good habitat for mountain goats. The remainder of the area provides large tracts of pristine wilderness, with habitat for caribou, grizzly and black bear. The Atsitka and Sustut rivers have migrating populations of salmon and steelhead.

The Goal 2 Protected Areas recommended in this plan are:

- ➔ **Mt. Pope Protected Area** (1,944 hectares) — Key values include mule deer winter range, Douglas-fir representation, some unique plant and animal species associated with limestone rock formations, and significant recreation values.
- ➔ **Mudzenchoot Protected Area** (637 hectares) — A dry meadow complex with some unique plant species.

Maps and descriptions of each of these areas are included in the Resource Management Zone section of this document.

A further grouping of thirteen small (Goal 2) Protected Areas, totalling 669.3 hectares, have been identified on sandy beaches and points of interest on Stuart, Trembleur, Takla, Tchentlo and Chuchi Lakes. These are sites that will provide moorage in remote areas on large lakes in the planning area. A map showing locations of these sites is included on page 203.

The following existing areas are to remain as Protected Areas:

- Paarens Beach Provincial Park (Class A Park)
- Stuart Lake Provincial Park (Class A Park)
- Takla Lake Marine Provincial Park (Class A Park)
- Takla Lake (Ecological Reserve)
- Sowchea Bay Recreation Area (recommended for upgrade to a Class A Park).

Maps and descriptions of these areas are included in the Resource Management Zone section of this document.

**Table 6 Compatibility of Activities, Services and Facilities in Protected Areas**

<u>ACTIVITY/USE/FACILITY</u>	<u>COMPATIBILITY</u>	<u>COMMENTS</u>
<b>Logging</b>	Not allowed.	As approved by Cabinet (PAS).
<b>Mining</b>	Not allowed.	As approved by Cabinet (PAS).
<b>Hydroelectric Development</b>	Not allowed.	As approved by Cabinet (PAS).
<b>Grazing</b>	Compatible subject to the Management Plan	As approved by Cabinet. Existing tenures are normally replaceable and transferable. No new tenures to be issued except for expressed management purposes as defined by a Protected Area Management

		Plan.
<b>Hunting</b>	Compatible subject to the Management Plan	
<b>Fishing</b>	Compatible subject to the Management Plan	
<b>Fish Stocking and Enhancement</b>	Compatible subject to the Management Plan	The use of species or stocks not native to the watershed will not be permitted.
<b>Trapping</b>	Existing tenures grandfathered.	May be permitted for expressed management purposes as defined by Protected Area Management Plan. Existing tenures are renewable and transferable.
<b>Horse Use</b>	Compatible subject to the Management Plan	Limited to designated zones and/ or trails.
<b>Pack Animal Use</b>	Compatible subject to the Management Plan	Limited to designated zones and/or trails.
<b>Water Control Structures</b>	Compatible subject to the Management Plan	Only in intensive recreation zones to enhance recreational opportunities or for expressed management purposes as defined by Management Plan. Infrastructure existing at the time of area establishment normally permitted to remain.

<b>Powerline/Transmission Line and other Rights-of-Way</b>	Not allowed.	Allowed if there are no practical and feasible alternatives. If present at time of area establishment, normally allowed to continue.
<b>Commercial Guiding (Hunting, Fishing, Nature Tours, River Rafting)</b>	Compatible subject to the Management Plan	Permits from managing agency will be required.
<b>Lodges /Cabins / Guest Ranches / Backcountry Huts</b>	Compatible subject to the Management Plan	
<b>Roads within Protected Areas</b>	Compatible subject to the Management Plan	New road developments must be identified in Management Plans.
<b><u>Off-Road Activities:</u></b>		
<b>Snowmobiling</b>	Compatible subject to the Management Plan	Limited to designated zones and/or trails.
<b>Mechanical Activities (vehicles which are not motorized (i.e. mountain bikes)</b>	Compatible subject to the Management Plan	Limited to designated zones and/or trails.
<b>Water: Motorized Activities</b>	Compatible subject to the Management Plan	
<b>Aircraft Access</b>	Compatible subject to the Management Plan	For destination access purposes.

<b>Heli-Skiing</b>	Compatible subject to the Management Plan	
<b>Heli-Hiking</b>	Compatible subject to the Management Plan	
<b>Cat-Assisted Skiing</b>	Compatible subject to the Management Plan	
<b><u>Fire Management:</u></b>		
<b>Wildfire Management</b>	Compatible subject to the Management Plan	Wildfires are a naturally occurring ecological process. Policy recognizes the need to protect public safety/facilities/values on adjacent lands, etc.
<b>Prescribed Fire Management</b>	Compatible subject to the Management Plan	Only for expressed management purposes as defined by a Protected Area Management Plan.
<b>Fire Prevention and Preparedness</b>	Compatible subject to the Management Plan	Only for expressed management purposes as defined by a Protected Area Management Plan.
<b>Forest Health</b>	Compatible subject to the Management Plan	
<b><u>Tourism Related Infrastructure:</u></b>		
<b>Resorts</b>	Not compatible	Facilities existing at time of area establishment will remain.

<b>Exotic Organisms Control</b>	Compatible subject to the Management Plan	
<b>Scientific Research</b>	Compatible subject to the Management Plan	Manipulative activities normally not permitted. Specimen collections only permitted if results in information providing increased scientific knowledge (i.e. geology, forestry, etc.) or protection and/or understanding of protected area values. Permits from managing agency will be required.
<b>Ecosystem and Habitat Restoration</b>	Compatible subject to the Management Plan	
<b>Communication Sites</b>	Normally not compatible	May be considered if essential for Protected Area Management Communication needs or if there are no practical or feasible alternatives. If present at time of establishment, normally allowed to continue.

## 4.0 Resource Management Zones

### Definitions and Designations

Resource Management Zones (RMZ's) have been established across the planning area in order to develop management appropriate for the resource values of smaller areas.

The Working Group developed 36 Resource Management Zones (including Protected Areas) for the Fort St. James LRMP planning area. Boundaries were drawn according to the resource values found within each zone. Zone boundaries were drawn to encompass a smaller landbase that possesses related values, and that require inter-related management.

Descriptions for each of the 36 resource management zones in the Fort St. James planning area are included in this section. Statistical information from each zone has been pulled from the descriptions and put into tables detailing:

- ➔ resource values
- ➔ lakes and recreation values

These tables are available in the Technical Appendices which are bound as a separate document, but constitute a part of the Fort St. James LRMP.

Each Resource Management Zone section of this document contains:

- ➔ a description of resource values within that zone
- ➔ an intent statement
- ➔ objectives and strategies
- ➔ a map of the zone

Overall management direction for each Resource Management Zone consists of General Management Direction plus site-specific objectives and strategies. General Management Direction also applies where a site-specific strategy is not identified for a particular resource value in a Resource Management Zone. Where there is no site-specific objective or strategy for a particular resource value a reference has been made to General Management Direction. A cross-reference between the General Management Direction and the specific Resource Management Zone direction is necessary in order to gain an accurate understanding of the Working Group's intent for each zone.

Strategies are identified by a bullet (•) and accompany most objectives. Strategies may be further subdivided, as indicated by diamonds (◆).

Resource Management Zone designations recommend a general management intent for each zone, to be applied across the entire zone. Objectives and strategies provide specific direction to maintain the overall zone intent.

Each management intent is based on zone-specific resource values, and on the types and levels of activity currently and potentially occurring in each zone.

Some zones may have areas within them that require different types of management. Within a Resource Development Zone, for example, there may be a sensitive or scenic area that requires a management strategy different from the overall zone intent.

The Fort St. James LRMP Working Group used the following designations in recommending management direction for the planning area:

- Settlement/Agriculture
- Multi-Value
- Resource Development
- Special Management



## Protected Area

### Settlement/Agriculture Resource Management Zone

A relatively large area of lands within the zone are currently used or proposed for farming, and/or are used or proposed for settlement in an Official Community Plan, Crown Land Plan, or LRMP. Management on these lands integrates Crown lands with the historic pattern of settlement and agriculture in the planning area, and management of natural resource values and resource development is compatible with this.

### Resource Development Resource Management Zone

These are lands with existing or future potential for intensive resource development, and are managed with consideration of other resource values and within the guidelines of specific zone objectives and strategies.

Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

### Multi-Value Resource Management Zone

These lands are managed to integrate a wide range of resource values. Access within these zones is relatively unrestricted, with the exception of any land that may need special management considerations.

### Special Management Resource Management Zone

These lands are managed for a wide array of resources, often by dividing the RMZ into subzones. Resource development (including roaded access development) may proceed as long as impacts on other resource values are minimized and resource values are maintained.

### Protected Area Resource Management Zone

Protected Areas are established in perpetuity so that the ecological systems they encompass can continue to evolve with a minimum of intervention. The Protected Areas system comprises a family of protected areas. The system, rather than individual areas, provides for the diversity of ecosystems, special features and outdoor recreation opportunities and experiences sought. As such, not all uses are appropriate or compatible within every Protected Area.

**RMZ map scales vary throughout this document, to allow consistent sizing of**

## maps

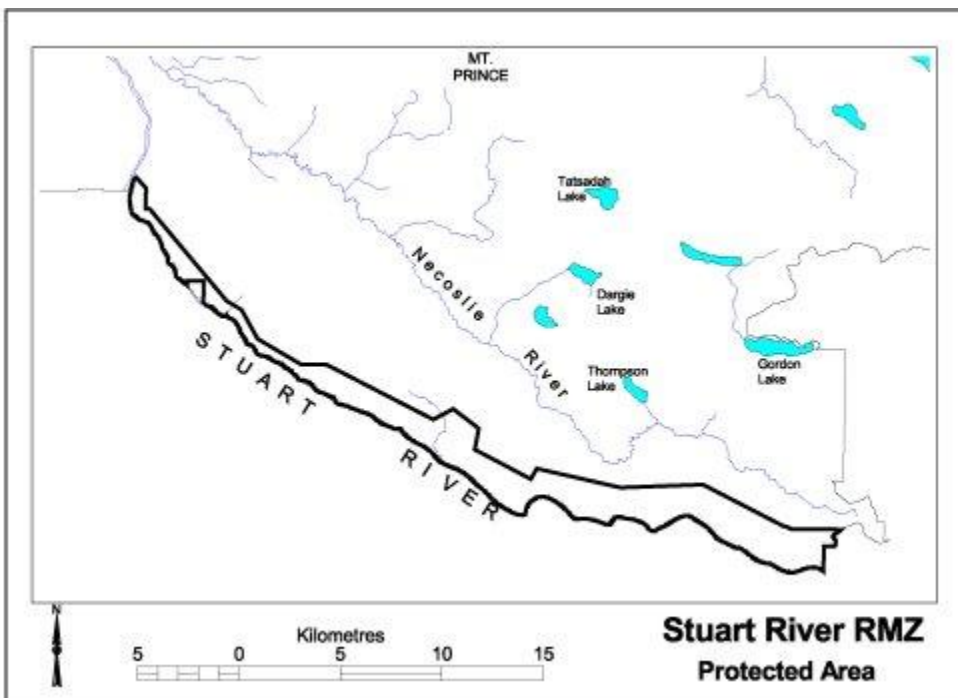
### 4.1 Stuart River

#### Resource Management Zone (Protected Area)



Total Area: 5,575 hectares

The Stuart River Protected Area is shared by the Vanderhoof and Fort St. James LRMP planning areas. Less than half of the Protected Area is accessible by roads. Highway 27 crosses the Stuart River at the Stuart Lake outlet, with a few private land access points further down stream. Access to the area also exists by boat, along Sturgeon Point Road, and from some areas on Highway 27 (outside of the Fort St. James Forest District). This area is characterized by a number of benches and south-facing slopes rising up from the Stuart River.



The Stuart River provides excellent, relatively undisturbed large river habitat, rich with aquatic life. The river receives high sediment loads and treated sewage outflow from the Necoslie River, and from the Fort St. James municipal sewage treatment plant. Sensitive soils along the river contribute to further sedimentation.

The Stuart River Protected Area provides a virtually undisturbed corridor for wildlife. Valuable habitat is provided for bald eagles, waterfowl, cavity nesting birds and mammals, and other wildlife. The area is home to a small elk herd. An extensive mineral lick is associated with open natural grasslands on the north side of Stuart River.

There are high trumpeter swan winter values in riparian habitat along the Stuart River. The steeper south-facing slopes are generally composed of aspen and some mixed forest types, providing valuable winter habitat for trumpeter swans, elk, moose and deer. The Stuart River is an excellent wildlife corridor, and provides important winter range values for ungulates.

The Stuart River Protected Area is home to a number of threatened (blue-listed) species, including American bittern, trumpeter swan, bald eagle, grizzly bear, and fisher. There is one endangered (red-listed) habitat, dominated by Douglas-fir, saskatoon and false sarsaparilla [technically known as SBS dw3 (06)].

The Stuart River and its connecting streams provide valuable habitat for rainbow trout, bull trout and various species of coarse fish.

The river also provides habitat for two species of salmon and a population of endangered (red-listed) white sturgeon. The Stuart River is a major corridor for sockeye salmon on their way to their spawning grounds. Salmon are present in the Stuart River (chinook and sockeye), Bearcub Creek and Dog Creek.

Recreational activities in the area include boating, canoeing, fishing, and wildlife and fish viewing. The viewscape from the Stuart River has high visual sensitivity.

Timber values are mainly moderate throughout, with lodgepole pine as the leading tree species. Other species include aspen, spruce and Douglas-fir.

On the adjacent Vanderhoof side of the Protected Area there are remains of the historic exploration route used by Simon Fraser, and a major New Caledonia fur trade canoe brigade route. The Stuart River was an important travel route for First Nations people. There are several identified Carrier archaeological sites, and a provincially significant massacre site at Chinlac, in the Vanderhoof LRMP portion of the proposed Protected Area. An old village site was situated on the north side of the river, at the river crossing on the trail from Vanderhoof to Fort St. James.

There is high to moderate potential for limestone, but the aggregate resource potential is unknown. There is moderate industrial mineral potential in portions of the Protected Area. The Dog Creek designated placer area extends into the northern end.

There is some private land which is excluded from the Protected Area, while two percent of the area was included in the Agricultural Land Reserve. Some areas are used for grazing livestock.

**Objectives and strategies for this Protected Area are found in 3.18 General Management Direction: Protected Areas**

## 4.2 Necoslie Resource Management Zone



Total Area: 48,061 hectares

The Necoslie Resource Management Zone forms the southeastern end of the Fort St. James planning area, and is bordered by the Fort St. James and Salmon Resource Management Zones, the Vanderhoof Forest District boundary, and the Stuart River Protected Area. It is one of the few zones in the planning area where farming and forest harvesting activities operate in close proximity to each other.



The Necoslie zone is home to a small, somewhat unique herd of Rocky Mountain elk, numbering 15 to 20 animals. Their summer and fall habitat includes south-facing benches on the Necoslie and Stuart rivers, and natural grasslands.

The Necoslie Forest Service Road is the only major road in the zone.

While fisheries data has not been collected for all lakes in the zone, some smaller lakes are expected to have sensitive fisheries. Headwater lakes likely support fish, and suitable spawning habitats are expected to be limited. The Necoslie River has high sediment loads, and very low fisheries values.

Hunting and fishing are the main tourism activities, while recreational activities include hiking, camping, and horseback riding. Five trappers and three guide outfitters are licensed to operate.

The industrial mineral assessment of the zone is classed as high and the metallic assessment of the zone is classed high except for a relatively small area of metallic moderate along the southwestern boundary. A limestone prospect and a limestone past producer are located in the area. Aggregate resources are always an especially important consideration near settlement areas because of the local demand generated by industrial, commercial, public and residential construction projects. There are no existing tenures in the zone.

The historic Omineca Trail heads through the Necoslie zone, stretching from the old Noonla Village site near Vanderhoof, into Fort St. James. This trail historically offered access to the north from the Nechako Valley for First Nations and mining prospectors.

Necoslie RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

## **Community Stability and Development**

Refer to General Management Direction.

## **Biodiversity**

Objective - Maintain the viability of existing natural grasslands.

- ➔ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire or, in the event of use, rehabilitate to a natural state

## **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Refer to General Management Direction.

## **Wildlife Habitats and Populations**

Objective — Maintain elk habitat.

- ➔ Identify, survey and map key habitat areas for elk
- ➔ Manage/minimize access to habitat areas used by elk.

Objective - Manage wetland habitats shown on the habitat value map, near north end of zone.

- ➔ Minimize altering natural drainage patterns that impact on wetlands.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective Manage access adjacent to the Stuart River proposed Protected Area.

- ➔ Consider Park Management Plan objectives when planning/developing industrial access immediately adjacent to the Protected Area, and manage access compatibly.

Objective Manage ATV and snowmobile access.

- ➔ Monitor ATV and snowmobile use for potential impact on grasslands, wetlands, wildlife and other sensitive habitats, and mitigate any problems that may occur.

## Forest Stands

Objective — Optimize commercial timber production across the zone, including in riparian management areas where appropriate.

Objective — Implement silviculture strategies to produce a broad spectrum of timber products.

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Promote intensive silviculture where appropriate.
- ➔ Promote the use of low impact silviculture systems where appropriate, to maintain site productivity across this zone, while maintaining a sustainable forest resource.

Objective Maintain timber harvesting and forest management opportunities.

- ➔ In areas of valuable elk habitat, develop innovative harvesting systems to achieve a sustainable long term supply of timber.
- ➔ Investigate the appropriateness of seeding road right-of-ways with preferred elk forage species.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Objective- Allow for future agricultural opportunities.

- ➔ Assess arability in this zone as per the General Management Direction for Agriculture.

Objective - Maintain availability of range land for the purpose of grazing.

- ➔ Recognize and provide for the continuation of existing range land uses and expansion opportunities.
- ➔ Identify and manage the movement of livestock in sensitive wildlife areas.

## Tourism

Refer to General Management Direction.

## Recreation

Objective - Develop recreational lots where compatible with other values.



Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

Objective - Promote a variety of recreational opportunities.

Update current recreation inventory and identify potential areas for future recreational use and development.

Plan for the maintenance of non-roaded recreational access and the associated recreational experiences for a number of small quality fisheries lakes. Inventory and identify these lakes for forest development planning.

Maintain the remote walk-in recreational access at Dargie, Donald, Thompson, Tatsadah and Gordon lakes.

Assess implications of current levels of recreational use at Harry Lake on fishery. Inventory the fisheries values at this lake and prepare a management plan if required to mitigate negative impacts. Managing access may be considered.

### Visual Quality

Refer to General Management Direction.

### Heritage and Culture

Objective — Manage to maintain the historic Omineca Trail, while allowing for recreational use.

Locate and map the Omineca Trail.

Develop and implement a management plan to maintain the values of the trail.

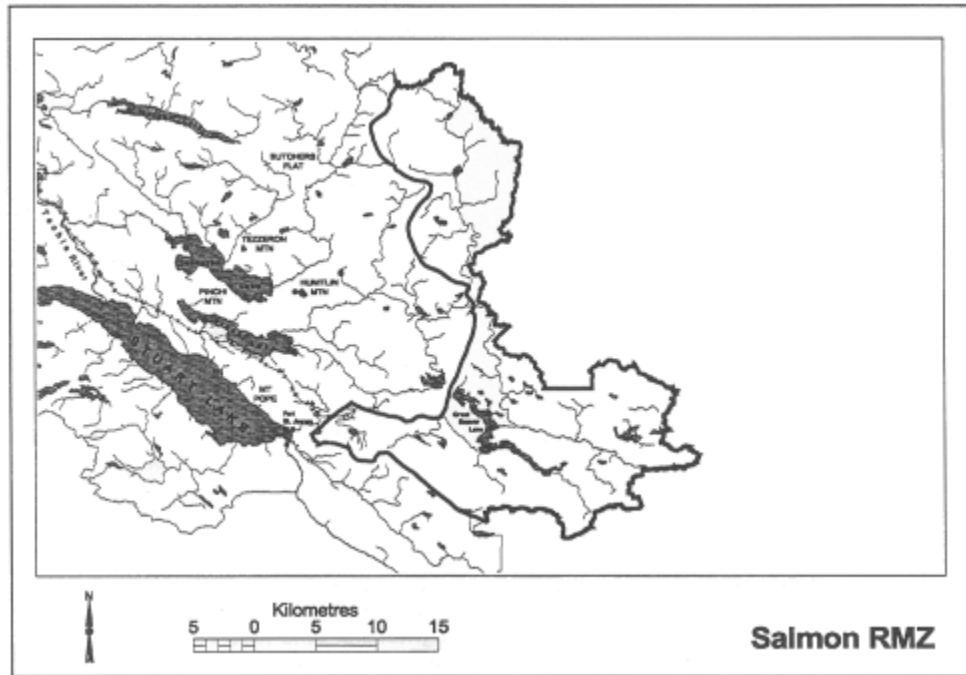
Re-establish the trail route as necessary.

## 4.3 Salmon Resource Management Zone



Total Area: 181,514 hectares

Close to the community of Fort St. James, the Salmon Resource Management Zone includes all of the Salmon River watershed within the Fort St. James Forest District. Two-wheel drive access is prominent throughout this zone, and roaded access is increasing, including east to Prince George and north to Bear Lake. The British Columbia Railway runs through the middle of this zone.



The Salmon zone is known for its lakes and associated recreational activities. Lakes include Great Beaver, Bugle, Tureen, and Teardrop, and there are numerous small lakes, many of which have recreational access.

Timber values are high throughout the zone, with lodgepole pine as the leading species. Other species include spruce, balsam, deciduous, and Douglas-fir. Spruce and balsam stands dominate the Salmon River headwaters, while pine stands predominate further south. The forest cover pattern has historically been developed through the occurrence of frequent wild fires, with fires generally of a large size (+500 ha).

Timber harvesting is creating a regular age class distribution, with a relatively equal distribution of immature, mature, and old-growth forests. Harvesting to date has been done using clearcuts of 60 hectares and larger. The first pass volume has been harvested north and east of Great Beaver Lake. In the past there has been timber harvesting to lake shores but little harvesting has occurred adjacent to the Salmon River. To date 11.92 % of the total forest area has been logged. Spruce beetle infestations in the Salmon Lake area resulted in increased harvesting during the early 1990's.

Predominantly moderate wildlife habitat values are primarily associated with the lodgepole pine-dominated forests. Wildlife species include ungulates, bear, furbearers,

porcupine, Northern goshawks, and owls. The south-facing slopes along the Salmon River support diverse habitat types, including Douglas-fir. The southern part of the zone provides good ungulate winter range, including valuable riparian habitat along the Salmon River. Several blue-listed plant communities are found in this zone, near Nahounli Lake. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre).

Spruce-balsam types and associated good furbearer habitat values are characteristic of the upper Salmon River. The Great Beaver Lake area provides good ungulate winter range habitat. Riparian and upland habitats immediately adjacent to the Salmon River provide a wildlife movement corridor. Valuable riparian/wetland habitat features are found in association with the wetlands, providing valuable habitat for ungulates, bear, furbearers, waterfowl, birds of prey, songbirds, reptiles and amphibians. Localized valuable habitats are associated with the northwest area of Great Beaver Lake, and along the Salmon River.

Increasing numbers of problems for wildlife have arisen in the past twenty years as a result of habitat fragmentation (due to access development) and a reduction in the amount of older age classes (due to forest development). Openings tend to be evenly distributed across the landscape, as a result of a cut/leave pattern of forest harvesting.

The Salmon River supports chinook spawning habitat upstream from Highway 97 to Salmon Lake. The greatest concentrations of spawning adults are present immediately downstream of the Muskeg River confluence and within the vicinity of Great Beaver Lake. Salmon River tributaries, especially the lower reaches, provide valuable rearing habitat for juvenile chinook.

There are several small, unnamed lakes with un-inventoried fish populations. Both Tureen and Teardrop lakes are stocked with rainbow trout.

Recreation and tourism activities include hunting, fishing, camping, canoeing and boating. Recreational use of sections of the Salmon River includes canoeing along the 8 kilometre section between Boot Road and Rikki Road, and fishing. However, the numerous log jams on the river can make it impassable for boating. There is heavy use by hunters in the fall, with one hunting lodge located at Salmon Lake.

There are three guiding licenses and one vacant guiding license area. Silver Lake Outfitters operate a hunting and fishing camp on Salmon Lake. There are also known guiding camps at Boot Lake, just off the Oop Forest Service Road, and at the mouth of Boundary Creek. There are twenty trapping licenses in the zone.

There are eight Forest Service Recreation Sites in this zone, including those at Great Beaver, Tureen, Teardrop, Mossvale, Salmon and Bugle lakes, and the two Forest Recreation Sites on the Salmon River. Most of the sites have good two-wheel drive access, and are heavily used on weekends. BC Lands has identified stretches of shoreline on Great Beaver Lake for future recreational lot development.

Although there are currently no agricultural operations in this zone and no lands within the Agricultural Land Reserve, there is a block of potentially arable land at the midpoint along the west side of Great Beaver Lake.

The industrial mineral assessment of the zone is classed as low in the south half and high and moderate in the north half. The metallic assessment is classed as high in the south and north and moderate in the central part of the zone. Five documented mineral occurrences are located in the area. Commodities include gold, copper, palladium, and mercury. Tenure exists in the northern part of the zone and covers a copper-gold-palladium occurrence.

Fourteen kilometres of the historic Hudson's Bay Brigade trail run through the zone. This unmaintained trail was a transportation route for the Hudson's Bay Company to pack supplies and furs between Fort St. James and the post at McLeod Lake. Portions of the trail have been cleared, but current recreational use is unknown.

#### Salmon RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

### **Water**

Refer to General Management Direction.

### **Fish and Fish Habitat**

Objective — Provide optimum management for salmon streams that feed into the Fraser River system.

- ➔ Support stocking Teardrop Lake with rainbow trout.

## **Wildlife Habitats and Populations**

Objective - Maintain value of high quality habitats located at the northwest end of Great Beaver Lake and along the Salmon River.

- ➔ Identify and refine mapping for key habitat areas, and set objectives for vegetation management in ungulate winter range and feeding areas.

Objective - Manage wetland habitats shown on the habitat value map, near north end of zone.

- ➔ Minimize altering natural drainage patterns that impact on wetlands.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective — Plan and manage access in forest development planning to avoid fragmenting key habitats as shown on the habitat value map.

## **Forest Stands**

Objective — Optimize timber growth across the zone, including in riparian management areas where appropriate.

Objective — Implement silviculture strategies to produce a broad spectrum of timber products.

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

Objective - Endorse forestry-related programs within this zone that continue to provide employment opportunities in the Fort St. James planning area.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective — Develop recreational lots where compatible with other values.

Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

Endorse recreational lot development on Great Beaver Lake.

Objective - Promote a variety of recreational opportunities.

Update current recreation inventory and identify potential areas for future recreational use and development.

Maintain or increase the facilities at the Great Beaver Lake Forest Recreation Site.

Maintain two-wheel drive access to recreation sites at Great Beaver Lake, Bugle Lake, Tureen Lake and Teardrop Lake.

Maintain the remote walk-in access at the small lakes northeast of Great Beaver Lake.

Avoid establishing a Forest Recreation site at Henning Lake and other small lakes northeast of Great Beaver Lake.

Plan to maintain remote walk-in access for a number of small currently unaccessed lakes. Identify these lakes for forest development planning, and inventory their wildlife, recreation, water quality and fisheries attributes.

Objective — Maintain the visual quality of Great Beaver Lake.

Within the viewscape of Great Beaver Lake, utilize harvest design techniques that reduce high visual impact

(Technical notes: Visual Quality objectives for this area range from Partial Retention within the immediate shoreline of the lake, to Modification on the background slopes. There are two small areas of Retention around and across from the recreation site.)

## **Visual Quality**

Refer to General Management Direction.

## Heritage and Culture

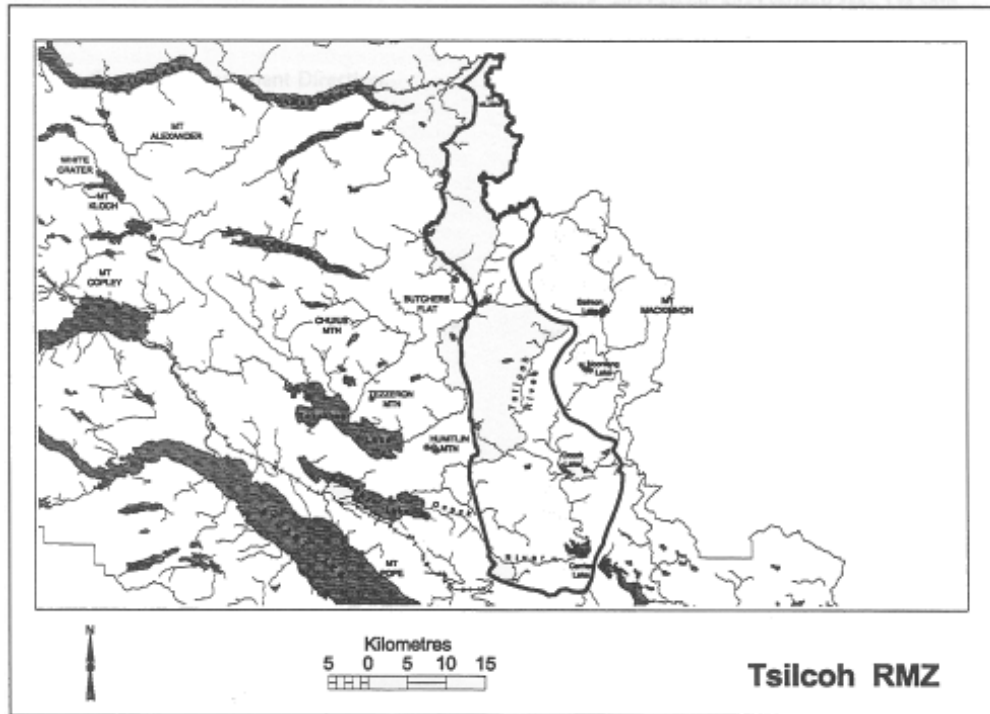
Refer to General Management Direction.

### 4.4 Tsilcoh Resource Management Zone



Total Area: 116,029 hectares

The Tsilcoh Resource Management Zone is characterized by numerous small lakes and the recreational activities associated with them. The northern boundary of the zone is common with the Lower Nation Resource Management Zone. This zone offers a variety of recreational and tourism activities within easy access of the community of Fort St. James. The zone is generally well accessed by several main roads through the area, including the North Road, the Teardrop-Carrier Forest Service Road (FSR), the Germansen-Cripple FSR, the Germansen Tsilcoh FSR, and the Rainbow Creek Road.



Recreation values are high, mostly associated with the numerous lakes scattered throughout. Recreational and tourism activities include fishing, boating, canoeing, hiking, camping and hunting. Four Forest Service recreation sites have cartop boat launches, offering access to the numerous small lakes throughout the zone. There are seven trapping licenses and three guiding licenses in the zone, with the southwestern end covered by a vacant guide territory.

Timber values are generally high throughout, with lodgepole pine as the leading tree species. Lodgepole pine is located in the north end of the zone, with a mix of balsam and fir in the southern end. The majority of the stands are mature, with some old-growth located in the southern and western areas of the zone.

Kokanee are present in several of the lakes, including Cripple Lake. The Tsilcoh River has kokanee throughout, and is very important to the Pinchi Lake fishery. Spawning habitats are expected to be limited in slow-moving streams, such as the Ocock River.

Kalder Lake supports a sensitive lake trout population. Although not confirmed, endangered Arctic grayling may potentially occur in some of the northern waters. Most of the numerous small lakes throughout the zone have unknown fisheries values. Fish are suspected in these lakes, but spawning habitat may be limited.

The headwaters and majority of the Tsilcoh River are within the zone. The north quarter of the Tsilcoh zone drains into the Nation River and into Arctic waters, while the remainder falls within the Stuart-Fraser River system.

Wildlife habitats are generally of moderate value, with a few areas of high value to the east. Moderate habitat values are associated mainly with the lodgepole pine-dominated forests, and are used by ungulates, bear, furbearers, porcupine, goshawks, owls and



small mammals. Localized valuable habitats are associated with the Ocock River, Carrier Lake, and the Ducks Unlimited projects along the Ocock River and the Teardrop Forest Service Road. Localized valuable winter habitat is associated with the Ocock and Great Beaver Lake areas, providing good ungulate winter range features. Carrier Lake also provides good ungulate winter range. Extensive valuable wetland areas are scattered throughout, with small lakes connected to the wetlands. Valuable habitat features are found in association with the wetlands. There may be occasional caribou use in the northern quarter of the zone.

The metallic mineral assessment is classed moderate in the south half of the zone and high in the north half. The industrial mineral assessment is classed low in the south half of the zone, and high and moderate in the north half. There are five documented occurrences. Commodities include copper, copper-gold and copper-molybdenum. There is a significant amount of tenured area in the zone. The Mt. Milligan gold-copper deposit is located just east of the zone boundary in the Mackenzie LRMP area.

Approximately eighteen kilometres of the historic Hudson's Bay Brigade Trail runs through the southern end of the zone. This trail was used as a transportation route by the Hudson's Bay Company to pack supplies and furs between Fort St. James and the post at McLeod Lake. Portions of the trail are currently being upgraded.

### **Tsilcoh RMZ - Resource Development**

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Objective Maintain the viability of existing natural grasslands.

- ➡ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire or, in the event of use, rehabilitate to a natural state.

### **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Objective — Manage for viable populations of Arctic grayling.

- ➔ Identify potential Arctic grayling habitat and develop management plans to maintain this habitat.

Objective - Manage to maintain the sensitive lake trout population in Kalder (Horseshoe) Lake.

## **Wildlife Habitat and Populations**

Objective - Manage for the high wildlife habitat values associated with Ocock and Carrier lakes and Ocock and Teardrop rivers.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Refer to General Management Direction.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective - Provide a variety of recreational experiences.

Maintain the Jaw Lake, Cripple Lake and Kalder Lake Forest Recreation Sites.

## Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive views of Jaw, Cripple, Carrier, Kalder (Horseshoe) and Ocock lakes.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

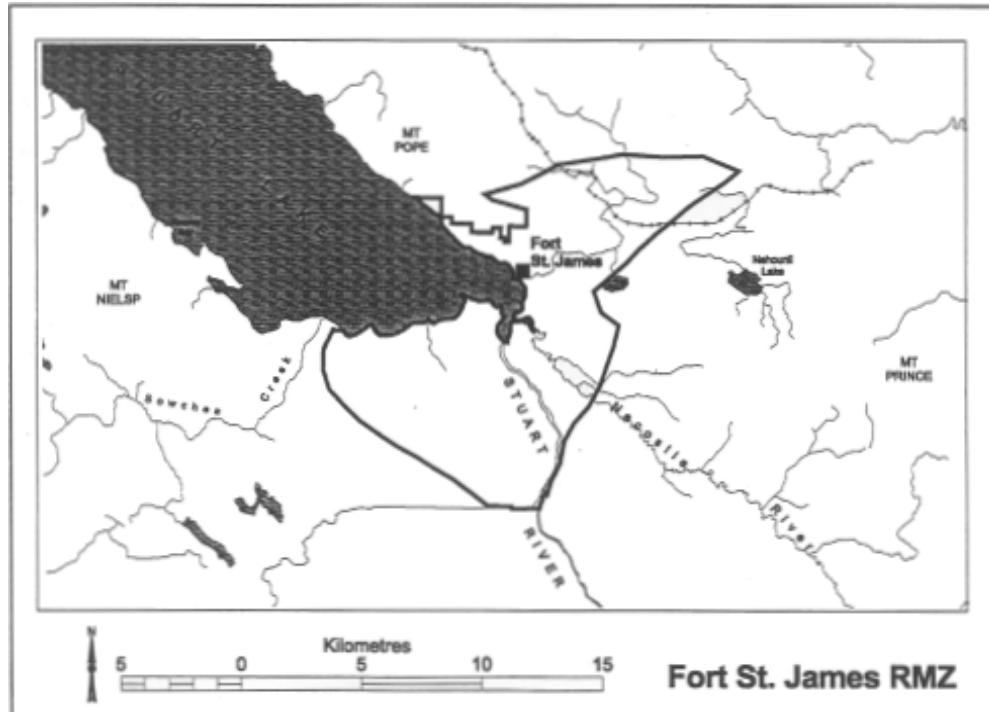
Refer to General Management Direction.

### 4.5 Fort St. James Resource Management Zone



Total Area: 14,377 hectares

The Fort St. James Resource Management Zone is located at the southeastern end of Stuart Lake and includes the community of Fort St. James. One of the oldest communities in British Columbia, it was historically known as New Caledonia. In 1858 the *British Columbia Act* changed the name of the mainland territory from New Caledonia to British Columbia, and moved the capital, first to New Westminster, and later to Victoria.



The community of Fort St. James has a rich historical background. The British-based Hudson's Bay Company was established in 1670 and had held a monopoly on the fur trade in Canada. In the 1770's, a group of independent traders challenged this domination and formed the North West Company, with headquarters in Montreal. This new group had to establish its own trading territories, and the search led them farther and farther west. Alexander Mackenzie was a part of this new company and crossed the Rocky Mountains in 1793 in search of an inland water route to the Pacific that would provide a cheaper and faster way of transporting furs and supplies.

Thirteen years later Simon Fraser followed his footsteps, and the community was founded. In the 1850's gold was discovered. In the first part of 1858, between ten and twenty thousand prospectors came seeking their fortunes. According to Lillooet clergyman R.C. Lund, "Never in the history of the migrations of man has seen a rush so sudden and so vast". While the majority of the goldseekers left the area after the gold rush, there are still significant gold mining claims being worked in the area.

Bush flying was in its infancy in the 1920's in the remote parts of the planning area, and the community of Fort St. James became a central point for accessing the remote wilderness areas. The only other means of access involved weeks of paddling and portaging rivers and lakes, or travelling by dog sled in the winter. After World War II, the community was home to Russ Baker who started the original Central BC Airways (later Pacific Western Airlines, and today known as Canadian Airlines International). Russ used a Junkers plane that was designed and built in Germany. It quickly was dubbed the "workhorse of the north". Several pilots who flew out of Fort St. James have been enshrined in the Canadian Aviation Hall of Fame in Edmonton. Most of the areas they flew were unmapped, requiring quick thinking and sometimes "flying by the seat of their pants".

Numerous historical trails converge at Fort St. James, including the Hudson's Bay Brigade Trail between Fort Fraser and Fort McLeod, the New Caledonia fur trade canoe brigade route down the Stuart River, and the trail between Noonla and Fort St. James, which is part of the Omineca Trail. There are many First Nations trails in the area.

The community has worked together to preserve artifacts that tell the history of the area. The Fort St. James National Historic Park includes the second largest number of artifacts in Canada, and welcomes over 25,000 visitors each year. Other significant points of interest include Our Lady of Good Hope Catholic Church (built in 1873), a scale model of a 1930's Junkers Plane, a monument to Russ Baker, and a refurbished Marion Steam Shovel. First Nations have marked Chief Kwah's grave site for visitors. Pictographs on the north shore of Stuart Lake are accessed mainly by water. These pictographs have been catalogued by the BC Heritage Conservation Branch.

Approximately 3,200 people live and work in the zone. Foreshore settlement and development of Stuart Lake has been extensive at the southern portion of the lake. This includes municipal and provincial parks, two marinas, a government wharf that was recently transferred to the municipality, and a float plane base. Community infrastructure includes an artesian well water supply for the municipality, a municipal landfill site that is scheduled for deactivation within the next few years, a sewage treatment plant located on the Nak'azdli reserve, a municipal airport, hospital, curling rink, hockey arena, 9-hole golf course, ski hill, four schools, and a wide range of shops and services. There is currently very little property available for residential expansion.

Industrial activities are centred around the community. There are currently eight lumber producing facilities within the planning area, including two value-added operations. Other industrial activities include the BC Rail Line, three helicopter bases and an inactive peat processing plant. The BC Rail Line to Dease Lake was established in 1980 to facilitate the extraction of timber, but also has implications for future mining activity within the area.

Close to a third of the land in the zone has private tenure. The Agricultural Land Reserve occupies 7% of the landbase, while another third is designated as general settlement lands.

Necoslie River and Nahounli Creek flow through this zone. Nahounli Creek bisects the community and receives local urban runoff. The Nahounli Creek Watershed Project has been approved by Forest Renewal BC for complete restoration and rehabilitation. The Necoslie River receives outflow from the community sewage treatment plant as well as high sediment loads from adjacent lacustrine soils.

Timber values are generally high throughout the zone, and there is a substantial amount of aspen. Other species include spruce, lodgepole pine, and Douglas-fir. Younger age classes predominate. There are a number of woodlots throughout this zone. To date roughly 17% of the total forest area has been harvested.

Wildlife habitat values are generally low to moderate throughout the zone, with localized areas of high value associated with both riparian and Douglas-fir forest types. The Stuart River provides important habitat values for waterfowl, bald eagles and

wintering trumpeter swans. Douglas-fir dominated slopes provide mule deer winter range.

The Stuart River also provides a major travel corridor for the provincially significant Stuart-Takla salmon run. These fish are used extensively by local First Nations for food. The river provides valuable habitat for chinook and sockeye salmon, and red-listed white sturgeon, as well as rainbow and bull trout. Nahounli Creek has historically provided good sockeye salmon spawning habitat. However, the numbers of spawning salmon in the creek have decreased each year.

The Nak'azdli Band recently operated a chinook salmon hatchery within municipal boundaries, but it closed as a result of funding shortfalls.

The Fort St. James Resource Management Zone offers year-round opportunities for a variety of outdoor recreational pursuits. The trailhead of the Mount Pope trail is found within this zone, and is currently maintained by the Ministry of Forests. It continues on into the Mount Pope Protected Area. The Fraser Lake trail is also maintained by the Ministry of Forests. A trail leading to the top of Mount Dickinson was built by Apollo Forest Products, and is moderately used. Houseboat Charters, with a base in Fort St. James, offers houseboat and fishing charters on Stuart Lake.

The mineral assessment in this zone is classed as high for both industrial and metallic minerals. There are two past-producing limestone occurrences and two mercury occurrences in the zone. Aggregate resources are always an especially important consideration near settlement areas because of local demand generated by industrial, commercial, public and residential construction projects.

#### Fort St. James RMZ - Settlement / Agriculture

Resource Management Zone Intent — Management on these lands integrates Crown lands with the historic pattern of settlement and agriculture in the planning area. A relatively large area of lands within this zone is currently used or proposed for farming, or is used for, or proposed for, settlement in an Official Community Plan, Crown Land Plan, or this plan. Management of natural resource values and resource development is compatible with this.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

## **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Objective — Protect or enhance domestic ground and surface water quality and quantity to ensure a sustainable and safe water source for the community of Fort St. James and other rural settlements.

- ➔ Identify factors that may reduce surface water quality.
- ➔ Develop and implement a Water Management Plan to identify and maintain community water supplies.
- ➔ Consider groundwater supplies in zoning and development approvals.
- ➔ Develop and implement a Sewage Management Plan to reduce impacts on water quality in the upper Stuart River.
- ➔ Identify factors impacting water quality in the Pitka Creek watershed. Develop and implement a management plan to improve water quality in this watershed.

## **Fish and Fish Habitat**

Objective - Manage for fish populations and high value fish habitats.

- ➔ Support existing fisheries enhancement programs and activities.
- ➔ Recommend the re-establishment of the chinook salmon hatchery program
- ➔ Encourage continued community involvement in the restoration and/or enhancement of fish habitat in Nahounli Creek.
- ➔ Identify, survey and map white sturgeon habitat areas and implement a management plan to meet white sturgeon habitat requirements.

## **Wildlife Habitat and Populations**

Objective - Manage to maintain the viability of trumpeter swan winter habitat.

- ➔ Identify trumpeter swan winter habitat.
- ➔ Implement strategies to minimize impacts on trumpeter swan winter habitat in development planning.

## **Trapping and Guiding**

Refer to General Management Direction.

## Access

Refer to General Management Direction.

## Forest Stands

Refer to General Management Direction.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Objective - Allow for future agriculture opportunities.

- ➔ Assess arability in this zone as per the General Management Direction for Agriculture.

Objective - Maintain the availability of range land for the purpose of grazing.

- ➔ Recognize and provide for the continuation of existing range land uses and expansion opportunities.
- ➔ Identify and manage the movement of livestock in sensitive wildlife areas.

## Tourism

Objective - Provide opportunities for tourism operations and development.

- ➔ Encourage the development of new accommodations as warranted by public demand, and in consideration of other resource values.

## Recreation

Objective - Promote a variety of recreational opportunities.

Maintain or increase the level of public access to the south end of Stuart Lake.

Endorse recreational development on Stuart Lake that does not negatively impact water quality.

Manage the Spencers Ridge esker road to maintain the recreational experiences it currently offers.

## Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive viewscape of Stuart Lake and the surrounding residential areas.



Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

### **Heritage and Culture**

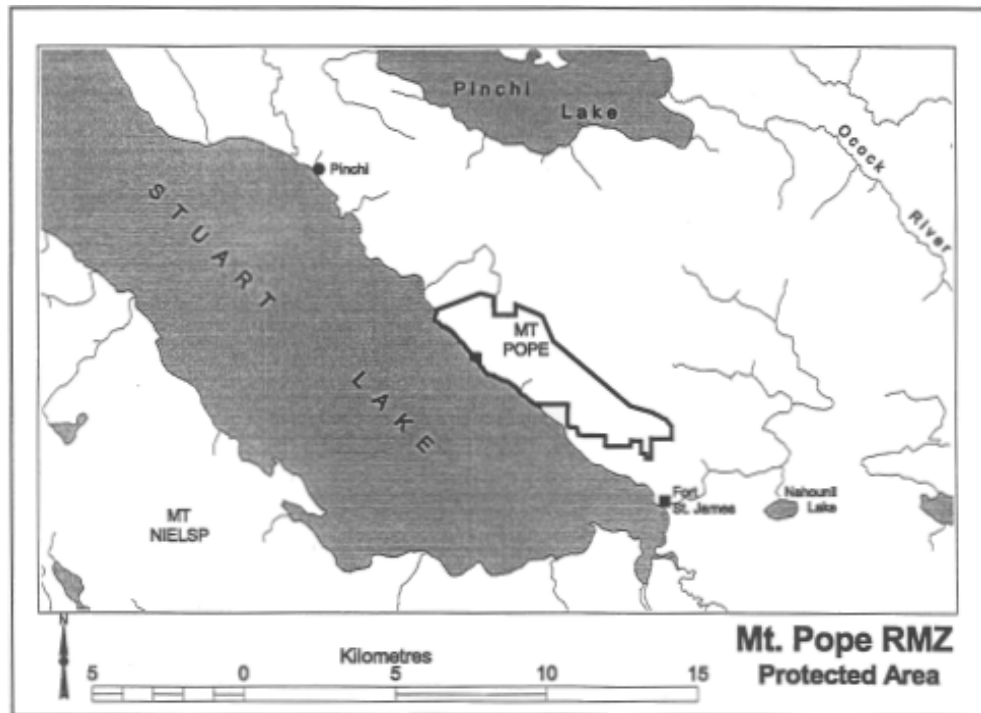
Refer to General Management Direction.

### **4.6 Mt. Pope Resource Management Zone (Protected Area)**



Total Area: 1,944 hectares

The Mt. Pope Protected Area is characterized by steep, limestone-based rocky terrain, and is covered mainly by Douglas-fir with some pockets of mixed forests. Unique plant species dependent on alkaline soils and steep aspects are found in this area. Some species are also found outside their normal ranges.



Timber values are low throughout, with Douglas-fir as the leading species. Other species include lodgepole pine, deciduous species and spruce. Bark beetle infestations have been recorded nearby and within the Protected Area.

The Mt. Pope Protected Area has very high wildlife habitat values. The area is predominantly limestone, and supports rare plants, caves, and unusual habitats for bats, garter snakes, and some uncommon birds such as blue grouse and Clark's nutcracker.

The steep south-facing slope of Mt. Pope is predominantly Douglas-fir and provides valuable mule deer winter range, some of the best in the Prince George region. The limestone talus slopes and caves are believed to provide valuable garter snake overwinter sites (hibernacula). There are also uncommon limestone-associated habitats for various bat species and bushy-tailed wood rats.

Recreation values are high. Recreation and tourism activities include hiking, wildlife viewing, cross-country skiing, rock-climbing and hunting. There are no provincial parks or Forest Service Recreation Sites in this Protected Area, but there is one BC Parks Reserve for Use, Recreation and Enjoyment for People (UREP).

The Mt. Pope Forest Service Recreation Trail runs approximately six kilometres up to the summit. Originally built in 1890 to access a forest lookout, the trail is currently maintained by the Ministry of Forests. Once the Protected Area becomes a Class A Park this portion of the trail will be maintained by BC Parks. There is a viewing gazebo at the top of the mountain, offering a panoramic view of the mountains to the north, and the broad valley of agricultural lands to the south. An interpretive trail guide book is

available to accompany hikers as they climb to the top. The trail is heavily used from mid-May through to the end of September.

The viewscapes from Stuart Lake, the highway into Fort St. James, and Pinchi Lake all have high visual sensitivity.

There are caves and pictograph sites in this Protected Area.

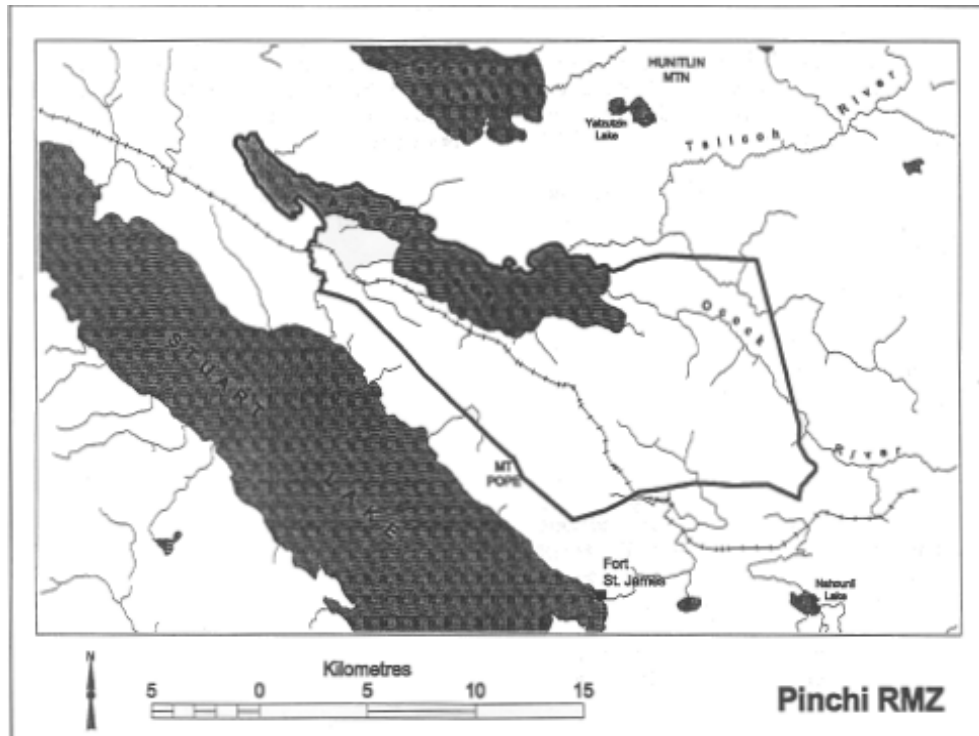
**Objectives and strategies for this Protected Area are found in 3.18 General Management Direction: Protected Areas**

## 4.7 Pinchi Resource Management Zone



Total Area: 26,358 hectares

Industrial development and recreation activities co-exist in the Pinchi Resource Management Zone. This is one of the few zones in the planning area with on-going agricultural activities. There are three transportation corridors through this zone, including the British Columbia Rail line.



Timber values are high throughout the zone except at higher altitudes (Mt. Pope and Murray Ridge). Lodgepole pine is the leading tree species, with other species such as Douglas-fir, spruce, deciduous species and balsam.

The zone provides good moose habitat, including valuable winter habitat at the mouths of the Ocock and Tsilchoh rivers and Pinchi Creek. There is good furbearer habitat throughout the zone.

The north slopes of Mt. Pope and Murray Ridge fall within this zone, and support uncommon plants (such as maidenhair fern) associated with limestone or serpentine soils. They also provide mule deer habitat. The north slope of Mt. Pope has bats and caves. There are stands of Douglas-fir in the Murray Ridge area, and there may be several blue-listed plant communities in the zone (Refer to Appendix 3 for a list of red-listed and blue-listed plant associations, or acquire the most current list from the BC Conservation Data Centre).

A Ducks Unlimited proposal is being developed for the Hyman Creek wetland east of the North Road.

Pinchi Creek provides good spawning habitat for trout. Kokanee in Pinchi Lake spawn in the Tsilchoh River. Sockeye and chinook are also present in Pinchi Creek.

There are naturally occurring elevated levels of mercury in Pinchi Lake and the surrounding area, and naturally occurring elevated levels of mercury in some of the fish species found in the lake, particularly char and burbot.

Blackburn Lake has rainbow trout. This lake has low winter oxygen levels, and is susceptible to winter fish kill.

The Pinchi Resource Management Zone provides area residents with a variety of easily-accessed recreational opportunities. Recreation and tourism activities include fishing, boating, camping, hiking, canoeing, snowmobiling and hunting.

A major recreation feature of the zone is the Murray Ridge ski complex, with both downhill and cross-country ski facilities. The downhill skiing facility has one tow rope and one T-bar, and there are plans for expansion in the future. The Forest Service built fifteen kilometres of cross country ski trails as part of the Murray Ridge ski complex. These trails are now maintained by the Nordic Ski Club. Murray Ridge has also developed recreation facilities such as a gun club and a shooting range.

There are good fly-fishing opportunities on Pinchi Creek. Activities in and around Pinchi Lake include fishing (year-round), boating, camping, hiking, and canoeing. There are two guiding licenses and six trapping licenses within the zone.

Mineral assessment in this zone is high. The past-producing Pinchi Lake mercury mine is located in the adjacent Yatzutzin Resource Management Zone. There are three documented mineral occurrences within the area, and a fourth is located on the Pinchi/Fort St. James zone border. Commodities include mercury and chromium, and potential exists for chromium, mercury, gold, limestone and magnesite.

The historic Omineca Gold Rush Trail runs through the zone, but the location of the entire trail is not known. The trail was important as a transportation route during the Omineca Gold Rush. There is also a First Nations wagon trail that runs from Tachie to Fort St. James, and a second trail that runs from the north side of Pinchi Lake to the east.

The Ministry of Forests administers one grazing permit in this zone. Agricultural potential is generally low, but four percent of the zone has high potential for agriculture. The area around the Cassiar Ranch is currently used for cattle production. There is also some settlement and private land.

Pinchi RMZ - Multi-Value

Resource Management Zone Intent — Management on these lands integrates a wide range of resource values. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

## **Biodiversity**

Refer to General Management Direction.

## **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Objective — Develop lakeshore classifications and implement lake management plans.

- ➔ Consider Pinchi Lake as a priority lake for classification and management plans.

Objective - Avoid disturbance of lakebed sediments in Pinchi Lake by industrial activities.

## **Fish and Fish Habitat**

Objective - Maintain, or enhance where appropriate, fisheries values in identified lakes.

- ➔ Consider the potential for fisheries enhancement on Blackburn Lake.

## **Wildlife Habitat and Populations**

Objective - Maintain (or enhance where appropriate) mule deer winter range on the slopes of Mt. Pope and Murray Ridge.

- ➔ Incorporate mule deer range management strategies and Douglas-fir management strategies (from General Management Direction) into resource development plans.
- ➔ Manage development activities to maintain a component of Douglas-fir with appropriate age class and associated understory for deer winter range habitat.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective - Manage access to specific lakes to maintain resource values while providing a variety of recreational experiences.

- ➔ Improve current two-wheel drive access into Blackburn Lake. Maintain launch facilities suitable for cartop boats.

## **Forest Stands**

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

## **Minerals and Energy**

Objective — Provide continued opportunities for mineral exploration and development (specifically Murray Ridge and Pinchi Lake) sensitive to other values.

## **Agriculture and Grazing**

Objective — Allow for future agricultural opportunities.

- ➔ Assess arability in this zone as per the General Management Direction for Agriculture.

Objective - Maintain availability of range land for the purpose of grazing.

- ➔ Recognize and provide for the continuation of existing range land uses and expansion opportunities.
- ➔ Identify and manage the movement of livestock in sensitive wildlife areas.

## **Tourism**

Objective - Increase opportunities for tourism.

- ➔ Endorse the establishment of a destination tourism attraction at the Murray Ridge ski area. Develop and implement a long-term land-use and development plan for the area.

## **Recreation**

Objective - Increase recreation opportunities where compatible with other values.

- ➔ Manage the Murray Ridge cross-country ski trails to maintain or improve the current condition and level of facility development.
- ➔ Consider opportunities to develop recreational trails in the zone.
- ➔ Consider upgrading sections of the Omineca Trail for recreational use.

Objective - Manage to maintain the existing recreational fishing opportunity at Pinchi Creek.

Consider limiting access to walk-in access only to Pinchi Creek.

Objective - Manage recreational opportunities and development on Pinchi Lake to provide a variety of experiences.

Plan recreational developments compatible with other values to maintain or enhance public recreational opportunities.

Consider limiting future shoreline developments on the east half of Pinchi Lake.

Endorse developing local educational programming and activities focused on the east half of Pinchi Lake (i.e., the Resource and Environmental Management Centre).

## **Visual Quality**

Objective - Manage to reduce visual impacts on the visually sensitive viewsapes of Pinchi and Blackburn lakes.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality, as directed by the District Manager.

## **Heritage and Culture**

Objective - Manage to maintain the historic Omineca Trail, while allowing for recreational use.

Locate and map the Omineca Trail.

Develop and implement a management plan to maintain the values of the trail.

Re-establish the trail route as necessary.



## 4.8 Yatzutzin Resource Management Zone



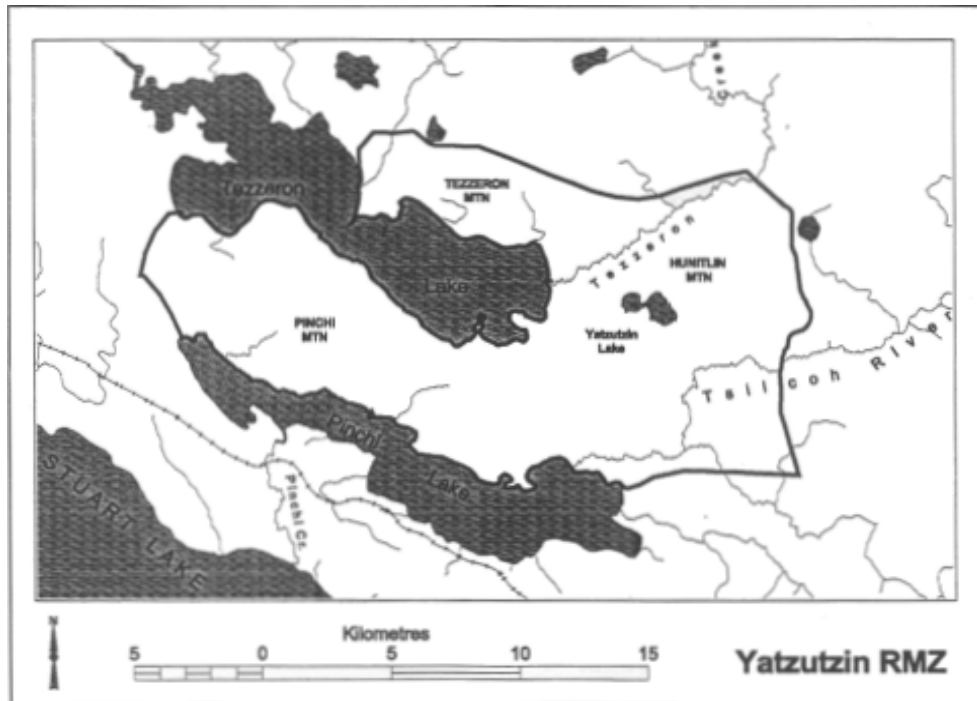
Total Area: 29,272 hectares

Lakes and associated habitats and recreation activities are a major feature of this zone. Several large lakes, including Tezzeron, Pinchi, and Yatzutzin, fall within this area.

The University of Northern British Columbia has established a 13,032 hectare research forest, located between Pinchi and Tezzeron lakes.

There are two main roads in this zone. The North Road forms the eastern boundary of the zone. The Pinchi Road runs through the zone. There is currently no roaded access to Yatzutzin Lake.

Timber values are high throughout approximately half of the zone. Spruce is the leading tree species, with other species such as Douglas-fir, lodgepole pine, aspen, balsam and birch. Douglas-fir stands are found mainly in the southern portion of the zone.



There is valuable wildlife habitat throughout the zone, particularly in the eastern end. The zone is marked by important wetlands and mixed forest types, which together provide diverse wildlife habitat. Valuable ungulate winter range values are found throughout the zone, particularly along Tezzaron Creek and the lakeshore. The east end of Tezzaron Lake supports valuable wetland habitat. The south-facing slopes of Pinchi Lake and Tezzaron Mountain support Douglas-fir and provide valuable winter and good spring range for ungulates. Hunitlin Mountain has Douglas-fir stands, bluffs and cliffs, providing habitat for cliff nesters. The mountain is also adjacent to an important wetland and mixed forest types complex.

High fisheries values are associated with Tezzaron Lake and Tezzaron Creek. There are indications that the sports fishery may be declining in Tezzaron Lake as coarse fish population numbers are high.

This zone is close to the community of Fort St. James, offering attractive recreation opportunities to local users. Recreational and tourism activities include canoeing, hiking, camping, and year-round fishing.

There are two Forest Service Recreation Sites in the Yatzutzin Resource Management Zone. The Tezzaron Lake Recreation Site has sites for group camping. The Tsilcoh Falls Forest Recreation site includes a one kilometre hiking trail, providing an excellent location for viewing the spawning kokanee run in August.

Two lodges are located on the southern corner of Tezzaron Lake. Cinnabar Resort and Tezzaron Resort, both road accessible, offer hiking, fishing, camping, cabins, wharfage, a boat launch, and rentals and supplies. There are also a series of privately owned

cabins accessible by boat, aircraft, and vehicle. Inzana Outfitters operates road accessible and fly-in camps on Inzana Lake, the Nation Lakes and the Nation River, offering cabins, air service, boat rentals and guided canoe trips. One licensed guide operates a single guiding territory, and there are five trapping licenses registered within the zone boundaries.

The metallic assessment in this zone is classed high on the west side of the zone, and moderate in the central and eastern portions. The industrial mineral assessment is classed high in the west side of the zone and low in the central and eastern portions of the zone. There are five documented occurrences including the past producing Pinchi Lake Mercury Mine. In addition to mercury, the other commodities that occur in the zone are limestone and magnesite.

During its two phases of operation, the Pinchi Lake Mercury Mine produced a total of 2.4 million tonnes of ore. Remaining measured and indicated reserves are 1,175,000 tonnes grading 6.35 mercury pounds per tonne — additional inferred reserves have also been outlined.

The historic Omineca Gold Rush Trail runs through the eastern end of the zone, though the location of the entire trail is not known. This trail was important as a transportation route during the Omineca Gold Rush.

Some farming occurs in the zone, mainly on private lands along the Pinchi Road.

Yatzutzin RMZ - Multi-Value

Resource Management Zone Intent — Management on these lands integrates a wide range of resource values. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

## Water

Objective — Develop lakeshore classifications and implement lake management plans.

- ➔ Consider Pinchi and Tezzeron lakes as priority lakes for classification and management plans.

## Fish and Fish Habitat

Objective Manage for a high quality sport fishery on Tezzeron Lake.

- ➔ Identify factors potentially impacting fisheries values. Develop and implement strategies to manage potential impacts and improve fisheries values.

## Wildlife Habitat and Populations

Objective — Manage to maintain nesting habitat on Hunitlin Mountain(i.e., Douglas-fir stands, bluff/cliffs).

Objective — Manage to maintain wetland habitat values, especially near the southeast end of the RMZ.

- ➔ Minimize altering natural drainage patterns that impact on wetlands.
- ➔ Strive to maintain forested screening around wetlands.

Objective - Manage valuable habitat features to maintain healthy ungulate populations, especially near Hatdudatehl and Tezzeron creeks, Tezzeron Lake and north of Pinchi Lake.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective - Manage access to maintain resource values.

- ➔ Develop access management strategies for new secondary access developments adjacent to identified lakes or habitats that incorporate the interests of trappers, guides, tourism operators, public, resource users and government agencies.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Objective - Allow for future agricultural opportunities.

- ➔ Assess arability in this zone as per the General Management Direction for Agriculture.
- ➔ Map land arability in the valley bottom that generally runs from Pinchi Lake to the North Road and develop appropriate management strategies.

Objective - Maintain availability of range land for the purpose of grazing.

- ➔ Recognize and provide for the continuation of existing range land uses and expansion opportunities.
- ➔ Identify and manage the movement of livestock in sensitive wildlife areas.

## Tourism

Refer to General Management Direction.

## Recreation

Objective - Promote a variety of recreation opportunities compatible with other values.

- ➔ Consider opportunities to develop recreational trails where compatible with wildlife values.
- ➔ Consider upgrading sections of the Omineca Trail for recreational use.
- ➔ Plan for the maintenance of non-roaded access and the associated recreational experience for a number of small unaccessed lakes northeast of Tezzeron Lake. Inventory and identify these lakes for forest development planning.
- ➔ Maintain the current remote, walk-in access to Yatzutzin Lake.
- ➔ Maintain the current condition and level of facility development at the Tsilcoh Falls Forest Recreation Site.

Objective - Manage recreational opportunities and development on Pinchi Lake to provide a variety of experiences.

- ➔ Plan recreational developments compatible with other values to maintain or enhance public recreational opportunities.
- ➔ Consider limiting future shoreline developments on the east half of Pinchi Lake.

- ➔ Endorse developing local educational programming and activities focused on the east half of Pinchi Lake (i.e., the Resource and Environmental Management Centre).

Objective - Manage for a high quality sport fishery and unique recreational experience on Tezzeron Lake.

Monitor fishery to assess changes to quality of fishing experience. Develop and implement strategies to maintain a high quality fishing and recreational experience.

Consider avoiding new access to Tezzeron Lake.

Maintain the number, current condition and level of facility development of Forest Service Recreation Sites on Tezzeron Lake.

### Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive viewscales of Pinchi and Tezzeron lakes.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

### Heritage and Culture

Objective - Manage to maintain the historic Omineca Trail, while allowing for recreational use.

Locate and map the Omineca Trail.

Develop and implement a management plan to maintain the values of the trail.

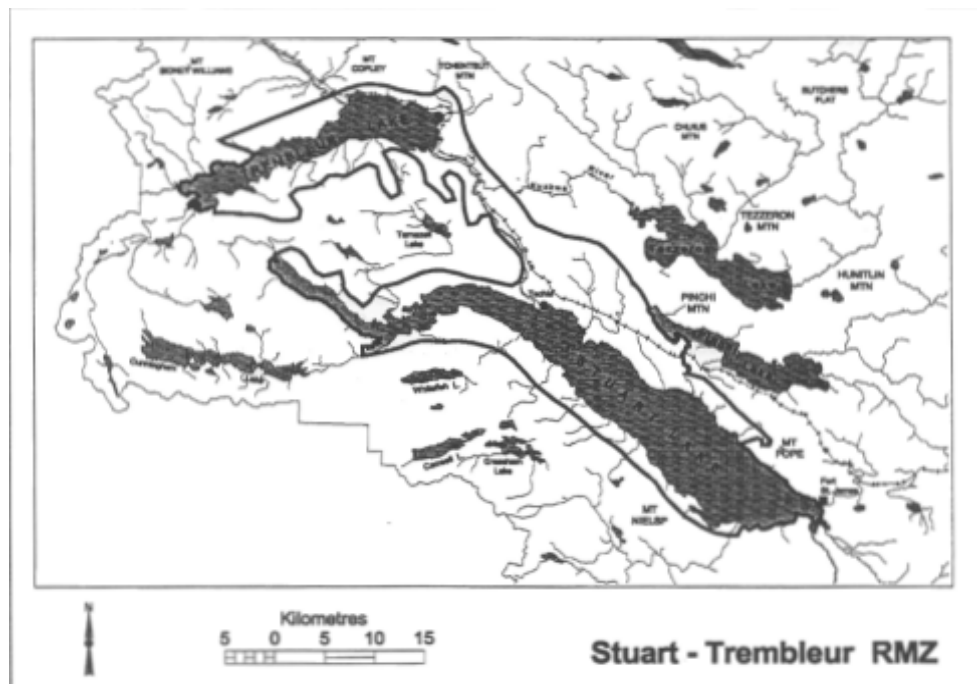
Re-establish the trail route as necessary.

## 4.9 Stuart-Trembleur Resource Management Zone



Total Area: 108,791 hectares

The Stuart-Trembleur Resource Management Zone is located immediately northwest of the community of Fort St. James, and includes the First Nations communities of Tachie, Grand Rapids, Middle River, Binché and Yekooche. The zone sits between the Mount Pope and Fleming Protected Areas. It wraps around the Tanizul Resource Management Zone and contains portions of Tree Farm License (TFL) #42. Stuart and Trembleur lakes, and associated recreational and wildlife values, are the main features of this zone. The University of Northern British Columbia (UNBC) Research Forest lies partially within this zone.



The Tachie Highway and the Leo Creek Forest Service Road are the main road systems, and are heavily used by resident, industrial and recreational traffic.

Timber values vary throughout the zone. Many of the lakes are surrounded by mixed low elevation stands of deciduous, Douglas-fir, white spruce and lodgepole pine. Extensive deciduous stands exist between the Tachie River and Pinchi Creek. Lodgepole pine and deciduous stands dominate, while Douglas-fir stands are scattered throughout the area. Deciduous species are the leading tree species.

High wildlife values are an important feature of this zone. A small number of relatively uncommon birch stands along Stuart Lake provide excellent habitat for birds, especially cavity nesters, and provide nesting opportunities for osprey and bald eagles.

Good moose winter range is found throughout the zone, while valuable mule deer winter range occurs in association with the Douglas-fir dominated south-facing slopes. Large areas of even-aged aspen stands provide important winter wildlife range. Some small natural grasslands exist along portions of the Leo Creek Road and the Tachie River. The marsh at the outlet of Sowchea Creek provides valuable wetland habitat for waterfowl nesting, and habitat for species such as black terns, American bittern, yellow-headed blackbird and cinnamon teal.

There several blue-listed plant communities within the zone. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre). There are locally significant vegetation types in the SBS dw3 biogeoclimatic subzone of this zone. This is likely a reflection of the warmer habitats associated with large lake shores, and tied to the nature of the limestone outcrops and Douglas-fir dominated ecosystems. Douglas maple can also be found on south-facing slopes.

Lakes and rivers in this zone support both spawning and rearing habitat for the critically important Stuart-Takla salmon stocks. This habitat contributes significantly to salmon production in the Fraser River basin. Important spawning habitats are found within Pinchi Creek, Nancut Creek and throughout the numerous small tributaries along the south shore of Stuart Lake. Sockeye and chinook are present in Pinchi Creek. The Grand Rapids area is a sensitive spawning area, and the natural unstable walls of Pinchi Creek affect water quality and fish habitat within the creek. Stuart Lake fish are dependent on the Tachie River.

The Stuart River is one of the few remaining river systems in British Columbia not impacted by hydro-electric development, which may make it critical for maintenance of the white sturgeon. The species is very sensitive to temperature changes. White sturgeon are resident throughout the Fraser, Nechako and Stuart river systems. At the east end of Trembleur Lake there is a large shallow bay used by white sturgeon.

Recreational activities include fishing, boating, sailing, hiking, and camping. Two Provincial Parks, one Provincial Recreation Area, and two Forest Service Recreation Sites offer water and land-based recreational opportunities primarily utilized by the residents of Fort St. James, Vanderhoof and Prince George.



There are four privately owned lodges in the zone, and many cabins are used recreationally, and by guides and trappers scattered throughout the area. The Will-O-Winn Lodge is located at the mouth of the Middle River, at Trembleur Lake. This lodge is boat accessible, and offers cabins, full service accommodations, boat rentals, air service and supplies. Houseboat Charters, with a base in Fort St. James, offers houseboat and fishing charters on Stuart Lake. Five guiding licenses and seventeen traplines are registered in this zone. United Guide and Outfitters is located on Trembleur Lake, offering hunting, fishing and guide services. [Nakalat Lodge](#), on the north arm of Stuart Lake, is accessible only by float plane or boat. This lodge offers guided fishing charters, boat rentals, accommodation, meals and supplies. Five moorages are located close to the community of Fort St. James, and there is a boat launch at Middle River.

Stuart and Trembleur lakes provide many of the area's recreational opportunities. Trembleur Lake is a special place for many local residents. A large lake with numerous small bays, Trembleur offers recreational users great sports fishing. Most people reach the lake by boat, a challenge often considered part of the Trembleur Lake recreational experience. To date Trembleur Lake has been managed for no roaded access, with the exception of access to the lake through the Tachie reserve and newly improved access through the Middle River reserve. There is a small cluster of summer cabins at Tranquillity Bay, on the west end of the lake.

The Tachie River connects Stuart and Trembleur lakes. Its fast water and small rapids provide a navigational challenge to boaters, a feature that has helped to maintain the remote nature and good fishery of Trembleur Lake.

Winter use of Stuart Lake includes ice fishing, snowmobiling and ice boating. The old Antimony Mine road along the south shore of Stuart Lake provides opportunities for all-terrain vehicle and mountain bike use. There is some potential for recreational lot development along the shore of Stuart Lake.

The majority of archaeological sites identified within the Fort St. James planning area occur in the Stuart-Trembleur Resource Management Zone. The Provincial Archaeology Branch has identified areas of high archaeological potential along the shores of Stuart and Trembleur lakes, and along the Tachie River. Numerous archaeological sites have been identified along the northeastern shores of Stuart Lake. Portions of the historic Babine-Stuart and Portage trails run through the zone. These trails were used as transportation routes, by both First Nations and the Hudson's Bay Company. A former First Nations village site is located at the mouth of Sowchea Creek.

There are many areas of traditional use. Lakeshores are rich in berry-producing shrubs such as saskatoon, red-osier dogwood, buffalo berry and currants.

The metallic mineral assessment in this zone is classed as high throughout the zone. The industrial mineral assessment is also classed high throughout. Mineral occurrences include one limestone prospect, a lead showing, and a past producer of gold (the Snowbird occurrence on the southeast side of Stuart Lake where reserves of 226,000 tonnes grading 6.86 grams per tonne of gold remain). There are large blocks of tenure covering the Snowbird gold deposit on the east side of Stuart Lake.

The Stuart-Trembleur lakes system supports domestic water supplies and a number of households draw water from shallow wells within the zone.

## Stuart-Trembleur RMZ - Special Management

Resource Management Zone Intent — Management on these lands emphasizes the significant recreation, tourism, fish and wildlife values of the zone. Resource development (including roaded access development) may proceed as long as impacts on other resource values are minimized and resource values are maintained.

Objectives and strategies to supplement the General Management Direction

### Community Stability and Development

Refer to General Management Direction.

### Biodiversity

Objective - Maintain the viability of existing natural grasslands.

- ➔ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire, or in the event of use, rehabilitate to a natural state.

Objective - Maintain the diversity of locally significant habitats/vegetation types.

- ➔ Inventory locally significant habitats/vegetation types, red-listed and blue-listed associations, and identify factors affecting them.
- ➔ Implement management strategies for these habitats/vegetation types.
- ➔ Where possible, avoid the use of herbicides in locally significant habitats/vegetation types.

### Air Quality

Refer to General Management Direction.

### Soils

Refer to General Management Direction.

### Water

Objective - Manage to maintain or enhance the water quality of Stuart Lake.

- ➔ Identify and inventory potential pollution sources and implement actions to mitigate impacts on water quality.

- ➔ Develop and implement a plan to minimize effluent contamination in Stuart Lake.

## **Fish and Fish Habitat**

Objective - Manage to maintain viable populations of the white sturgeon.

- ➔ Identify the abundance, distribution and habitat use of all life stages of the white sturgeon.
- ➔ Develop and implement a management plan to protect white sturgeon populations and habitat.

## **Wildlife Habitat and Populations**

Objective - Maintain (or enhance where appropriate) mule deer winter range associated with south-facing Douglas-fir slopes.

- ➔ Incorporate mule deer range management strategies and Douglas-fir management strategies (from General Management Direction) into resource development plans.

Objective - Manage to maintain the viability of trumpeter swan winter habitat.

- ➔ Identify trumpeter swan winter habitat.
- ➔ Implement strategies to minimize impacts on trumpeter swan winter habitat in development planning.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective Maintain current low levels of roaded access into this RMZ.

- ➔ Identify essential and non-essential roads for resource management. Plan to deactivate non-essential roads in forest development and access management planning.
- ➔ Identify access-sensitive areas and encourage the use of non-roaded access methods for the exploration stage of mining and for the development of other resources.

Objective — Manage access to the south shore of Trembleur Lake and to the north arm of Stuart Lake.

## Forest Stands

Objective — Manage forest lands for timber production as well as recreation, tourism, fish and wildlife values.

- ➔ While ensuring that stocking standards are met, minimize the area where thinning, brushing and/or weeding is required, to provide wildlife values.

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.
- ➔ Promote the use of low impact silviculture systems to maintain the visual values and water quality of Stuart and Trembleur lakes, and the site productivity surrounding the lakes.

Objective - Maintain opportunities for timber harvesting and forest management.

- ➔ Develop cutblocks that are compatible with the visual quality objectives established for the viewsapes of Stuart and Trembleur lakes.

Objective - Manage beetle infestations to minimize impacts on timber supply while considering the visual quality of Stuart and Trembleur lakes, and other values.

- ➔ Monitor to provide early detection of beetle infestations.
- ➔ Promptly treat small beetle epicentres to prevent large infestations.
- ➔ Prioritize for harvesting those stands with highest risk of beetle infestations during forest development planning. Address currently infested stands on a priority basis.

## Minerals and Energy

Objective - Provide opportunities for mineral exploration and development.

- ➔ Plan exploration and development activities with sensitivity to other resource values.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Objective - Provide opportunities for tourism development in compatible areas on parts of Stuart Lake, in association with the development of hiking and walking trails. (See strategy under Recreation)

## Recreation

Objective - Promote a variety of recreational opportunities.

- ➔ Maintain or increase the level of public access to the south end of Stuart Lake.
- ➔ Endorse recreational development on Stuart Lake that does not negatively impact water quality.
- ➔ Manage Tachie River, Trembleur Lake and the north arm of Stuart Lake as limited or remote access to maintain a valuable sports fishery and to provide a unique recreational experience. Management strategies may include encouraging non-motorized trail use.
- ➔ Monitor the fishery on Trembleur Lake and, if required, develop strategies to maintain a high quality fishing experience.

Objective - Provide recreational opportunities to areas accessible only by boat.

- ➔ Identify existing recreational sites (and where appropriate develop new sites) accessible by boat.
- ➔ Maintain boat access only to Battleship Bay by permanently deactivating road access after beetle control activities are finished.

Objective - Manage to minimize impacts of recreational boating on fish, wildlife and recreation values.

- ➔ Increase public education about the impacts of dumping effluent (gray and black water) and garbage from recreational boats, as well as appropriate methods of garbage and effluent disposal.
- ➔ Provide proper garbage and effluent disposal facilities at several locations on Stuart Lake.

Objective - Manage lot development to be compatible with other values.

Develop a lot strategy consistent with the overall objectives and resource management intent of this zone.

Apply the Land Development Guidelines to lot developments.

Plan lot development for compatible areas, upon completion of lakeshore inventories.

Note: preference for lot development to be directed to the south end of Stuart Lake

Objective - Provide opportunities for hiking and walking access in compatible areas on parts of Stuart Lake.

Endorse building and maintaining hiking trails in compatible areas on parts of Stuart Lake.

## Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive viewsapes of Tachie River and Stuart and Trembleur lakes.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Objective - Manage to maintain the values of significant cultural and heritage sites (i.e., pictographs).

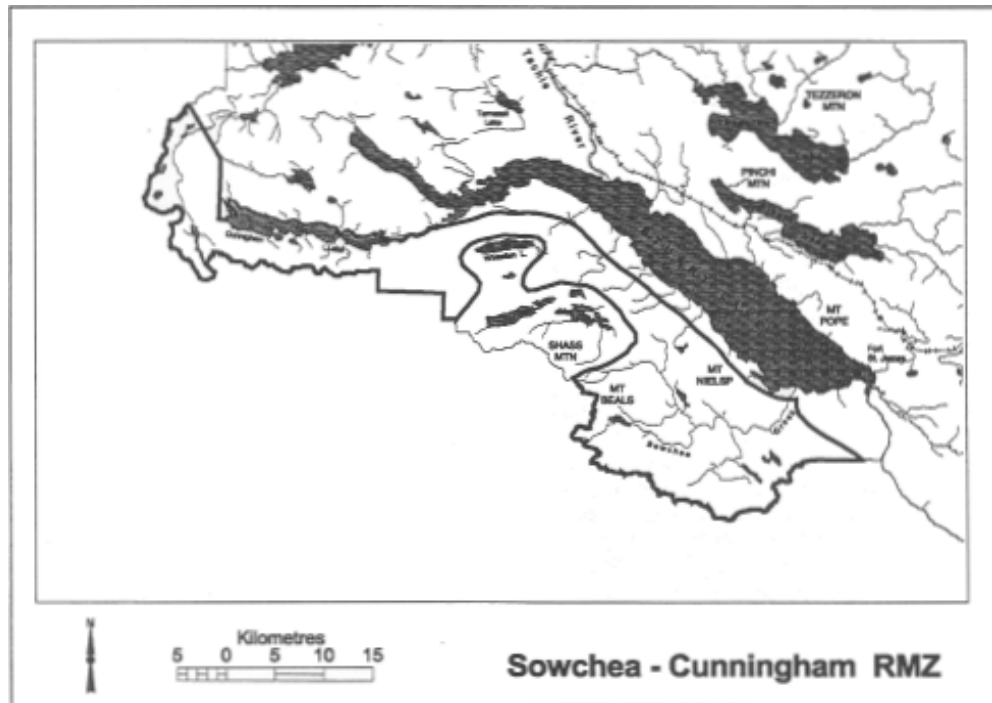
Identify significant cultural and heritage sites (i.e., pictographs on Stuart Lake) and develop management plans to maintain their values.

## Sowchea-Cunningham Resource Management Zone



Total Area: 89,482 hectares

The Sowchea-Cunningham Resource Management Zone is characterized by rolling topography, eskers (Spencer's Ridge), and three prominent mountains: Mt. Bud, Mt. Beals and Nielsp Mountain. The western boundary corresponds with the border of the planning area, while part of the northern boundary is common with the Fleming Protected Area. The Sutherland Protected Area is located immediately to the south in the Vanderhoof and Lakes forest districts.



The Cunningham Forest Service Road is the major road through this well-accessed zone. Many of the lakes, including McKnab, Karena, Specularite and Butterfield are unaccessed, as is a small chain of lakes south of Bolcome Creek.

Timber values are high throughout the zone, with lodgepole pine as the leading species. Other species include spruce, deciduous, Douglas-fir, and balsam. There is a large mountain pine beetle infestation east of Grassham Lake. To date about 11% of the total forest area has been harvested.

Harvesting, mineral exploration, fire prevention activities, access, extensive recreational activity and minor agricultural development all affect wildlife habitat. Habitats are generally moderate throughout the zone, with the exception of some excellent moose habitat. The eskers around Sowchea Creek and along Spencer's Ridge provide year-round mule deer range. Opportunities also exist throughout the area to provide movement corridors and habitat connections such as the wide immature patch of forest along Sowchea Creek. The area adjacent to the Sutherland Valley includes Shass Mountain, and provides valuable grizzly bear habitat. Extensive wetlands lie adjacent to Nanna and Marie lakes, and in the vicinity of Whitefish and Camsell lakes.

Nanna, Marie, and McKnab lakes have moderate to good fish habitat. Sowchea Creek has fish throughout, providing rainbow and sockeye spawning habitat. Some sockeye are present in Nancut Creek, which originates in Cunningham Lake and drains into Stuart Lake.

Recreation is a major activity within the Sowchea-Cunningham Resource Management Zone. Recreational activities are primarily associated with lakes and eskers, and include fishing, canoeing, hiking, biking, cross-country skiing, nature viewing, and snowmobiling. Cunningham Lake has both high recreational and fisheries values, and is

a popular local spot. Access into the east end of the lake is limited and there are no established campsites. Spencer's Ridge provides opportunities for hiking, snowmobiling, and mountain bike riding. Two guiding licenses are used mainly for hunting and fishing, and there are twelve trapping licenses.

There are two Forest Service Recreation sites in the zone, one at Sowchea Creek and a second at Camp Lake. The Tulle Lake Forest Service Recreation Trail is accessible from the Cunningham Forest Service Road, and offers 15 kilometres of trail to Tulle, Marie, and Nanna lakes for hiking, biking, nature viewing and fishing.

The industrial mineral assessment of this zone is classed as high in the east-central part of the zone, and the remainder is classed as industrial low. The metallic assessment is classed high throughout the zone. Four mineral occurrences are located within the area. Commodities include silver-lead, copper, placer gold and vermiculite. Sowchea Creek has been the site of placer activity since the early 1930's. Tenures are located east of Butterfield Lake, at Sowchea Creek, and along the eastern boundary of the zone, where portions of the Snowbird gold occurrence tenure block extends into the zone from the adjacent Stuart-Trembleur zone.

The prehistoric Nautley/Sowchea Trail runs through the zone and intersects the Forest Service recreational trail system. An early trade route, the trail connected First Nations villages on Fraser and Stuart lakes. The trail has been identified between Nautley and Marie Lake, but the exact location between Marie Lake and the mouth of Sowchea Creek remains to be determined. Some areas of a historic trail between Babine and Stuart lakes (Yekooche Village) have been affected by road development. There are areas of traditional use within this zone.

## **Sowchea-Cunningham RMZ - Resource Development**

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

## **Objectives and strategies to supplement the General Management Direction**

Community Stability and Development

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.



## **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Objective — Manage for the maintenance of fish passage in the lower reaches of Sowchea Creek.

- ➔ Conduct a watershed assessment on the lower reaches of Sowchea Creek and implement recommendations and a management plan as required.

## **Wildlife Habitat and Populations**

Objective - Manage for a healthy, sustainable moose population.

- ➔ Maintain (or enhance where appropriate) the mix of age classes and species required by moose around Nielsp Creek, Pam and Dawn lakes.

Objective - Maintain or enhance grizzly habitat and populations. (objective from General Management Direction)

- ➔ Identify, survey and map high suitability and capability grizzly habitat in the vicinity of Shass Mountain.

Objective - Maintain (or enhance where appropriate) mule deer winter range along the eskers at Sowchea Creek and Spencers Ridge.

- ➔ Incorporate mule deer range management strategies and Douglas-fir management strategies (from General Management Direction) into resource development plans.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Refer to General Management Direction.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

Objective - Manage forest lands for timber production and wildlife values.

- ➔ While ensuring that stocking standards are met, minimize the area where thinning, brushing and/or weeding is required, to provide wildlife values.

Objective — Optimize commercial timber production across the zone, including in riparian management areas where appropriate.

Objective — Implement silviculture strategies to produce a broad spectrum of timber products.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Promote a variety of recreational opportunities.

- ➔ Plan to maintain remote walk-in access to a number of small currently unaccessed lakes. Inventory and identify these lakes for forest development planning.
- ➔ Maintain the Camp Lake Forest Recreation Site.

Objective - Maintain current levels of recreational infrastructure on Cunningham Lake.

- ➔ Consider not establishing any new Forest Recreation Sites on Cunningham Lake.
- ➔ Manage for low levels of access to Cunningham Lake.

Objective - Manage to maintain the Tulle Lake Forest Recreation Trail (linking Tulle, Marie and Nanna lakes).

Re-establish the trail surface as necessary.

Objective - Manage the Spencers Ridge and Sowchea Creek esker roads to maintain the recreational experiences they currently offer.

Objective - Develop recreational lots where compatible with other values.

Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

### Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive viewsapes of Nanna, Marie, Butterfield, and Cunningham lakes, and the Bolcome lake chain.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

### Heritage and Culture

Objective - Manage the prehistoric Nautley/ Sowchea Trail to maintain its cultural and heritage values.

Locate and map the prehistoric Nautley/Sowchea Trail in its entirety.

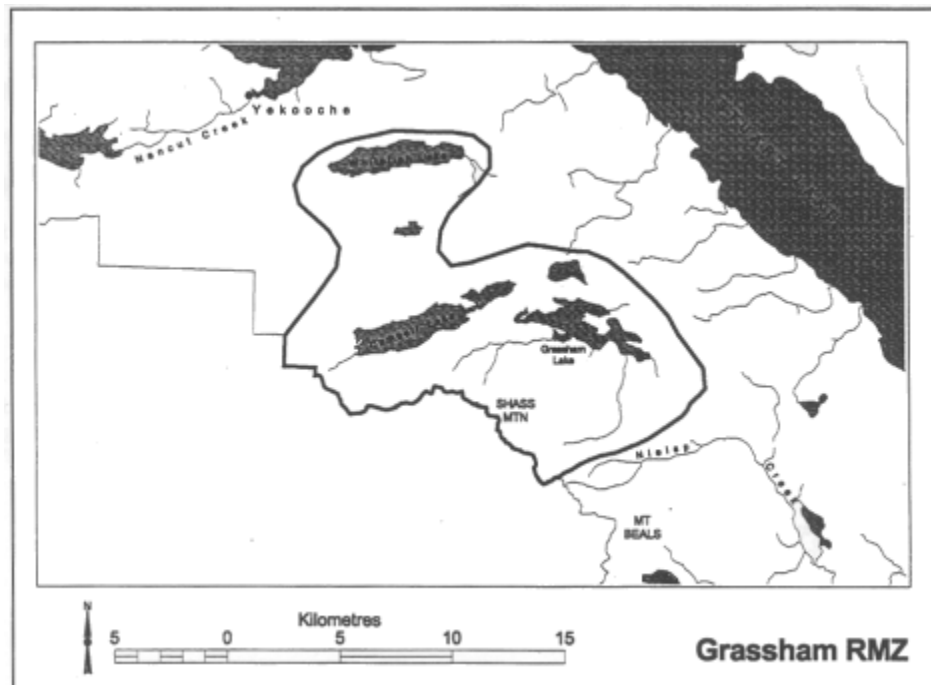
Develop and implement a management plan for the trail that recognizes its cultural and heritage significance. Consider this information in development planning.

## 4.11 Grassham Resource Management Zone



Total Area: 21,273 hectares

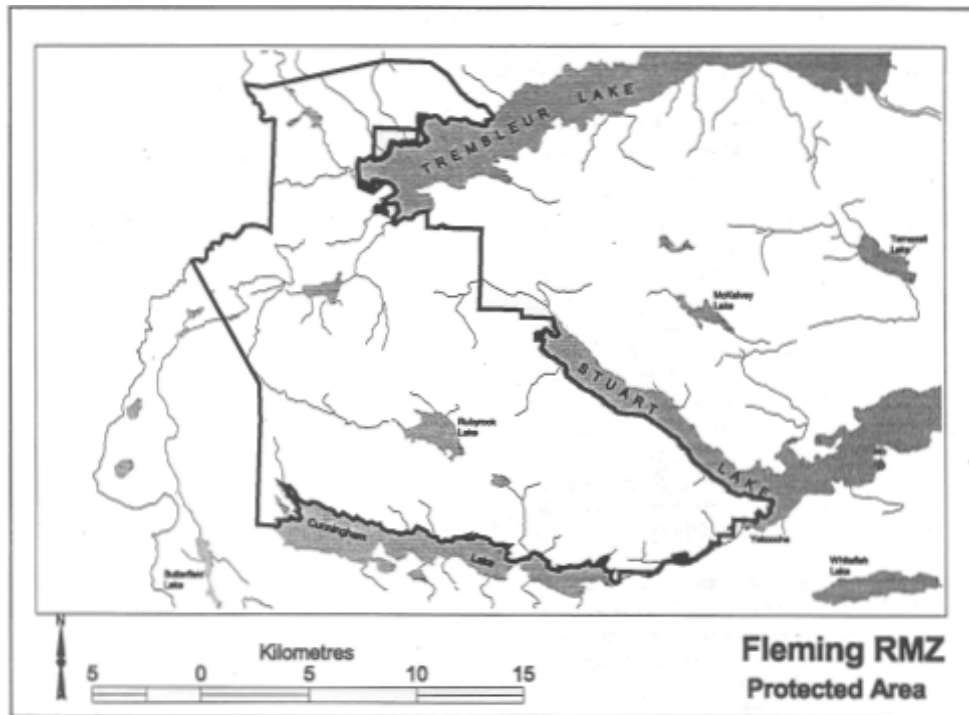
The Grassham Resource Management Zone is unique in that it offers a variety of recreational and tourism activities within easy reach of the community of Fort St. James. The Cunningham Forest Service Road is the main road, and runs through the zone along the northwest sides of Grassham and Camsell lakes. The power line servicing Yekooche Village on the west arm of Stuart Lake runs in a wide corridor along the Cunningham Forest Service Road.



#### **4.12 Fleming Resource Management Zone (Protected Area)**

Total Area: 41,590 hectares

The Fleming Protected Area is characterized by broken terrain and is dotted with numerous small lakes, rock outcrops, creeks and wetlands. It is bordered on three sides by large lakes:



◆Trembleur Lake forms the northeast boundary of the Protected Area. Fleming, Butterfield, Sidney and Paula creeks are major tributaries into Trembleur Lake.

◆Cunningham Lake forms the southwest boundary of the Protected Area.

◆the north arm of Stuart Lake forms the southeast boundary of the Protected Area.

Access is a concern to users throughout the Fleming Protected Area. There is little roaded access, save for an old jeep trail from the north end of Stuart Lake to the west end of Trembleur Lake. Some users have expressed a desire to develop additional access to recreational areas, while others wish to preserve the current non-roaded access in this area and the associated recreation experience.

There are moderate timber values in the middle of this area, with spruce as the leading species. Other species include lodgepole pine, aspen, Douglas-fir, balsam and birch. Deciduous stands are primarily mature.

Diverse habitats in this area support a wide variety of wildlife species, including grizzly bear, moose, furbearers and waterfowl. The area offers good aquatic furbearer habitat, and provides waterfowl migration stopover and nesting grounds. Riparian/wetland habitats include broken terrain, dotted with numerous small lakes, rock outcrops and wetlands.

The Fleming Protected Area provides important ungulate winter range. There is wildlife movement between the Fleming area and the north side of Cunningham Lake, throughout the Butterfield Creek drainage. There is one blue-listed habitat [SBS dw3

(06)], which is dominated by Douglas-fir, saskatoon and false sarsaparilla. The Fleming is one of the few areas that captures unique Douglas-fir shoreline ecosystems.

Sockeye salmon spawn in Fleming Creek, but sockeye production below the lake is severely limited by high spawning temperature. Paula Creek has high terrain instability in the upper areas, with an extensive fan in the lower three kilometres of the spawning area. Low flows have been noted in Sidney Creek, with an extensive fan in the lower three kilometres of the spawning area. There is high terrain instability in the upper area of Sidney Creek.

This area offers high recreational value for boating, hiking, hunting and fishing.

Landscapes that can be seen from Trembleur Lake, and Stuart and Cunningham lakes have high visual sensitivity. Recreational lease lots and private lands with cabins are located at Tranquillity Bay on Trembleur Lake, and there is high potential along the shore of Trembleur Lake outside the Protected Area for recreational lot development.

The area has high mineral potential.

Several traditional First Nations trade routes and areas of traditional use lie within the Protected Area. Aboriginal and heritage trails (currently all unmanaged) that are within or closely border the Protected Area include:

- the Trembleur-Stuart trail
- the Stuart-Babine trail
- the Trembleur-Babine trail
- the trail at Rubyrock Lake.

## 4.13 Tanizul

Resource Management Zone

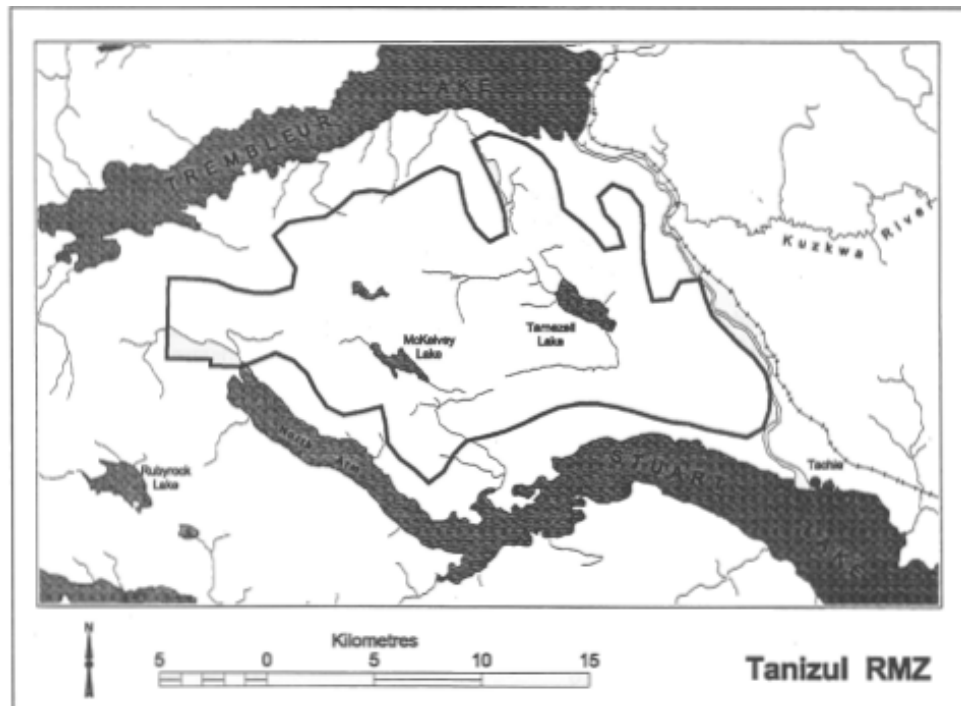


Total Area: 30,331 hectares

The Tanizul Resource Management Zone is a small zone surrounded by the larger Stuart-Trembleur Resource Management Zone.

Tree Farm License (TFL) #42 falls within this zone. Timber values are high throughout, with spruce as the leading tree species. Other species include lodgepole pine, deciduous species, balsam and some Douglas-fir on south-facing slopes.

Wildlife habitat values are generally moderate, with some patches of high value wildlife habitat. The zone provides valuable spring and winter ungulate habitat, and good movement corridors and habitat connections. South-facing slopes mainly adjacent to Stuart Lake may provide valuable mule deer winter and spring range. In the western part of the zone there are meadows and a swamp range. A young forest in the Tarnezell Lake burn area has scattered patches of mature timber.



There are good fishing values, especially associated with Tarnezell Lake. McKelvey Lake has been stocked with rainbow trout, and has high fisheries values. The Tachie River, which runs along the southeastern boundary, is used by spawning salmon.

Recreation and tourism activities include fishing and hunting. A trail connects the north arm of Stuart Lake with Trembleur Lake. There is some high potential for recreational lot development. One guiding license and five traplines are registered.

The industrial mineral assessment and metallic assessment are classed as high throughout the zone. Although there are no documented mineral occurrences, there is a small block of tenure in the area.

Areas of high archaeological potential have been identified along the Tachie River.

Tanizul RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

### **Water**

Refer to General Management Direction.

### **Fish and Fish Habitat**

Objective — Manage to maintain the sports fishery on Tarnezell and McKelvey lakes.

- ➡ Assess the current condition of the fishery and develop management plans to maintain, or enhance if appropriate, the fishery.

### **Wildlife Habitat and Populations**

Refer to General Management Direction.

### **Trapping and Guiding**

Refer to General Management Direction.



## Access

Objective - Manage recreational access to identified lakes to maintain resource values while providing a variety of recreational opportunities.

- ➔ Maintain the current condition of two-wheel drive access to Tarnezell Lake.
- ➔ Maintain the current remote, walk-in access to McKelvey Lake.

Objective - Manage access adjacent to the Fleming proposed Protected Area.

- ➔ Consider Park Management Plan objectives when planning/developing industrial access immediately adjacent to the proposed Protected Area, and manage access compatibly.

## Forest Stands

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Promote intensive silviculture where appropriate.
- ➔ Encourage establishing a forest and sustainable forest management in the Tan Fire area and in previously logged areas, while recognizing other resource values.

Objective - Minimize losses to the forest resource from bark beetle activities.

- ➔ Continue comprehensive and timely pest management activities to minimize losses on the landbase within Tree Farm License #42.

Objective - Endeavour to maintain Douglas-fir where it naturally occurs.

Strive to maintain the Douglas-fir component of the stand during harvesting and reforestation activities.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Develop recreational lots where compatible with other values.

Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

## Visual Quality

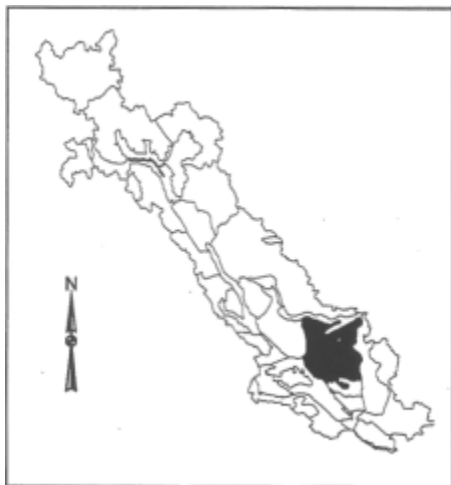
Refer to General Management Direction.

## Heritage and Culture

Objective - Manage to maintain the values of significant cultural and heritage sites.

Identify significant cultural and heritage sites and develop management plans to maintain their values.

### 4.14 Inzana Resource Management Zone



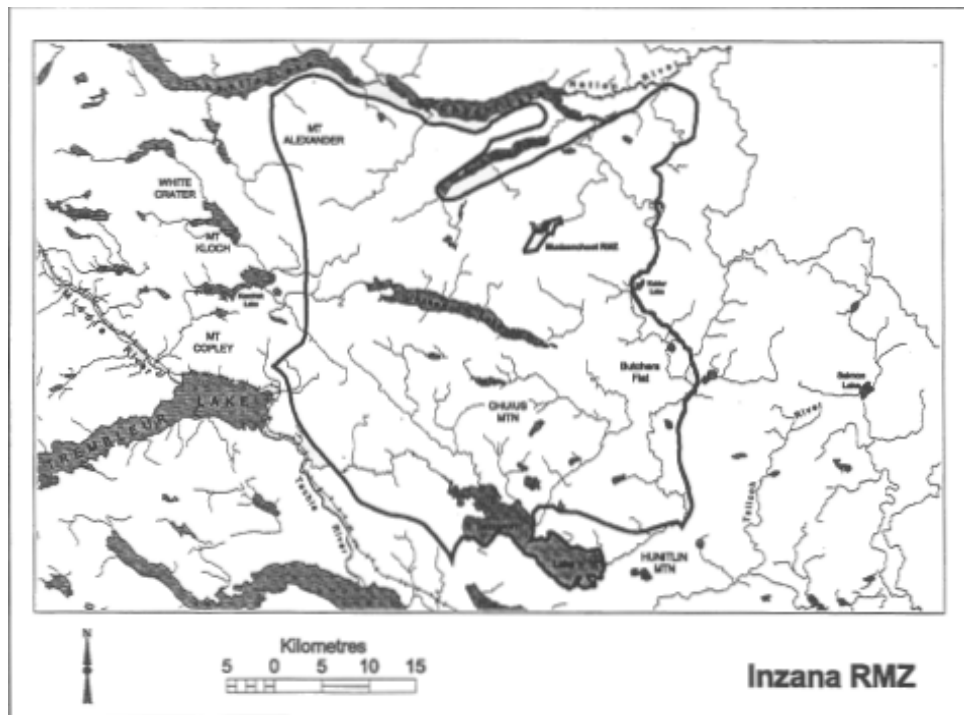
Total Area: 223,236 hectares

Numerous lakes dot this zone, and include Mudzenchoot, Hatdudatehl, Tezzeron, Inzana, 28 Mile, Otterson, Dem, Tamasgale, and Dolphin. The Kuzkwa River flows through the zone, linking Tezzeron Lake with the Tachie River and Trembleur Lake.

There are five main roads through this zone, including the Leo Creek Forest Service Road, the Germansen-Hat Forest Service Road, the Witch Forest Service Road, the Germansen Landing-North Road, and the Inzana Main Road.

Timber values are generally moderate across the zone, with some areas of high value. Lodgepole pine is the leading tree species, with other species such as spruce, balsam, aspen, Douglas-fir and birch. There has been extensive logging road development

through the watershed, with evidence of some unstable valley walls for some streams (tills and lacustrine soil slides).



Wildlife habitat values are generally moderate, with some specific areas of high value habitat. High habitat values are associated with Tezzeron Creek, Hatdudatehl Creek, and the Kuzkwa River, and along the western edge of the zone. Tezzeron Lake provides a necessary stopover for migrating geese.

Localized wetland complexes, streams, and associated riparian areas are scattered throughout, supplying valuable features for ungulate, bears, furbearers, waterfowl, eagles, songbirds and amphibians. The wetlands east of the Tachie River, areas north and south of the Kuzkwa River, and the area along the west end of Tezzeron Lake provide valuable winter habitat for moose. The series of wetland complexes and numerous small pothole lakes in the vicinity of the Kuzkwa River may have sensitive fisheries and waterfowl nesting habitats.

Forest habitat types include some deciduous types and some Douglas-fir in the lower half of the resource management zone. Numerous deciduous habitat types mark the zone's southern boundary. The south slopes of Tchentsut Mountain provides favourable habitats, with open forests and some Douglas-fir stands. The limestone escarpment formed by the Pinchi Fault has rocky outcrops that support uncommon plants, such as wood ferns, and some Douglas-fir stands. This area also provides a movement corridor for wildlife. Grizzly bears are found throughout the zone.

Sockeye and chinook salmon are found in the Kuzkwa River. The Department of Fisheries and Oceans feels that the application of Baseline management practices will protect existing salmon populations and associated salmon habitat within the zone, but

concern has been expressed regarding high summertime water temperature in some streams and lakes.

Good spawning habitat can be found in Inzana Creek. There are lake trout populations throughout, with spawning habitat occurring along most of the Inzana Lake shoreline. Over the past few years there have been proposals to blast the Kazchek Falls away as a means of allowing salmon passage to Takatoot, Kazchek, Kloch and Inzana lakes. Opening up the falls might allow squawfish access to those waters.

Both Dem and Hatdudatehl lakes support lake trout but these lakes are small and have very sensitive populations. Hatdudatehl Lake provides excellent shoreline lake trout spawning habitat. Tributaries to Hatdudatehl Creek are expected to provide the only spawning habitat for rainbow trout, since there is no inlet spawning habitat for rainbow trout. Rainbow trout are also abundant in Dolphin Lake.

Recreation and tourism activities in the zone include fishing, camping, hiking, and canoeing. Inzana Lake Lodge is located at the east end of Inzana Lake, and is accessible by road. The lodge offers log cabins, camping, boat rentals and launching, fishing and recreation services. A number of Forest Service recreation sites are heavily used by local and out-of-town users. There are four guiding licenses and seven trapping licenses within the zone.

The northeast and southwest portions of this zone are classed as metallic high, and the central part of the zone is classed as moderate metallic. The industrial mineral assessment is classed as high in the northeast and southwest portions of the zone, and low in the remainder. Twenty-one mineral occurrences have been documented, including six prospects and one developed prospect. Areas of occurrences are heavily tenured. Mineral claims exist mainly in the northern part of the zone. There are some claims southeast of Inzana Lake and north of Tezzeron Lake, and a few small claims just north of Inzana Lake.

The historic Omineca Gold Rush Trail continues straight through the zone, but the location of the entire trail is not known. The trail was important as a transportation route during the Omineca Gold Rush.

#### Inzana RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

## Biodiversity

Objective — Maintain the viability of existing natural grasslands.

- ➔ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire or, in the event of use, rehabilitate to a natural state.

## Air Quality

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Objective — Manage to maintain the sport fisheries on Dem, Dolphin and Tezzeron lakes.

- ➔ Assess the current status of these fisheries and develop management plans to maintain them (or enhance if appropriate).

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ◆the south slopes of Tchentsut Mountain
  - ◆the east end of Trembleur Lake
  - ◆the limestone escarpment which parallels the Pinchi Fault
  - ◆mixed deciduous/Douglas-fir habitats in the vicinity of Dem Lake
  - ◆the south-facing slope above the Kuzkwa River
- ➔ Manage grizzly bear habitat north of Tezzeron Lake.
- ➔ Implement strategies to maintain the wetland and riparian habitats associated with:
  - ◆Hatdudatehl Creek
  - ◆Grosette Creek (lower reaches)

- ◆ pothole wetlands east of Trembleur Lake and Tachie River
- ◆ Kuzkwa River
- ◆ Tezzeron Creek

Management strategies include avoiding altering natural drainage patterns and other activities that impact on wetlands.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Manage recreational access to remote lakes (use a variety of methods to control vehicular access to remote lakes).

- ➔ Identify and inventory these lakes for resource development planning.

Objective — Manage recreational access to identified lakes to maintain resource values while providing a variety of recreational opportunities.

- ➔ Consider not developing recreational vehicle access to Hatdudatehl Lake.
- ➔ Maintain the current level of recreational access into Inzana Lake and consider not developing new recreational access points to the lake.
- ➔ Maintain existing recreational access into 28 Mile Lake.
- ➔ Manage for two-wheel drive access into Otterson, Dem and Dolphin lakes.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.
- ➔ Promote the use of low impact silviculture systems to maintain the visual values and water quality of Inzana, Tezzeron and Tchentlo lakes.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Develop recreational lots where compatible with other values.

- ➔ Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

Objective — Manage identified lakes to provide a variety of recreational opportunities.

- ➔ Maintain the current condition and level of facility development at the Inzana Lake, Otterson Lake, 28 Mile Lake, Dolphin Lake, Dem Lake, and Tezzeron Lake Forest Service Recreation Sites.
- ➔ Consider expanding recreational opportunities on Tezzeron Lake.
- ➔ Consider not developing new Forest Service Recreation Sites on Dem Lake and 28 Mile Lake.

## Visual Quality

Refer to General Management Direction.

## Heritage and Culture

Objective — Manage to maintain the historic Omineca Trail, while allowing for recreational use.

- Locate and map the Omineca Trail.
- Develop and implement a management plan to maintain the values of the trail.
- Re-establish the trail route as necessary.

#### 4.15 Mudzenchoot Resource Management Zone (Protected Area)



Total Area: 637 hectares

This Protected Area is located in a high elevation area around Mudzenchoot Lake, south of Witch Lake.

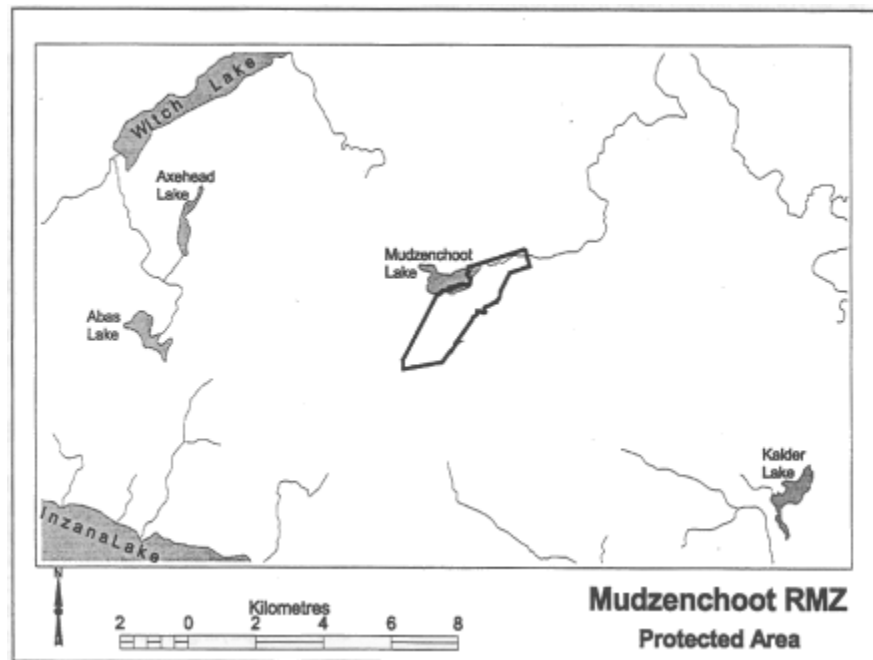
This high elevation area is characterized by unique vegetation types and dry meadows, with associated uncommon plants. A creek runs through the middle of the area. Dry meadows surround the lake, interspersed with drier lichen types and clumps of compact subalpine fir. Associated uncommon plants include cotton grass, erigerons, and aster type species.

Timber values are low throughout, with spruce as the leading species. Other species include balsam.

There is some wolf use of the area, and limited caribou use.

**Objectives and strategies for this proposed Protected Area are found in 3.18 General Management Direction: Protected Areas**



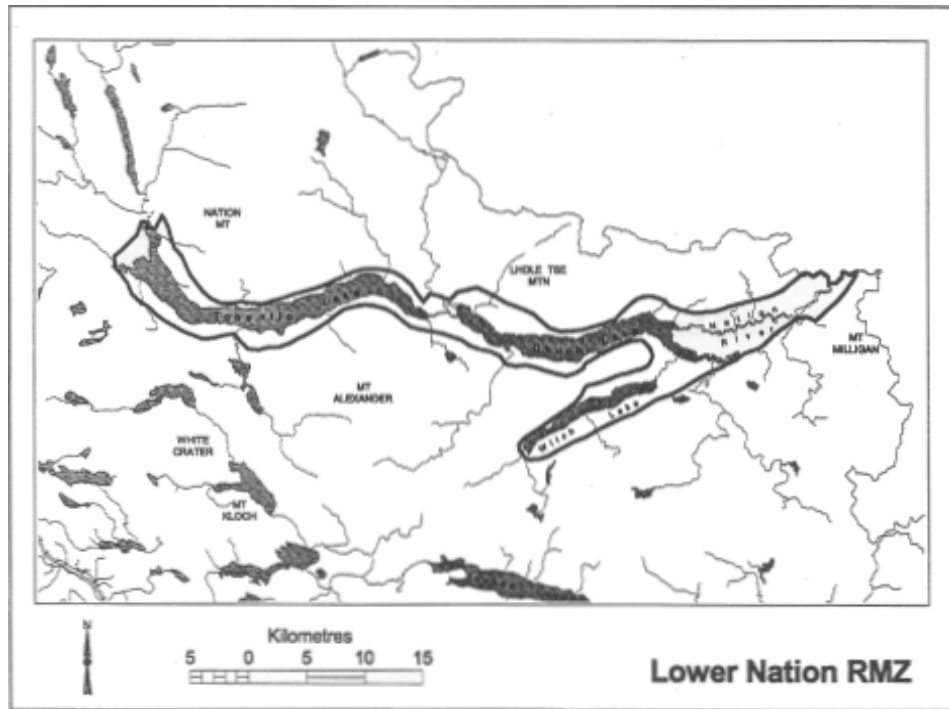


#### 4.16 Lower Nation Resource Management Zone



Total Area: 38,889 hectares

Two of the largest lakes in the Nation Lakes chain, Tchentlo and Chuchi, flow through the Lower Nation Resource Management Zone. The area is bordered by the Nation Protected Area, and the Inzana, Hogem and Kloch Resource Management Zones.



Tchentlo and Chuchi lakes complete a four-lake canoe chain (together with Tsayta, Indata and the Nation River) that has provincial significance. The east end of Chuchi Lake is the terminus of the popular Nation Lakes canoe route. The canoe route offers a recreational opportunity similar to the Bowron Lake chain, but is more remote and less crowded. At this point in time the Nation Lakes chain does not have the comparative level of use and does not require any sort of booking for departure dates. To canoe the entire four lakes takes from five to ten days. Tchentlo and Chuchi lakes receive considerably more motor boat use than the two upper lakes that lie within the adjacent Nation Protected Area.

Witch Lake is independent of the canoe route, and lies to the south of Chuchi Lake. Witch Lake is one of the few large, remote lakes in the southern half of the district that currently has limited road access (Cunningham Lake, in the Sowchea-Cunningham Resource Management Zone, is the other). It has exceptional water quality and supports an excellent lake trout fishery.

There are several main roads through or adjacent to the zone, including the Driftwood, Tchentlo, Leo-Airline, and the Germansen-Indata Forest Service roads.

Timber values are mainly moderate, with lodgepole pine as the leading tree species. Other species include spruce, balsam, and deciduous. The north slopes of Tchentlo and Chuchi lakes are predominantly pine, while the south slopes are predominantly spruce. There are a variety of age classes including younger to moderate-aged burns north of Chuchi Lake.

Wildlife values are moderate throughout most of the zone. Important riparian habitats are located at the mouth of the Klawli River. Segments of the Nation River provide winter range for ungulates, although it is limited due to high snow loads. South-facing

slopes on the north shores of Witch Lake are dominated by deciduous types, which are limited in this area. Brule Creek is a riparian and wetland habitat that contains associated wetland complexes adjacent to south-facing, mainly deciduous slopes, and provides good wildlife habitat. Between the lakes the Nation River provides good riparian habitats for songbirds, waterfowl, cavity nesters, aquatic fur bearers, bear, and ungulates.

Ahdatay Creek, Upper Airline Creek, the Nation River outlet, and Purvis Creek are productive tributaries and provide the most viable sources of lake trout. Klawli River and Klawdetelle, Wittsichica, and Witch creeks are the major tributaries in terms of fish production (i.e., spawning habitats). Tchentlo and Chuchi lakes contain vulnerable fish species such as bull trout and Arctic grayling and have also been stocked with Gerard trout. The Nation River was stocked with kokanee, but there is no evidence that spawning kokanee can pass the rapids at Philip Creek to return to spawn in the Nation River.

A number of tourism operations on the lower Nation Lakes offer guiding, outfitting and accommodations. There have been in excess of 500 inquiries a year to the local Chamber of Commerce regarding the Nation Lakes remote canoe adventure. Nation Lakes Canoeing and Fishing Resort is accessible by road, offering canoe trips and outfitting, cabins, camping and boat rentals. Inzana Outfitters operates road-accessible and fly-in camps on the Nation Lakes and the Nation River, offering cabins, air service, boat rentals and guided canoe trips. Tchentlo Lake Lodge is accessible by road, and offers accommodations, boat rentals and fishing. Natural, undeveloped warm springs are located across from this lodge. Tooty Lake Lodge is located on Chuchi Lake, and offers accommodations, meals, cabins and boat rentals. Numerous private cabins are located at the east end of Chuchi Lake as well.

There are five Forest Service Recreation Sites on Tchentlo Lake (one road access, four boat access) and six Forest Service Recreation Sites on Chuchi Lake (three road access, three boat access). There are also several undeveloped public recreational reserve sites. Recent improvements to the Chuchi Lake canoe route terminus now offer 30 campsites and improved boat access. Two shelters have been built along the canoe route. Four guiding licenses and one vacant guiding license area are registered in the zone.

The mineral assessment of the zone shows that the area is classified as having high metallic values, except for small areas at Witch Lake and along the west and central portions of Tchentlo Lake, which are classified as moderate value. The industrial mineral assessment is classed high in the Witch Lake area and the west and east ends of the two lakes, while the remainder is classed industrial moderate and low. There are numerous occurrences in the zone including three polymetallic prospects and the Wit deposit of 20,000 tonnes grading 4.7% lead and 2.3% zinc. There are several significant prospects, developed prospects and tenures located immediately outside this zone. There is also a significant amount of mineral tenure in this zone.

The historic Omineca Gold Rush Trail runs through the east end of the zone, running from Fort St. James to Baldy Mountain. The trail was important as a transportation route during the Omineca Gold Rush. Archaeological potential in this zone is high.

## Lower Nation RMZ - Special Management

Resource Management Zone Intent — Management on these lands emphasizes the significant tourism, recreational and fisheries values of the zone. Resource development (including roaded access development) may proceed as long as impacts on other resource values are minimized and resource values are maintained.

Objectives and strategies to supplement the General Management Direction

### Community Stability and Development

Refer to General Management Direction.

### Biodiversity

Refer to General Management Direction.

### Air Quality

Refer to General Management Direction.

### Soils

Refer to General Management Direction.

### Water

Objective — Maintain or enhance the water quality of Tchentlo, Chuchi and Witch lakes.

- ➔ Develop and implement a plan to minimize effluent contamination.
- ➔ Increase public education about the impacts of dumping effluent (gray and black water) and garbage from recreational boats, as well as appropriate methods of garbage and effluent disposal.
- ➔ Monitor water quality. Take remedial action if monitoring shows a significant decline in water quality.

### Fish and Fish Habitat

Objective - Manage to maintain the recreational/sport fishery on Tchentlo and Chuchi lakes.

- ➔ Assess the current status of the fishery through an inventory project. Develop recommendations and identify opportunities to maintain the fishery (or enhance where appropriate).

Objective - Manage lake trout populations in Witch Lake.

- ➔ Assess and monitor the lake trout population in Witch Lake. If necessary, develop and implement a management plan and consider applying some form of special management designation to maintain this population.
- ➔ Monitor water quality in Witch Lake. If the current high water quality changes, develop and implement a management plan to restore water quality to its original condition.

## Wildlife Habitat and Populations

Objective - Manage valuable habitats for a variety of species.

- ➔ Develop and implement management strategies to meet the objective for plans impacting riparian habitat at the mouth of the Klawli River, riparian habitats along the Nation River, and the south-facing deciduous slopes on Witch Lake.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Manage access to identified lakes to maintain remote recreational experiences.

- ➔ Maintain the current level of recreational vehicle access to Tchentlo Lake.
- ➔ Consider not developing new roaded recreational access to the Nation Lake Chain.
- ➔ Effectively restrict roaded recreational access to the shores of Witch Lake to minimize boat use.

## Forest Stands

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and consider intensive silviculture where appropriate, and where compatible with wildlife habitat and recreational objectives.
- ➔ Utilize low impact silviculture systems to maintain the visual and water quality objectives established for Witch Lake and the Nation Lakes Chain, and their viewscapes.

Objective - Minimize losses from damaging agents through fire and pest management with consideration for wildlife and recreational values within this zone.

- ➔ Adopt a management strategy of aggressive mapping, monitoring and single tree treatments prior to utilizing other strategies for salvaging damaged or attacked timber.
- ➔ Identify, survey and map defoliator species (i.e., two-year cycle budworm).
- ➔ Consider research projects for defoliator species (i.e., two-year cycle budworm).

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Objective — Manage for the recreational experience of the Nation Lakes Chain (Tchentlo and Chuchi lakes, as well as Tsayta and Indata lakes in the Protected Area) and Witch Lake, to provide continued opportunities for tourism and recreation.

- ➔ Manage Tchentlo and Chuchi lakes to maintain their contribution to the Nation Lakes canoe route.
- ➔ Support the continued promotion of the Nation Lakes canoe route.
- ➔ Develop a communications brochure to promote the use of the Nation Lakes chain as a canoe route.
- ➔ Endeavour to schedule resource development activities within this zone to minimize impacts on recreational users during the canoe season (July 1 to September 15).

## Recreation

Objective - Develop recreational lots where compatible with other values.

Plan recreational lot development for already developed, compatible areas on Chuchi Lake, upon completion of lakeshore inventories.

Avoid developing recreational lots on Tchentlo Lake without full opportunity for stakeholder involvement.

Avoid developing any recreational lots on Witch Lake.

Objective - Manage recreational facilities on identified lakes to provide a variety of recreational opportunities.

Assess acceptable limits of use in order to maintain the quality of the wilderness lake experience.

Avoid developing new recreation sites on the Nation Lakes chain, but maintain the current condition and level of facility development on existing Forest Service Recreation Sites. Involve local stakeholders in planning.

Objective - Maintain the viability of the warm spring located on Tchentlo Lake.

Complete an assessment of the warm spring and associated plant communities, and develop management direction for this spring (i.e., use, type of use, development).

## Visual Quality

Objective - Manage development activities to maintain the scenic qualities of the lower Nation River, and of Tchentlo and Chuchi lakes.

Complete a visual landscape inventory of the lower Nation River, and establish Visual Quality Objectives (VQOs) which maintain the wilderness quality of the recreational experience.

Consider designating a master visual quality objective of Retention along the immediate viewscape (shoreline) of Tchentlo and Chuchi lakes. Establish and implement a master visual quality objective of Partial Retention within the remaining viewscape of these lakes. Involve and consult with local stakeholders.

Consider designating a master visual quality objective of Partial Retention along the viewscape of the lower Nation River.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Refer to General Management Direction.

## 4.17 Kloch Resource Management Zone



Total Area: 123,290 hectares

Numerous lakes highlight the diverse topography of the Kloch Resource Management Zone. The north eastern corner of the zone borders the Nation Protected Area. There are four major roads through the Kloch zone: the Leo-Driftwood, the Leo-Purvis, the Leo-Eye, and the Leo-Kazchek Forest Service Roads. Several mountains are found within the zone, including Mt. Copley, Kloch Mountain and White Crater, and the Mitchell range to the north.



Several of the lakes in this zone, including Airline, Purvis, and Rock (Glaucers), are located in the Arctic watershed. Other lakes flow into the Fraser watershed. The Kazchek River and several creeks, including Leo, Kazchek, and Inzana, run through the zone.

Timber harvesting is a main activity in the Kloch Resource Management Zone, with several logging camps located within the zone boundaries. Timber values are high in this zone, particularly in the central and southern portions. Lodgepole pine is predominant through the southern and western portions of the zone, intermixed with spruce and aspen. A large area of aspen is located in the south of the zone. The northern portion of the zone contains sub-boreal fir. The central and western portions have mixed aspen and lodgepole pine stands.

Wildlife habitat values are generally moderate. There are some localized valuable habitat areas, including:

- ◆*Mt. Copley: south-slope habitats, open forests, with some Douglas-fir. This provides spring range habitat.*

- ◆*Elliot Lake and Kloch Mountain: old burns and some south slopes. The area provides*



*spring range habitat, and hare/lynx habitats.*

◆ *riparian and wetland habitat associated with Brule Creek (adjacent to mainly deciduous, south-facing slopes).*

Several wetland complexes are scattered throughout, providing significant riparian areas for ungulate populations. Streams and associated riparian types supply valuable features for ungulate, bears, furbearers, waterfowl, eagles, songbirds and amphibians. Deciduous habitat is associated with burn areas. Caribou may use the lower slopes of the Mitchell Range, crossing from Mount Sidney Williams.

The Pinchi Fault runs into this zone. The limestone escarpment along the fault has some Douglas-fir and rock outcrops, and provides habitat for several uncommon plants.

Kazchek Creek is used by sockeye and chinook salmon. High stream temperature is a concern as it can cause mortality, and the unstable valley walls may cause sediment input into lower portions of the creek. Over the past few years there have been proposals to blast the Kazchek Falls away, as a means of allowing salmon passage to Takatoot, Kazchek, Kloch and Inzana lakes. Opening up the falls might allow squawfish access to those waters. The lower three kilometres of Leo Creek support spawning sockeye salmon.

There is an isolated fish population above the falls at Brule Creek and includes rainbow trout, burbot, and whitefish. These fish are genetically different, due to their isolation. Arctic grayling are suspected to inhabit this zone.

Recreational activities within the area include fishing, hiking, and camping. The Forest Service maintains recreation sites at Kazchek, Kloch and Takatoot lakes. These sites provide opportunities for hiking, boating and fishing. There are three Forest Service Recreation Trails within the zone at Island and Green lakes, and to Kazchek Falls. The Forest Service trail at Dan Miner Lake is no longer maintained. A maintained trail leads to a Forest Service Recreation Site on the south end of Kazchek Lake, and another trail accesses the Kloch Lookout. Kazchek Lake Enterprises operates a hunting and fishing camp on Kazchek Lake.

The metallic mineral assessment in this zone is classed as high, except for an area around Airline and Kloch lakes which is classed as moderate metallic. The high metallic area is also classed industrial mineral high, and the metallic moderate area is classed industrial mineral low. There are seven occurrences including a prospect located northeast of Kloch Lake and a developed prospect located east of Albert Lake. Commodities are gold, silver, antimony, copper and lead at the Albert Lake occurrence. Commodities at the other occurrences include limestone, mercury, copper-mercury, copper-molybdenum and chromium. There is tenure in the Albert Lake area, and along the eastern boundary of the zone, north of Kloch Lake.

A historic pack trail from Fort St. James to Manson Creek runs through the zone, crossing into several other zones.

Kloch RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Objective — Maintain the diversity of locally significant habitats / vegetation types.

- ➔ Inventory locally significant habitats/vegetation types and associated habitats (i.e., habitats/vegetation types associated with the Pinchi Fault limestone escarpment) and identify factors affecting them.
- ➔ Implement management strategies for these habitats/vegetation types.
- ➔ Where possible, avoid the use of herbicides in locally significant habitats/vegetation types.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

### **Water**

Refer to General Management Direction.

### **Fish and Fish Habitat**

Objective — Manage to maintain the isolated fish populations above the falls on Brule Creek.

- ➔ Develop and implement management strategies to maintain fish habitat above Brule Creek falls. If appropriate, apply some form of special management designation.

Objective — Provide optimum management for salmon streams.

Objective — Investigate the enhancement of salmon and trout species, without adversely affecting existing fish populations.

- ➔ Prior to commencing any work in the vicinity of Kazchek Falls, undertake a detailed study to assess existing fish distribution, existing fish habitat use, enhancement opportunities (including numbers, economic benefit, and project cost), and the ecology of the existing fish/food/vegetation interactions. This study should undergo a full public review prior to commencing enhancement activities.

Objective — Manage to maintain sensitive lake trout fisheries in a number of lakes in this zone.

- ➔ Undertake inventory and research to determine which lakes in this zone have sensitive trout fisheries.

## **Wildlife Habitat and Populations**

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans around:
  - ◆the limestone escarpment along the Pinchi Fault and the north shore of Trembleur Lake
  - ◆the spring habitat range provided by south-slope habitats and open forests on Mt. Copley
  - ◆the lynx/hare habitat and spring range habitat provided by south-facing slopes and old burns around Elliot Lake and Kloch Mountain
  - ◆the riparian and wetland habitat associated with deciduous, south-facing slopes around Brule Creek
- ➔ Implement strategies to maintain connectivity throughout the zone.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Refer to General Management Direction.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.

Objective — Minimize losses from damaging agents through fire and pest management.

- ➔ Identify, survey and map defoliator species (i.e., two-year cycle budworm in the area north of Kloch Lake).
- ➔ Develop pro-active management, including a wide variety of management tools.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Provide a variety of recreational opportunities on identified lakes.

- ➔ Maintain Forest Service Recreation Sites with two-wheel drive access at Kazchek Lake, Kloch Lake, and Takatoot Lake.
- ➔ Establish Forest Service Recreation Sites (with two-wheel drive access as the only recreational access) at Elliot Lake and Glaucers Lake (Rock Lake).
- ➔ Consider developing a small Forest Service Recreation Site on Albert Lake.
- ➔ Maintain Forest Service Recreation Trails to Dan Miner Lake, Green Lake, Kazchek Lake and Kazchek Falls.
- ➔ Avoid maintaining Forest Service Recreation Trails to Island Lake.
- ➔ Establish a Forest Service Recreation Trail to Eye Lake.
- ➔ Avoid developing roaded recreational access to Island Lake, Green Lake, Natazulto Lake, Airline Lake and Eye Lake.
- ➔ Avoid developing new recreational facilities on MacDonald Lake.

## Visual Quality

Objective — Manage to reduce visual impacts on the visually sensitive viewscape of Kazchek Falls.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Refer to General Management Direction.

### 4.18 Takla-Middle Resource Management Zone

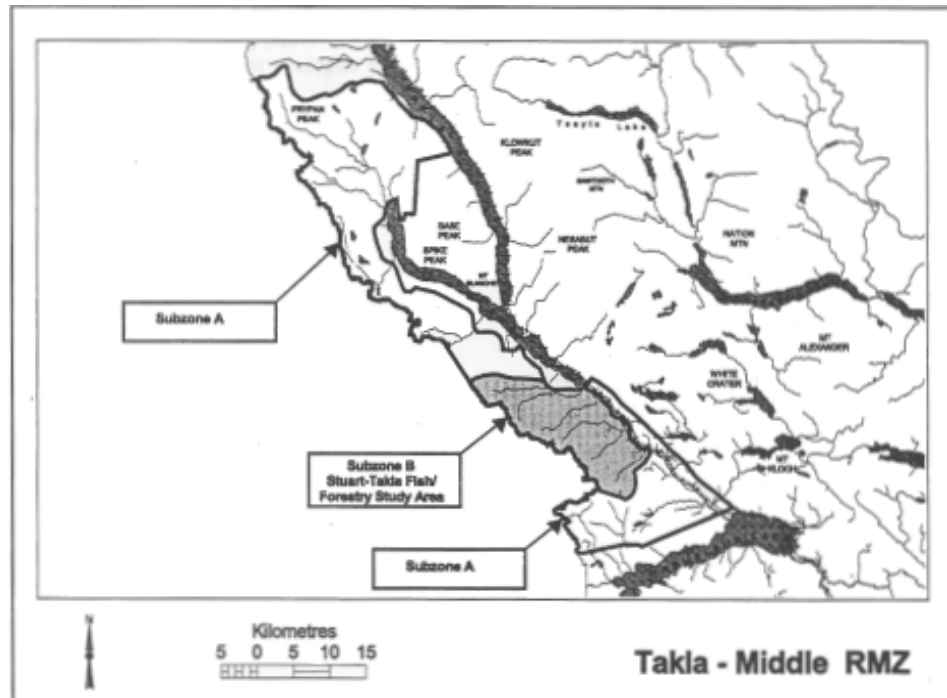


Total Area: 121,767 hectares

This Resource Management Zone is divided into two subzones:

- ◆ *Subzone A: Takla-Middle Resource Management Zone*
- ◆ *Subzone B: creeks on the west side of Takla Lake and Middle River, as defined by the Stuart-Takla Fish Forestry Study.*

*Subzone B:* **Stuart-Takla Fish Forestry Study area**



This sub-zoning reflects research and management associated with the Stuart-Takla Fish Forestry Study (funded by the Department of Fisheries and Oceans, Ministry of Forests, Ministry of Environment, Lands and Parks, and Canadian Forest Products).

In order to assist with the development of fish/forestry/wildlife guidelines for the Interior a research project was initiated in 1990, focusing on four tributaries of the Stuart-Takla watershed:

Gluskie Creek  
O'Ne-ell Creek (Kynoch Creek)  
Forfar Creek  
Bivouac Creek

The research project is designed to develop an understanding of the ecosystem processes that affect stream production and forest outputs.

The Stuart-Takla river system produces provincially significant salmon runs. Predominantly a wild salmon fishery, it is made up of sockeye and chinook.

The Stuart-Takla watershed supports both early and late run sockeye salmon. Escapements of early run sockeye salmon to the experimental watersheds in early August frequently exceed 10,000 fish. The watershed also supports other species of salmonids, including rainbow trout, bull trout, a possibly distinct race of kokanee, and non-salmonids, such as burbot, squawfish and shiners. Sockeye salmon use the small tributaries of the Stuart-Takla drainage almost exclusively as incubation habitats.

The Fleming Protected Area and the Blanchet Protected Area are adjacent to this zone. Three major roads run through zone: the Leo Creek-Middle, Leo Creek-Kazchek, and

the Leo Creek-Sakeniche Forest Service roads. The British Columbia Rail Dease Lake extension runs along the east side of the Middle River.

Numerous First Nations communities surround Takla Lake, on both traditional and reserve lands. The slow moving Middle River area is important to Carrier people. Middle River is used for hunting, fishing, travel and settlement. There are also areas of traditional use activities, such as trapping. Trails lead off Middle River to traditional upland hunting, fishing, trapping and berry picking areas, such as the trail to Baptiste Lake. There is a traditional summer camp on the north shore of Baptiste Lake. Areas of high archaeological potential have been identified along Middle River.

Lakes in the zone include the Macdougall Lake chain and the Baptiste Lake chain. Middle River moves slowly through the zone. Many creeks flow off from Mt. Sidney Williams into both the Middle River and Trembleur Lake.

Timber values are high throughout the zone, with lodgepole pine as the leading tree species. Other species include balsam, spruce, deciduous species and Douglas-fir. Mountain pine beetle is endemic, with epidemic patches throughout the zone.

The area has moderate and high wildlife habitat values. Mt. Sidney Williams, Pyramid Peak and Tsitsutl Mountain provide alpine habitat for caribou, mountain goat and grizzly bear, and key sub-alpine forest habitat for caribou and grizzly bear. Mt. Sidney Williams has geological features similar to those found on Murray Ridge (in the Pinchi Resource Management Zone). The south slope has more open habitat, and provides spring range for bears. Maidenhair ferns are found on the lower slopes of Mt. Sidney Williams.

Good wetland habitats are found throughout the zone. Valuable floodplain habitats are associated with the Sakeniche River, providing quality habitat for bear, aquatic furbearers, fisher, moose and cavity nesters. Areas along Middle River provide overwintering sites for trumpeter swans and waterfowl, and nesting locations and migration stopovers for various bird species. There are extensive riparian habitats associated with Middle River. Paula and Sidney creeks, which flow into Trembleur Lake, have high terrain instability in their upper reaches, and an extensive fan in the lower three to four kilometres. This lower fan is characteristic of many of the creeks that run off Mt. Sidney Williams, and provides excellent spawning habitat.

Mature forest on the west side of Takla Lake provides good grizzly bear and furbearer habitat. A large fire-origin stand northwest of Dust Creek may also provide good grizzly habitat. The Dust Creek area supports mixed forest types with considerable deciduous stands, wetlands, streams and associated good wildlife values. The Sinta Creek burn provides a movement connection from Takla Lake through to Friday and Morrison lakes in the Babine system. The Frypan Pass provides a habitat connection between Takla and Babine Lakes adjacent to wetlands, a burn, and extensive deciduous stands along the headwaters of Dust Creek.

A blue-listed plant community (Black spruce, black huckleberry, coltsfoot), is associated with the flat bottom land along Middle River (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre). High profile wildlife species include grizzly bear, trumpeter swan, mountain goat, and caribou.

Numerous rivers and streams provide important salmon spawning habitat values. The Sakeniche River is used by salmon, but high temperatures and seasonal low flow rates in the river limit fish use. The Middle River provides valuable fish habitat, particularly for late Stuart sockeye and chinook salmon, but high stream temperatures have caused pre-spawning mortality in some years. Spawning occurs in gravel fans at the outlets of the west bank of Middle River tributaries. The Stuart-Takla Fish Forestry study area lies within this zone. White sturgeon are found in the Middle River.

Recreation and tourism activities include hunting, fishing, boating, hiking, canoeing, wildlife and landscape viewing, and backcountry skiing. There is a trail from Middle River to the top of Tsitsutl Mountain. There are no Forest Service Recreation Sites or trails in this zone. One guiding license and six trapping licenses are active in the area.

The metallic assessment is classed as high throughout this zone, except for a small fraction that lies west of the Blanchet Protected Area. The industrial mineral assessment is classed as high in the south half and moderate in the north half. There are sixteen documented mineral occurrences located within the area. Ten occurrences are located in the Mt. Sidney Williams area where the commodities are placer, hardrock gold and chromium. There is a jade occurrence at Kynoch (O'Ne-ell) Creek and a soapstone occurrence south of Baptiste Creek. Three copper occurrences and two copper-silver-zinc-lead occurrences are found farther north in the zone. There is tenure in the Mt. Sidney Williams and Kynoch Creek areas.

The Hazelton-Manson Trail from Fort Babine to the Omineca gold fields runs through the Frypan Pass. This trail was used as a transportation route during the Omineca Gold Rush.

#### Takla-Middle RMZ - Resource Development

Resource Management Zone Intent — Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

#### **Community Stability and Development**

Refer to General Management Direction.

#### **Biodiversity**

Objective — Maintain the diversity of locally significant habitats / vegetation types.

- ➔ Inventory locally significant habitats/vegetation types, red-listed and blue-listed associations, and associated habitats, and identify factors affecting them.
- ➔ Implement management strategies for these habitats/vegetation types.



- ➔ Where possible, avoid the use of herbicides in locally significant habitats/vegetation types.

## **Air Quality**

Refer to General Management Direction.

## **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Objective — Provide optimum management for salmon streams that feed into the Stuart River system.

- ➔ Endorse the research activities being conducted through the Stuart-Takla Fish Forestry Study.

## **Wildlife Habitat and Populations**

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ◆grizzly bear habitat needs on the south slopes of Mt. Sidney Williams
  - ◆wildlife values associated with alpine areas and the flood plain of Sakeniche River
  - ◆caribou and goat habitat on Mt. Sidney Williams, Pyramid Peak and Tsitsutl Mountain
  - ◆wildlife values in the riparian areas adjacent to the Middle River.
- ➔ If appropriate, consider applying some form of special management designation.

Objective — Manage to maintain the viability of trumpeter swan winter habitat.

- ➔ Identify trumpeter swan winter habitat.
- ➔ Implement strategies to minimize impacts on trumpeter swan winter habitat in development planning.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Manage recreational access on the Macdougall Creek Road.

- ➔ Minimize the amount of time that the Macdougall Creek Bridge is in place, and remove the bridge at each opportunity when active operations cease.
- ➔ Address access management and associated rationales in a Co-ordinated Access Management Plan.
- ➔ Applications for permanent access would require a public process.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Within Subzone B, promote the use of low impact silviculture systems to maintain the visual values and water quality of Takla Lake and the Middle River.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Manage to provide a variety of recreational and tourism opportunities along the Middle River.

- ➔ Manage to maintain the recreational boating experience on the Middle River.
- ➔ Maintain navigational aids on the Middle River.
- ➔ Consider establishing a hiking trail to the alpine for use by summer hikers and winter backcountry skiers.

## Visual Quality

Objective — Manage to reduce visual impacts on the visually sensitive viewscales of the Middle River and of Takla Lake.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Objective — Consider the on-going traditional use of the camp on the north shore of Baptiste Lake in resource development planning.

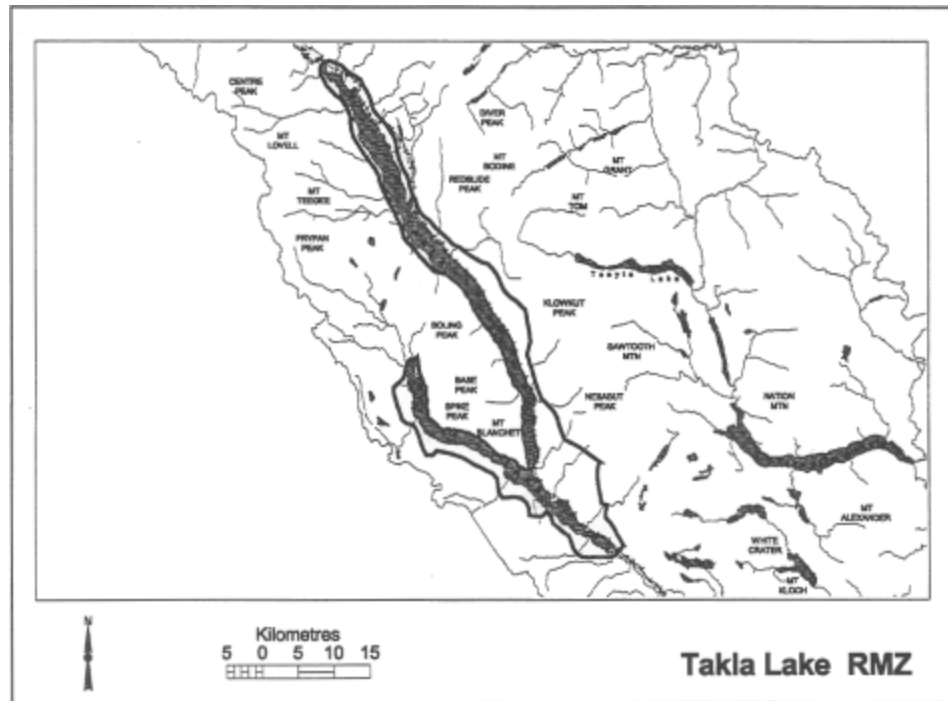
### 4.19 Takla Lake Resource Management Zone



Total Area: 59,472 hectares

Takla Lake is the main feature of this Resource Management Zone, covering almost one half of the total area. The Takla Lake Band has a community at Takla Landing, and there is another community (Bulkley House) at the top end of the lake. The Sakeniche and Driftwood rivers flow into Takla Lake. The Blanchet Protected Area lies between the north and northwest arms of this zone.

The zone is well accessed, with three Forest Service Roads (Leo Creek, Leo-Sakeniche and the Driftwood) providing access for industrial, residential and recreational users. Rustad Brothers & Co. Ltd. operate a 200-person logging camp at Lovell Cove, with associated access and resource roads. The British Columbia Rail Dease Lake extension runs through this zone, along the northeast side of Takla Lake.



Timber values are generally high throughout the zone, particularly along the shore of Takla Lake. Lodgepole pine is the leading tree species, with other species such as spruce, deciduous and balsam. Lodgepole pine, spruce, and aspen are mainly found in the eastern part of the zone. The southwest portion of the zone contains balsam, lodgepole pine, spruce, and aspen in varying amounts.

Wildlife habitat values are moderate to high. Younger, mixed forest types and some Douglas-fir are located on the east side of Takla Lake, from Middle River north to just below Takla Landing. The area, which currently has limited access, provides moderate habitat for moose (some winter use), bear, furbearers and cavity nesters. The Middle River area is used by trumpeter swans for over-wintering.

The outlet of Dust Creek provides extensive deciduous stands for use by cavity nesters and ungulates. The area is a habitat connection north to Frypan Pass and east to West Landing.

Along the southwest side of the lake, just south of Ankwill Creek, there is a deciduous patch used by cavity nesters, aquatic furbearers, bear and ungulates.

Takla Lake has high fisheries values, mainly due to the connection to southern lakes. The lake has an excellent sport fishery for lake trout (char), rainbow trout and kokanee. Sockeye and chinook salmon use most of the tributaries that flow into Takla Lake for spawning in the fall.

Recreation and tourism activities include canoeing, fishing, hunting, and boating. The one Forest Service recreation site in this zone, at Sakeniche Crossing on the east side of Takla Lake, is heavily used on weekends.

Takla Lake hosts a variety of recreational uses. This lake is the first of three lakes (Takla, Trembleur and Stuart) that join to form a unique boating opportunity. Takla Lake Marine Park (Sandy Point) is an undeveloped provincial Class A park. Takla Rainbow Lodge is located at Takla Narrows, on Takla Lake. This lodge offers accommodations, boat rentals, supplies and fishing services. The Middle River Hunting and Fishing Camp, is accessible by road and is located where Middle River flows out of Takla Lake. It offers cabins and fishing services. One guiding license and three trapping licenses are active.

Recreational lots are located on the east shore of the northwest arm and the east shore of the north arm of Takla Lake, with considerable area available for future development.

The northern third of the zone has a metallic mineral assessment showing low potential, while the remainder of the zone is classed as metallic high. The zone is classed industrial high south of the main and northwest arms of Takla Lake, and at the northwest arm of Takla Lake. The remainder of the zone is classed industrial moderate. There is one known mineral occurrence located on the south west side of the northwest arm of Takla Lake. The zone is an important transportation corridor for mineral resource management.

Unique fossil beds are found at the north end of Lovell Cove. The Hazelton-Manson Trail from Fort Babine to the Omineca gold fields runs through the Frypan Pass. This trail was used as a transportation route during the Omineca Gold Rush. West Landing is a historic site on Takla Lake.

Takla Lake RMZ - Multi-Value

Resource Management Zone Intent — Management on these lands integrates a wide range of resource values. Access is relatively unrestricted, with the exception of any land that may need special management considerations.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Objective — Manage to maintain or enhance the water quality of Takla Lake.

- ➔ Identify and inventory potential pollution sources and implement actions to mitigate impacts on water quality.
- ➔ Develop and implement a plan to minimize effluent contamination in Takla Lake.

## Fish and Fish Habitat

Objective — Manage to maintain viable populations of white sturgeon.

- ➔ Identify the abundance, distribution and habitat use of all life stages of the white sturgeon.
- ➔ Develop and implement a management plan to protect white sturgeon populations and habitat. If appropriate, consider applying some form of site-specific special management designation for spawning areas and other valuable habitat areas.

Objective — Manage to maintain the fishery on Takla Lake.

- ➔ Assess the current status of the fishery. Develop recommendations and identify opportunities to maintain (or enhance where appropriate) the fishery.

Objective — Provide optimum management for salmon streams that feed into the Stuart River system.

## Wildlife Habitat and Populations

Objective — Manage to maintain valuable habitat associated with the deciduous stands at the mouth of Dust Creek.

- ➔ Consider incorporating these stands into a wildlife movement corridor. Consider applying some form of special management designation, if appropriate.

Objective — Manage to maintain the valuable ungulate winter range at the junction of the Driftwood River and Takla Lake.

- ➔ Implement strategies for resource development and, if appropriate, consider applying some form of special management designation to maintain this habitat.

Objective — Manage to maintain the viability of trumpeter swan winter habitat.

- ➔ Identify trumpeter swan winter habitat.
- ➔ Implement strategies to minimize impacts on trumpeter swan winter habitat in development planning.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Refer to General Management Direction.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture.
- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for Takla Lake and its viewscape.

Objective — Maintain opportunities for timber harvesting and forest management.

- ➔ Develop cutblocks that are compatible with the visual quality objectives established for Takla Lake.

Objective — Endeavour to maintain Douglas-fir where it naturally occurs.

- ➔ Strive to maintain the Douglas-fir component of the stand during harvesting and reforestation activities.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective — Develop recreational lots where compatible with other values.

Develop and implement a management strategy for recreational lot development that is consistent with the objectives and resource management intent of this zone.

Plan recreational lot development for compatible areas, upon completion of lakeshore inventories.

Objective — Manage for recreational opportunities on Takla Lake, while considering the recreational experience and other values.

Consider developing recreational access and facilities to accommodate recreational demands.

Improve the current condition of the Sakeniche Crossing Forest Service Recreation Site.

Consider developing several user-maintained recreational sites with boat access on the north west and north arms of Takla Lake.

Increase public education about the impacts of dumping effluent (gray and black water) and garbage from recreational boats, as well as appropriate methods of garbage and effluent disposal.

Provide proper garbage and effluent disposal facilities at several locations on Takla Lake.

Identify the Takla Lake Marine Park as a priority for future recreational development within the plan area. Encourage public participation in the development of a management plan for the park.

## Visual Quality

Objective — Manage resource development to reduce visual impacts on the visually sensitive viewscape of Takla Lake.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Refer to General Management Direction



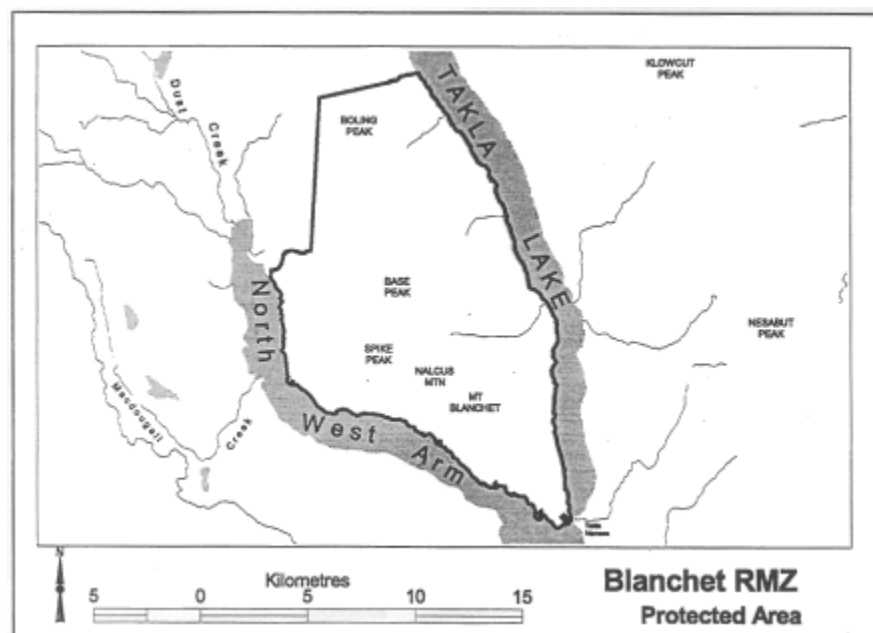
## 4.20 Blanchet Resource Management Zone (Protected Area)



Total Area: 24,099 hectares

The Blanchet Protected Area is a very mountainous area, located between the northwest arm and the main part of Takla Lake. There is no roaded access to the area, only trail access from the Takla Narrows Reserve.

Timber values are low throughout the zone, with balsam as the leading species. Other species include spruce, lodgepole pine, deciduous species and Douglas-fir. Major beetle salvage operations have been proposed for stands on the pine flats to the east of the Protected Area. An ecological reserve at Takla Lake protects the most northerly stand of Douglas-fir in the planning area.



Extensive alpine provides valuable habitat for local caribou, mountain goat and grizzly bear. The open south-facing slopes above the northwest arm of Takla Lake provide spring range habitats.

Sockeye are found in Crow Creek, Hooker Creek, Point Creek and Blanchet Creek.

Recreation and tourism activities include boating, hiking, fishing, and wildlife viewing. There are no Forest Service Recreation Sites or Trails within the area, but there is a trail from the shore of Takla Lake to Mt. Blanchet. There are two recreation reserves on the northwest arm of Takla Lake, where potential exists for expansion of recreational lots.

The area has moderate mineral potential, with one copper occurrence.

There is First Nations sustenance fishing in the Protected Area.

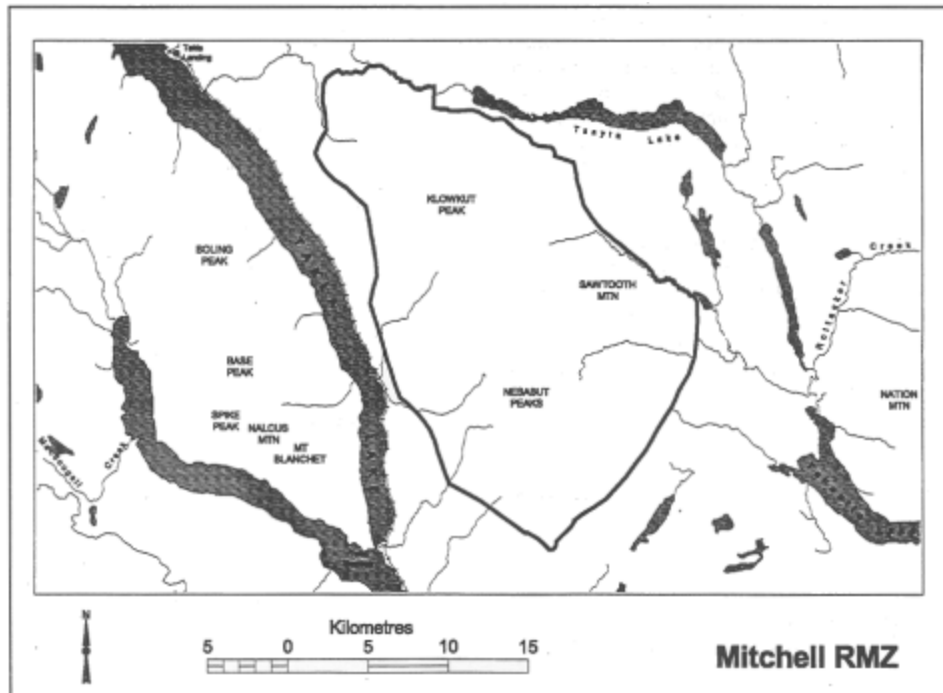
#### **4.21 Mitchell Resource Management Zone**



Total Area: 54,785 hectares

The Mitchell Resource Management Zone is mainly alpine, with very mountainous topography. The height of land between the Arctic and Fraser watersheds runs through the middle of the zone, and is made up of Mitchell Peak, Nesabut Peaks, Sawtooth Mountain, and Klowkut Peak. There are no large rivers in this zone but several small creeks drain off the mountain peaks. The zone shares its eastern boundary with the Nation Protected Area.

Road access is very limited. The Driftwood Forest Service Road runs up the east side of the zone.



Timber values are generally low to moderate throughout the zone, with some small areas of high value. Balsam is the leading tree species with other species such as spruce, lodgepole pine and deciduous. Lodgepole pine is found predominantly in the eastern and western portions of the zone. Aspen is found in small patches in the eastern and western portions of the zone. The majority of the older age classes is found in the north and south of the zone. The large alpine areas are located in the central and western parts of the zone. Mature stands are primarily found in the western and eastern parts of the zone. Immature stands are found in the eastern part of the zone, and are intermixed with the alpine areas of the central part of the zone. To date less than 1% of the total forest area has been logged.

Wildlife habitat values are split almost evenly between high and moderate value. There are predominantly higher elevation habitats with some younger mixed forest types. Wetland habitats are relatively uncommon in this zone. The slopes above Brule Creek and Albert Lake provide deciduous forest used by ungulates for summer and fall range. The Mitchell Range provides good habitat for moose, bear, fur bearers and mountain goat. The zone also provides important connections and movement corridors for wildlife, particularly along Brule Creek between the upper Nation River and Tchentlo Lake. The old spruce/ balsam types on the north-facing slopes have high levels of coarse woody debris and provide good furbearer habitat. There are also some winter range values for caribou.

Recreation and tourism activities include pursuits associated with undeveloped alpine areas, such as hiking, snowmobiling, hunting, and backcountry activities. The Mitchell Range alpine area is relatively accessible for recreational use, as it is within a two hour drive from the community of Fort St. James. There are two trails to the alpine, established by First Nations, guides and outfitters. Two guiding licenses operate in the zone.

The metallic mineral assessment classifies this zone as high for metallic minerals. The industrial mineral assessment is classed moderate through much of the zone, and classed high in the southern limits of the zone. There are ten occurrences including three mineral prospects. Commodities include molybdenum, copper, gold and chromium.

#### **Mitchell RMZ - Special Management**

Resource Management Zone Intent — The largely unroaded nature of the zone, and the key alpine areas within it, provide the significant scenic and recreation values in this zone, as well as wildlife habitat values for goat and caribou. Management on these lands emphasizes these values. Resource development (including roaded access development) may proceed as long as impacts on other resource values are minimized and resource values are maintained. More intensive forest development will occur along the Driftwood Forest Service Road corridor.

Objectives and strategies to supplement the General Management Direction

#### **Community Stability and Development**

Refer to General Management Direction.

#### **Biodiversity**

Refer to General Management Direction.

#### **Air Quality**

Refer to General Management Direction.

#### **Soils**

Refer to General Management Direction.

#### **Water**

Refer to General Management Direction.

#### **Fish and Fish Habitat**

Objective — Provide optimum management for salmon streams that feed into the Stuart River System.

## Wildlife Habitat and Populations

Objective — Manage to maintain identified valuable habitats for a variety of wildlife species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with deciduous slopes above Brule Creek and Albert Lake (summer and fall ungulate range).
- ➔ Implement strategies to manage for the caribou habitat in the Mitchell Range.

Objective - Manage for the goat population on Mitchell Range.

- ➔ Inventory the goat population
- ➔ Develop and implement strategies to maintain viable goat populations.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective - Manage access to alpine habitats in this zone.

- ➔ Minimize roads into alpine habitats.
- ➔ Upon completion of industrial activities and where deemed appropriate, endorse the removal of motorized vehicle access routes.

## Forest Stands

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

Emphasize basic silviculture.

Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for Takla Lake and the northwest corner of Tsayta Lake, and their viewscapes.

Promote intensive silviculture along the Driftwood Forest Service Road corridor, within this zone.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Refer to General Management Direction.

## **Visual Quality**

Refer to General Management Direction.

## **Heritage and Culture**

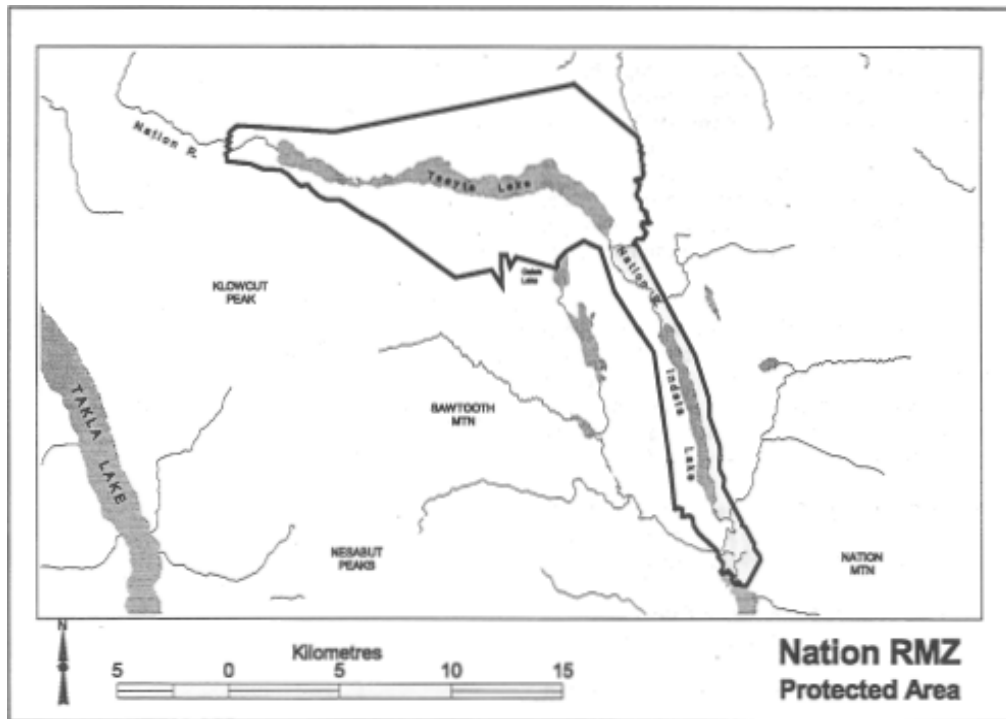
Refer to General Management Direction.

## **4.22 Nation Resource Management Zone (Protected Area)**



Total Area: 18,732 hectares

The Nation Protected Area includes portions of the Nation Lakes chain, a provincially significant canoe route. The Nation Lakes chain is made up of Tsayta, Indata, Tchentlo, and Chuchi lakes. Tsayta and Indata lakes are located in this Protected Area: Tchentlo and Chuchi lakes are located in the adjacent Lower Nation Resource Management Zone. The lakes are connected by the Nation River.



Roaded access includes the Leo and the Driftwood Forest Service Roads. The area represents typical topography and forests associated with valleys and peaks of the Omineca Mountains.

Timber values are mainly low throughout, with lodgepole pine as the leading tree species. Other species include spruce, balsam and aspen.

The Nation Protected Area has high wildlife values. The lake chain is roughly the southern limit of the woodland caribou range. Caribou are commonly seen around Tsayta/ Indata Lakes area.

Wetland complexes adjacent to south-facing slopes of Brule Creek are mainly deciduous, and provide good wildlife habitat. Along the Nation River there are good riparian habitats for songbirds, waterfowl, cavity nesters, aquatic furbearers, bear and ungulates.

There is a valuable fishery along the entire lake chain including bull trout (blue-listed) and lake trout. Arctic grayling have declined significantly over the last thirty years throughout the system. An Arctic grayling brood stock had been established in Little Calais Lake.

Water-based recreation values are high in this Protected Area, mainly because of the many sandy beaches and campsites along shorelines. The Nation Lakes chain is a provincially significant canoe route, with boating, trophy fishing, and camping areas. The Fort St. James Chamber of Commerce indicates that tourist interest in the Nation Lakes chain is high, recording 560 inquiries in the first ten months of 1995.

There are numerous BC Parks recreation reserves throughout the zone. Tsayta Lake Lodge is accessible via the Driftwood Forest Service Road and offers meals, accommodations, cabins and kitchenettes, boat rentals, and emergency fuel, as well as guiding services for hunting and fishing.

There are existing commercial and recreational lakeshore tenures within the Protected Area, with high potential for further development.

Mineral and archaeological potential are high throughout the zone. The possibility of a quit claim on the Indata property may be negotiated by the property holder and the Ministry of Energy and Mines.

#### **4.23 Hogem Resource Management Zone**

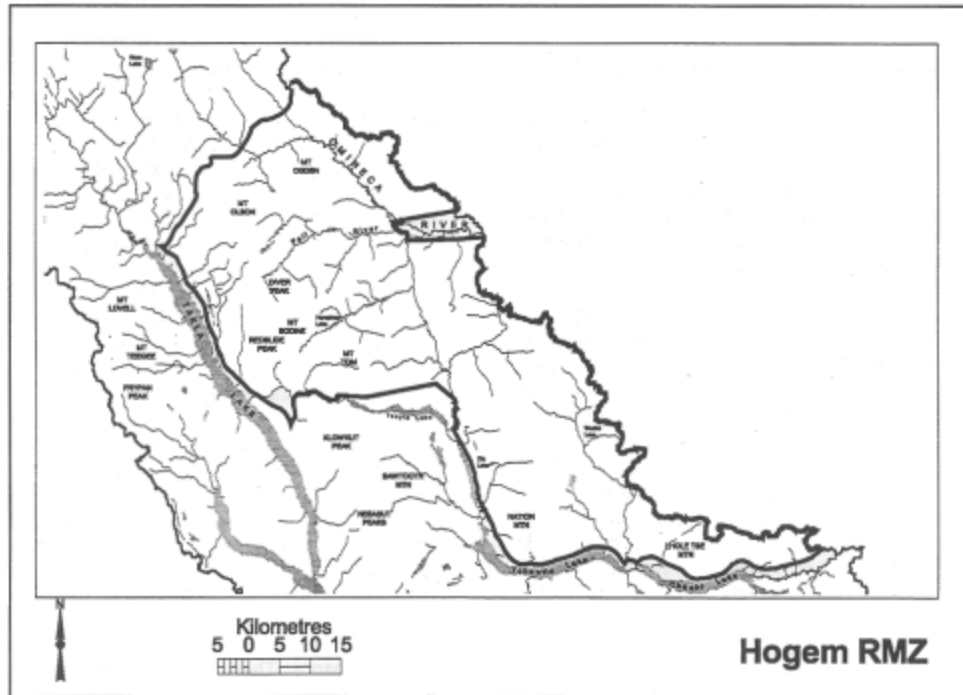


Total Area: 388,243 hectares

The Hogem Resource Management Zone is a very mountainous and scenic area, stretching from the central to the northern part of the Fort St. James Forest District. Caribou and mountain goat are high profile wildlife species in this zone. The Hogem zone shares borders with the Nation and Omineca Protected Areas.

A developed road network provides good access throughout the zone. A number of Forest Service roads extend from Fort St. James throughout the zone.





The northern and eastern watercourses of the zone drain into the Omineca River, while the southern watercourses drain to the Nation Lakes. All of the northern and eastern watercourses of the zone drain to the Arctic watershed. The western and northern watercourses drain to Takla Lake, which flows to the Fraser Basin and the Pacific Ocean.

Timber values vary throughout the zone. Balsam is the leading tree species, with other species such as lodgepole pine, spruce and deciduous.

Wildlife values range from moderate to areas of high. Important habitats include the caribou range at Valleau Creek and the Kwanika range, and the mountain goat range between Silver and Groundhog/Twin creeks.

The caribou found in the Fort St. James LRMP area are the northern ecotype of the woodland caribou. Caribou use lichen from poor quality pine and spruce stands in association with numerous small wetland systems. Alpine areas throughout the zone are thought to support both summer and fall caribou use. The Vital Range and the area east of Silver Creek provide valuable fall and winter range for caribou. The Kwanika Range has alpine habitats, providing possible spring and summer caribou habitat values, including calving. There is moderate value woodland caribou habitat with good summer/fall use at Valleau Creek. This habitat type is rare in the Fort St. James area. Deciduous forest cover on the north-side slopes of the Omineca River near Old Hogem provide important spring caribou range. Along Ahdatay Creek, and below Ahdatay Lake, there are extensive wetlands associated with caribou habitat values.

The south slopes of the older burn on Mt. Tom have mixed stands, some deciduous forests, and higher elevation wetlands, providing habitat for cavity nesters, furbearers and bears. The area from Groundhog/ Twin Creeks to Silver Creek provides habitat for

mountain goat. Very valuable wildlife habitat values are associated with the Omineca River, particularly as the construction of the Williston Reservoir flooded other habitats to the east. Kwanika Creek has good riparian habitat in the upper reaches. There are valuable wetlands along west Kwanika Creek, providing summer use for ungulates, waterfowl, songbirds and small mammals. At Kenny Creek and Humphrey Lake there is a wetland system with good riparian values. In the Ahdatay burn there are patches of mature stands scattered throughout, which provides thermal cover for wildlife and makes especially good lynx and hare habitat.

Alpine Outfitters operates in the Manson Creek and Twenty-Mile Creek area and offers hunting, fishing and guiding services. Six guiding licenses are registered in this zone. There is angling guide interest along the Omineca River and on the north end of Tsayta Lake. Ten traplines are partially or completely contained within this zone.

The Omineca River has high fisheries values throughout, and supports a red-listed Arctic grayling population. There are high fisheries values throughout the Fall River, despite the falls on the lower river. Kwanika Creek has important fisheries values that contribute to the Nation Lakes fishery. Significant salmon spawning streams flow into the east side of Takla Lake from within this resource management zone.

The creeks draining to Takla Lake provide good salmon spawning habitat, while the zone's small lakes have good rainbow trout fisheries. Low flows have been observed in some of the creeks. The Department of Fisheries and Oceans has identified an Enhanced level of concern on the watersheds associated with Hudson Bay and Five Mile (MacLaing) creeks. Sockeye spawn in the lower eight kilometres of Hudson Bay Creek. There has been extensive first pass logging in the watershed. Channel instability has been observed in creek tributaries, and the valley walls are generally unstable. Sockeye spawn in the lower 2.4 kilometre fan of Five Mile (MacLaing) Creek, and the valley walls are generally unstable.

Several small lakes with sensitive trout fisheries, such as Dia and Klawli, are inaccessible by road. Restrictions to access are generally based upon road conditions rather than regulations.

Recreation and tourism activities include fishing, camping, picnicking, canoeing, hiking, and wildlife/landscape viewing. While there are no Forest Service recreation sites or trails in the zone there are a number of areas regularly used for recreation activities. The falls at Ogden Creek provide good viewing opportunities. There is a sports fishery on the Fall River, with fish runs and spawning beds, but the fishery could be sensitive to overfishing and disturbance. There are extensive recreation opportunities along the Omineca River, the Klawli River, and the Valleau Valley. The wetland system along the Kenny Creek and Humphrey Lake chain has fisheries, recreational and historical values. Humphrey Lake has opportunities for camping, picnicking, canoeing, hiking, sport fishing and viewing. The Beaverpond Creek area offers hiking and viewing opportunities. The roads that extend from Fort St. James provide a good vehicular route for sight-seeing in the District.

There are very significant mineral values in this zone. The metallic mineral assessment is classed as high except for a few small areas. The industrial mineral assessment is classed as moderate and high throughout most of the zone. There are 72 known

occurrences, including one intermittently producing jade mine, eight past producers (placer gold and jade), seven prospects (six are metallic, non-placer occurrences), and five developed prospects. Known deposits include the Chuchi Lake deposit (50 million tonnes grading 0.21 grams per tonne of gold and 0.21% copper), the Col deposit (1,814,200 tonnes grading 0.6% copper), the Lustdust deposit (19,684 tonnes grading 4.45 grams per tonne of gold), the Swan deposit (36 million tonnes of 0.2% copper), and the Takla-Rainbow deposit (199,980 tonnes grading 13.71 grams per tonne of gold). Commodities of occurrences include placer gold, jade, mercury, copper-gold, copper, lead, zinc, silver, gold and copper-molybdenum. There is significant mineral tenure in the Nation Lake area, in the Lion Creek area, and along the eastern district boundary. There is also significant placer tenure in the zone. Placer areas include Quartzite, Tom, Kenny, Vital, Valleau, Groundhog and Klawli creeks.

A number of trails, some historic, run through this zone. The Old Hogen Trail bisects the zone diagonally, and passes through both the Humphrey Lake chain and Diver Lake valleys. The Old Hogen trail was originally used to access the Omineca gold fields.

Hogen RMZ - Multi-Value

Resource Management Zone Intent — Management on these lands integrates a wide range of resource values. There should be special consideration of habitat values in the Caribou Management Areas, as well as the resource values of the Omineca River. Access is relatively unrestricted, with the exception of any land that may need special management considerations. Co-ordinated access management planning will be required for this zone.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Objective — Manage the Valleau Creek and Kwanika Range areas with a higher biodiversity emphasis than the adjacent landbase.

Objective — Maintain the viability of existing natural grasslands.

- ➔ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire or, in the event of use, rehabilitate to a natural state.

### **Air Quality**

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Objective — Provide optimum management for salmon streams.

- ➔ Prioritize Hudson Bay and MacLaing creeks for additional fish habitat assessments and/or inventories.

Objective — Maintain the trout fishery on lakes in this zone.

- ➔ Monitor fishing activities to assess impacts on the trout fishery.
- ➔ Support changes in fishing regulations that manage a trout fishery.

Objective — Manage to conserve the red-listed Williston Watershed Arctic grayling.

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ◆Kwanika Creek
  - ◆alpine areas of the Kwanika Mountain Range
  - ◆deciduous forest cover on the north slopes of the Omineca River near Old Hogen
  - ◆wetlands associated with Ahdatay Creek
  - ◆the Omineca River
  - ◆old burn on the south slopes of Mt. Tom
  - ◆Humphrey Lake chain wetland system
  - ◆mountain goat habitat below Silver and Groundhog/Twin creeks
- ➔ Consider this zone a priority for biophysical habitat mapping.

Objective — Manage to maintain the high caribou habitat values associated with Kwanika Creek and Range, and Valteau Creek.

- ➔ Develop and implement strategies to maintain the valuable caribou habitat in this area.

- ➔ Within the RMZ, prioritize the Kwanika and Valleau creeks for biophysical mapping to identify caribou habitat distribution and values.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective — Manage access for a diversity of recreational experiences and resource development.

- ➔ Identify essential roads for resource management activities. Plan to deactivate non-essential roads in forest development plans and access management plans.
- ➔ Encourage non-motorized trail access.

Objective — Manage recreational access to identified lakes to maintain resource values while providing a range of recreational experiences.

Objective — Manage and maintain a permanent road system to facilitate long term integrated resource management.

Objective — Develop a Co-ordinated Access Management Plan for this zone.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture.
- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for Takla Lake and its viewscape.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## Recreation

Objective — Manage the Omineca River and Lower Ominicetla Creek for a backcountry recreational experience.

- ➔ Manage for backcountry canoeing and camping experiences as appropriate.

Objective — Promote recreational opportunities associated with the Omineca and the Old Hogen trails.

- ➔ Locate and map the trails.
- ➔ Consider the potential for recreational trail development on the Omineca and the Old Hogen trails.

Objective — Manage the Humphrey Lake Chain for a remote recreational experience and historical emphasis.

Consider not developing Forest Recreation Sites on the Humphrey Lake Chain.

## Visual Quality

Refer to General Management Direction.

## Heritage and Culture

Objective — Manage to maintain the historic Omineca Trail, while allowing for recreational use.

- Locate and map the Omineca Trail.
- Develop and implement a management plan to maintain the values of the trail.
- Re-establish the trail route as necessary.

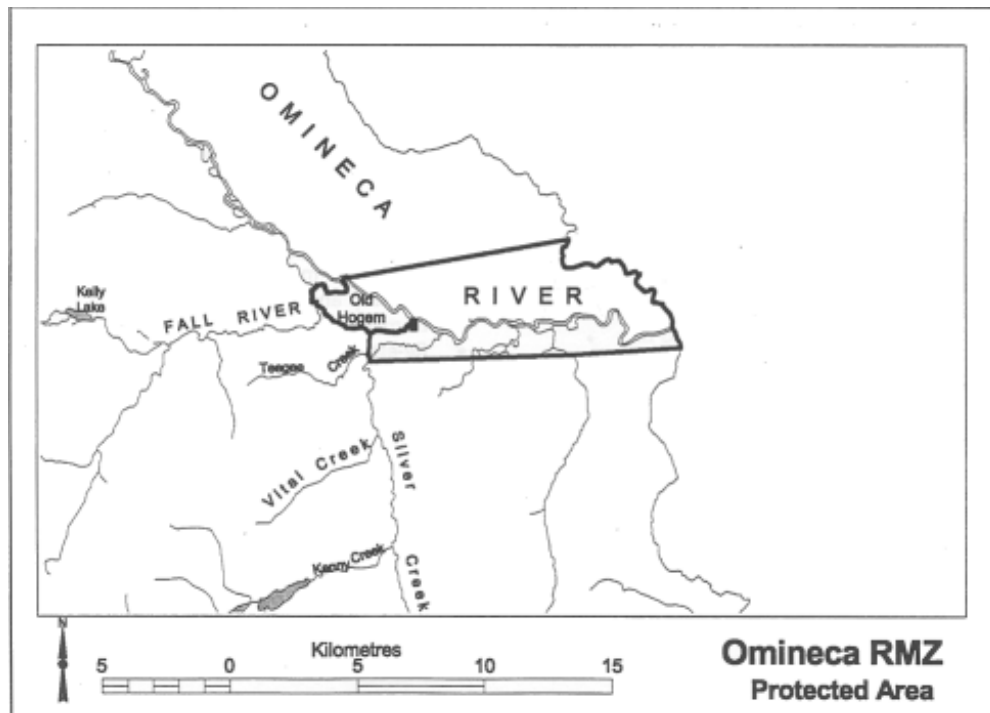
#### 4.24 Omineca Resource Management Zone (Protected Area)



Total Area: 6,707 hectares

The Fort St. James portion of the Omineca Protected Area is a pocket of land which nestles into the Hogen Resource Management Zone. The majority of the Protected Area lies in the Mackenzie Forest District, and includes Germansen, Nina and Wolverine lakes, and the Wolverine Ranges. The Fort St. James portion of this area runs along the Omineca River, and includes the village site of Old Hogen.

Timber values are mainly low throughout, with lodgepole pine as the leading tree species. Other species include spruce and deciduous species.



The Omineca Valley contains some of the highest value and most diverse habitat in the ecoregion. Provincially significant riparian habitats along the Omineca River include important waterfowl habitat. There are very high wildlife values associated with the Omineca River, particularly once the construction of the Williston Reservoir flooded the Rocky Mountain trench.

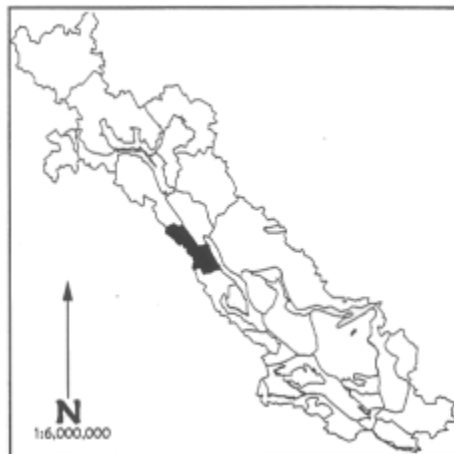
There is good ungulate winter range below the Old Hogem village site. Caribou make fall and winter use of the Vital Range and the area east of Silver Creek. There is a wildlife corridor between the Omineca River, Silver Creek and Takla Lake.

The Omineca River has high fisheries values, including red-listed Arctic grayling populations. Silver Creek supports rainbow trout, burbot, lake whitefish, mountain whitefish, lake trout, reidsided shiners and prickly sculpin.

Recreation activities along the Omineca River include camping and picnicking, flat water rafting, hiking, hunting, boating, sport fishing and wildlife viewing.

The Protected Area includes portions of the historic Old Hogem Trail, which runs along the Omineca River. This trail was important as a transportation route to the Omineca gold fields. There are areas of First Nations traditional use.

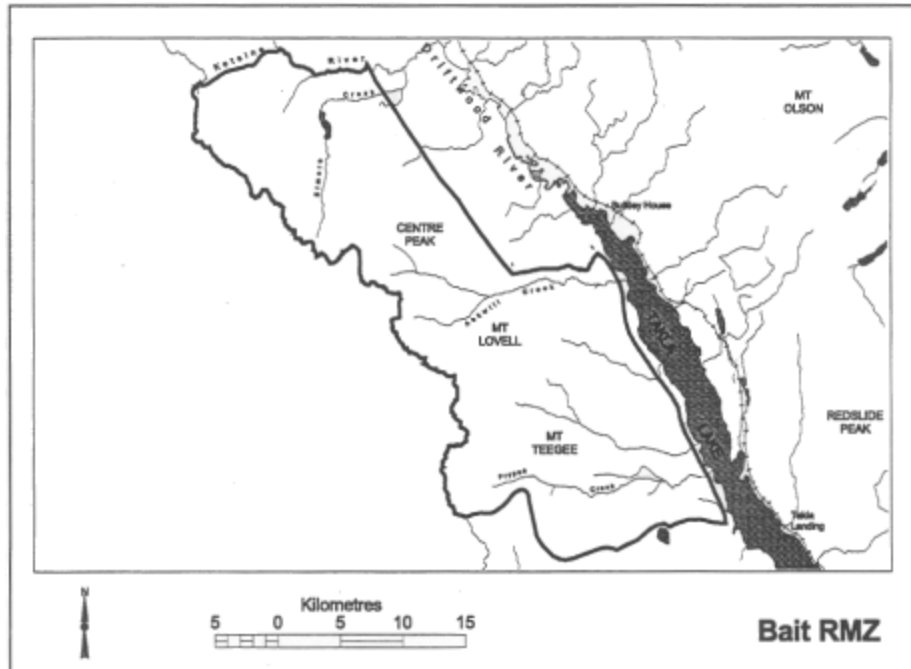
#### **4.25 Bait Resource Management Zone**



Total Area: 63,925 hectares

The Bait Resource Management Zone is very mountainous, and includes Mt. Teegee, Mt. Lovell, and Centre Peak. One plateau extends down from Mt. Teegee towards Takla Lake in the eastern part of the zone, while a second plateau from the northwest extends into the Kotsine River. The Bait Mountains separate the Babine watershed from the Takla watershed and have historically provided a barrier to the westward progression of early bush mill logging and homesteading.





The Ankwill-Driftwood Forest Service Road approaches the zone, extending just inside the northeast boundary.

Timber values are generally moderate throughout the zone, with areas of high value on lower elevations. Balsam is the leading tree species, with other species such as lodgepole pine, spruce and deciduous. The western part of the area is mainly alpine forest, while the central part contains mainly balsam. To the southeast is a mixture of lodgepole pine, aspen and spruce stands, while the northeast is mainly lodgepole pine. Old-growth stands are found in the western part of the zone. Mature age classes are found in the northern areas of the zone, while the immature age classes are located to the south.

Wildlife habitat values are generally moderate throughout the zone, with some areas of high value in the mountains. The Bait mountain range provides habitat for grizzly bear and mountain goat. At present, however, caribou habitat has not been identified in the Bait Range. Recreationalists have found antler drops that date back over 100 years. The zone also provides important connections and movement corridors for wildlife, particularly Ankwill Creek, Frypan Pass, Lovell Creek, and the Kotsine River. The Kotsine River is an important wildlife movement corridor through this zone to the Nilkitkwa range to the west.

Deciduous and wetland types occur in localized pockets, but are not generally found throughout the zone.

Sockeye salmon spawn in Ankwill Creek, Frypan Creek, Lovell Creek and the Kotsine River. The lower reaches of Ankwill Creek, which flow into Takla Lake, provide good spawning habitat.

There are few recreational facilities and trails. Backcountry recreationalists enjoy the remote, wilderness character of this zone. Plateaus break up the steep, mountainous terrain of the Bait Range, providing a more leisurely hiking experience between sharp mountain peaks. Frypan Creek offers opportunities for camping and picnicking, hiking (both alpine and trail), sport fishing, and wildlife viewing. Ankwill Creek offers recreational opportunities for camping and picnicking, sport fishing, and wildlife viewing. With seasonally abundant grizzly bear populations resident throughout this area, human-bear encounters can be expected.

Three guiding licenses operate within the Bait Resource Management Zone: one along the eastern boundary, one in the southern portion, and a third operating in the northern portion. There are two trapping licenses in the zone.

The northern and western parts of the zone are classified as having moderate metallic mineral values, while towards the southern limits of the zone the classification becomes high for metallic minerals. The remainder of the zone has low mineral values. The industrial mineral assessment is classed as high in southern and northwest portions of the zone, while the remainder is classed industrial moderate. There are two documented mineral occurrences of copper and gold-copper.

Bait RMZ - Multi-Value

Resource Management Zone Intent — To date, this zone has seen little roaded development. However, a combination of forest inventory and wildlife values requires an integrated, multi-value approach to future development. Management on these lands will integrate a wide range of resource values. Co-ordinated access management planning will be required for this zone.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Objective — Provide optimum management for salmon streams that feed into the Stuart River system.

## **Wildlife Habitat and Populations**

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ◆the Bait Mountain Range
  - ◆deciduous and wetland habitats that are uncommon within this zone

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective — Develop a Co-ordinated Access Management Plan for this and adjoining Resource Management Zones.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for Takla Lake and its viewscape.

Objective — Maintain opportunities for timber harvesting and forest management.

- ➔ Develop cutblocks that are compatible with the visual quality objectives established for Takla Lake.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective — Endorse the provision of a variety of recreational opportunities.

Identify and implement suitable recreational trail development (i.e., to Elmore [Blue] Lake and Kotsine Falls).

## **Visual Quality**

Refer to General Management Direction.

## **Heritage and Culture**

Refer to General Management Direction.

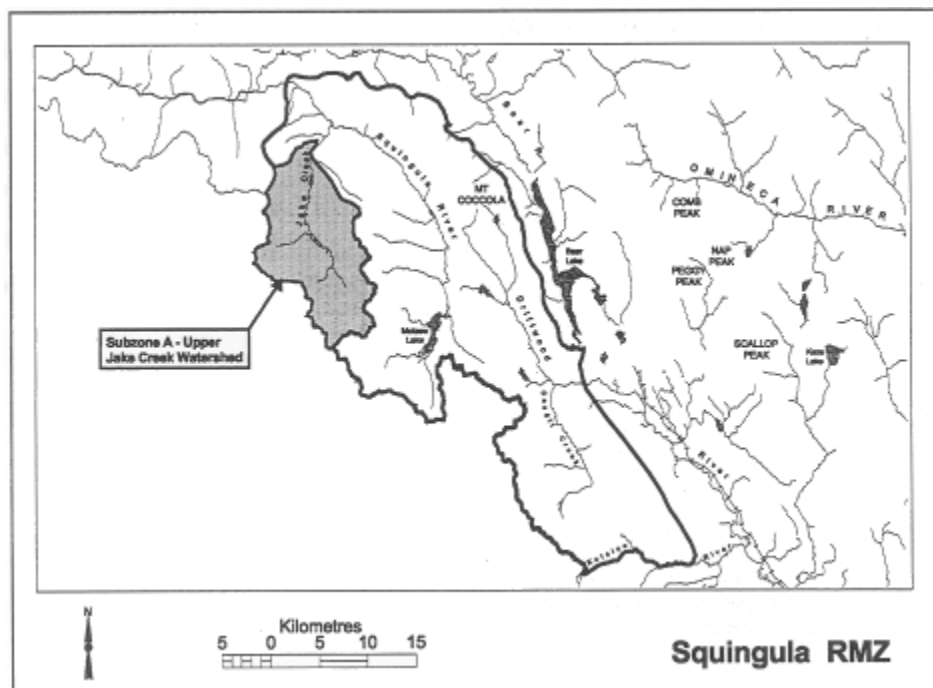
## **4.26 Squingula Resource Management Zone**



Total Area: 126,656 hectares

The Squingula Resource Management Zone is dominated by high mountain peaks of the Tsaytut Spur and Sicintine Ranges and generally narrow valleys. Mountain peaks include the Shelagyote Peak and associated glaciers, Motase Peak, and Mt. Coccola. The Sicintine Range extends along the south western portion of the zone, while the Driftwood range extends along the opposing boundary. The Jake Creek Valley (in the

Sicintine Range) has one of the few glaciers within this district, and is the only glacier of a significant size within this planning area.



This zone contains one subzone: Subzone A - the Upper Jake Creek Watershed. The Upper Jake Creek Watershed is part of the Atna-Sicintine Range. Jake Creek is the major tributary of the Squingula River. The drainage provides for a diverse mix of habitats for a variety of species, including coniferous forests with deciduous patches, abundant productive wetlands, numerous brush types, avalanche chutes extending down to the valley floor, and good surrounding mountain goat habitat.

The Upper Jake Creek Watershed is also noted for its abundance of moose and bear. The local guide outfitter has a satellite camp in the Upper Jake Creek Watershed, and regards this drainage to be special in terms of species abundance and pristine quality.

The area is currently unroaded, with the exception of minor exploration trails in lower Squingula. Logging roads are proposed to access the upper Driftwood River and Condit Creek junction areas within the next five years.

Motase Lake is the major lake within this zone and forms the headwaters of the Squingula River. The Driftwood and Kotsine rivers also originate within the Resource Management Zone.

Timber values are generally moderate throughout the zone, with some areas of high value. Balsam is the leading species. The northeastern and southwestern portions of the zone contain a mixture of balsam, spruce and lodgepole pine. The central portion of the zone is predominantly alpine, with aspen and balsam. Older age classes occur mainly south of Motase Lake.

The predominant habitat type in the Squingula is the large burn that lies in the lower two-thirds of the zone. This burn has regenerated into a diverse mixture of aspen/ cottonwood/ spruce/ pine/ balsam trees. Numerous brush types, wetlands, wet seepage sites, and the occasional small lake are associated with these tree species. This mixture of habitats is rare, and makes the area very productive for wildlife such as grizzly bear, moose, and birds. In contrast the upper valley near Motase Lake is dominated by older age class balsam stands with some mature pine. Abundant wetlands, brush-type areas and numerous small lakes and ponds are mixed with forest stands in this portion of the valley, providing habitat for grizzly bear, moose, furbearers, and waterfowl.

Jake Creek is the major tributary stream to the Squingula, and the drainage is a very important wildlife area. A diverse mixture of habitats is present in the valley bottom, including coniferous forests with deciduous patches, abundant productive wetlands, numerous brush types, and avalanche chute vegetation extending down to the valley floor. Local reports indicate that since this valley lies on the lee side of the Sicintine Ranges it appears to receive somewhat less snow during the winter. This may account for moose over-wintering in the Jake Creek Valley. It appears this valley greens up earlier, due perhaps to the lower amount of snow. Bears denning nearby take advantage of this food source when they come out of hibernation.

Alpine habitat is found throughout the zone including Motase Peak, Mt. Coccola, and on the Driftwood and Sicintine ranges. The headwaters of the Kotsine River contain complexes of older burn habitats and wetlands. The Driftwood River and Condit Creek areas are characterized by pine lichen stands in association with numerous wetlands, and may provide summer and early winter caribou habitat.

The Squingula and Driftwood watersheds support populations of grizzly bear, black bear, mountain goat, moose, wolf, furbearers, and birds. Mountain goat populations are found on the mountain peaks of the Tsaytut Spur, Sicintine, and Driftwood ranges. Good numbers of bears, particularly grizzly bears, are found in this watershed due to the amount of productive habitats and the availability of salmon in the fall. There are moderate values for moose throughout the zone, but deep snow restricts the areas where they can winter. Some moose do winter in the burns in the lower Squingula and in the upper Jake Creek valley, but it appears that most moose move down to lower elevation winter ranges along the Skeena and Sustut Rivers. There are moderate values for furbearers, particularly marten and wolverine. Mature forest stands found in the upper and lower portions of the Squingula and Driftwood drainages provide important habitat for furbearers.

The Driftwood River has important fisheries values for sockeye, bull trout, rainbow trout, and kokanee. Fish are absent from the Kotsine River above Kotsine Falls at 9.6 kilometres. Motase Lake serves as a rearing lake for sockeye juveniles. Particularly important reaches of this river system for spawning and rearing of salmonids and other fish include Motase Lake, and its inlet stream, and the main river downstream about six kilometres; upper Jake Creek and Cub Lake upstream; and the lower few kilometres of the main river above its confluence with the Skeena River. Other important spawning sites are probably present in this river system but very little detailed inventory work has been completed on this river system to date. A fish tagged just upstream of Terrace in late August of 1994 (under the Skeena River Steelhead Radio Transmitter Tagging program) spawned the next May in the Squingula River.

There is very little recreational use of this zone, perhaps due to the remoteness of the area. Recreation and tourism activities centre mainly on fly-in fishing and hunting, and there is potential for backcountry recreation. There are several recreation areas, but no maintained Forest Service recreation trails or sites. Fishing activity is associated with Motase Lake, and the Slamgeesh and Driftwood rivers. The Kotsine Falls are located along the planning area boundary in the Kotsine Pass. There are numerous scenic areas in this zone which are currently inaccessible by road. There are two guiding licence territories. The one guide outfitter in the zone has a base camp on Motase Lake, and takes clients on hunts for grizzly bear and mountain goat.

Metallic and industrial mineral assessments of the zone are both classified as high. There are 24 known and documented mineral occurrences, including three prospects and two identified deposits. The deposits are the Red occurrence (4,989,050 tonnes of 11.9 grams per tonne of gold and 0.5% copper) located just east of the Squingula River, and the Driftwood deposit (900,000 tonnes grading 4.5 grams per tonne of gold, and 2% copper) located in the Driftwood Range in the southern limits of the zone. There is a significant amount of mineral tenure in the zone. Renewed interest in this area has resulted in new exploration programs.

There is a First Nations trail (Kotsine Falls trail) that traverses the Squingula valley bottom connecting to Condit Creek, and eventually to Kotsine Falls. It is thought that there are a number of secondary trails to the ridges.

#### Squingula RMZ - Multi-Value

Resource Management Zone Intent — The combination of a dominant wildfire history, low to moderate value isolated timber stands, moderate and high mineral values and valuable wildlife habitat requires an integrated, multi-value approach to development in this zone. Management on these lands integrates a wide range of resource values. Co-ordinated access management planning will be required for this zone.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans around:
  - ◆the Squingula Burn
  - ◆Jake Creek valley bottom
  - ◆the Driftwood River, Condit Creek and the Squingula River
  - ◆the gap between the Driftwood Range and Tsaytut Spur
  - ◆the Kotsine Pass, which connects the Driftwood and Nilkitkwa rivers
  - ◆Condit Creek south to the Nilkitkwa River
  - ◆Onerka Lake (Nilkitkwa River) north to Motase Lake and down the east side of the Squingula River to the boundary of the RMZ
  - ◆Motase Lake northeast to Drift Lake.
- ➔ Address wildlife habitat values within the Squingula Burn in silviculture planning.
- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium), for use in developing a Co-ordinated Access Management Plan.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the viability of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users for the Squingula and adjoining zones, for use in resource development planning.
- ➔ Establish and maintain a permanent road infrastructure within the zone (i.e., main corridor roads with associated culverts, bridges) to facilitate long-term



integrated resource management. Consider all resource values in determining main resource development access routes. Utilize an efficient and timely review and decision-making process by the appropriate resource agencies.

- ➔ Utilize an efficient and timely joint approval process to designate Forest Service Road corridors.

## **Forest Stands**

Objective — Maintain a sustainable, long-term supply of timber.

- ➔ Emphasize basic silviculture.

Objective — Manage the Upper Jake Creek Watershed (Subzone A) as a subzone that focuses on minimizing roaded access, maintaining natural seral stage distribution and managing for habitat values.

- ➔ Designate the Upper Jake Creek watershed (subzone A) as a “Special Management” subzone.
- ➔ Avoid harvesting in the Upper Jake Creek Special Management subzone (subzone A) except for forest health and mineral exploration and development purposes.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective — Promote a variety of recreational experiences.

- ➔ Recognize the potential backcountry recreational opportunities in the Jake Creek valley in resource development planning.

Objective — Manage to maintain the remote character of Motase Lake.

Consider not developing roaded access to Motase Lake (maintain access as fly-in only).

Consider not developing any new recreational facilities on Motase Lake.

## Visual Quality

Refer to General Management Direction.

## Heritage and Culture

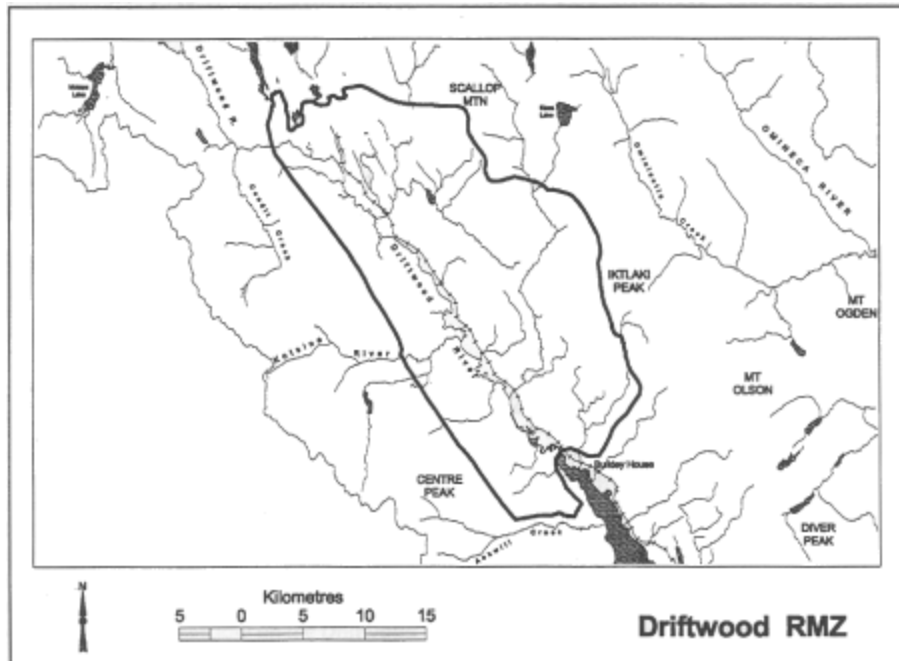
Refer to General Management Direction.

### 4.27 Driftwood Resource Management Zone



Total Area: 84,074 hectares

The Driftwood River is the central feature of this Resource Management Zone. Numerous small lakes cover the zone, and include Pathway and Tetana lakes. Tetana Lake is featured in the book *Driftwood Valley*, an account of life along the river from 1937 to 1941. Theodora Stanwell-Fletcher and her husband John lived on the shores of Tetana Lake, collecting specimens for the B.C. Provincial Museum. One of their monographs, *Some Accounts of Flora and Fauna of the Driftwood Valley Region of NW British Columbia*, (1943) is still considered a good historical biodiversity reference for the area.



Other major streams in the zone include the Kotsine River outlet, Lion, and Kastberg creeks, and numerous unnamed Driftwood River tributaries. Kotsine Falls can currently only be seen from the air, and are approximately seven kilometres upstream from the confluence of the Kotsine and Driftwood rivers.

There is extensive road development within this zone. The main Driftwood Forest Service Road has been built approximately two-thirds of the way northwest through the zone, paralleling the Driftwood River. Two other roads access the Ankwil and lower Lion and Kastberg Creek drainages. The B.C. Rail line follows along the Driftwood River valley, connecting Takla and Bear lakes.

Timber values are high to moderate throughout. Lodgepole pine is predominant throughout the zone. Aspen stands are located primarily near the major rivers and lakes, extending northwest along the central part of the zone. Subalpine fir occurs in the western and northern parts of the zone near the alpine areas. Spruce is intermixed throughout the southern and northcentral regions. Mature age classes occur in the northern part of the zone, while immature forests are found in the southeast. Old-growth occurs in the southwest and northeastern portions of the zone. Mountain pine beetle infestations are prominent on the Pathway Lake ridge.

Wildlife habitat values range from moderate to high. The Driftwood River provides valuable ungulate winter range and habitat for waterfowl, songbirds, grizzly bear, bald eagles and osprey. The Hudson's Bay Meadow is a large wetland north of the Driftwood River. A large riparian/wetland complex at the northwest top end of the zone provides summer habitat for ungulates, waterfowl, songbirds and furbearers. The area is a habitat connection between Bear Lake and the Driftwood River.

The Lion Creek drainage is characterized by recent fire history, with trees ranging in age from 25 to 70 years old. Features within the burns include scattered deciduous and

old-growth remnants, structural features that contribute to the high wildlife values in this area. These burns provide good habitat values for hare, lynx, bear, moose and cavity nesters. They may also be used by caribou, which calve in the adjacent Cariboo Heart range. The Kotsine burn is an older burn with deciduous types.

The Driftwood River provides very important spawning and rearing habitat for sockeye and kokanee. The Department of Fisheries and Oceans has expressed an elevated level of concern regarding the impacts of development activities within this drainage. A cluster of small lakes at the northwest end of the zone has potentially sensitive fisheries values.

There is currently low recreational use of the Driftwood Resource Management Zone. Recreation and tourism activities are mainly associated with the Driftwood River and include camping and picnicking, canoeing, motorized boating, sport fishing and nature viewing. Canoeists can access the lower Driftwood River by existing roads. Recreational interest in Tetana Lake has often been expressed.

Guiding and trapping activities are present, with two guiding licenses and six licensed traplines.

The northcentral and northeastern portions of the zone are classified as having high metallic mineral values. The southwestern part of the zone has moderate metallic mineral values, and the central and southern portions of the zone have low metallic mineral values. Most of the zone is classed industrial moderate, except for a northwestern portion which is classed as industrial high. There are no known mineral occurrences, but there is existing tenure at Lion Creek.

The historic Fort St. James-Fort Connelly trail parallels the east side of the Driftwood River to Bear Lake. This trail was used as a transportation route by the Hudson's Bay Company to pack supplies and furs between Fort St. James and Fort Connelly.

#### Driftwood RMZ - Resource Development

Resource Management Zone Intent — Current and historical resource harvesting development, combined with a well-developed access corridor, make this zone important for resource development. However, this zone also has high wildlife habitat, as well as recreational canoeing values along the Driftwood River that require management. Management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies.

Objectives and strategies to supplement the General Management Direction

#### **Community Stability and Development**

Refer to General Management Direction.

## Biodiversity

Refer to General Management Direction.

## Air Quality

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Objective — Provide optimum management for salmon streams that feed into the Stuart River System.

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➡ Consider this zone a priority for biophysical habitat mapping.
- ➡ Consider the maintenance of habitat when integrating resource development plans around:
  - ➡ Hudson's Bay meadow on the Driftwood River
  - ➡ the lower Driftwood River (below Tuwatenindlay Rapids)
  - ➡ the Lion / Kastberg wetland complex
  - ➡ the Kotsine and Lion burns
  - ➡ the large riparian/wetland complex at the northwest end of the zone
- ➡ Consider designating the Lower Driftwood River as a Sensitive Area under the *Forest Practices Code of British Columbia Act*.
- ➡ Address wildlife habitat values within the Lion and Kotsine burns in silviculture planning.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Manage access to maintain high wildlife values.

- ➔ Develop an access management plan for this zone which considers minimizing access to alpine areas and minimizing road access to the Lion and Kotsine burns.

Objective — Manage access to facilitate long term integrated resource management.

- ➔ Establish and maintain a permanent road infrastructure (i.e., main corridor roads with associated culverts, bridges).

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate.
- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for Takla Lake and its viewscape.
- ➔ Encourage sustainable forest management for fire origin forest stands and in reforestation of forest stands that have not been satisfactorily restocked (NSR), while recognizing other resource values.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Promote a variety of recreational opportunities.

- ➔ Consider not developing any large recreation sites in this zone.
- ➔ Consider developing a canoe route on the Driftwood River.
- ➔ Plan for non-roaded recreational access in the headwaters of the zone in the vicinity of the unnamed, small lake group.

## Visual Quality

Objective — Manage to reduce visual impacts on the visually sensitive viewscape of the Driftwood River.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## Heritage and Culture

Objective — Manage to maintain the historic Fort St. James-Fort Connelly Trail, while allowing for recreational use.

Locate and map the historic Fort St. James-Fort Connelly Trail.

Develop and implement a management plan, including potential upgrading of the trail route, to maintain the values of the trail.

Objective — Manage Tetana Lake as a historical interest area.

Consider developing a recreational trail to the Tetana Lake historical interest area to access Theodora Stanwell-Fletcher's cabin.

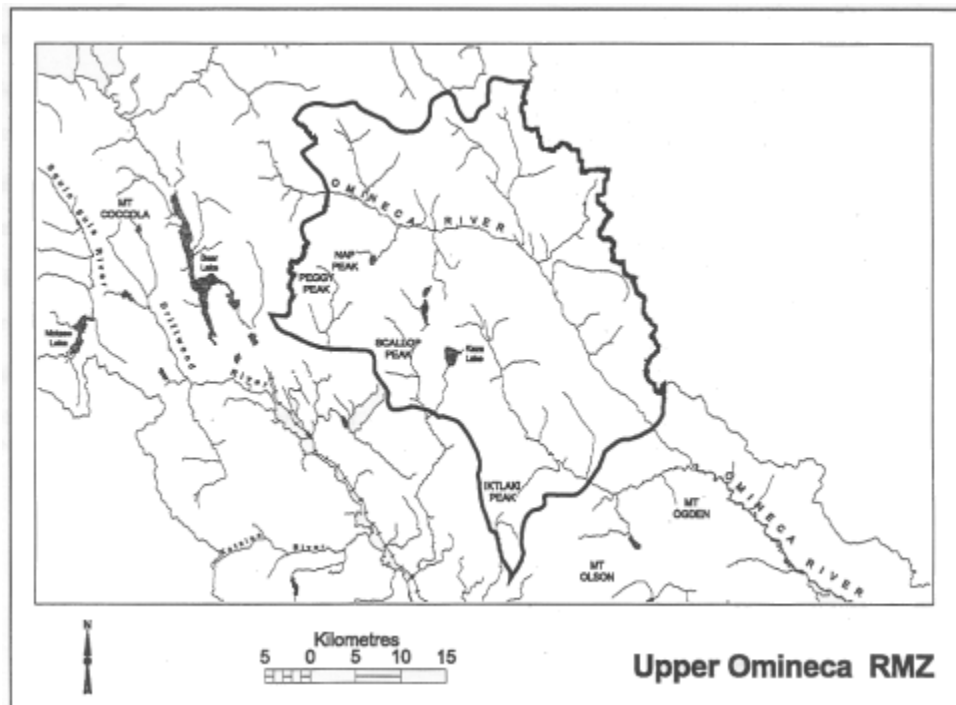
## 4.28 Upper Omineca Resource Management Zone



Total Area: 170,457 hectares

The Upper Omineca Resource Management Zone is largely mountainous and includes the the Sikanni, Cariboo Heart and Axelgold Ranges. Mountainous areas are marked by big valleys, with grasslands and meadows, swamps, and wetlands. This zone contains the headwaters of the Omineca River, which flows to the Arctic via the Peace River.

The northwestern boundary borders the Upper Sustut-Thumb Protected Area. There is limited road development within the zone. Mining roads access Kaza Lake and there is limited access into the zone from the neighboring planning area (Mackenzie Forest District) via Boulder Pass. Hauling roads for forestry activities are found in the southern portion of the zone.



Timber values are low in the north and in alpine areas, and moderate and higher in the south and in valley areas. Balsam is the leading tree species. Valley bottoms are dominated by lodgepole pine and spruce, with balsam at higher elevations. The majority of the stands are mature and old, with small pockets of younger, mature timber. Older age classes occur in the northern valleys, while the younger age classes occur primarily in the southern part of the zone, especially along the Omineca River. A large previously burned area exists around the southwestern border of the zone in the Lion Creek area.

Valleys in this zone contain an abundance of wetlands, swamps, and open shrubby vegetation, making them very productive for species like moose, caribou, and grizzly bear. Caribou that spend the summer/fall in the zone appear to move eastwards to winter. There are possible caribou calving areas on the Sikanni Range, the Axelgold Range, the Cariboo Heart Range, and the Sitlika Range. A proposed project will collar some of these animals to follow their movement patterns.

Movement corridors through low elevation passes east of Johanson Creek are probably heavily used by wildlife. These corridors include Sitlika Pass, Beaverpond, Lion and Ominicetla creeks, and the Omineca River.

There are potentially important Arctic grayling populations in the Omineca River drainage.



The zone has high potential for future back country recreation. While there are no Forest Service recreation sites or trails in the area there is moderate recreational use. Lakes, rivers and mountains offer users landscape and wildlife viewing opportunities. There are opportunities for hiking (both alpine and trail), horseback riding, hunting, and snowmobiling. The Omineca River and Ominicetla Creek offer water-based activities, including canoeing and kayaking. There are parts of two guiding territories and six trapping licenses in the Upper Omineca zone.

The Upper Omineca zone has significant mineral values. The mineral assessment of the zone shows high metallic mineral values except for small portions in the northwest and southwest, which are classed as metallic low. The north central part of the zone is classed as high for industrial minerals, while the remainder is classed as industrial mineral moderate. There are 15 mineral occurrences, including five prospects. Commodities include coal, copper and gold. There is mineral tenure in the Axelgold Range and in Lion and Omineca creeks.

The historic Northwest Mounted Police route, originally from Edmonton to the Klondike gold fields, cuts across the northwest end of the zone (across the headwaters of the Omineca River from Bear Lake). This same trail was originally established and used as a travel route by First Nations. Moderate archaeological potential runs mainly along the rivers.

#### Upper Omineca RMZ - Multi-Value

Resource Management Zone Intent — To date, this zone has seen little roaded development. A combination of forest inventory, significant mineral values, backcountry recreation, as well as wildlife and habitat values for a broad range of species, requires an integrated, multi-value approach to development. Management on these lands integrates a wide range of resource values. Co-ordinated access management planning will be required for this zone.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

## **Water**

Refer to General Management Direction.

## **Fish and Fish Habitat**

Refer to General Management Direction.

## **Wildlife Habitat and Populations**

Objective — Manage for a variety of wildlife species.

- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium), for use in developing a Co-ordinated Access Management Plan.

## **Trapping and Guiding**

Refer to General Management Direction.

## **Access**

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the integrity of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Upper Sustut-Omineca and adjoining zones for use in resource development planning.

Objective - Manage access adjacent to the Upper Sustut-Thumb Protected Area.

- ➔ Consider Protected Area values such as conservation, recreation and visual quality in managing access adjacent to Protected Areas.

## **Forest Stands**

Objective - Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture.

Objective - Manage silviculture activities to maintain subalpine fir (balsam) and associated habitats as a significant component of the forest landscape.

- ➔ Endorse a research program to better understand the regeneration of subalpine fir.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective - Maintain the wilderness qualities and recreational experience of remote areas, including the Omineca River.

- Identify, survey and map areas appropriate for remote recreational activities.
- Develop management strategies to maintain wilderness qualities and remote recreational experience provided by the Omineca River.

## **Visual Quality**

Objective - Manage to reduce visual impacts on the visually sensitive viewsapes of Kaza, Yuen and Nanitsch lakes.

- Address visual quality in resource development planning.
- Design harvest patterns and activities to manage visual quality, as directed by the District Manager.
- Minimize impacts on visual quality from developing communication towers or power transmission lines within the lake viewsapes.

## **Heritage and Culture**

Refer to General Management Direction.

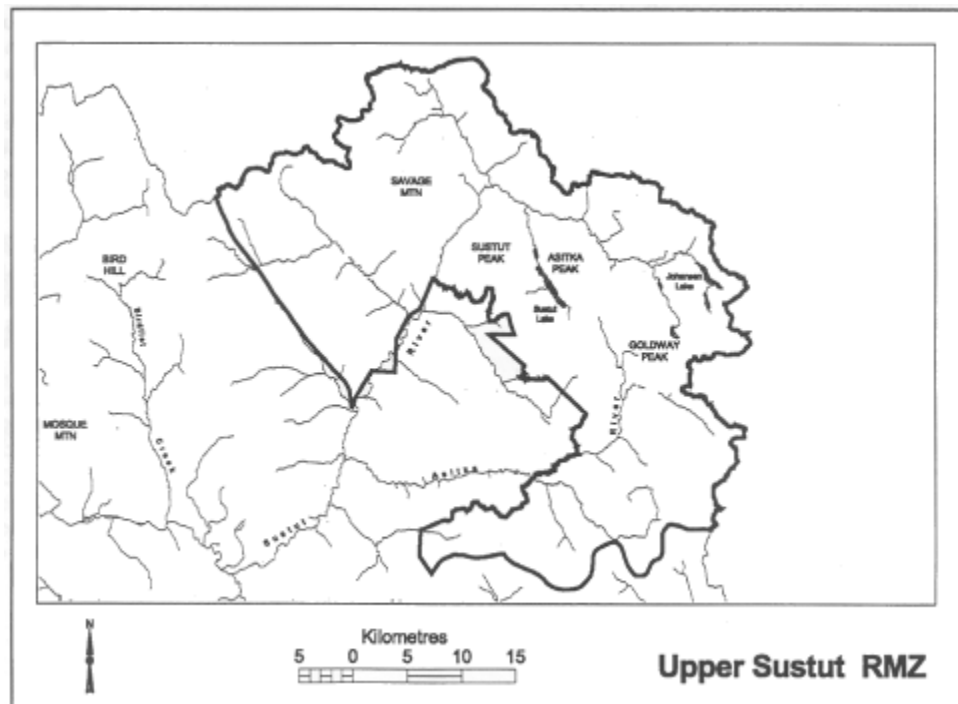
## 4.29 Upper Sustut Resource Management Zone



Total Area: 153,084 hectares

The Upper Sustut Resource Management Zone is very mountainous and includes such peaks as Goldway, Asitka and Sustut, which meet the foot of the Cassiar Mountain Range. Mountainous areas are marked by big valleys, with grasslands and meadows, swamps, and wetlands. This zone contains the headwaters of the Sustut River, which flows to the Pacific.

The western boundary borders the Upper Sustut-Thumb Protected Area. The Omineca Mining Access Road runs through the Johanson and Moose Valley areas.



Timber values are generally low to moderate in the valleys within the zone. Balsam is the leading tree species. Valley bottoms are dominated by spruce and some lodgepole pine in the Two Lake Creek and Moosevale Creek areas, with balsam at higher elevations in all valleys. The majority of the stands are mature and old, with small pockets of younger, mature timber. A small previously burned area exists at the upper corner of the Moosevale Creek watershed.

Valleys in this zone contain an abundance of wetlands, swamps, and open shrubby vegetation, making them very productive for species like moose, caribou, and grizzly bear. Caribou that spend the summer/fall in the zone appear to move eastwards to winter.

Grizzly bear and goat habitats are found throughout the zone. Salmon in streams adjacent to Sustut, Johanson, and Asitka lakes attract resident grizzly bears as well as those from a great distance. The more northerly mountains support some stone sheep. Deciduous habitat is limited to isolated patches, perhaps in association with younger burns. The broader valley bottoms in the eastern portion of the zone are key habitat areas, and include Willow Creek, Moosevale Creek, Asitka River, Sustut River, Johanson Creek and Two Lake Creek.

Movement corridors through low elevation passes east of Johanson Creek (i.e., Sitlika Pass) are probably heavily used by wildlife.

There are significant fisheries values in the headwater streams of the Sustut River, as the system supports several species of salmon as well as steelhead. Fisheries values have been impacted by access, illegal angling pressures, and under-resourced enforcement. Major fish spawning habitats are located throughout the zone, including the fish runs and spawning beds in Johanson Creek and the Sustut River. Populations of salmon and steelhead are considered unique by BC Environment and the Department of Fisheries and Oceans, due to their very early migration up the Skeena River and their isolation from adjacent populations.

The zone has high potential for future back country recreation. While there are no Forest Service recreation sites or trails in the area, there is moderate recreational use, mainly associated with lakes and rivers. Sustut Lake offers users landscape and wildlife viewing opportunities. In the Johanson Valley there are opportunities for hiking (both alpine and trail), horseback riding, hunting, and snowmobiling.

There are parts of two guiding territories and three trapping licenses in the Upper Sustut zone. Moose Valley Outfitters, located in Moose Valley, operates in this area and offers full guiding services, including hunting and wilderness adventures.

The Upper Sustut zone has very significant mineral values. The mineral assessment of the zone shows high metallic mineral values except for a narrow area of land extending from Moosevale Creek southward to Sustut Lake. In this narrow belt, the metallic mineral values are classed as being low. The metallic low assessment land is classed as moderate for industrial minerals. There is also an area of industrial moderate in the southwest limits of the zone, and the remainder of the zone is classed as high for industrial minerals. There are 48 known and documented mineral occurrences including one prospect and one developed prospect. The Sustut deposit is 54,426,999 tonnes of

1.25% copper. These mineral occurrences are located in two distinct mineral belts: a copper belt in which the Sustut deposit lies is located in the west part of the zone and the precious and precious/base metal bearing rocks of the Northern Quesnel Trough are located on the east side of the zone. Significant amounts of mineral tenure exist at Goldway Peak, Johanson Lake and Johanson Creek, and in the Upper Sustut River areas. The Upper Sustut Valley is a potential transportation corridor for mineral development in northcentral BC.

The historic Northwest Mounted Police route, originally from Edmonton to the Klondike gold fields, runs across the south end of the zone. This same trail was originally established and used as a travel route by First Nations.

The land in this zone was part of the Gitksan houses of Nii Kyap, Wii Monoosik, Miluulak prior to European settlement. Moderate archaeological potential runs mainly along the rivers.

#### Upper Sustut RMZ - Multi-Value

Resource Management Zone Intent — Current levels of access development, high mineral values, lower forest values relative to adjacent zones, value of the existing road and a potential transportation corridor, as well as the backcountry recreation, wildlife and fisheries values in this zone, require an integrated, multi-value approach to future development. Co-ordinated access management planning will be required for this zone. There will be special management for fisheries and wildlife resources, with the intent of no net loss of fisheries habitat over the long term.

Objectives and strategies to supplement the General Management Direction

### Community Stability and Development

Refer to General Management Direction.

### Biodiversity

Objective - Maintain the viability of existing natural grasslands.

- ➔ Where appropriate, enhance existing natural grasslands through pro-active management activities such as prescribed fire or, in the event of use, rehabilitate to a natural state.

### Air Quality

Refer to General Management Direction.

### Soils

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Objective — Maintain valuable fish habitat and populations in the zone, with special attention to bull trout, salmonid and steelhead populations.

- ➔ Inventory and map fisheries values in this zone. Consider designating valuable areas for special management.

## Wildlife Habitat and Populations

Objective - Manage for a variety of wildlife species.

- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium), for use in developing a Co-ordinated Access Management Plan.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the viability of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Upper Sustut-Omineca and adjoining zones for use in resource development planning.

Objective - Manage access on the proposed Sloane Connector Road, or other industrial access through the Sustut Valley, if and when it is proposed, planned or constructed.

- ➔ Design and construct the Sloane Connector Road to minimize long-term environmental impacts.
- ➔ Consider utilizing gates to manage non-industrial access.
- ➔ Define responsibility for access management and maintenance of the Sloane Connector Road by licensed resource users.
- ➔ Manage new access to new mines with access control points.

Objective - Manage access adjacent to the Upper Sustut-Thumb Protected Area.

- ➔ Consider Protected Area values such as conservation, recreation and visual quality in managing access adjacent to Protected Areas.

## **Forest Stands**

Objective Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture.

Objective - Manage silviculture activities to maintain subalpine fir (balsam) and associated habitats as a significant component of the forest landscape.

Endorse a research program to better understand the regeneration of subalpine fir.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective - Maintain or enhance recreational opportunities to remote areas.

- ➔ Identify, survey and map areas appropriate for remote recreational activities.
- ➔ Maintain visual quality that enhances the remote recreational experience provided by the Sustut River (from its headwaters downstream to the Bear River).

Objective - Manage to maintain the remote recreational values of Johanson, Sustut, Asitka and Goldway lakes.

- ➔ Consider managing recreational vehicular access.
- ➔ Consider not developing Forest Service Recreation Sites on these lakes.



## Visual Quality

Objective - Manage to reduce visual impacts on the visually sensitive viewsapes of Johanson, Asitka, Goldway and Sustut lakes.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

Minimize impacts on visual quality from the development of communication towers or power transmission lines within the lake viewsapes.

## Heritage and Culture

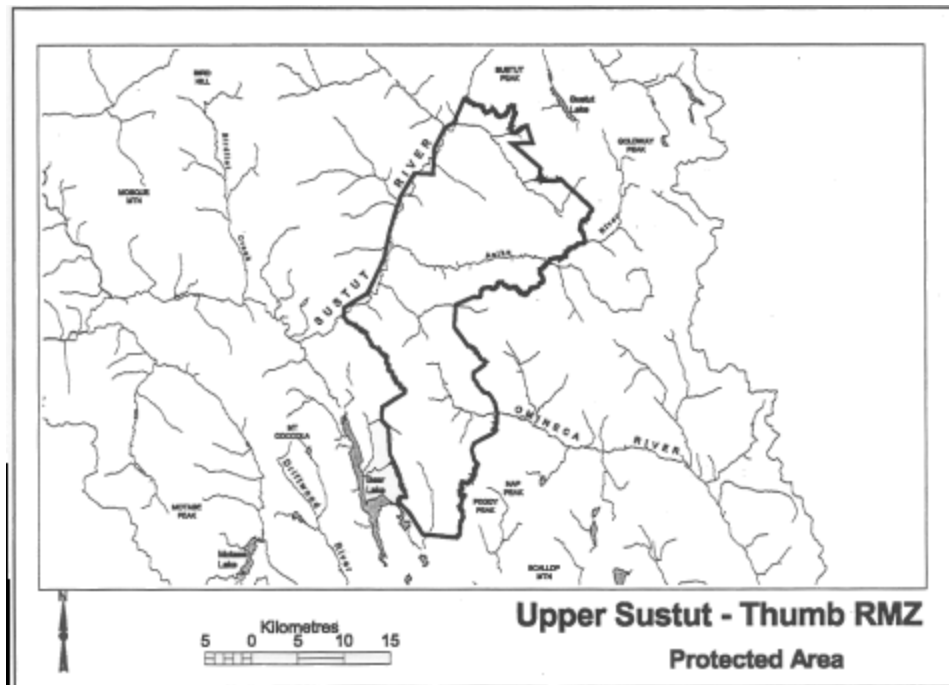
Refer to General Management Direction.

### 4.30 Upper Sustut-Thumb Resource Management Zone



Total Area: 77,486 hectares

The Upper Sustut-Thumb Protected Area is a very scenic area, characterized by mountainous terrain and special volcanic features such as fumaroles and basalt cliffs. The inaccessible basaltic escarpment called "The Thumb" affords good habitat for mountain goats. The remainder of the area provides large tracts of pristine wilderness, with habitat for caribou, grizzly and black bear, and stone sheep. The Asitka and Sustut rivers have migrating populations of salmon and steelhead.



The Connelly Range and the Hogem Ranges of the Omineca Mountains are found within this Protected Area.

Access to the area is by rail or air, with the British Columbia Rail line running along the southwest boundary of the Protected Area. Roaded access to the area has been proposed, but development has not yet commenced.

There has been limited development and no settlement. Bear Lake is located to the immediate west of the Protected Area.

Timber values are low throughout the zone, with balsam poplar the leading species. Other species include spruce and lodgepole pine.

The mountainous terrain contains mature and old-growth high elevation forest and some lower elevation upland spruce-pine forest and associated wetlands. This Protected Area has excellent representation of moist cold Englemann spruce-subalpine fir (ESSFmc).

Extensive sub-alpine wetlands and many small lakes located near the headwaters of the Omineca provide valuable wildlife habitat for many species. Wildlife values are high throughout, with valuable spring habitat for grizzly bear. Important mountain goat, caribou, grizzly bear and bald eagle populations are found within this Protected Area.

The volcanic formations and sub-alpine terrain are regionally significant recreation features and provide opportunities for hiking, climbing, skiing and viewing. There is potential for backcountry touring and wildlife viewing in a wilderness setting.

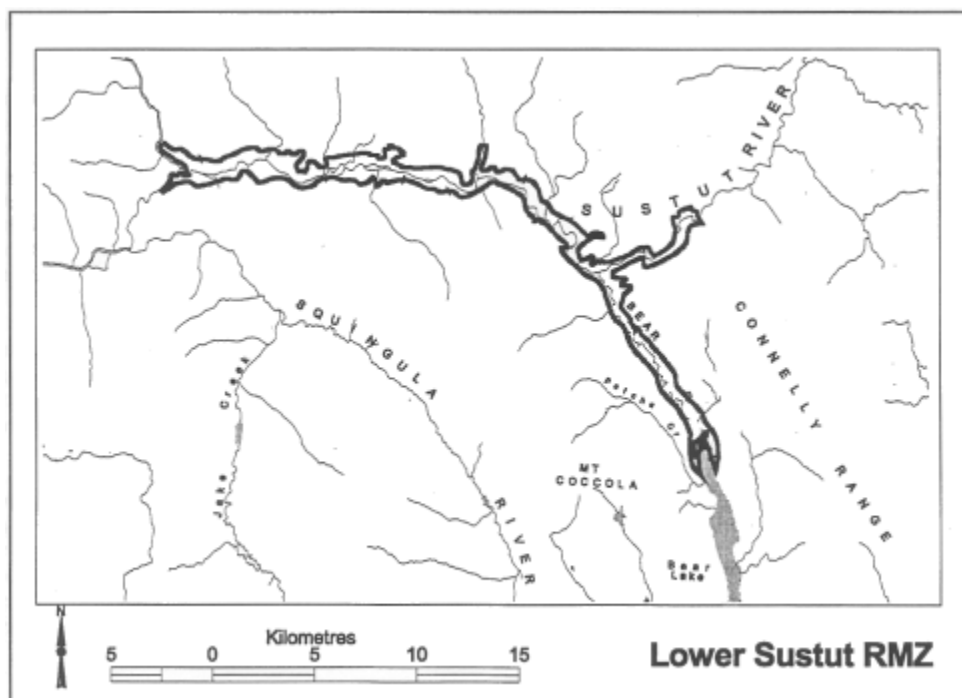
### 4.31 Lower Sustut Resource Management Zone



Total Area: 5,169 hectares

The Lower Sustut Resource Management Zone is centred around the Sustut River, which attracts anglers from around the world seeking an exceptional fishing experience.

Objectives and strategies for the Lower Sustut zone follow some of the recommendations of a local planning group. A draft Local Resource Use Plan (LRUP) was published in 1994 for the area. The boundaries of the Lower Sustut Resource Management Zone generally follow the boundaries of the "Preservation Zone", as determined in the Sustut LRUP report. That report contains excellent resource information.



This zone is set inside the Sustut Resource Management Zone, and touches on the Upper Sustut-Thumb Protected Area.

The British Columbia Rail-Dease Lake runs along the north side of the lower Sustut River and the east side of the Skeena River. There currently is no roaded access. The proposed Sloane Connector, a road that may be used for the transportation of mining products from the Kemess mining project, is designed to run along the west side of the Sustut River. There are also three airstrips in the area.

The Skeena, Sustut, Omineca, and Bear rivers flow through this zone. Numerous creeks flow into the Sustut River, including Islam, Minaret, Birdflat and February creeks. The Skeena ranks second only to the Fraser River as a salmon producer. Water quality in the area is generally high, but disturbance (natural or human induced) of the very fine soils that exist along the Sustut could lead to temporary turbidity.

Mixed stands of pine, spruce, and balsam dominate this zone. Timber values are moderate, with some areas of high value in the valleys. Lodgepole pine is the leading tree species. Balsam is found at higher elevations in the western portions of the zone, while lodgepole pine and spruce occur mainly in the valleys of the northwest. Older age classes occur in the northern part of the zone, while mature age classes occur in the southeast and northwest areas of the zone. Mountain pine beetle is a serious problem in this zone, and control and salvage operations are underway.

Wildlife species include grizzly bear, moose, wolf, black bear, furbearers (including wolverine), eagle waterfowl, and other birds. The availability of salmon in the fall attracts concentrations of wildlife along the streams. Eagles, grizzly bears, black bears, wolves, and waterfowl travel many miles to forage on salmon from streams. The movement cycles of these species are linked to the availability of salmon, and this food source is essential to the fall migration (in the case of birds) and to survive the winter months (in the case of wolves and bears). An abundance of older-aged forest stands provides valuable grizzly and furbearer habitat. Birdflat Creek is one of the many drainages along the Sustut River that provide important wildlife movement linkages.

This zone contains most of the better quality moose winter range found in the upper Skeena River watershed. Areas where moose can winter are limited due to the high snowfall in this zone. The Bear and the lower Sustut rivers provide important winter range. Forest cover on and adjacent to these winter ranges enhances their value.

Fish values in the zone are very high. The Bear River chinook run is one of the three largest in the Skeena watershed. Runs over the last two years have been very high, with estimates of around 20,000 fish. Average run size since the early 1980's has been approximately 10,500.

The Bear and Sustut rivers within this zone provide extremely important rearing habitat for large densities of chinook and steelhead. Lower reaches of some of the tributaries provide important spawning and rearing areas for coho salmon.

This Resource Management Zone receives the most recreational use in the upper Skeena watershed. The Sustut River is a Class 1 Classified Water, which means angling use is specially regulated. A combination of high natural resource values (water quality,

natural beauty of the landscapes, wildlife, and remoteness) results in uncrowded conditions and exceptional fishing, attracting anglers from around the world to the Sustut River.

There is considerable fly-in fishing use in many places. Suskeena Lodge is located on the Sustut River and is accessible only by air. This lodge offers full accommodations, as well as hunting, fishing, and guiding services. Steelhead Valhalla Lodge, located on the Sustut River, is accessible only by air and offers accommodations, boat rentals and fishing services. Two guiding licenses and three trapping licenses are registered in the zone.

River rafters have recently begun to use the upper Skeena River for multi-day wilderness float trips. Trips start at the Mosque airstrip and rafters drift down to the confluence of the Babine River or down to the Kispiox River.

The zone is classed as metallic assessment low. Industrial mineral assessment is classed low in the western half of the zone, and moderate in the eastern half. The zone is an important transportation corridor for mineral resource management. There are no known mineral occurrences or existing tenure in this zone.

The historic Yukon Telegraph Trail runs through this zone. A Gitxsan trail runs along the Skeena, Slamgeesh and Sustut rivers. Archaeological potential is high in this zone, particularly along the Bear and Sustut rivers, and includes several identified Gitxsan sites. An old Gitxsan village is located at the confluence of the Sustut and Skeena rivers.

#### Lower Sustut RMZ - Special Management

Resource Management Zone Intent — Management on these lands emphasizes the significant fish, tourism and recreation values of the zone, while recognizing its significance as a transportation corridor. Resource development may proceed as long as impacts on other resource values are minimized and resource values of the Sustut River are maintained. Co-ordinated access management planning will be required.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Objective — Manage industrial activities to minimize sedimentation of streams and other waterbodies.

- ➔ Design a zone reserved from resource extraction, via stakeholder and agency co-operation, along the Sustut River and Bear River within this zone, that recognizes and incorporates the following:
  - ➔ wetlands
  - ➔ animal movement corridors
  - ➔ habitat features such as eagle and osprey nesting sites
  - ➔ deciduous stands
  - ➔ stream confluences
  - ➔ recreational experience that is river-based
- ➔ Timber harvesting adjacent to this reserve should be managed to maintain the integrity of the reserve, and the attributes associated with the Classified Waters.
- ➔ Develop soils mapping to address potential soil erosion resulting from disturbance, prior to Forest Development Plan approval.
- ➔ Develop sediment control plans to address potential soil erosion resulting from disturbance, prior to operational plan approval (i.e., Road Permits).

## Fish and Fish Habitat

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage to maintain valuable habitats identified in the Sustut Local Resource Use Plan (LRUP) draft document.

- ➔ Adopt movement corridors and linkages as recommended in the Sustut Local Resource Use Plan (LRUP).
- ➔ In resource development plans, propose management strategies to maintain moose winter ranges (wetlands) east of the confluence of the Sustut and Skeena rivers.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Manage access into the RMZ to maintain the wilderness character of the zone and the values of the Sustut Classified Waters.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) for the Lower Sustut and adjoining zones for use in resource development planning.
- ➔ Manage for additional loadouts along the BC Rail Takla Extension railroad as required to facilitate resource extraction. Soil stability, adjacency to Classified Waters and implications for other resource values should be evaluated.
- ➔ Conduct detailed engineering survey and design, and assess slope stability to minimize potential impacts from industrial access development.

Note: The Working Group has discussed the potential of a bridge crossing one of, or a combination of the Sustut, Skeena and Bear Rivers, so the south sides of these rivers can be accessed. A specific crossing location was not chosen due to the complexity associated with this decision. The Working Group recommends that this decision should be made by senior-level officials from the Ministry of Forests and the Ministry of Environment, Lands and Parks, based on detailed technical information. An on-site assessment of alternative locations should be a part of this decision-making process.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture, outside the resource extraction reserve zone (see Water section).
- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives established for the Lower Sustut River and its viewscape.

Objective — Maintain opportunities for timber harvesting and forest management.

- ➔ Strive to develop cutblocks that are compatible with the visual quality objectives established for the Lower Sustut River.
- ➔ Plan harvesting in areas of sensitive management so that visual quality is retained.

Objective — Manage resource development planning to maintain the values of the zone.

- ➔ Recommend joint approval of portions of Forest Development Plans located within this zone by the Ministry of Forests and the Ministry of Environment, Lands and Parks (under section 2.1 of the Operational Planning Regulation of the *Forest Practices Code of British Columbia Act*).

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Manage the Sustut and Bear rivers to maintain a remote recreational experience.

- ➔ Develop Forest Recreation Sites away from the Sustut and Bear rivers.
- ➔ Address the maintenance of the resource attributes associated with the classified water portion of the Sustut River.

## Visual Quality

Objective — Manage visual quality in the Lower Sustut Resource Management Zone.

- ➔ As a priority, establish visual quality objectives (VQO's) for this zone.
- ➔ Adopt visual quality objectives (VQO's) as recommended in the Sustut Local Resource Use Plan (LRUP).

## Heritage and Culture

Objective — Manage for the archaeologically significant features along the Bear River.

Identify and inventory archaeological sites and artifacts to assess management requirements.

Develop and implement management strategies to maintain archaeological sites and artifacts at Bear River.

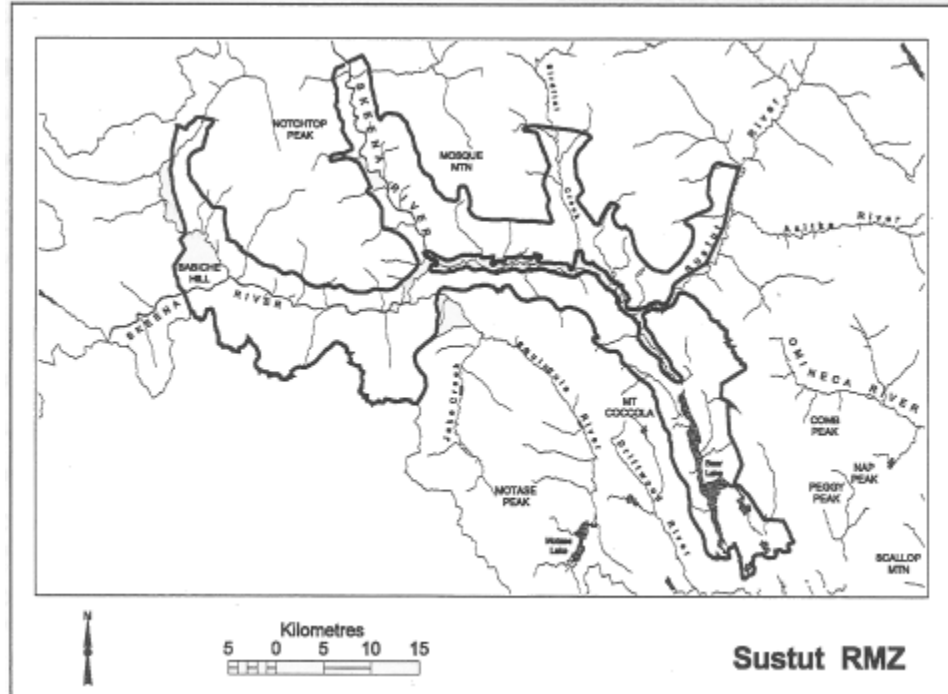


## 4.32 Sustut Resource Management Zone



Total Area: 116,561 hectares

The Sustut Resource Management Zone has been developed following the recommendations of a local planning group. In 1994, after five years of meetings and work, a draft Local Resource Use Plan (LRUP) was published for much of the area. The boundaries of this zone follow those detailed in the Sustut LRUP report, with the exception of the area in the Sustut-Thumb Protected Area.



There is one First Nation community located at Bear Lake. Several Protected Areas are in close proximity to this zone, including the Damdochax and Upper Sustut-Thumb

Protected Areas. The Lower Sustut Resource Management Zone lies completely within the Sustut zone.

The British Columbia Rail-Dease Lake extension runs along the north side of the lower Sustut and the east side of the Skeena rivers. There are a few airstrips in the area. Currently there is no roaded access to this zone. However, the Sloane Connector road has been proposed but the decision to construct the road has not been made.

The Skeena, Sustut and Bear rivers flow through this zone. The Skeena River ranks second only to the Fraser River as a producer of salmon.

This zone lies mostly at lower elevations and, as a result, consists primarily of forests. Mixed stands of pine, spruce, and balsam dominate this zone, with balsam as the leading tree species. Timber values are high in the valleys. Balsam is found at higher elevations in the western portions. Lodgepole pine and spruce mainly occur in the valleys to the northwest. Older age classes occur in the northern part of the zone, while mature age classes occur in the southeast and northwest areas. Mountain pine beetle is a serious problem in this zone, and salvage operations are underway.

Wildlife habitat values are generally moderate to high throughout, with some scattered pockets of high value habitat. Numerous mixed deciduous - coniferous stands are found along the river systems.

The Damdochax-Slamgeesh valley is the major grizzly bear corridor in the immediate area. The two drainages are linked as grizzly bear home ranges. Bears feed on the Blackwater and Slamgeesh rivers. The two systems hold salmon at different times, extending the period of time that the bears can feed on salmon.

The availability of salmon in the fall attracts concentrations of wildlife species along the streams. Eagles, grizzly bears, black bears, wolves, and waterfowl travel many miles to forage on salmon from streams. The movement cycles of these species are linked to the availability of salmon, and this food source is essential to allow birds to successfully make the fall migration, and to wolves and bears to survive the winter months. Valuable furbearer habitat is present in the abundant older age forest stands.

The Sustut Resource Management Zone contains much of the better quality moose winter range found in the upper Skeena River watershed, with moderate to high values. High snowfall in this zone limits areas where moose can winter. The Bear River, and the lower Sustut River, provide winter range. Maintaining forest cover on and adjacent to these winter ranges enhances the value of the habitat for moose. The cliffs above Bear Lake provide mountain goat winter range.

Fish values in the Sustut zone are very high. Important known spawning areas are located in the upper river upstream of Shaslomal Creek. Significant populations of Skeena River watershed chinook salmon spawn in the Bear River, which is part of the Sustut watershed.

The Sustut River is a Class 1 Classified Water, which means angling use is specially regulated. A combination of high natural resource values (water quality, natural beauty

of the landscapes, wildlife, and remoteness) results in uncrowded conditions and exceptional fishing, attracting anglers from around the world to the Sustut River. Only four other streams in the province share this designation.

This zone receives considerable fly-in fishing use. River rafters have recently begun to use the upper Skeena River for multi-day wilderness float trips. Trips start at the Mosque airstrip and rafters drift down to the confluence of the Babine River, or down to the Kispiox River.

Bear Lake Lodge is located on Bear Lake, and is accessible only by air. This lodge offers full accommodations, as well as hunting, fishing and guiding services. There are five registered guides in this zone, and ten registered traplines.

An area along the southern and western ends of the zone is classed as metallic moderate. The remaining northern and eastern parts of the zone are classed metallic low. Industrial mineral assessment is classed as low in the western half of the zone, and moderate in the eastern half. There are many mineral occurrences located immediately adjacent to the western boundary in the Squingula Resource Management Zone. Portions of tenure blocks covering these occurrences extend into the Sustut zone in the Mt. Coccoila and Bear Lake areas. This zone is an important transportation corridor for mineral resource management.

The historic Collins Overland Telegraph Trail runs along the Skeena River, over to the Slamgeesh Valley and then down the Damdochax Valley. Fort Connelly, a former Hudson's Bay Company outpost, is located at Tsaytut Bay on Bear Lake. A traditional trail runs from Bear Lake to the Driftwood Valley. A Gitxsan trail runs along the Skeena, Slamgeesh and Sustut rivers. Archaeological potential is high along the Skeena, Bear and Sustut rivers in this zone, and includes several identified First Nations sites along the Bear River. The Gitxsan claim that an old village is located at the confluence of the Sustut and Skeena rivers.

#### Sustut RMZ - Multi-Value

Resource Management Zone Intent — Valuable low elevation wildlife habitat connected along river valleys and high fisheries values, combined with rail access development and high forest values, require an integrated, multi-value approach to development. Co-ordinated access management planning will be required for this zone. There will be special management for fisheries and wildlife resources, with the intent of no net loss of fisheries habitat over the long term.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

## Biodiversity

Refer to General Management Direction.

## Air Quality

Refer to General Management Direction.

## Soils

Refer to General Management Direction.

## Water

Objective — Manage industrial activities to minimize sedimentation of streams and other waterbodies.

- ➔ Develop detailed sediment control plans to address potential soil erosion resulting from any form of disturbance.

## Fish and Fish Habitat

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage for the Slamgeesh River grizzly bear population and habitat.

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ➔ flood plain/riparian areas and adjacent upland habitats along the Slamgeesh, Bear and Sustut rivers
  - ➔ Bear Lake and upland habitats
  - ➔ older burns near the mouth of Mosque Creek and along the Skeena River (west of Tally Creek).
- ➔ Adopt movement corridors and linkages established in the Sustut LRUP draft document.
- ➔ Inventory and map habitat capability/suitability for grizzly bear, mule deer, moose, mountain goat and caribou, for use in developing a Co-ordinated Access Management Plan.
- ➔ Consider the Slamgeesh/Damdochax valleys as a potential candidate for a Grizzly Bear Conservation Area.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the viability of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Sustut and adjoining zones for use in resource development planning.
- ➔ Manage for additional loadouts along the BC Rail Takla Extension railroad as required to facilitate resource extraction. Soil stability, adjacency to Classified Waters and implications for other resource values are to be evaluated.
- ➔ Avoid developing new roaded access into the zone without assessing the implications of socio-economic and environmental impact assessments and conducting a timely, consultative public forum to make recommendations to decision makers.
- ➔ Establish and maintain a permanent road infrastructure within the zone (i.e., main corridor roads with associated culverts, bridges) to facilitate long term integrated resource management. Consider all resource values in determining main resource development access routes. Utilize an efficient and timely review and decision making process by the appropriate resource agencies.
- ➔ Utilize an efficient and timely joint approval process to designate Forest Service Road corridors.

Objective — Manage access on the proposed Sloane Connector Road if and when it is constructed.

- ➔ Design and construct the Sloane Connector Road to minimize long-term environmental impacts.
- ➔ Consider utilizing gates to manage non-industrial access.
- ➔ Define responsibility for access management and maintenance of the Sloane Connector Road by licensed resource users.
- ➔ Manage new access to new mines with access control points.

Objective — Assess implications of aircraft activity on other resource values and resource user activities.

- ➔ Utilize education strategies as required.

Objective — Manage access adjacent to the Damdochax and the Upper Sustut-Thumb Protected Areas to maintain their values.

- ➔ Consider Park Management Plan objectives when planning/developing industrial access immediately adjacent to the Protected Area.

## **Forest Stands**

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and promote intensive silviculture where appropriate, inclusive of biodiversity values.

Objective — Maintain timber harvesting and forest management opportunities while maintaining the water quality of water bodies within this zone.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Objective — Manage Bear Lake to maintain the remote recreational experience.

Avoid developing new Forest Service Recreation Sites.

Objective — Manage for the resource attributes associated with Classified Waters.

## **Visual Quality**

Refer to General Management Direction.

## **Heritage and Culture**

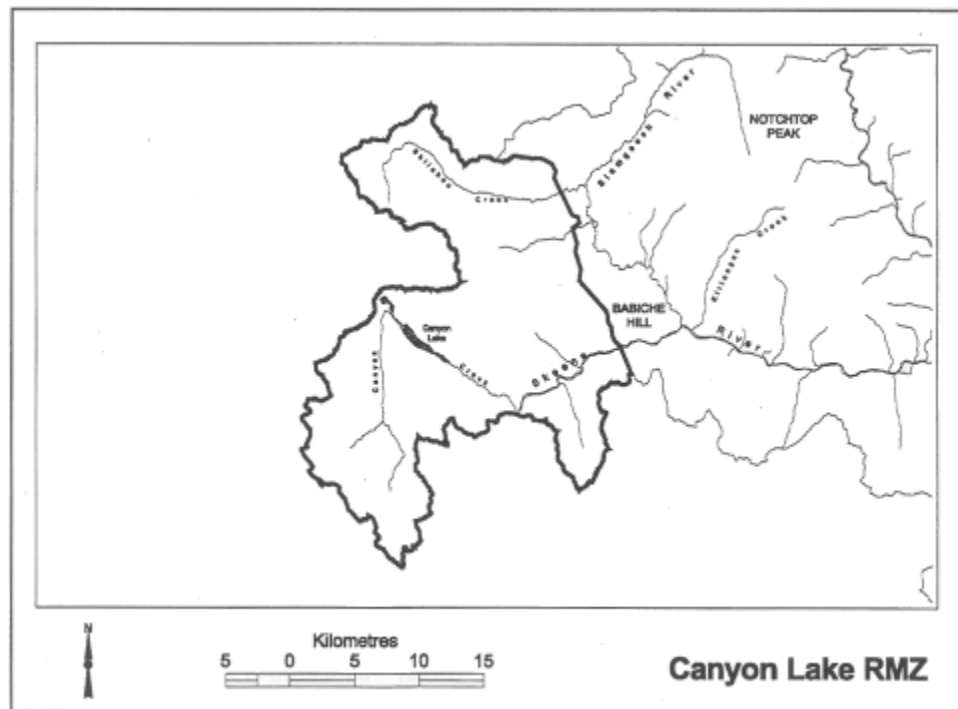
Refer to General Management Direction.

### 4.33 Canyon Lake Resource Management Zone



Total Area: 59,892 hectares

The Canyon Lake Resource Management Zone takes its name from the major lake in the zone. Composed mainly of steep mountainous terrain, the area is difficult to access from the east. The majority of this zone is drained by the Skeena River.



The zone borders the Damdochax Protected Area to the east.

Balsam is the leading tree species, with other species such as hemlock and aspen. Timber values are primarily low.

There are numerous large avalanche chutes, high elevation meadows, and devil's club plant associations in this zone which provide good foraging areas for bears. There is a very productive habitat area at the north end of the lake where there are numerous wetlands, lakes, avalanche chutes, and some mature timber.

The creek leaving Canyon Lake tumbles over several large falls or chutes, leaving use by salmon or steelhead restricted to the mouth of the creek. Canyon Lake may contain resident populations of bull trout and rainbow trout.

Recreation and tourism activities include fly-in fishing and hunting. There is one trapping license and one guiding license in this zone.

The Canyon Lake zone has a metallic assessment classed as moderate, and an industrial assessment classed as low. There are no known mineral occurrences or existing tenures in this zone.

#### Canyon Lake RMZ - Multi-Value

Resource Management Zone Intent — A combination of existing wildlife habitat, a general lack of local knowledge, as well as some future potential for forest development, require an integrated, multi-value approach to future development in this zone. Management on these lands integrates a wide range of resource values. Co-ordinated access management planning will be required for this zone.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

### **Water**

Refer to General Management Direction.



## Fish and Fish Habitat

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➔ Implement strategies for resource development to maintain high wildlife values associated with high elevation meadows, large avalanche chutes and the wetlands at the north end of Canyon Lake.
- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium), for use in developing a Co-ordinated Access Management Plan.
- ➔ Consider devils club plant associations and seepage sites for wildlife tree patch reserves in silviculture prescriptions (to conserve important grizzly bear habitat).

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Co-ordinate access management throughout the zone.

- ➔ Develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Canyon Lake and adjoining zones for use in resource development planning.

## Forest Stands

Objective - Develop a long-term, multi-resource value plan for this zone at the landscape level.

Foster partnerships to employ Geographical Information Systems (GIS) technology and resource mapping portfolios as a visual and analytical tool to facilitate the inclusion of all values in this planning process. Inventory standards and values to be mapped should be agreed upon by local resource users (i.e., First Nations, licensees, mineral tenure holders, and tourism, guiding and trapping operators) and resource agencies.

Prioritize funding projects that support this method of providing information for improved resource management decision-making at strategic and operational levels.

## **Minerals and Energy**

Refer to General Management Direction.

## **Agriculture and Grazing**

Refer to General Management Direction.

## **Tourism**

Refer to General Management Direction.

## **Recreation**

Refer to General Management Direction.

## **Visual Quality**

Objective - Manage to maintain the sensitive visual quality around Canyon Lake.

Address visual quality in resource development planning.

Design harvest patterns and activities to manage visual quality as directed by the District Manager.

## **Heritage and Culture**

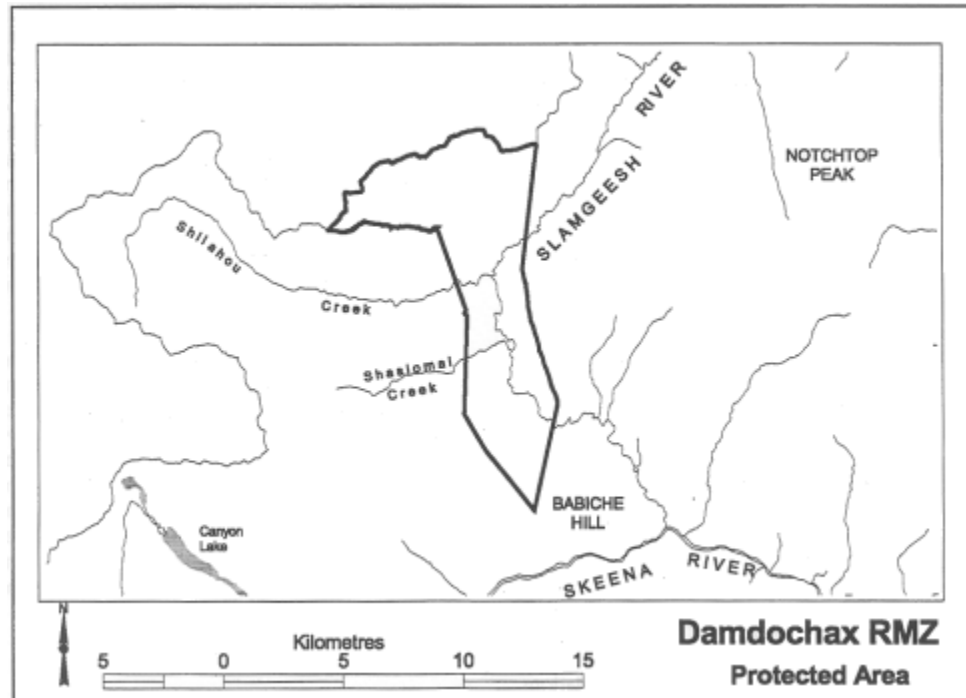
Refer to General Management Direction.

## **4.34 Damdochax Resource Management Zone**



Total Area: 8,097 hectares

Damdochax is an altered Gitksan word for **black water**, a place people in the region and elsewhere know as "The Blackwater". This Protected Area straddles the borders of both the Fort St. James Forest District and the Kalum Forest District (Prince Rupert Forest Region).



The Blackwater is a living component of local wilderness cultural vocabulary, providing "a sense of place" that outdoor enthusiasts need. It is also an outstanding example of Nass River biodiversity. A crossover First Nations/Telegraph Trail campsite composed of four historic log cabins in disrepair, two First Nations' gravehouses, two First Nations' traditional dwelling site depressions and remnants of traditional aboriginal fishing tools, are scattered over a lovely meadow between the outlet area and the first tributary, the Sansixmor.

The Telegraph Trail runs northwesterly down the Blackwater Valley, from the direction of the Hazeltons in the south to the junction of the Blackwater and the Nass, where it turns north toward the headwaters of the Nass. Line Cabin 5 1/2 sits on a hill overlooking the southeast corner of the lake.

Damdochax Lake is situated approximately 97 kilometres in a southeasterly bearing from the headwater lake of the Nass, known locally as Nass Lake. The waters of the Damdochax are some of the warmest and clearest in the Nass watershed. It is invariably the first lake in the region to be free of ice in the spring, and the last to freeze in the fall. The Groundhog Trail leaves the Blackwater Valley by veering off the Telegraph Trail and running northerly along the main tributary of the Blackwater, the Slowmaldo, creating a short cut to the headwaters of the Skeena.

The main stem of the Damdochax is 8 air miles long. The two tributaries that join the Damdochax change the size and character of the river considerably. Very good numbers of chunky rainbow trout and Dolly Varden are found along its length, especially in the headwaters area directly below the lake outlet. The riffles and pools of the Damdochax are close together.

Old-growth spruce/balsam forest covers the northern hillsides of the Damdochax. Deciduous trees and shrubs populating the lakeshore include birch, Douglas maple, cottonwood, poplar, soapberry, mountain ash, willows, alder and wild crabapple. There are relatively low timber values throughout, with balsam as the predominant species.

Specific zones within the Damdochax watershed are heavily used by wildlife, waterfowl and fish. Grizzly bears live and den in the area, their patterns and trails similar from year to year.

Good numbers of moose calve in the flooded willow swamps between Damdochax and Wiminask lakes. Moose winter along the entire Damdochax Valley. There are good populations of wolves and dense populations of mountain goat in the Slowmald Mountains. According to the local guide outfitters 50 moose, 35 grizzlies, 20 black bears, 20 eagles and 20 wolves frequent the valley.

High numbers of waterfowl, including swans, use the open waters of the Damdochax in their fall migrations when other lakes in the region remain frozen.

There are also outstanding populations of furbearers. A 'catch', written in pencil on a blazed spruce by an aboriginal trapper 30 years ago, reads: "6 wolves, 4 otter, 4 wolverine, 6 fisher, 107 marten, 6 mink, 200 squirrels, 30 beaver".

The Damdochax/Slamgeesh valley is the major grizzly bear corridor in the immediate area. The two drainages are linked as grizzly bear home ranges. Bears feed on the Blackwater and Slamgeesh rivers. The two systems hold salmon at different times, extending the period of time that grizzly bears can feed on salmon.

Thousands of sockeye spawn from one end of the Wiminask to the other, along the shores of Damdochax Lake and along the main stem of the Damdochax River. Chinook spawn from the lake outlet downstream for three miles. Nineteen per cent of the chinook of the Nass River are birthed in the Damdochax. Coho and chum spawn throughout the system. Steelhead spawn in the outlet waters. Steelhead caught by anglers (measured by hours of effort) are amongst the highest catch-per-hour values in British Columbia. The Damdochax is a world-class fly fishing Classified Waters destination river, recognized provincially by the Ministry of Environment and internationally by fly-rod fishers.

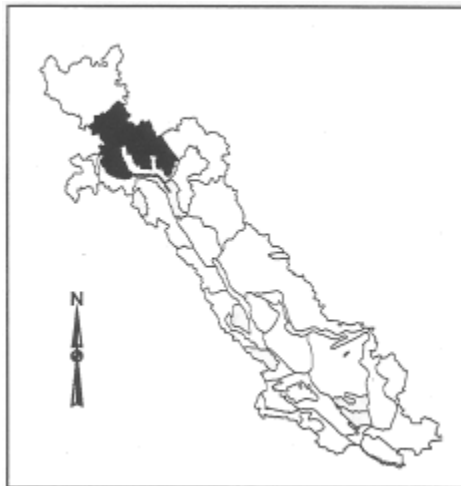
Nass Headwaters Guiding Co. has guided catch and release fly fishers on the Classified Waters of the Damdochax for 19 years. The main base of operations is at Damdochax Lake. In season, two other camps on the river are utilized. Linked by trail right from the lake, and running along the lake shore and crossing at the Sansixmor, the trail connects with the Tobacco Creek and Moss Creek camps on the main stem. The entire length of the Damdochax is used by those who fish the Damdochax, from the headwaters to the Nass.

Culturally modified trees exhibit written territory statements by the Gitxsan. But the Nisga'a also claim the headwaters of the Nass, and in recent years have taken a genuine interest in understanding and managing the Nass fishery.

A gravehouse on the banks of the Damdochax headwaters is held together with telegraph trail wire and hand-forged nails. A salmon trap in the area is made of split willow and spruce roots. Weir stakes are hidden in the woods. Trails lead to the Hazelton area where Gitxsan chiefs and members of the Kispiox Village such as Billy, Walter, and Dave Blackwater, have a history of trapping and travelling in this area.

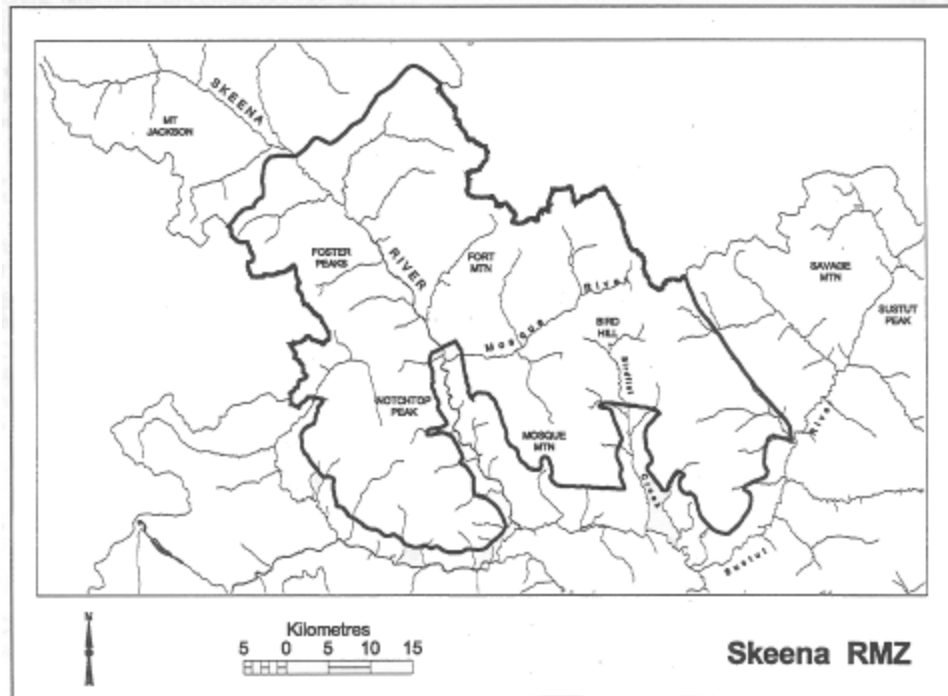
There is some coal and coal-bed methane potential at the northern boundary of the Protected Area.

#### **4.35 Skeena Resource Management Zone**



Total Area: 254,116 hectares

The Skeena Resource Management Zone is very mountainous and includes the Slamgeesh and Tatlatui ranges. The zone shares the boundary of the Damdochax and the Upper Sustut-Thumb Protected Areas. The northern portion of the zone borders on the Spatsizi and Tatlatui Provincial Parks.



The zone includes the upper Skeena River, and portions of the upper elevations of the Sustut River Watershed. Other rivers within this zone include the Mosquito and the Slamgeesh, and the headwaters of Birdflat Creek.

There are no roads in the zone. Grade for the BC Rail-Dease Lake extension has been constructed, but no rails have been laid.

Timber values are generally low throughout the zone. Balsam is the leading tree species with other species such as spruce, lodgepole pine, aspen, and hemlock. Lodgepole pine and spruce occur mainly in the valleys, while balsam is found at higher elevations in the valleys.

The zone contains a diverse mixture of coniferous forests, old burns, small lakes, and large wetland systems. There are generally moderate wildlife habitat values throughout, with a number of valuable habitat areas. Wildlife species include stone sheep, woodland caribou, moose, mountain goat, grizzly bear, wolf, and furbearers. Stone sheep are found in the mountain peaks and ranges bordering the parks. Valuable caribou habitat is found in the northern half of this zone, with moderate value habitat in the south. Good numbers of woodland caribou are found in the Tatlatui Range north of Alma Creek. Most of these caribou winter in the northern portions of the parks. Some caribou are found on the mountains east and west of upper Birdflat Creek, where they have been observed in the winter months.

Grizzly bears are found throughout this Resource Management Zone. Productive high elevation foraging sites include avalanche chutes, meadows, and wetlands. Bears likely move to valley bottom areas in the spring to take advantage of the earlier green-up, and in the fall to sites where salmon are available. Mountain goats are found on most of the mountain peaks. Habitat values for moose are low to moderate, and some animals

do winter along the Skeena River. Packs of wolves can be found wherever there are populations of ungulates. Furbearer values are moderate to high throughout, particularly where there are connected stands of mature forests, such as along the east side of the Skeena River.

Skeena River tributaries contain resident fish species and serve as important rearing areas for anadromous fish (salmonids). Fishery values are considered moderate to high.

Due to the remoteness of this zone, and the lack of large lakes on which to land a plane, this area receives little non-guided recreational use. Some hunting and fishing does occur. The guide outfitters in this area guide hunting of big game species. There are three guiding licenses in this zone.

A large westcentral portion of the zone is classed as moderate for metallic mineral assessment. The northeastern, central and eastern parts are classed as metallic low. A small part of the zone located along the southeastern boundary is classed as metallic high. The industrial mineral assessment is classed as moderate in the southeast and northwest portions of the zone, and low in the remainder of the zone. There are three copper occurrences, as well as mineral tenure, located in these metallic high lands. There is coal potential in the zone, and a developed prospect of coal (the Sustut deposit of 63 million tonnes of coal) is located at the headwaters of Red Creek.

Skeena RMZ - Multi-Value

Resource Management Zone Intent — Management on these lands integrates a wide range of resource values. Access is relatively unrestricted, with the exception of any land that may need special management considerations. Co-ordinated access management planning will be required.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

## Water

Refer to General Management Direction.

## Fish and Fish Habitat

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage for the goat population on the Kitlangas range.

- ➔ Increase education for pilots and other aircraft personnel about the potential impacts of repeated harassment to goat populations.

Objective — Manage valuable habitats for a variety of species.

- ➔ Consider the maintenance of habitat when integrating resource development plans with:
  - ➔ the large interconnected wetland complex at the upper reaches of Birdflat, Mosque, Red and Two Lake creeks.
  - ➔ old burn and numerous small wetland complexes along the Skeena River from Fort Creek to Mosque Creek.
  - ➔ large wetland system near the mouth of Chipmunk Creek.
  - ➔ small lake and wetland complexes along the Skeena River from Alma Creek to Fort Creek.
  - ➔ Birdflat Creek
  - ➔ along the east side of the Skeena
  - ➔ the Duti River valley bottom including Tzahny Creek
  - ➔ up Cutfoot Creek into Sansixmor Creek
  - ➔ up unnamed creek (opposite Mosque Creek) up into upper Slamgeesh River and down Slamgeesh River to RMZ boundary
  - ➔ up Mosque Creek into upper Birdflat Creek, Two Lake Creek, and Red Creek connecting to large wetland complex in the head waters of Niven Creek.
- ➔ Identify valuable grizzly bear habitat for use in resource development planning.
- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium), for use in developing a Co-ordinated Access Management Plan.

## Trapping and Guiding

Refer to General Management Direction.



## Access

Objective — Manage access on the proposed Sloane Connector Road if and when it is constructed.

- ➔ Design and construct the Sloane Connector Road to minimize long-term environmental impacts.
- ➔ Consider utilizing gates to manage non-industrial access.
- ➔ Define responsibility for access management and maintenance of the Sloane Connector Road by licensed resource users.
- ➔ Manage new access to new mines with access control points.

Objective — Manage access to maintain sensitive habitats.

- ➔ Consider restricting/minimizing vehicle access to and within the meadow complex at the top of Birdflat Creek and the Upper Mosque drainage.

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the viability of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Skeena and adjoining zones, for use in resource development planning.
- ➔ Consider additional loadouts along the rail line as required to facilitate timber extraction as part of the Co-ordinated Access Management Plan.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and consider intensive silviculture where appropriate, and where compatible with wildlife habitat, cultural values and recreation objectives.
- ➔ Promote the use of low impact silviculture systems to maintain the visual and water quality objectives, and the resource and cultural values of this zone.

Objective — Develop a long-term, multi-resource value plan for this zone at the landscape level.

Foster partnerships to employ Geographical Information Systems (GIS) technology and resource mapping portfolios as a visual and analytical tool to facilitate the inclusion of all values in this planning process. Inventory standards and values to be mapped should be agreed upon by local resource users (i.e.,

First Nations, licensees, mineral tenure holders, and tourism, guiding and trapping operators) and resource agencies.

Prioritize funding projects that support this method of providing information for improved resource management decision making at strategic and operational levels.

### **Minerals and Energy**

Refer to General Management Direction.

### **Agriculture and Grazing**

Refer to General Management Direction.

### **Tourism**

Refer to General Management Direction.

### **Recreation**

Objective — Recognize and manage to maintain the values of the Skeena River for white-water rafting and kayaking,

Develop and implement strategies to address these values in resource development planning.

### **Visual Quality**

Refer to General Management Direction.

### **Heritage and Culture**

Refer to General Management Direction.

#### 4.36 Groundhog Resource Management Zone



Total Area: 277,505 hectares

The Groundhog Resource Management Zone is very remote, forming the northwestern tip of the planning area. The northwestern portion is very mountainous and includes the Groundhog Range. Major peaks include Groundhog Mountain, Mt. Jackson, Mt. McEvoy, Table Mountain, Devil's Claw Mountain, Gil Peak, and Distingue Mountain.



The zone is primarily unaccessed, with no major road systems. An old air strip is located near the confluence of the Kluatantan and Skeena Rivers.

The upper reaches of the Skeena River run through the central portion of this zone. The Kluatantan River, a tributary to the Skeena, enters the zone in the northeast. The Kluatantan River is a Classified Water.

Timber values are generally low throughout the zone. Balsam is the leading tree species, with other species such as spruce and aspen. The major concentrations of spruce occur along the Skeena and Kluatantan rivers, with aspen found along the Skeena downstream of McEvoy Flats, and in the old burn along the Kluatantan River and Kluayaz Creek. Balsam is found in the river valleys, and at higher and alpine elevations. To date less than 1% of the total forest area has been logged.

Coniferous forests are mainly mature, mixed with numerous wetlands and meadows. Low elevation wetlands are dominated by willow, mountain alder, sedges, and other herbs. The meadows found at higher elevations, along streams and in frost pockets, contain a lush herb layer.

This area has been studied and inventoried in the context of mapping work done for the Klappan coal project, and wildlife studies conducted in Spatsizi Park in the early 1980's. There are high habitat values for woodland caribou. After wintering in Spatsizi Park woodland caribou move south into the Groundhog zone during the summer and fall months. Pregnant females select isolated birthing sites on the mountains. One collared female traveled out of Spatsizi Park to the north side of Groundhog Mountain to give birth two years in a row.

Moose use the moderate habitat values found throughout the zone. Animals winter along the Skeena River floodplain, due to the lower snowfall in this area and extensive wetlands and meadows adjacent to the river that provide forage. Mountain goats are a high profile wildlife species, and good populations live on mountain ranges in the zone. Movement between the ranges is likely common, as goats have often been seen at lower elevations along the Skeena River.

Grizzly bears, another high profile species, are found throughout the area. Extensive wetlands, meadows, and avalanche tracts, combined with some salmon activity in the fall, make this a productive area for grizzly bears. Packs of wolves are also found here, likely following populations of ungulates in this area.

Fisheries inventory is poor or lacking for many of the streams, but values are suspected to be moderate. Steelhead, coho and sockeye salmon spawn and rear in the Duti and Kluatantan rivers, and in Beirnes, Currier, and Otsi creeks. The most heavily used spawning areas are the outlet and inlet streams of the larger lakes, including Tzahny, Kluatantan, and Kluayaz.

There is little recreational use of the area, perhaps due to the remote nature of the zone. A guide outfitter has a camp on Kluatantan Lake, guiding hunts for caribou, grizzly bear, and mountain goat. There is some angler guiding for steelhead on the Kluatantan River.

The metallic mineral assessment of the zone is classed as low, except for a small southwest portion that is classed as moderate. The industrial mineral assessment is classified as low, except for a tract of land located in the east and northeast portions of

the zone that is classified as moderate. There are significant coal values in the upper Skeena drainage, including occurrences and tenure. There are three coal showings, three coal prospects, and one developed prospect at McEvoy Flats with established reserves of 343 million tonnes of coal. Coal tenure covers the deposit. There is also a small block of mineral tenure in the area. The very significant Klappan coal field and deposits are located immediately north of this zone. This zone includes an important transportation corridor for mineral resource management.

Archaeological potential has been identified as high along the Skeena River and along the Groundhog Trail, and moderate along Beirnes and Currier creeks. There are many significant archaeological and cultural sites in this area. Inventories are still required to provide further information.

#### Groundhog RMZ - Special Management

Resource Management Zone Intent — Management on these lands emphasizes the significant fish and wildlife values of the zone. Resource development (including roaded access development and where appropriate north of the zone) may proceed as long as impacts on other resource values are minimized and resource values are maintained. Co-ordinated access management planning will be required.

Objectives and strategies to supplement the General Management Direction

### **Community Stability and Development**

Refer to General Management Direction.

### **Biodiversity**

Refer to General Management Direction.

### **Air Quality**

Refer to General Management Direction.

### **Soils**

Refer to General Management Direction.

### **Water**

Refer to General Management Direction.

### **Fish and Fish Habitat**

Refer to General Management Direction.

## Wildlife Habitat and Populations

Objective — Manage valuable habitats for a variety of species.

- ➔ Conduct habitat inventories in association with habitat capability/suitability mapping to identify specific wildlife habitat areas (grizzly bear, mule deer, moose, mountain goat, caribou high and caribou medium) for use in developing a Co-ordinated Access Management Plan.
- ➔ Consider prescribed fires for wildlife enhancement with attention to stone sheep range management.
- ➔ Implement management strategies for resource development for the following identified valuable wildlife habitats:
  - ➔ large wetland system at the headwaters of the Skeena River downstream to Ethel Creek
  - ➔ large wetland system, numerous small lakes, mixed forests and numerous small meadows in the upper Kluatantan River area by Merry Creek downstream to Kluayaz Lake, upper Kluayaz Creek, and along Billy Goat Creek
  - ➔ large burn in the lower Kluatantan River area
  - ➔ numerous lakes, large wetlands and mixed forests around Tantan Creek and Kluatantan Lakes, east to Tzahny
  - ➔ wetlands along Beirnes Creek
  - ➔ the old burn, numerous wetlands and meadows, and mixed forests on the east side of the Skeena River downstream from Kluatantan River to the boundary of the RMZ
  - ➔ caribou calving areas
  - ➔ the low elevation areas along the Skeena River mainstream from Fire Flats in Spatsizi Park, over to the Kluayaz Lake and down the Kluatantan River to the confluence with the Skeena River
  - ➔ up Beirnes Creek into Anthony Creek
  - ➔ up Currier Creek to Panorama Lake.

## Trapping and Guiding

Refer to General Management Direction.

## Access

Objective — Co-ordinate access management for resource extraction throughout this zone, while maintaining the viability of wildlife movement corridors, fish spawning/rearing habitat, water quality, remote recreational experiences, local community interests and tourism requirements.

- ➔ As a priority, develop a Co-ordinated Access Management Plan (including public and stakeholder participation) that addresses the interests of all resource users, for the Groundhog and adjoining Resource Management Zones, for use in resource development planning.
- ➔ Consider additional loadouts along the rail line as required to facilitate resource extraction as part of the Co-ordinated Access Management Plan. Plan and manage for soil stability, adjacency to Classified Waters, and implications for other resource values, should the existing right-of-way and loadouts be developed.

Objective — Manage access to maintain sensitive habitats.

- ➔ Consider restricting/minimizing motorized vehicle access to and within the meadow complexes associated with the Fire Flats area, the Upper Skeena basin, and the Upper Duti River.
- ➔ Consider restricting/minimizing motorized vehicle access to the upper reaches of the Kluatantan River.

## Forest Stands

Objective — Utilize appropriate silviculture systems/practices for this zone in consideration of resource values.

- ➔ Emphasize basic silviculture and consider intensive silviculture where appropriate, and where compatible with wildlife habitat and recreation objectives.
- ➔ Promote the use of low impact silviculture systems to maintain the site productivity across this zone.

Objective — Develop a long-term, multi-resource value plan for this zone at the landscape level.

Foster partnerships to employ Geographical Information Systems (GIS) technology and resource mapping portfolios as a visual and analytical tool to facilitate the inclusion of all values in this planning process. Inventory standards and values to be mapped should be agreed upon by local resource users (i.e., First Nations, licensees, mineral tenure holders, and tourism, guiding and trapping operators) and resource agencies.

Prioritize funding projects that support this method of providing information for improved resource management decision making at strategic and operational levels.

## Minerals and Energy

Refer to General Management Direction.

## Agriculture and Grazing

Refer to General Management Direction.

## Tourism

Refer to General Management Direction.

## Recreation

Objective — Manage to maintain the values associated with Classified Waters.

Address the maintenance of the resource attributes associated with the Classified Waters portion of the Kluatantan River in resource development planning.

## Visual Quality

Refer to General Management Direction.

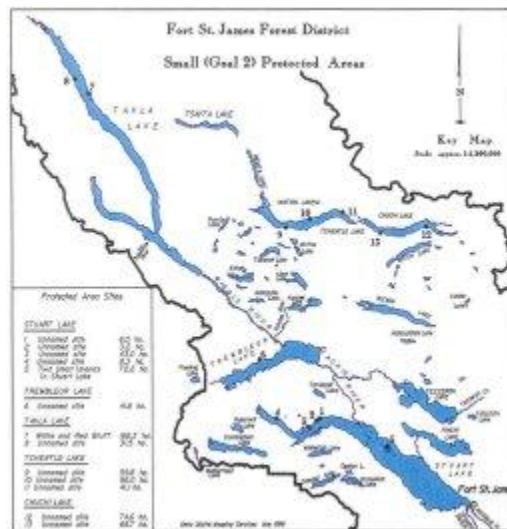
## Heritage and Culture

Refer to General Management Direction.

[Fort St. James LRMP toc](#)

Questions or Comments? [Web Administrator](#)

### 4.37 Small (Goal 2) Protected Areas



Large, long, narrow glacially-formed lakes are not found in many parts of the world, but they are a characteristic feature of British Columbia. In their mountainous settings



these lakes have high scenic, recreation and conservation values and are notable tourism destinations, with opportunities for multi-day boating excursions. This requires good access points and a series of protected anchorages near beaches or other scenic areas.

Lake boating systems are being proposed in the northern half of the province for Quesnel, Babine, Atlin, Tagish and Teslin lakes. Similar opportunities exist on the Takla-Trembleur-Stuart Lake system and on the Nation Lakes. BC Parks presently provides boat launch access at Paarens Beach and Sowchea Bay. Stuart Lake and Takla Lake also provide walk-in access.

These small Protected Areas will enhance tourism and recreation opportunities on Takla, Trembleur and Stuart lakes, and on the Nation Lakes, both for the present and into the future.

The following thirteen sites (total area=669.3 hectares) are identified as small (Goal 2) Protected Areas:

### **Stuart Lake**

Unnamed Site 6.0 ha  
Unnamed Site 3.2 ha  
Unnamed Site 43.0 ha  
Unnamed Site 8.3 ha  
Two small islands in Stuart Lake 72.2 ha

### **Trembleur Lake**

Unnamed Site 41.6 ha

### **Takla Lake**

White and Red Bluff 166.3 ha  
Unnamed Site 31.5 ha

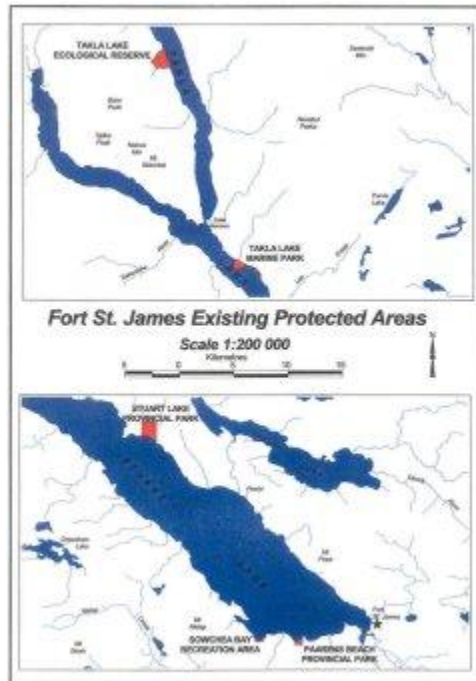
### **Tchentlo Lake**

Unnamed Site 59.8 ha  
Unnamed Site 56.0 ha  
Unnamed Site 41.1 ha

### **Chuchi Lake**

Unnamed Site 74.6 ha  
Unnamed Site 65.7 ha

## 4.38 Existing Protected Areas



The following five areas remain as Protected Areas under this Land and Resource Management Plan:

### Paarens Beach Provincial Park

Paarens Beach Provincial Park is located fifteen kilometres west of Fort St. James on the south end of Stuart Lake. It is 43 hectares in size and offers opportunities for camping, fishing, boating water skiing, picnicking, swimming, and nature studies. There are 36 campground sites, a picnic shelter with tables and a wood stove, pit toilets, and a concrete boat launch. Statistics from 1993 indicate the campground is used by many first time visitors (very likely due to its proximity to Fort St. James), with day use facilities receiving use primarily by local and regional visitors.

### Stuart Lake Provincial Park

Stuart Lake Provincial Park was established as part of a park system along the Takla/Trembleur/Stuart lakes corridor. It is 32 kilometres northwest of Fort St. James and is 315 hectares in size. Access to the park is by gravel road and there are currently no developed or planned facilities. Recreation opportunities include angling, boating, and swimming. No user statistics are available.

### Takla Lake Marine Provincial Park

Takla Lake Marine Park was established in 1993 as a Class A provincial park. It is located approximately 144 kilometres northwest of Fort St. James on a forest access

road and contains 98.2 hectares in the Takla/Trembleur/Stuart Lakes corridor. Recreation opportunities include fishing, boating, and swimming, and there are currently no facilities planned. There are no user statistics available.

#### Takla Lake Ecological Reserve

Takla Lake Ecological Reserve is located on the west shore of the north east arm of Takla Lake and is within the Mount Blanchet Protected Area. This reserve, 264 ha. in size, is considered the northern outpost of Douglas-fir, and may provide genetic stock with features such as superior frost resistance. This seed source is potentially very important for genetic improvement of Douglas-fir for reforestation.

#### Sowchea Bay Recreation Area

(Recommended for upgrade to Class A Park Status)

Sowchea Bay Recreation Area is located twenty kilometres west of Fort St. James on the south end of Stuart Lake. It is 13 hectares in size, with 30 lakeshore campground sites. Facilities include fire rings, pit toilets and a concrete boat launch. Recreation opportunities include camping, fishing, boating, water sports and swimming. Statistics from 1993 indicate that 85% of campground visitors are BC residents, and 65% of all visitors to the campground stay less than three nights.

### 5.0 Socio-Economic and Environmental Assessment Summary

#### Introduction

This section summarizes the socio-economic and environmental implications of the land use plan developed by the Fort St. James Land and Resource Management Plan (LRMP) Working Group; the complete assessment (April 1998) is available under separate cover. It should be noted that the LRMP is a "strategic" plan that provides "high level" direction to lower level planning. Given this, the assessment evaluates only the readily identifiable implications of the LRMP vs. those of the "Base Case," i.e. the default land use regime likely to occur in the absence of an LRMP. This independent assessment was undertaken by Gary Holman, Consulting Economist (socio-economic portion) and Jim Trask, R.P. Bio. (environmental portion) in cooperation with the Ministry of Employment & Investment. Every attempt is made to ensure the work is consistent with the principles contained in the government's **Social and Economic Impact Assessment for Land and Resource Management Planning in BC - Interim Guidelines**, August 1993.

In addition to the LRMP document's management objectives/strategies, the assessment draws upon the Ministry of Forests (Prince George Forest Region) Geographic Information System (GIS) area analysis and resource analyses (e.g., for timber supply) by government agencies on the Fort St. James LRMP Interagency Planning Team (IPT).

The Base Case includes the 1995 Timber Supply Review (TSR) management regime and the Forest Practices Code (FPC). The impacts of 189,000 ha. of proposed Protected Areas as recommended by the government's Regional Protected Areas Team (RPAT) are

also attributed to the Base Case, since it is likely that about 5.7% in new Protected Areas (due to the provincial Protected Areas Strategy and government's 5.8% overall target set for the Plan Area) would have been implemented in the absence of the LRMP.

The LRMP divides the Gross Land Base (GLB) of the 3.2 million ha. Plan Area into five broad Resource Management Zones (RMZs) categories: Protected Areas (PAs), Special Management (SMZs), Multi-Value Management (MVZs), Resource Development (RDZs), and Agriculture/Settlement (ASZs). In order to develop a Base Case map and GIS area statistics that can be meaningfully compared to the LRMP, the IPT used these same RMZ designations to "label" the management zones that would likely prevail in the Base Case. The table below summarizes the proportion of the land base under each of the five land use designations for both the Base Case and the LRMP.

Generally, although the locations differ, the overall proportion of the Gross Land Base (GLB) of the Plan Area in PAs is similar in the Base Case and the LRMP. However, the proportion of Special Management Zones (SMZs) is significantly higher (about 20% of the overall land base) in the LRMP than in the Base Case (4%). There is also a reduction from 88% to 31% of the Plan Area in Resource Development emphasis, and an increase in the area under Multi-Value Management (from 2% to 44%).<sup>1</sup>

<b>Land Use Zones as % of the Gross Land Base of the Fort St. James LRMP Plan Area<sup>a</sup></b>				
	<b>Protected Areas</b>	<b>Special Management</b>	<b>Multi- Value</b>	<b>Resource Development<sup>b</sup></b>
<b>Base Case</b>	6.0%	4.0%	1.8%	88.3%
		<sup>c</sup>	<sup>c</sup>	
<b>LRMP</b>	5.9%	19.6%	43.9%	30.7%
(a) Defined as the 3,174,426 ha Fort St. James Forest District.				
(b) Includes Agriculture/Settlement, which comprises less than 1% of the Plan Area.				
(c) Consists of LRUP & VQO areas likely to be implemented in the absence of the LRMP.				

The quantifiable socio-economic implications of the Base Case and Fort St. James LRMP arise primarily from potential future timber supply impacts. The socio-economic and environmental implications for other sectors/values are more difficult to quantify because they mainly relate to longer term potential (e.g., possible mineral development, future wildlife populations, etc), rather affecting existing amounts of identified resources (e.g., the Timber Harvesting Land Base) in the short-term. **The impacts for all sectors and values will likely occur gradually over several decades.**

## Forestry

Forestry dominates the economy in the Plan Area, accounting for an estimated 46% of 1991 basic employment.<sup>2</sup> Currently, about 40% of the 2.9 million m<sup>3</sup>/yr (non-TFL) harvest in the Plan Area is exported to sawmills elsewhere in the Prince George TSA.

The Fort St. James Plan Area is one of three Forest Districts in the TSA. **This implies that harvest reductions within any Forest District are pro-rated among all licensees within the entire TSA, according to Ministry of Forests policy.** A TSA-level timber supply analysis (as undertaken for the TSR) is not available at this time, but an approximate “rolled up” analysis using Forest District-level results from the Vanderhoof, Prince George, and Ft. St. James LRMPs has been undertaken for purposes of this assessment. Note that timber supply impacts (all from Base Case initiatives such as the TSR, FPC, and PAS) on harvesting and milling employment within the Plan Area are assumed to be 18% of the harvest impact on the overall TSA (i.e., the estimated 1.7 million m<sup>3</sup>/yr. of FSJ District harvest processed locally, divided by the TSA AAC of 9.4 million m<sup>3</sup>/yr).

Another factor to be considered in the timber analysis is the expected temporary re-allocation of harvesting from the Prince George Forest District (which is experiencing short term timber supply shortages due to “green-up/adjacency” constraints) to the Fort St. James and Vanderhoof Districts. The extent of the re-allocation has not been finalized by the Ministry of Forests, but is estimated to be in the range of 300,000 m<sup>3</sup>/yr to 800,000 m<sup>3</sup>/yr. in total. It is assumed for purposes of the timber analysis that harvest levels in the FSJFD would increase by the upper end of the range, or 600,000 m<sup>3</sup>/yr. (i.e., to 3.5 million m<sup>3</sup>/yr.), implying that the Vanderhoof harvest would increase by 200,000 m<sup>3</sup>/yr.; the corresponding decrease in harvest in the Prince George Forest District would therefore be 800,000 m<sup>3</sup>/yr. Note that this re-allocation will only affect where in the TSA that the timber is harvested, and will not affect the AAC apportionments to individual licensees.

The timber supply analysis (undertaken by independent forestry consultants on contract to the Ministry of Forests) indicate that **harvest reductions to Ft. St. James area timber processors in the Plan Area can be deferred for about 30 years** (subject to Chief Forester AAC determinations) and are estimated to be about 113,000 m<sup>3</sup>/yr during years 31 to 40, or about 7% of the amount now processed in the Plan Area. After year 40, the overall TSA harvest level declines by an average of roughly 5% per decade until year 100.

The Base Case timber harvest impact could, by year 31, place at risk up to 55 harvesting and processing jobs and 15 spin-off jobs in the Plan Area. This potential employment impact represents about 5-6% of 1991 Plan Area employment and income during years 31-40. Jobs at risk by year 31 for the Prince George TSA as a whole (including the Plan Area) due to management decisions within the Plan Area are estimated to be up to 125 harvesting and processing jobs and up to 65 spin-off jobs<sup>3</sup> during that same decade, or about 0.5% of total 1991 TSA employment.

There are many uncertainties that make quantitative assessment of forestry-related economic impacts in the long term very uncertain. For example, new “site index” data

indicate that timber growth rates, and therefore sustainable harvest levels, may be significantly higher than currently estimated. Long term trends in technology, forest product prices, operability and timber utilization compound these uncertainties.<sup>4</sup> However, if the Base Case fall-down in the TSA harvest levels indicated by the timber supply analysis does occur, it could result in the eventual closure of one or two of the larger mills in the Plan Area (as well as some others in Vanderhoof and Prince George) even without an LRMP. While the estimated timber supply impacts would not likely be the causal factor to trigger such a situation for at least 50 years, present over-capacity in the TSA could induce some rationalization of local processing capacity sooner.

As for the LRMP, the timber supply analysis indicates that its Protected Area recommendations have no additional harvest impact (in either the short or long terms) vs. the Base Case.<sup>5</sup> This is due to the fact that the LRMP's proposed Protected Areas comprise a lower proportion of the Timber Harvesting Land Base (about 71,000 ha or 5.5% of total post-FPC THLB) than those proposed by RPAT (about 83,000 ha or 6.4%). Of the estimated 276 million m<sup>3</sup> stock of mature/old growth coniferous timber in the post-FPC THLB that would be precluded from harvesting, the LRMP PAs would alienate about 16 million m<sup>3</sup> (5.8%), compared to 17 million m<sup>3</sup> (6.2%) in the RPAT PAs.

It is important to note that the timber supply analysis was not able to ascertain any measurable harvest impacts from the LRMP's management prescriptions outside of Protected Areas, due to the practical difficulties of attempting to assess objectives/strategies that mainly consist of broad direction to lower level planning. It is likely, though, that in addition to some implications on the harvest, such strategies will also result in cost increases to licensees for planning, access management, etc., especially in Special Management Zones. It is acknowledged that the cost implications of initiatives such as the FPC are already a concern in the Base Case.<sup>6</sup>

## **Tourism and Recreation**

Total direct tourism employment in the Plan Area is estimated at approximately 100, and comprises an estimated 8% of 1991 basic employment. Some of this employment is associated with the wilderness or "back-country" tourism portion of the sector, which is assumed to be more strongly linked to changes in crown land use than is the "front-country" (e.g., motels and restaurants near highways) component. There is good growth potential in guide-outfitting and other forms of wilderness tourism based on several key attractions in and around the area's many lakes, rivers, and wilderness areas.

In the Base Case, about 9% of total guide/outfitter territories are in RPAT PAs or areas that are considered to be specially managed in the Base Case regime, as are 8% of high tourism capability areas (according to mapping done by the Ministry of Small Business, Tourism and Culture), 14% of MoF recreation sites, about 15% of rare and endangered sport fish habitats, 61% of large river/riparian habitats, 25% of lakes with special management needs, 0.1% of primitive non-motorized areas (i.e., lands greater than 5000 hectares that are more than 8 kilometres from a 4-wheel drive road) and 12% of semi-primitive non-motorized areas (i.e., lands greater than 1000 hectares and more than 1 kilometre from a 4-wheel drive road).<sup>7</sup>

Generally, the proportion of the Plan Area in Special Management Zones is significantly higher (about 20% of the overall land base) in the LRMP, than in the Base Case (about 4%). And given the large reduction in the proportion of the Plan Area in Resource Development Management Zones, in general, there is a significant shift due to the LRMP from a management emphasis on resource development to a management regime that takes more into account recreation and environmental values.

More specifically, the LRMP places about 21% of total guide/outfitter territories, 16% of high tourism capability, 39% of forest recreation sites, 43% of lakes with special management needs, 9% of primitive non-motorized and 17% of semi-primitive non-motorized recreation opportunities in PAs/SMZs. The proportion of rare and endangered sport fish habitats and of large river/riparian habitats that are in PAs/SMZs, is also increased somewhat in the LRMP. Other key LRMP recommendations for recreation and tourism include various supportive management objectives and strategies, as well as establishment of 13 small "Goal 2" Protected Areas, 5 of which combine with the Nation Protected Area and the Lower Nation SMZ to surround lakes with the objective of preserving a recreation and tourism experience similar to the Bowron Lakes (noting that the latter is wholly contained within an existing provincial park). However, the LRMP reduces RPAT's Nation Lakes PA, resulting in lower proportions of key recreation/tourism values in protected status vs. the Base Case - this is mainly due to the LRMP-recommended reduction in the Nation Lakes PA with a corresponding increase in the Upper Sustut/Thumb PA.

On balance, the LRMP should preserve more opportunities for the back-country wilderness tourism sector and the fish and wildlife resources upon which they depend, than would the Base Case. However, with continued timber harvesting and road access, there will still be some wilderness tourism potential foregone over the longer term even with the LRMP, although front-country tourism should continue to grow indefinitely.

## Mining and Energy

There are presently no major mines operating in the Plan Area, although the Ministry of Energy and Mines (MEM) considers it to be one of the more highly ranked mineral potential areas in the province, as evidenced by the nearby South Kemess development. There is small scale, intermittent production at the Ogden Mountain jade occurrence and a number of placer gold properties. Total direct mining employment in the Plan Area is estimated at approximately 40, comprising about 3% of 1991 basic employment.

None of the 13 proven "developed prospects" would be alienated in the Base Case, but 2 out of 25 "prospects" and 9 out of 218 "showings"<sup>8</sup> are located in RPAT proposed PAs, and therefore could be precluded from potential development, should they be viable. About 8% and 6% of high metallic and high industrial mineral potential, respectively, overlay RPAT PAs, as does 5% of mineral tenures.

There are no proven energy reserves in the Plan Area, although there is some moderate potential for oil and gas in the Bowser-Whitehorse Basin from the upper half of Takla Lake to the Lower Sustut area. There is significant coal resource potential in the



Groundhog area at the north end of the Plan Area. A number of hydroelectric opportunities also exist.

The LRMP would not alienate any of the existing jade or placer operations, developed prospects, or prospects. It would also “grand-father” the approximately 2,350 ha<sup>9</sup> of existing mineral and placer tenures (less than 2% of total tenured area) in PAs. Thus, the LRMP would not directly preclude any existing employment, or any future employment associated with the most promising mineral deposits in the Plan Area.

Although 16 out of 218 (about 7%) showings are located within the LRMP’s Protected Areas, many of these occurrences (particularly the more promising ones) would likely be tenured and therefore the grand-fathering provision of the LRMP would allow further exploration/development. Similar to the Base Case, LRMP PAs would also alienate about 8% and 6% of high metallic and industrial mineral potential, respectively. However, the likelihood and timing of development of mineral potential, and therefore its economic significance, is very uncertain.

The increase in the proportion of the land base in SMZs (including 1 of 10 developed prospects, 6 of 25 prospects, 35 of 218 showings, and 12% of mineral tenured land), and LRMP management strategies (e.g., for access management) could increase the costs of mineral exploration and development. This is a concern for investor confidence, particularly during the short-term implementation period for the LRMP.

The Upper Sustut/Thumb PA in the LRMP would preclude a similar (although highly uncertain) amount of oil and gas potential lands as the Base Case. The remainder of the oil and gas potential in the Bowser-Whitehorse Basin is located in Resource Development and Multi-Value RMZs. The Groundhog Special Management Zone at the north end of the Plan Area includes significant coal potential, and while development costs could increase, the LRMP does not preclude development.

B.C. Hydro has indicated that it has no significant concerns about the LRMP.

## Agriculture

Agricultural activity, limited to the southern portion of the Plan Area, consists primarily of livestock and some mixed farming. There is also some grazing activity and 8 agricultural tenures on Crown land. Total local employment in the industry as of 1991 is estimated at about 35-55, accounting for about 3%-4% of basic employment. There is room for expansion of the agriculture sector, e.g. within the Necoslie River valley and east of Pinchi Lake. However, as per historical trends, market factors leading to marginal profitability imply that it is likely that growth in this sector will continue to be slow.

While resource mapping was not available for input into the GIS database, it does not appear that RPAT PAs would preclude any existing operations, tenures or Agricultural Land Reserve (ALR) area. The new riparian areas (on both streams and lakes) and biodiversity strategies established under the FPC could preclude or limit access for some cattle grazing. There could also be some additional costs associated with fencing riparian areas, and new watering structures, and/or relocation and development costs



of establishing new range areas. These impacts will be site dependent, affecting some operators more than others.

As in the Base Case, the LRMP PAs appear to have negligible implications for existing agricultural operations in the Plan Area. There are some management strategies in the LRMP that could increase the cost of operating on agricultural land (e.g. encouragement of strategies to maintain and/or enhance wildlife and aquatic habitat), although most of these management constraints have been or will be implemented through Base Case initiatives such as the FPC and possibly the new Fish Protection Act.

There are some supportive recommendations in the LRMP for agriculture, including mapping of high potential agriculture lands to better identify and zone Agricultural Development Areas for future development. Overall, the changes due to the LRMP are unlikely to have significant implications on existing or potential activity in the local agriculture sector vs. the Base Case, and would not result in the loss of any existing jobs.

### **Subsistence Fisheries and Trapping**

Trapping and fishing are the primary sources of income for about 10 people in the Plan Area, based on 1991 Census data. However, trapping and fishing are important sources of supplemental income or sustenance for many more residents, particularly First Nations.

In the Base Case, the risks to fisheries and habitat for fur-bearers (e.g. marten) would increase over time as activities such as timber harvesting and related road access throughout the THLB proceeds. These impacts would be mitigated somewhat by the FPC and the RPAT proposed Protected Areas. However, as mature and old-growth forests are converted to younger forests, old-growth dependent fur-bearer populations and thus trapping incomes would likely decline. Fisheries resources may also be impacted as continued timber harvesting affects habitat quality and logging road access results in increased fishing pressure.

As noted previously, the LRMP significantly increases the overall proportion of the Plan Area in Special Management Zones and a reduces the proportion in Resource Development Zones. Because of these changes and a number of other objectives and strategies proposed in the Plan, there is generally improved management for fisheries and fur-bearers compared to the Base Case. However, although the LRMP better protects these resources, there is still some risk of longer term declines in some of these values, and in the economic and subsistence activities dependent on these resources.

### **First Nations Concerns**

The Plan Area includes portions of traditional territories of the Carrier, Sekani, Gitksan, and Tahltan Nations. The Carrier First Nations include the Takla Lake Band and the Nak'azdli, Yekooche, and Tl'azt'en Nations. The estimated First Nations on-reserve population is about 1,800 and comprises about 40% of total population in the Plan Area, with additional aboriginals living off-reserve.

Logging/silviculture is probably the most important source of private sector employment to local First Nations. While the harvest impacts of the Base Case are relatively minor in the short term, they could be much more significant after 30 years, with associated impacts on First Nations' communities. Traditional/subsistence activities (hunting, fishing, trapping) are also an important part of First Nations' culture and livelihood. Protection of the resources upon which these traditional activities depend, and the desire for greater involvement in resource management, have been on-going issues of concern to First Nations in the Plan Area. The eventual resolution of land claims will also make an important contribution to their economic development and resource management goals.

First Nations participation in the LRMP was infrequent and no mapping of their key values was available, making assessment of LRMP implications on their interests more uncertain. However, in general, the land use changes and objectives/strategies proposed in the LRMP would provide greater protection for First Nations' traditional and subsistence values, as well as nature-based economic development opportunities (e.g. wilderness tourism); the LRMP thus appears to be generally supportive of historical First Nations' concerns. However, as discussed above, there are still some resource values and related economic activities (e.g. trapping) that are likely to decline over time, although to a lesser degree than in the Base Case. Finally, as indicated previously, there are no measurable incremental short or long term timber harvest (or resulting socio-economic implications) from the LRMP for all Plan Area residents, including First Nations.

### **Community and Worker Adjustments, Mitigation / Transition Issues**

This discussion applies to impacts attributable to both the Base Case and the LRMP, because the extent of adjustment and/or mitigation applied would presumably be larger assuming the LRMP has timber supply or cost impacts beyond those of the Base Case.

The forestry employment impacts estimated (all of which appear attributable to the Base Case rather than the LRMP) are characterized as "jobs at risk" because of uncertainties inherent in forecasting over a 30+ year period and because estimates are based on the unrealistic assumption that firms and workers make no adjustments to minimize impacts. For example, firms throughout the TSA could attempt to offset timber shortages through log imports, greater utilization of timber currently considered inoperable or non-commercial, salvage timber, reduction of non-recoverable losses, and technological changes that can increase lumber recovery.

There are other "economic" adjustments that can be made by firms to lower labour costs (e.g., periodic downtime, attrition, pension bridging, transfers to other licensee operations) without permanent involuntary lay-offs. This is not to trivialize the difficult adjustments for individual workers who are displaced, but is simply an attempt to show that the nature of the socio-economic impacts caused by lower harvest levels can take a variety of forms.<sup>10</sup>

There are also a number of pro-active measures that could mitigate the employment impacts of land use changes in the shorter term, if necessary. Probably the most important is for the Ministry of Forests to defer and gradually phase in timber harvest

reductions, which the timber supply analysis undertaken for the assessments of all three LRMPs in the TSA indicates is possible. Other initiatives that can mitigate impacts include incremental silviculture and watershed restoration projects funded by FRBC, and policies to encourage improved timber utilization and value-added processing.

## **An Economic Strategy**

A formal economic strategy could also be developed. For example, a key concern of local residents is the amount of timber that leaves the Ft. St. James Forest District for processing elsewhere and the lack of benefits returning to Ft. St. James from these exports. <sup>11</sup> This concern is exacerbated by the re-allocation of timber in the TSA that will allow for, at least temporarily, several hundred thousand more cubic metres to be harvested in the Ft. St. James District due to green-up/adjacency constraints in the Prince George Forest District.

Such a strategy could suggest an number of items, including planning for the establishment of a community forest license with the objective of processing more timber locally, having a specific allotment of FRBC funding put aside annually towards an “endowment fund” to be utilized for economic development purposes in the Ft. St. James Plan Area, exploring new value-added wood opportunities, whereby logs currently subject to primary breakdown in the Plan Area could be further processed locally, and other ideas that have been suggested by the LRMP Working Group.

## **Environmental Values**

### **General Approach and Background**

The assessment of potential environmental consequences resulting from the existing Base Case management regime vs. the LRMP is largely based on area statistics generated at the Plan Area level. Area-based statistics are relied on as indicators of potential risks or benefits relative to each of the major environmental values (fish, wildlife, etc.). Also, it is not possible to model the effects of broadly-crafted LRMP objectives and strategies, which require professional judgement, limiting much of the assessment of future outcomes to qualitative (i.e., descriptive) statements.

In general, the introduction of some relatively recent government initiatives improves the outlook for key environmental values relative to the current management practices of the early 1990s. The key initiatives include the Protected Areas Strategy (PAS), *Forest Practices Code of British Columbia Act* (FPC) and Forest Renewal BC, which feature the conservation of environmental values within their mandates and supporting legislation. The FPC Biodiversity Guidebook addresses key landscape and stand level planning and practices that address a broad range of environmental parameters such as seral stage distribution (including old growth), patch size, wildlife movement corridors, and the maintenance of coarse woody debris, wildlife tree and tree patch retention. The FPC guidebooks typically provide a range of options relative to the intensity of biodiversity emphasis, which is guided by higher level plans such as the LRMP. In general, the application of LRMP objectives and strategies will improve the effectiveness of the implementation of the FPC by providing clearer management direction.

Variation in climate and topography within the Plan Area results in a diverse range of ecosystems and wildlife communities. The drier, warmer climate and more subdued terrain in the southern portions of the Plan Area support spruce-pine forests and are characterized by the prevalence of wetlands and small lakes. The more mountainous areas to the north contain wetter forests and are dominated by sub-alpine and alpine ecosystems.

## Protected Areas Strategy and Ecosystem Representation

The goal of the Protected Areas Strategy initiative is to protect representative examples of the full range of natural diversity within the province by increasing Protected Areas to 12% of the provincial area. Due in part to over-representation in other Plan Areas as a result of existing parks and consideration of unique values, Protected Area target percentages and RPAT Protected Area recommendations have been delivered to each Forest District (i.e., Plan Area) in the Prince George Forest Region. The target for the Fort St. James Plan Area is to increase Protected Areas to 5.8% of the Gross Land Base. RPAT identified the most favourable areas for ecosystem representation, which were modified by the LRMP Working Group to address social, economic and environmental considerations.

Based on the various classification schemes (i.e., ecosections, biogeoclimatic subzones/variants) that describe ecosystems at different scales, the RPAT areas in the Base Case provided a more balanced representation of ecosystems while modifications made by the LRMP increased the proportion of high elevation ecosystems in Protected Areas. The dominant low elevation ecosystems (primarily Sub-Boreal Spruce) are under-represented in the LRMP's Protected Areas vs. the RPAT candidates, a pattern that has been repeated throughout much of the province. In the Ft. St. James Plan Area, this occurred due to RPAT's Nation Lakes and Mt. Blanchet proposals being reduced to accommodate a larger Upper Sustut/Thumb Protected Area recommendation by the LRMP.

## Wildlife

The key wildlife species that are featured in the analysis include woodland caribou and grizzly bear. Overall, the LRMP reduces the risks vs. the Base Case of major long-term declines in grizzly numbers as a result of strategies that address access management and the protection of important habitats. However, it is likely that grizzly numbers will continue to decline from their present low-moderate densities in the southern portion of the Plan Area. Grizzly densities could be maintained at, or near their present levels, in the central and northern portions of the Plan Area with the application of LRMP strategies, although this is dependent on the ability of BC Environment to identify important grizzly habitats and on the outcomes of future access management agreements. Bear-human conflicts, including poaching activities, are anticipated to continue to be a pressure along the main transportation routes within major river corridors.

The RPAT proposed Protected Areas in the Base Case reduce the risk of long term declines for some groups of caribou. However, the lack of a formalized management plan results in a moderate-to-high level of overall risk. The provision of caribou

management strategies and the designation of Special Management RMZs with caribou emphasis in the LRMP scenario provide the greatest potential benefits for caribou and further reduces the risk to a low-moderate level for the Chase herd and to moderate for the Wolverine herd. The Takla herd remains at moderate-to-high risk as a result of the anticipated continued habitat/range isolation and habitat fragmentation as well as the small size of the herd, disturbance, and poaching associated with increased access and predation.

Wildlife species that are wide ranging and/or habitat specialists with habitat requirements that include mature and old-growth forest conditions (i.e. marten) are at the greatest risk in the southern portion of the Plan Area where extensive areas are zoned for intensive resource development. Habitat generalists with requirements for larger proportions of younger age classes of forest (i.e. moose) would be favoured in these areas.

## **Fisheries**

The fisheries resources within the Plan Area are represented within roughly equivalent proportions of three watersheds including the Skeena and Fraser basins, which contain provincially significant salmon spawning and rearing habitats, and the Omineca basin, which lacks salmon but contains important Arctic grayling and bull trout habitats. The primary assumption on which the fisheries analysis is based, is that there is a direct relationship between increasing resource development and impacts to fisheries values. The results of the analysis indicate that moderate-to-significant negative impacts to fish would occur with sustained pre-FPC management in 43 out of the 44 identified fish units. The introduction of the FPC Riparian Reserve and Management Zones significantly improves the outlook for fisheries values in 42 of the 44 identified fisheries units that describe areas with similar terrain and fisheries attributes. The application of LRMP-defined objectives and strategies are anticipated to improve the outlook for fisheries values in 9 of the 44 fish units, relative to the Base Case; 32 remain unchanged and 3 are better protected in the Base Case. Arctic grayling habitats in the Omineca and Nation watersheds, and bull trout habitats in small streams in mountainous areas, remain at moderate risk.

## **Conclusion of Environmental Analysis**

The LRMP provides objectives and strategies that are supportive and often incremental to existing legislation with respect to the protection of key environmental values. Local knowledge of important fish and wildlife habitats are translated into objectives and strategies at the Resource Management Zone level, which will provide clearer management direction, although the overall effectiveness is constrained where there are competing objectives. The reduction in the proportion of the land base in areas zoned for Enhanced Resource Development, with a corresponding increase in the proportion of areas zoned for Special Management improves the outlook for key environmental values at the landscape level.

## Notes

1 These land use changes are somewhat exaggerated because the Base Case designations do not factor in implementation of the FPC Biodiversity Guidelines and other possible management constraints that may be implemented (e.g. Caribou Management Zones) in the absence of the LRMP. Also for the LRMP, the % of the GLB in each RMZ category is somewhat different than the "official" distribution of 5.9% in PAs, 17% in SMZs, 45% in MVZs, and 32% in RDZs, since Base Case VQOs and the LRUPs within all LRMP-designated zones are assumed to be either Special Management or Multi-Value resource emphasis.

2 Basic employment arises from income that flows into an area from outside the Plan Area (e.g., forestry income, tourism income, public sector income, etc.), and is considered to "drive" the Area economically.

3 Excludes (Base Case) implications of timber impacts from the Vanderhoof and Prince George districts, which when added to those from Ft. St. James, could result in about 400 direct forestry and 200 indirect/induced jobs at risk in the TSA, or about 1.3% of TSA-level employment during Years 31-40.

4 For a discussion of some of these factors, see **The Truth is Out There**, L. Pedersen address to NFPA, April, 1997. The document suggests that the harvest in the PG Forest Region could be increased from about 19 million m<sup>3</sup>/yr to about 25 million m<sup>3</sup>/yr over the next 100 years.

5 The timber modeling actually indicates that the LRMP PAs have a slightly positive impact on harvest levels compared to the Base Case RPAT PAs.

6 See **Financial State of the Forest Industry and Delivered Wood Cost Drivers**, KPMG for MoF, April, 1997. The report estimated that total wood costs increased by 80% over the 1992-96 period. The FPC accounted for about one-quarter of this increase, and stumpage and other factors for the rest.

7 It is acknowledged that expanding road networks caused by resource development have both positive and negative implications for tourism and outdoor recreation. While roads increase access for many recreationalists, they also have a negative affect on the pristine nature of back-country experiences that are important to some individuals, and will increase the pressures and fish and wildlife populations.

8 Occurrences include producing mines, past producers, developed prospects (proven deposits with defined tonnages/grades), prospects (occurrences for which there is some indication of dimension) and showings (not sufficiently defined to permit resource estimation). Note the latest data from MEM indicates there are 28 prospects and 225 showings in the Plan Area.

9 This is net of 450 ha of mineral tenure in the Upper Sustut/Thumb that has recently been forfeited. **Fort St. James Land and Resource Management Plan Mineral Resource Analysis**, MEM, January 1998.

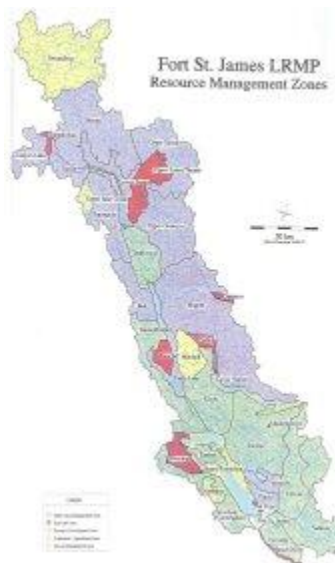
10 For example, a large pulp mill in Prince George recently downsized its workforce by 15% over three years by utilizing voluntary early retirement incentive packages.

11 These concerns were articulated in detail by the Mayor of Ft. St. James in a letter to the Ministry of Forests dated March 10, 1998.

#### List of Maps

[Fort St. James LRMP Planning Area](#)  
[Fort St. James Natural Disturbance Types](#)  
[Fort St. James Forest District - Habitat Values](#)  
[Fort St. James LRMP - Woodland Caribou Habitat Rating](#)  
[Fort St. James LRMP - Metallic Mineral Potential](#)  
[Fort St. James LRMP - Tourism Features and Operations](#)  
[Fort St. James LRMP - Goal 2 Protected Areas](#)  
[Fort St. James Existing Protected Areas](#)

## 1.0 The Planning Area



### 1.1 Introduction

The Fort St. James Land and Resource Management Plan (LRMP) covers a relatively isolated and sparsely populated area of approximately 3.174 million hectares. The planning area follows the boundaries of the Fort St. James Forest District, one of eight forest districts that make up the Prince George Forest Region.

Fort St. James is the oldest established community west of the Rocky Mountains. The town was founded in 1806 as a fur trading post. Simon Fraser brought the North-West Company (later the Hudson's Bay Company) to the shores of Stuart Lake and the surrounding area, naming the territory New Caledonia. All routes led to Stuart Lake Post, as New Caledonia became the administrative centre of the northern fur trade.



Area trading posts, including Stoney Creek, Fraser Lake and Fort Babine, sent their furs to Stuart Lake Post for accounting and subsequent shipping to the east.

The discovery of gold in the Omineca region in the 1850's brought thousands of hopefuls rushing into the Fort St. James - Manson Creek area. New roads and transportation routes for miners improved access to the more remote portions of the area. In-town services grew, hotels and boarding houses flourished. By 1890 transportation to and from the Fort was made even easier with the introduction of the Skeena River steamship route, which enabled goods to be transported by water from the Pacific Ocean as far east as Hazelton, then by portage and canoe to Stuart Lake and into Fort St. James.

The quest for gold continued well into the first part of the twentieth century. Claims for silver, gold and lead had been staked by the early 1920's, but access continued to be a concern. The province was urged to improve existing roads and to build new ones. In 1936 the province started work on a main road into the operating mines of the Manson Creek area and built the North Road, which continues to be one of the main access routes through the planning area.

By 1938 a mercury claim had been staked at Pinchi Lake. The mine operated from 1940 to 1944 and was, at that time, the only mercury producer in the country. The mine re-opened in 1967, and operated until 1975.

Logging has always been an important activity in the planning area. The provincial government set up an office of the Ministry of Forests in the 1930's to administer work in the forests. In the 1940's and 1950's several locally-owned sawmills employed area residents and loggers. During the 1960's several large company-owned sawmills set up continuing operations in the vicinity of Fort St. James.

Construction on the BC Rail-Dease Lake extension in the 1970's allowed harvesting to begin moving northward. The rail line, which goes as far as Minaret, was re-opened in 1991. This opened access to the most northern part of the forest district, increasing the annual harvest and solidifying forestry as the dominant economic activity in the planning area.

## 1.2 Biophysical Description

The planning area presents a diversity of landscapes, from the rolling landscapes of the northern interior plateau in the southern portion of the district to the extremely mountainous and largely unroaded landscapes of the north.

Mountain ranges in the planning area include the Frypan, Driftwood, Sicintine, Groundhog and Mitchell ranges. There are also significant peaks such as Goldway Peak, Sustut Peak and Notchtap Peak.

The area is best known for its series of lakes and rivers, many of which are highly valued for tourism and recreation. Large lake systems include the Trembleur, Stuart, Takla, Inzana, Pinchi, and Tezzeron systems, which are tributary to the Fraser River Basin. Other significant lakes include the Nation Lakes (Tsayta, Indata, Tchentlo, and



Chuchi), Great Beaver, Grassham, Cunningham, Kazchek, Kloch, Takatoot, Witch, Carrier, Tetana, Motase, Sustut, Johanson, Canyon, Slamgeesh, and Bear lakes.

The LRMP area covers parts of the headwaters of three major river basins: the Skeena, the Fraser, and the Peace. The first two drain to the Pacific Ocean while the Peace River flows, via the Mackenzie River, to the Arctic Ocean.

The Skeena Basin covers the northwestern portion of the planning area and is drained not only by the Skeena River, but also by its main tributaries; the Slamgeesh, Squingula, Sustut, Mosque, Dutu and Kluatantan rivers.

The Fraser Basin covers the southern portion of the LRMP area and provides access to the northern part of the planning area. The commanding features of the Basin are Takla Lake and its major tributaries, the Driftwood, Kotsine, and Sakeniche rivers. Takla Lake is drained via the Middle River into Trembleur Lake, which in turn is drained into Stuart Lake by the Tachie River. Stuart Lake is drained out of the planning area by the Stuart River, which joins the Nechako River before connecting with the main body of the Fraser River at Prince George. The Middle and Stuart rivers have been designated as provincial Heritage Rivers.

Two additional tributary rivers join this main drainage pattern before it leaves Stuart Lake. The Kuzkwa River flows into the Tachie River, and the Necoslie River flows into Stuart Lake near the Stuart River outfall. A small subset of the Fraser Basin, lying on the eastern edge of the planning area, is drained by the Salmon River and its main tributary, Whitemud Creek.

The Peace Basin covers the eastern portion of the planning area and is drained primarily by the Omineca and Nation rivers and their tributaries. The lower reaches of the Omineca flow into the Williston Lake Reservoir, to the east in the Mackenzie area. The upper reaches of the Nation River are slowed by a series of long lakes aligned generally with the direction of flow. These waters also subsequently flow rapidly through a series of gorges before reaching the Williston Reservoir.

The Stuart-Takla river system produces provincially significant salmon runs. It is a predominantly wild salmon fishery, composed of sockeye and chinook. A Salmonid Habitat Management Plan was developed in 1992 for the Stuart-Takla river system. The Driftwood River is the main kokanee spawning stream, and also sustains the largest number of sockeye spawners. Together with the Middle and Tachie rivers, the Driftwood River accounts for 80% of sockeye spawning in the planning area.

Upper Sustut River steelhead use high elevation habitats which are usually thought of as being poor quality. The Sustut River is a Class 1 Classified Water, which means angling use is specially regulated. A combination of high natural resource values (water quality, natural beauty of the landscapes, wildlife, and remoteness) results in uncrowded conditions and exceptional fishing, attracting anglers from around the world to the Sustut River.

White sturgeon and Arctic grayling are two uncommon fish species found in the LRMP area. Arctic grayling populations were once abundant in the Nation River, but have declined significantly over the past twenty years. Little Calais and Calais Lakes have

been stocked with grayling, in an attempt to maintain genetic stock. (Refer to Appendix 3 for a list of red-listed and blue-listed species, or acquire the most current list from the BC Conservation Data Centre.)

<b>Table 1 Ecoregion Representation in the Planning Area</b>		
<b>Ecoregion</b>	<b>Ecoregion</b>	<b>Percentage of Planning Area</b>
<b>Fraser Basin</b>	Babine Upland	27.1%
	Nechako Lowland	11%
<b>Omineca Mountains</b>	Manson Plateau	22.8%
	Southern Omineca Mountains	7%
	Eastern Skeena Mountains	27.8%
	Northern Skeena Mountains	1.8%
<b>Boreal Mountains &amp; Plateaus</b>	Southern Boreal Plateau	0.2%
	Cassiar Ranges	2.3%

Eight ecozones, including five with significant representation, divide the LRMP planning area: Babine Upland, Nechako Lowland, Manson Plateau, Southern Omineca Mountains, Eastern Skeena Mountains, Northern Skeena Mountains, Southern Boreal Plateau, and Cassiar Ranges.

Within the LRMP's eight ecozones there are five vegetation or biogeoclimatic zones:

- Sub-Boreal Spruce (SBS)
- Engelmann Spruce-Subalpine Fir (ESSF)
- Interior Cedar-Hemlock (ICH)
- Alpine Tundra (AT)
- Boreal White and Black Spruce (BWBS)

(See Table 1: Ecoregion Representation in the Planning Area, and Table 2: Biogeoclimatic Zones, Variants and Sub-Variants in the Planning Area.)

The LRMP planning area supports an abundance of wildlife. Resident mammals include moose, mule and white-tailed deer, elk, cougar, sheep, mountain goat, black and grizzly bear, coyote, wolf and woodland caribou. The area is home to approximately 13 furbearer species, including (but not limited) to beaver, otter, mink, muskrat, fisher, wolverine, and marten. Some 173 bird species are found within the planning area, with

52 species described as winter residents. Owls, cavity nesters and perching birds are widespread, as are waterfowl and some species of shorebirds. The area is home to a number of blue-listed wildlife species, including grizzly bear, trumpeter swan, fisher, great blue heron, and American bittern. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre.)

The planning area contains a diversity of important wildlife habitat for large mammals, birds and furbearers. Numerous lakes and extensive wetlands, particularly in the southern end of the planning area, provide riparian habitat.

Wetland habitats are extensive throughout the Babine Upland and Nechako Lowland ecosections. High elevation ecosystems also provide important habitat, and account for 47% of the landbase within the LRMP area. Old-growth Douglas-fir provides important wildlife habitat even though it is at the very northern borders of its natural range. There are several threatened or rare plant associations listed in this planning area. (Refer to Appendix 3 for a list of red-listed and blue-listed associations, or acquire the most current list from the BC Conservation Data Centre.)

Valuable winter range for moose is found in association with the Manson Plateau and Southern Omineca Mountains ecosections. High value ranges have been identified in the lower reaches of the Driftwood River, the Omineca River from Old Hogen downstream, the Middle, Sustut and Stuart River riparian areas, the Tezzeron Lake/Pinchi area, the Great Beaver Lake/Salmon area, and in the Fleming Lake/west end of Takla Lake area. Valuable habitats for mule deer have been identified in association with old growth Douglas-fir types, particularly those on south-facing slopes, such as Mt. Pope and along the north shore of Stuart Lake. Valuable habitat for elk is found on the south-facing slopes and in the valley bottom along the Stuart River.

<b>Table 2</b>  <b>Biogeoclimatic</b>	<b>Biogeoclimatic Zones, Variants and Sub-Variants in the Planning Area</b>
<b>Subzone/Variant</b>	<b>Description</b>
<b><u>Sub-Boreal Spruce (SBS)</u></b>	
<b>SBS dk</b>	characteristically dry and cool, dominated by prickly rose, purple peavine, devil's club and oakfern. There is no subalpine fir.

<b>SBS dw3</b>	characteristically dry and warm, dominated by Douglas-fir, saskatoon and false sarsaparilla
<b>SBS mc2</b>	characteristically moist and cold, dominated by subalpine fir, black huckleberry and five-leaved bramble
<b>SBS mk1</b>	characteristically moist and cool, dominated by soopolallie, velvet-leaved blueberry, kinnikinnick and dwarf blueberry
<b>SBS mv3</b>	characteristically moist, very cold
<b>SBS wk1</b>	characteristically wet and cool
<b>SBS wk3</b>	occurs in the valleys of the western Omineca Mountains, at elevations below 1100 m. The climate is wet and cool, dominated by devil's club and oakfern.
<b><u>Engelmann Spruce-Subalpine Fir (ESSF)</u></b>	
<b>ESSF mc</b>	characteristically moist and cold

<b>ESSF mv1</b>	characteristically moist and very cold, dominated by white-flowered rhododendron, with no devil's club and little to no oakfern on wetter sites
<b>ESSF mv3</b>	characteristically moist and very cold, dominated by black huckleberry and white flowered rhododendron. Occurs above approximately 1100 m and below the Alpine Tundra.
<b>ESSF mv3c</b>	characteristically moist and cold, dominated by knight's plume, bunchberry and heart-leaved arnica
<b>ESSF wv</b>	characteristically wet and very cold
<b><u>Boreal White and Black Spruce (BWBS)</u></b>	
<b>BWBS dk1</b>	characteristically dry and cool, dominated by white spruce or lodgepole pine
<b><u>Interior Cedar-Hemlock (ICH)</u></b>	
<b>ICH mc1</b>	characteristically moist and cold

## **Alpine Tundra (AT)**

there is no sub-zonation within the AT zone. Alpine vegetation typically occurs in a complex mosaic of communities.

Forests are mostly lodgepole pine and spruce, with balsam at higher elevations and scattered patches of aspen. There are some areas of Douglas-fir, particularly along the shores of Stuart Lake. A history of frequent wildfires has left a mosaic of forest ages. Old and mature balsam stands are found in the northern portion of the planning area, and are also associated with some patches of Douglas-fir elsewhere.

There is an ecological reserve at Takla Lake, consisting of Douglas-fir at the northern-most tip of the species' range. The majority of the stands are young, but there is some old-growth along the lakeshore.

Timber harvesting to date has concentrated on the southern portion of the LRMP area, in areas around the larger lakes, and along valley bottoms in old age class spruce, with increasing emphasis on lodgepole pine-dominated stands. Historical lack of access, mountainous terrain and a predominance of less preferred tree species, such as balsam, have limited harvesting in the north.

The Fort St. James planning area has significant mineral values, including significant mineral potential, mineral occurrence inventory including deposits with well defined reserves, existing mineral and placer tenure holdings, and a history of significant levels of exploration and development activities.

There are 277 documented mineral occurrences located in the district. Of these, one is an intermittently producing jade mine in the Ogden Mountain area, and several are small scale seasonal gold operations. Twelve occurrences are developed prospects (mineral deposits with defined reserves), 31 are prospects (occurrences of mineralization with some indication of dimension and value), and 17 are past producing mines, most of which are placer gold. The remainder are classified as showings where mineralization has not been sufficiently defined to permit a resource estimation.

This pattern of occurrences is consistent in the areas surrounding the planning area. There are 36 documented mineral occurrences immediately adjacent to the Fort St. James LRMP area. Of these, eleven are developed prospects, including the Mount Milligan gold-copper project, eight are prospects, and two are past-producing mines.

Maps of the mineral metallic and industrial mineral assessments, documented mineral occurrences, and existing tenure, show the locations of the mineral values. An assessment of the mineral values within the Fort St. James LRMP area was produced, describing the known and potential mineral values of the land base. Discovered mineral deposits comprise the known value component of this assessment. Resource value predictions or estimations based on mineral occurrences, past production, exploration expenditures and expert knowledge comprise the potential value component of the mineral assessment. Mineral assessments classify tracts of land from lowest (1) to highest (10) value. Metallic and industrial mineral (nonmetallic and non-fuel minerals) values are assessed separately. The assessments summarized in the Resource Management Zone descriptions of the Fort St. James LRMP area were completed by the provincial Geological Survey Branch, and were based on a refined version of an assessment process used by the United States Geological Survey.

### 1.3 Social and Economic Description

The Fort St. James planning area's population of 4015 (1996 census) is centred mainly in the communities of Fort St. James, Tachie, Yekooche Village, Middle River, Takla Landing, and Bear Lake.

The largest centre is the community of Fort St. James (population 2,209 @ 1996 census). Located on Highway 27 along the southern shores of Stuart Lake, Fort St. James is a service centre for the smaller communities and remote residences scattered throughout the planning area. Community services include provincial government offices (government agent, Ministry of Environment, Ministry of Forests), federal government (Canada Post, Human Resources Canada, Royal Canadian Mounted Police), elementary and high schools, post-secondary education, municipal government and health care services.

The population of the Fort St. James District makes up less than 5% of the total population of the Prince George Timber Supply Area (TSA). While the overall population of the planning area decreased by 2.3% between 1986 and 1991, the population of the town of Fort St. James increased by 2.1% between 1995 and 1996, just slightly less than the provincial average of 2.5%.

First Nations communities contribute significantly to the economic and community stability of the LRMP area. First Nations presently comprise approximately one third of the population of the Fort St. James LRMP area (1996 census). This may be an underestimation due to the nature of the census process. There are seven First Nations communities (the former or alternate name of the community is in brackets): Yekooche (Portage/Nancut), Nak'azdli (Necoslief), Binché (Pinchi), Tl'azt'en (Tachie), Dzitl'ainli (Middle River), Takla Landing, and Bear Lake.

The Nak'azdli Band has 1,262 members and sixteen reserves. The band maintains an office on their land immediately adjacent to town, offering health, housing and other services. Nak'azdli operates a value-added mill (Tl'oh Forest Products) near Fort St. James. Yekooche, on Stuart Lake, has approximately 200 members. The Takla Lake Band has 479 members, many living in the community at Takla Landing. The band operates the Takla Development Corporation. A majority of the members of the Tl'azt'en Nation live at Tachie. The community operates Tanizul Timber, which holds a

25-year renewable Tree Farm Licence, #42, the only Tree Farm Licence in the planning area. Tl'azt'en owns Teeslee Forest Products and operates a sawmill in a joint venture with Northwood Pulp and Timber. There are also small First Nations communities at Bear Lake and Dzitl'ainli.

Communities in the Fort St. James planning area depend heavily on the forest industry. In 1997-1998 2.9 million cubic metres of timber were harvested in the forest district, representing about 32% of the Prince George Timber Supply Area. An estimated 40% of the labour force are directly or indirectly involved in some aspect of forestry, including logging, woodlands, silviculture and milling (as compared to 15% for the Prince George District and 27% for the Vanderhoof District). Forestry is responsible for 46% of basic employment and 39% of basic incomes in the LRMP area, with approximately 1,000 direct jobs in harvesting, processing, silviculture and non-rail transportation.

There are presently six sawmills and two value-added operations in the planning area, while over fifty logging and silviculture contractors operate in the district. The current net outflow of fibre from the Fort St. James Forest District is estimated at approximately 1.507 million cubic metres. More wood is transported out of the district than remains within its boundaries, a situation that is a major cause for community economic development concern. Estimates indicate that 55% of all wood harvested within the Forest District is destined for processing outside the district.

Construction of the BC Rail Dease Lake extension in the 1970's brought harvesting to the Leo Creek and Lovell Cove areas. Re-opening the line in 1991 increased access to the most northern parts of the forest district, and timber harvesting jumped in the district from 1.8 to 3.0 million cubic metres.

The forest sector contributes significantly to provincial and federal government revenues. General stumpage fees of \$131.5 million were paid in 1997.

There are currently no major operating mines in the plan area. There are, however, significant mineral values including mineral deposits with well-defined reserves. There is jade production on an intermittent basis in the Ogden Mountain area, and a number of placer properties that produce gold on a seasonal basis. Exploration and development in search of new mines is presently the major element of mining in the planning area. Mineral exploration and development and small scale mining accounts for 3% of basic employment in the plan area. Mineral exploration and development will continue to be an important component of this district's economic profile.

The extent of exploration and development of mineral occurrences in the planning area places the Fort St. James planning area in a very favourable position for future mine development. The 277 documented mineral occurrences indicate high potential for metallic and industrial minerals. High mineral values and infrastructure development in oil and gas potential exists in the northern portion of the plan area. The potential for geothermal energy is lower than in other parts of the province. Opportunities for hydroelectric development also exist.



The agricultural land resource is characterized by a low level of development, as most current agricultural enterprises in the area are small in size and non-intensive in production. The sector generates about \$1.6 million each year.

Guide outfitting and trapping are growing contributors to the local economy, and important activities for First Nations. Numerous traplines cover the entire planning area. Four hundred trappers were registered in the planning area in 1993, including First Nations trappers. Some rely on trapping for a portion of their income, while others participate for recreational or traditional purposes. The entire planning area is covered by trapline tenure, the exceptions being private land and reserves. A large portion of the landbase supports healthy furbearer habitat.

Licensed guides and outfitters operate within the planning area, each of whom have an average annual client base of 15-35 individuals. All non-residents are required to use the services of a guide outfitter when big game hunting. Several guide outfitters have expanded from primarily hunting expeditions to include fishing and non-consumptive wildlife viewing.

**Table 3: Employment in the Plan Area**

<b>Employer</b>	<b>% of Basic Employment</b>
Forestry	46%
Public Sector	23%
Other (Service)	10%
Agriculture	9%
Tourism	8%
Mining	3%
Guiding and Trapping	<1%

The planning area is known for its numerous lakes and related recreation opportunities. Tourists and summer residents arrive seeking wilderness-based experiences, including sports fishing, guided hunting, and wildlife viewing. Roaded recreation activities are mainly limited to the southern portion of the planning area, largely due to the remoteness and limited access as one moves northward. The exceptions are those commercial lodges that provide a wilderness setting. Tourism lodges are located throughout the planning area, and are accessible by road, boat or air. There are exceptional guiding opportunities for wildlife, hunting, angling and wilderness experiences.

The Ministry of Forests currently maintains 60 recreation sites, most of which receive heavy local use. The Ministry of Forests also maintains the Mt. Pope, Green Lake, Kazchek Falls, Shass Mountain, Tsilcoh Falls and Kazchek Lake recreational trails. Provincial parks in the area tend to receive more non-local use. Camping, boating, fishing and hunting are among the most popular recreation activities, while more

specialized pursuits include cross-country skiing, snowmobiling, iceboating, canoeing, sailing, and hiking.

While the majority of those using recreational facilities are residents of the Prince George Forest Region (including Vanderhoof and Prince George) there is a steadily increasing flow of tourists from outside the planning area. Visitors to the area are increasing annually by an estimated 15%. In 1993 the Travel Information Centre in Fort St. James welcomed 2,331 visitors. Approximately 25 to 30% of those visitors were European, 10% American, and 10% were from out-of-province.

#### 1.4 First Nations

The Fort St. James LRMP area encompasses parts of the traditional territories of four aboriginal peoples, and is the subject of four land claims. The Carrier and Sekani interests are represented by the Carrier-Sekani Tribal Council, whose comprehensive claim includes all of the LRMP area, as well as other areas. The Gitksan claim originally included the area northward from Bear Lake, but later expanded to include Bear Lake and the northern portion of the Driftwood River. The Tahltan comprehensive claim, by the Association of United Tahltans, extends into the northern tip of the Fort St. James LRMP area, from 15 kilometres north of the confluence of the Mosque and Skeena rivers.

The Carrier First Nations living in the Fort St. James area are the Takla Lake Band, the Tl'azt'en Nations, Nak'azdli First Nation and Yekooche First Nation. Carrier traditional territory is associated with the lake and river systems which support abundant salmon resources. Some Carrier people established themselves around Fort Connelly on Bear Lake, but most Carrier traditional territory lies southward, and includes Takla Lake and the Stuart Lake and Trembleur Lake drainage systems.

The salmon fishery was the rationale for the location of summer villages, which were situated at the outlets of lakes and at the mouths of salmon rivers. Salmon were taken mainly in weirs and traps. There was a reliance on a wide range of game including caribou, deer, sheep, goats, grizzly bear, black bear, beaver, muskrat and rabbit. Since the 19th century trapping of beaver, muskrat, mink, marten, lynx, wolverine, wolf and bear has been important. Many plant species were used for food and medicines, including virtually all edible berries, lodgepole pine cambium, and the bulbs, leaves and shoots of many other species.

The Carrier cultural landscape is characterized by camps and villages at the outlets of lakes, at the mouths of rivers, and at lakeside sites with good southern exposure. Extensive trail networks linked Carrier settlements to each other and to food collecting locations. Concentrations of trails are found at portages between lake and river systems, along streams, and over mountain passes.

Several Sekani bands traditionally used the northern and eastern areas of Fort St. James LRMP area. The Yutuwichan extended westward to Takla Lake, and later became part of the Fort McLeod Band and probably part of the Takla Lake Band. The Sasuchan, who occupied Bear Lake and the northern third of the Fort St. James LRMP area, split

into several groups that joined different bands. One Sasuchan group remained at Bear Lake and became the Fort Connelly Band.

There are no Gitxsan settlements in the Fort St. James land use planning area. The Gitxsan claim to the northern third of Fort St. James LRMP area is based on their trade with Fort Connelly on Bear Lake and on traditional areas. A separate group called the T'lotona, or Long Grass, was formed through Gitxsan intermarriage with the Sasuchan Sekani. They ranged over the grassy plateau country at the headwaters of the Skeena River.

The northern part of the Fort St. James LRMP area is substantially different from the Gitxsan heartland on the middle Skeena River, where abundant salmon resources are the major factor in aboriginal settlement and land use. The Gitxsan cultural landscape here probably consisted of small seasonal camps located on or near trails.

Tahltan use of the far northern portion of the LRMP area is similar to the Gitxsan use. The LRMP area is the southern periphery of Tahltan traditional territory. Two Tahltan summer fishing villages have been identified at the headwaters of the Skeena River. Other Tahltan sites in the planning area have not been recorded.

Prior to 1805, when James MacDougall made a hurried stop at the Carrier village near the present town of Fort St. James, First Nations had no direct contact with Europeans nor their culture and traditions. Some Russian, Spanish and English trade goods had filtered into the area through the traditional trade between the Carrier and coastal tribes.

#### List of Figures

[\*Figure 1 The Planning Area\*](#)

[\*Figure 2 Resource Management Zone Categories\*](#)

## Appendix 1 General Management Policy Recommendations

This Fort St. James LRMP Working Group did not endeavour to reach consensus on these items. These items are recommendations by individuals or interest groups which are being submitted separately from the LRMP recommendations for consideration by Government. The Working Group would request Government's response to these suggestions.

### Policy Recommendation

### Responsible Agency(ies)

#### Community Stability and Development

Maintain the sustainable harvest flow levels for the forest industry of Fort St. James, while considering regional economies. Ensure that the level of existing timber harvest that is manufactured in the Fort St.

Ministry of Forests

James Forest District is maintained or enhanced.

Implement a process to determine and deliver compensation to resource users that are displaced or have been adversely affected by other resource users. The actual form of compensation should be determined by the parties involved.

To be determined by the Assistant Deputy Ministers' Committee on Land Use

Do not develop continuous roaded access to the west to ensure that timber harvested in the Fort St. James Forest District moves through transportation corridors that pass through the District (avoid the creation of circle routes).

Ministry of Forests

### **Fish and Fish Habitat**

Establish fish harvesting regulations to maintain fish populations.

Ministry of Environment, Lands and Parks (and Department of Fisheries and Oceans)

Provide sufficient funding for necessary Watershed Assessment projects.

Forest Renewal BC

### **Wildlife Habitat and Populations**

Recommend legislated closure of High Caribou Management Areas to recreational snowmobile and all-terrain vehicles.

Ministry of Environment, Lands and Parks

Consider opportunities for multi-agency approval for new roads in High Caribou Management Areas.

Ministry of Environment, Lands and Parks, Ministry of Forests

Recommend joint approval by a Designated Environment Officer of Fire, Fuel and Pest Management Plans within High and Medium Caribou Management Areas.

Ministry of Environment, Lands and Parks, Ministry of Forests

Maintain pre-existing levels of public motorized access in high value caribou management areas.

Ministry of Environment, Lands and Parks, Ministry of Forests

Encourage the placement of conservation officers in the Fort St. James Forest District Office to facilitate increased communication and cooperation.

Ministry of Environment, Lands and Parks

Implement effective conservation and enforcement

Ministry of Forests

capability to maintain wildlife habitats and populations by increasing the number of Conservation Officers in the Fort St. James planning area, and using this increased capability effectively.

Ministry of Environment, Lands and Parks,

Consider not allowing motorized winter recreational activities in identified critical habitat areas (consider the Johanson Lake area in the Upper Sustut/Omineca RMZ).

Ministry of Environment, Lands and Parks

Objective — Maintain healthy grizzly bear populations where they now exist and enhance the populations that are currently in decline.

Ministry of Environment, Lands and Parks

Complete mapping of grizzly bear habitat and estimation of populations in the planning area

On the basis of this mapping, identify those areas of critical importance to the support of healthy grizzly bear populations. Designate these areas as Grizzly Bear Conservation Areas. In each of these designated areas:

Identify a mosaic of habitats that must be conserved to assure the continued existence of adequate seasonal foraging sites and adjacent cover for the maintenance of a healthy grizzly bear population in the Conservation Areas.

Design potential development activities, including roaded access, in the Conservation Areas so as to avoid impairment of valuable grizzly bear habitat and the movement corridors the grizzly bear require.

Require that operational plans prepared by resource development organisations for designated Grizzly Bear Conservation Areas be subject to a joint sign-off, including a designated representative of the Ministry of Environment.

Permit hunting in those Conservation Areas for which there is a positive determination that a specified level of kill will not impair grizzly bear populations.

### Access

Do not develop continuous roaded access through the Driftwood-Squingula valleys which would result in a direct link between these two drainages.

Ministry of Forests

Avoid permitting mainline access through the Upper Sustut Watershed from Bear River to the Omineca Mine Road.	Ministry of Forests
Establish an interagency access committee to review and approve, via joint sign-off, proposed plans for additional access facilities, in order to:	Ministry of Forests Ministry of Environment, Lands and Parks
(1) assure coordinated access in the planning area, and (2) assure that access plans are consistent with the goals and strategies of each RMZ.	Ministry of Energy and Mines, Land Use Coordinating Office
Re-assess all route options for the Sloane Connector Road (the Kemess Mine Road).	

### Forest Stands

Provide opportunities for forest research by endorsing the allocation of land from the Yatzutzin, Stuart Trembleur, and Inzana RMZ's to the UNBC Research Forest. The objectives and strategies for that RMZ should not apply to land allocated to the UNBC Research Forest.	Ministry of Forests
Designate the Fort St. James Forest District as a discreet Timber Supply Area (separate from the Prince George Timber Supply Area)	Ministry of Forests
Recommend joint approval of portions of the Forest Development Plans that are in the Lower Nation Resource Management Zone (by the Ministry of Forests and the Ministry of Environment).	Ministry of Forests Ministry of Environment, Lands and Parks
Re-examine government pricing policies so as to ensure the economic viability of improved utilization.	Ministry of Forests
Ensure no loss of AAC for timber licensees with mills in the planning area.	Ministry of Forests

### Minerals and Energy

Recommend the provision of funds for reclamation of un-reclaimed mine sites, exploration roads and exploration camps at mines abandoned or closed prior to 1969.	Ministry of Energy and Mines
Encourage/ develop incentives to reduce power use as a result of industrial processing efficiencies and appropriate waste disposal.	To be determined

### **Agriculture and Grazing**

Notification must be given before new agriculture leases are issued, including notification to surrounding residents.

Ministry of Environment, Lands and Parks

High value habitat, if at all possible, should be excluded from incorporation into agriculture lease boundaries; if not, then they be zoned and finally noted in covenant to the prospective landowner.

Ministry of Environment, Lands and Parks

Increase the authority of regulations related to Range Use Plans and improve the level of enforcement of these regulations to better manage grazing on Crown lands.

Ministry of Forests

### **Recreation and Tourism**

Prohibit recreational lot development in the Tanizul Resource Management Zone.

Ministry of Environment, Lands and Parks

Restrict residential and recreational lot development on Stuart Lake on undeveloped Crown lands at the east end of the lake (requires mapping).

Ministry of Environment, Lands and Parks

### **LRMP Auditing**

Retain a staff of independent auditors to ensure that proposed operational plans adhere to provincial and federal regulations and are in compliance with the Land and Resource Management Plan.

Land Use Coordinating Office  
InterAgency Management Team

### **Heritage and Culture**

Where possible, provide opportunities for traditional use by maintaining traditional use areas (i.e. berry-producing sites) during harvest and silviculture activities.

Ministry of Forests

### **Forest Land Reserve and Agricultural Land Reserve**

Identified high potential agricultural land should be designated for agricultural leases instead of for the Forest Land Reserve.

Ministry of Agriculture and Food:  
Ministry of Environment, Lands and Parks;  
and Ministry of Forests

### General Policy Recommendations

Some portion of stumpage and/or other resource user rates should return to be directly reinvested into the management of the landbase from which the trees or other resources were extracted.

Recommend BC Environment review caribou hunting regulations in light of this management strategy.

It is recommended that the provincial government commission studies by neutral analysts

(a) to determine the net financial returns the province derives from various resource products

(b) to develop a methodology that can be utilized by provincial government personnel in making such determinations in the future.

Forest Renewal B.C.,  
Ministry of Forests,  
other resource  
ministries

Ministry of  
Environment, Lands  
and Parks

Ministry of Energy  
and Mines,  
natural resource  
ministries,  
Resource  
Management

### Integration of Plans for the Management and Use of the Resources of a Planning Area

Potential conflicts exist among the various uses that might be accommodated in a given RMZ as well as between a particular use and the maintenance of biodiversity. In order to systematize the process of integrating plans for a given area to realize as much net benefit as possible for the people of the region and the province, and at the same time maintain biodiversity, the following five steps should be taken:

Ministry of Forests  
Ministry of  
Environment, Lands  
and Parks;  
and others

Step One - Identify the conditions that must be maintained to sustain natural biodiversity.

Step Two - Identify the potential uses that might be made of the area and the specific location of such uses.

Step Three - For each potential use, identify the features of a plan that will optimize benefits to the people of BC from that single use.

Step Four - Identify the conflicts that would occur if benefits from each use are maximized (i.e. development of a tourism facility might conflict with optimum production of timber).

Step Five - Determine the adjustments that might be



made in the use plans to eliminate the conflicts and maximize benefits to the people of BC from the resource base.

## Appendix 2 Glossary Of Terms

with a written plan, describing the road building, harvesting, and other related operations that are submitted for a forest officer's approval to ensure that the applicable standards and obligations stated in the Silviculture Prescription and the harvesting agreement are met.

**Low Impact Silviculture:** The practice of controlling the establishment, composition, growth and quality of forest stands with minimized inputs. Planting and/or seeding may be done, but site rehabilitation, spacing, fertilization, and pesticide applications may not be used.

**RMD (Resource Management):** created by the provincial government in January of 1994 to define a corporate vision for Land and Resource Management Planning in British Columbia and to oversee, co-ordinate, evaluate and report to Cabinet on ministries' work to deliver the provincial land-use strategy. RMD's mandate is to improve corporate direction and co-ordination of all inter-ministry strategic land-use planning initiatives.

**Marine-Sensitive Zones:** For the purposes of the *Forest Practices Code of British Columbia Act* Operational Planning Regulation these areas include herring spawning areas, shellfish beds, marsh areas, aquaculture sites, juvenile salmonid rearing areas and adult salmon holding areas.

**Merchantable Timber:** A tree or stand that has attained sufficient size, quality and/or volume to make it suitable for harvesting.

**Mesic:** having or characterized by moderate or a well-balanced supply of moisture: a soil temperature regime that has mean annual soil temperatures of 8 degrees C or more than 5 degrees C difference between mean summer and mean winter soil temperatures at 50 cm below the surface.

### **Mine:**

- a) a place where mechanical disturbance of the ground or any excavation is made to explore for or to produce coal, mineral bearing substances, placer minerals, rock, limestone, earth, clay, sand, or gravel
- b) all cleared areas, machinery and equipment for use in servicing a mine or for use in connection with a mine and buildings other than bunkhouses, cookhouses, and related residential facilities
- c) all activities including exploratory drilling, excavation, processing, concentrating, waste disposal, and site reclamation

- d) closed and abandoned mines
- e) a place designated by the chief inspector as a mine.

**Minimize:** To reduce or restrict to the smallest amount or degree. Does not mean exclude or prohibit, but implies that all resource values will be considered.

**Modified Burning Zone:** A zone within or adjacent to a smoke-sensitive area that requires special considerations and burning techniques, even under favourable conditions, to maintain air quality within a smoke-sensitive area.

**Motorized Access and Use:** Refers to access and use by, for example, float planes, helicopters, fixed-wing aircraft, motorboats, motor bikes, all-terrain vehicles, snowmobiles, and/or other motorized equipment.

**Movement Corridor:** A band of vegetation, usually older forest, which serves to connect distinct patches on the landscape. Corridors are part of the Forest Ecosystem Network (FEN) and by providing connectivity permit the movement of plant and animal species between what would otherwise be isolated patches.

**Multiple Use:** A system of resource use where the resources in a given land unit serve more than one user. Multiple use can be effected in three ways:

- (a) different uses of adjacent sub-areas which together form a composite multiple use area;
- (b) the alternation in time of different uses on the same areas; and
- (c) more than one use of an area at one time.

In multiple use planning, where differing resource uses are conducted at the same time on the same area and conflicts between users will occur, one resource is determined to be the dominant use and all other secondary uses are integrated only in-so-far as they are compatible with the first. Often multiple use planning sacrifices the production of the individual resources in favour of the over-all mix of resource uses that brings the greatest social and economic benefits.

**Natural Resource:** Lands, water and atmosphere, their mineral, vegetable and other components, and the flora and fauna on or in them.

**Net Down Procedure:** The process of identifying the net land base, which is the number of hectares of forest land which actually contribute to the Allowable Annual Cut. The process involves "netting down" the Timber Supply Area gross area to the Timber Supply Area gross forest area, then to the Timber Supply Area net forest area. Areas and/or volumes are sequentially deleted or reduced from the gross land base for a number of considerations, including: private ownership, non-forest or non-productive, environmentally sensitive, unmerchantable and inaccessible.

**NDT (Natural Disturbance Type):** Characterize areas with different natural disturbance regimes. These disturbances are those processes that largely terminate the existing forest stand and initiate secondary succession in order to produce a new stand.

The disturbance agents are mostly wild fires, windstorms and, to a lesser extent, insects and land slides.

**Non-Timber Resource Values:** Values within the forest other than timber which include but are not limited to biological diversity, fisheries, wildlife, minerals, water quality and quantity, recreation and tourism, cultural and heritage values, and wilderness and aesthetic values.

**No Staking Reserves (NSR):** Prohibits a free miner from locating or recording a mineral title on land covered by the mineral reserve.

**Not Satisfactorily Restocked (NSR):** Productive forest land that has been denuded and has failed, partially or completely, to regenerate either naturally or by planting or seeding to the specified or desired free growing standards for the site.

**Operable Forest:** That portion of the productive forest that, under current market conditions, can be harvested at a profit.

**Operable Timber (Available Timber, Timber Operability):** Available timber that can be economically logged with present harvesting methods after consideration of access, timber quality and market price.

**Operational Plan:** *Forest Practices Code of British Columbia Act* states that within the context of area-specific management guidelines, operational plans detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include forest development plans, logging plans, access management plans, range-use plans, silviculture prescriptions, stand management prescriptions and five year silviculture plans.

**Permanent Access Structure:** A structure, including a road, bridge, landing, gravel pit or other similar structure, that provides access for timber harvesting, and is shown expressly or by necessary implication on a forest development plan, access management plan, logging plan, road permit or silviculture prescription as remaining operational after timber harvesting activities on the area are complete.

**Pest:** Any forest health agent designated as detrimental to effective resource management.

**Pesticide:** Any substance or mixture of substances (other than a device ) intended for killing, controlling, or managing insects, rodents, fungi, weeds, and other forms of plant or animal life that are considered to be pests as defined under the *British Columbia Pesticide Control Act*.

**Pesticide Buffer Zone:** A strip of land between the 10 metre pesticide-free zone and the pesticide treatment area for preventing entry of pesticides or pesticide residues by drift, runoff, or leachate into the pesticide-free zone.

**Plant Harvesting:** The collection of plant life including, but not limited to, bark, berries, boughs, branches, burls, cones, conks, ferns, flowers, grasses, herbs, fungi, lichens, mosses, mushrooms, roots, sedges, shrubs, sprays and twigs.

**Silviculture Prescription:** A document that applies site-specific field data and develops forest management prescriptions for areas in advance of logging.

**Pre-historic:** In the context of this Land and Resource Management Plan, the use of the term “pre-historic” pertains to the time period before 1846.

**Preservation:** The action of reserving, protecting or safeguarding a portion of the natural environment from unnatural disturbance. It does not imply preserving an area in its present state, for natural events and natural ecological processes are expected to continue. Preservation is part of, and not opposed to, conservation.

**Protected Area (PA):** Land or water set aside by legislation to protect the province’s natural diversity, special features and recreational opportunities.

**Provincial Forest:** Forest land designated under Section 4 of the *Forest Act*. The Lieutenant Governor-in-Council may designate any forest land as a provincial forest. The uses of provincial forests include timber production, forage production, forest recreation, and water, fisheries and wildlife resource purposes.

**Provincial Park:** Land designated under the *British Columbia Parks Act*, (1965) “for the preservation or their natural environments for the inspiration, use, and enjoyment of the public”.

**Range:** Any land supporting vegetation suitable for wildlife or domestic livestock grazing, including grasslands, woodlands, shrublands and forest lands.

**Range Type:** A defined area with specific physical characteristics, which differs from other areas in its ability to produce distinctive kinds and amounts of vegetation and in its response to management.

**Range Lands:** A broad category of lands characterized by native plant communities often associated with grazing, and which may be managed by a Range Management Plan if held under a Grazing Licence or Lease.

**Recreation:** Any physical or psychological revitalization through the voluntary pursuit of leisure time. Forest recreation includes the use and enjoyment of a forest or wildland setting, including heritage landmarks, developed facilities, and other biophysical features.

**Recreation Opportunity Spectrum (ROS):** A mix of outdoor settings based on remoteness, area size, and evidence of humans, which allows for a variety of recreation activities and experiences. The descriptions used to classify the settings are on a continuum and are described as:

a) “**Primitive:**” -unmodified natural environment

- ➔ greater than eight kilometres from a four-wheel drive road
- ➔ low interaction with other people
- ➔ non-motorized access

b) **"Semi-Primitive Non-Motorized:"**

- ➔ natural/natural appearing environment
- ➔ greater than one kilometre from a four-wheel drive road
- ➔ low interaction with other people
- ➔ non-motorized access

c) **"Semi-Primitive Motorized:"**

- ➔ natural/natural appearing environment
- ➔ greater than one kilometre from a two-wheel drive road
- ➔ low interaction with other people
- ➔ motorized access on trails, primitive roads, cross country

d) **"Roaded Resource:"**

modified natural environment  
 moderate interaction with other people  
 privacy and social interaction opportunities  
 motorized access

e) **"Rural:"** -culturally modified natural environment

many interactions with other people  
 social interaction and convenient facilities opportunities  
 conventional motorized vehicle access

**Recreation Site:** A site, and associated ancillary facilities developed by the Ministry of Forests for recreation, or to protect a recreation resource.

**Recreation Trail:** A trail, and associated ancillary facilities, developed by the B.C. Ministry of Forests for recreation, or to protect a recreation resource.

**Red-listed species:** Threatened or endangered species as identified by the Ministry of Environment, Lands and Parks. The taxa on the red list are either Extirpated, Endangered or Threatened, or are being considered for such status. Any indigenous taxon (species or sub-species) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in British Columbia is Endangered.

Threatened taxa are those indigenous species or sub-species that are likely to become endangered in British Columbia if factors are not reversed.

**Regeneration:** The renewal of a tree crop through either natural means (seeded on-site from adjacent stands or deposited by wind, birds, or animals) or artificial means (by planting seedlings or direct seeding).

**Regionally Important Species:** Species which are not red- or blue-listed, that require management practices that differ from standard integrated resource management guidelines in order to fulfil critical habitat needs; or locally or regionally threatened or declining species or those that may reasonably be expected to decline without protection of critical habitats.

**Registered Professional Forester (RPF):** A person registered under the *Foresters Act*, who performs or directs works, services, or undertakings that require specialized knowledge, training, and experience in forestry.

**Reserve:** An area of forest land that, by law or policy, is not available for harvesting. Areas of land and water set aside for ecosystem protection, outdoor and tourism values, preservation of rare species, gene pool, wildlife protection etc.

**Reserve Zone:** The inner portion of a riparian management area situated adjacent to a stream, lake, or wetland and established to conserve and maintain the productivity of aquatic and riparian ecosystems when harvesting is not permitted.

**Resource Agency:** Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as any government agency, ministry or department having jurisdiction over a resource that may be affected by any activity or operation proposed under higher level plan or operational plan.

**Resource Feature:** As defined in Section 51 (1) of the *Forest Practices Code of British Columbia Act* includes all of the following:

- a) a cultural heritage resource;
- b) a recreation feature ;
- c) a range development that is a structure, excavation or constructed livestock trail; and
- d) any other feature designation in the regulations

**Resource Management Zone (RMZ):** In a regional or sub-regional plan: A division or zone of the planning area that is distinct from other zones with respect to biophysical characteristics, resource issues or resource management direction. Resource management zones (in Land and Resource Management Plans these include settlement, agriculture, high intensity resource development, general resource development, low intensity resource development and protection) may be drawn on a map to describe general management intent. The zones are usually further defined using descriptive objectives and strategies to explain future land use and resource management activities.

**Resource Value:** Values on Crown land which include but are not limited to biological diversity, fisheries, wildlife, minerals, oil and gas, energy, water quality and quantity, recreation and tourism, natural and cultural heritage, timber, forage, wilderness and aesthetic values.

**Restrict:** To hold or keep within limits or bounds.

**Retention Visual Quality Objective:** A visual landscape strategy derived from landscape analysis which applies to areas of high landscape value (for example, continuously forested or steep slopes facing important viewpoints or recreation use areas, foreground areas adjacent to important viewpoints or recreation use areas, and certain shorelines). Forest management activities may be present, but should not be noticed by the average viewer. Some visual change may be discernible, but should not be recognized as being different from existing natural features in the landscape.

**Riparian:** An area of land adjacent to a stream, river, lake or wetland that contains vegetation that, due to the presence of water, is distinctly different from the vegetation of adjacent upland areas.

**Riparian Reserve Zone:** Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as that portion, if any, of the riparian management area or lakeshore management area located adjacent to a stream, wetland or lake of a width determined in accordance with Part 8 of the Regulation.

**Road Deactivation:** Measures taken to stabilize roads and logging trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation.

**Sedimentation:** The process of subsidence and deposition by gravity of suspended matter carried in water; usually the result of the reduction of water velocity below the point at which it can transport the material in suspended form.

**Sensitive Areas:** Small areas designated to protect important values during forest and range operations. These areas, established by a Ministry of Forests district manager in consultation with a designated B.C. Environment official, guide operations on a site-specific basis and require a combination of forest practices. Sensitive areas will be mapped by resource agencies, and include regionally significant recreational areas, scenic areas with high visual quality objectives, and forest ecosystem networks.

**Sensitive Soils:** Forest land areas that have a moderate to very high hazard for soil compaction, erosion, displacement, mass wasting or forest floor displacement.

**Sensitive/Vulnerable Species:** Sensitive or vulnerable species as identified by the Ministry of Environment, Lands and Parks. **Blue-listed species** are considered to be vulnerable and "at risk" but not yet endangered or threatened. Populations of these species may not be declined by their habitat or other requirements are such that they are sensitive to further disturbance. The blue list also includes species that are generally suspected of being vulnerable, but for which information is too limited to allow designation in another category.

**Sensitive Watershed:** A watershed that is used for domestic purposes or that has significant downstream fisheries values, and in which the quality of the water resource is highly responsive to changes in the environment. Typically, such watersheds lack settlement ponds, are relatively small, are located on steep slopes, and have special concerns such as an extreme risk of erosion.

**Seral Stage:** Any stage of development of an ecosystem from a disturbed, unvegetated state to a climax plant community.

**Silvics:** The study of the life history, requirements and general characteristics of forest trees and stands in relation to the environment and the practice of silviculture.

**Silviculture:** The art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

**Site:** An area described or defined by its biotic, climatic, and soil conditions in relation to its capacity to produce vegetation; the smallest planning unit.

**Site-Sensitivity:** An assessment of the susceptibility of a site to soil-degrading processes, such as soil compaction, erosion, mass wasting, and forest floor displacement.

**Small Business Forest Enterprise Program (SBFEP):** This program permits the Ministry of Forests to sell Crown timber competitively to individuals and corporations who are registered in the SBFEP.

**Small-Scale Forestry:** In general, non-industrial forestry operations. In B.C., small-scale forestry operations are carried out by woodlot licensees, First Nations, municipalities and private landowners.

**Smoke Management:** The scheduling and conducting of a prescribed burning program under predetermined burning prescriptions and ignition techniques intended to minimize the adverse effects of smoke production in smoke-sensitive areas.

**Smoke-Sensitive Area:** An area that has been identified in which smoke accumulations may cause a safety or public health hazard, or may unreasonably deny aesthetic enjoyment to the public.

**Softwoods:** Cone-bearing trees with needle or scale-like leaves such as Douglas-fir, Rocky mountain juniper and lodgepole pine.

**Soil Erosion:** The wearing away of the earth's surface by water, gravity, wind, and ice.

**Soil Productivity:** The capacity of a soil, in its normal environment, to support plant growth.



**Sound Sensitive Areas:** Parks and/or recreational sites, or sensitive wildlife habitats, that could be negatively impacted by noise created from forestry development activities or other human-created sources.

**Species:** A singular or plural term for a population or series of populations of organisms that are capable of interbreeding freely with each other but not with members of other species. Includes a number of cases:

**endemic species:** a species originating in, or belonging to, a particular region. Both "endemic" and "indigenous" are preferred over "native."

**exotic species:** a species introduced accidentally or intentionally to a region beyond its natural range. "Exotic" is preferred over "alien," "foreign" and "non-native."

**subspecies:** a subdivision of a species. A population or series of populations occupying a discrete range and differing genetically from other subspecies of the same species.

**Species at Risk:**

a) any wildlife species that, in the opinion of the Deputy Minister of Environment, Lands and Parks or a person authorized by that Deputy Minister, is threatened, endangered, sensitive or vulnerable;

b) any threatened and endangered plants or plant communities identified by the Deputy Minister of Environment, Lands and Parks or any person authorized by that Deputy Minister, as requiring protection;  
and

c) regionally important wildlife as determined by the Deputy Minister of Environment, Lands and Parks or a person authorized by that Deputy Minister.

**Stand:** A community of trees sufficiently uniform in species composition, age, arrangement, and condition to be distinguishable as a group from the forest or other growth on the adjoining area, and thus forming a silviculture or management entity.

**Standard:** The required level or measure of practice established by authority of the *Forest Practices Code of British Columbia Act* and referenced in legislation.

**Stewardship:** Caring for land and associated resources and passing healthy ecosystems to future generations.

**Strategic Land Resource Management Planning:** Planning at the regional, sub-regional and, in some cases, at the local level which provides direction for land and resource management. Strategic land-use planning at the regional and sub-regional level involves the preparation of resource management zones, objectives and strategies.

**Strategy:** A broad non-specific statement of an approach to accomplishing desired goals and objectives.

**Stream:** A watercourse, having an alluvial sediment bed, formed when water flows on a perennial or intermittent basis between continuous definable banks.

**Stream Class:** The British Columbia Coastal Fisheries/Forestry Guidelines defines three stream classes:

**Stream Class A** includes streams or portions of streams that are frequented by anadromous salmonids and/or resident sport fish or regionally significant fish species; or streams identified for fishery enhancement in an approved fishery management plan; stream gradient is usually less than 12 percent.

**Stream Class B** includes streams or portions of streams populated by resident fish not currently designated as sport fish or regionally significant fish; stream gradient is usually 8-20 percent.

**Stream Class C** includes streams or portions of streams not frequented by fish; stream gradient is usually greater than 20 percent.

**Suitability Mapping:** A habitat interpretation that describes the current potential of a habitat to support a species. Habitat potential is reflected by the present habitat condition or successional stage.

**Sustainability:** A state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlined elements—the environment, the economy and the social system—into a system that can be maintained indefinitely in a healthy state.

**Sustainable Development:** Preservation and protection of diverse ecosystems - the soil, plants, animals, insects and fungi, while maintaining the forest's productivity.

**Sustainable Forest Management:** Management regimes applied to forest land which maintains the productive and renewal capacities as well as the genetic, species and ecological diversity of forest ecosystems.

**Temporary Road:** A road that will be restored to a productive state upon completion of harvesting (e.g., haul roads).

**Tenure:** The holding, particularly as to manner or term (i.e., period of time), of a property. Land tenure may be broadly categorized into private lands, federal lands, and provincial Crown lands. The *Forest Act* defines a number of forestry tenures by which the cutting of timber and other user rights to provincial Crown land are assigned.

**Threatened or Endangered plant communities:** Ecosystems, as listed by the Conservation Data Center, that:

- (a) are restricted in their distribution over a natural landscape (e.g., freshwater wetlands within certain biogeoclimatic zones) or are restricted to a specific geographic area or a particular type of local environment; or
- (b) were previously widespread or common but now occur over a much smaller area

due to extensive disturbance or complete destruction by such practices as intensive harvesting or grazing by introduced species, hydro projects, dyking, and agricultural conversion.

**Threatened or Endangered Species:** Threatened or endangered species as identified by the Ministry of Environment, Lands and Parks. The taxa on the **red list** are either Extirpated, Endangered or Threatened, or are being considered for such status. Any indigenous taxon (species or sub-species) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in British Columbia is Endangered. Threatened taxa are those indigenous species or sub-species that are likely to become endangered in British Columbia if factors are not reversed.

**Timber Licence:** Tenures which revert to the government when merchantable timber on the area has been harvested and the land reforested. Many of these licences have been incorporated into tree farm licences.

**Timber Supply:** The available timber categorized by species, end-use, and relative value.

**Timber Supply Area (TSA):** An integrated resource management unit established in accordance with Section 6 of the *Forest Act*. Timber Supply Areas were originally defined by an established pattern of wood flow from management units to the primary timber-using industries.

**Total Resource Plans:** Plans that consider all resource values over the long term and involve multi-agencies and licensees.

**Tourism:** The aggregate of all business that directly provides goods or services to facilitate business, pleasure, or leisure activities away from the home environment.

**Tourism Operator:** A business operator that directly provides goods or services to facilitate business, pleasure, or leisure activities away from the home environment.

**Tree Farm Licence (TFL):** TFLs are privately managed parcels of Crown land. TFLs are designed to enable owners of Crown-granted forest lands and old temporary tenures or the timber licences which replace them, to combine these with enough unencumbered Crown land to form self-contained sustained yield management units. These licences commit the licensee to manage the entire area under the general supervision of the Forest Service. Cutting from all lands requires Forest Service approval through the issuance of cutting permits. TFLs should not be confused with Certified Tree Farms under the Taxation Act, though some Certified Tree Farm land (Crown-granted) may comprise a part of the TFL. A TFL has a term of 25 years.

**UREP:** A B.C. Parks Reserve for the Use, Recreation, and Enjoyment for the Public.

**Viable Population:** A population that is capable of existence, self-sustaining over time.

**Viability:** The potential to survive, or to maintain the potential to survive. The term could be species specific, or in reference to a complete ecosystem.

**Visual Absorption Capability:** A component of the visual landscape inventory that rates the relative capacity of a landscape to absorb visual alterations and still maintain its visual integrity.

**Visual Impact Assessment:** An evaluation of the visual impact of resource development proposals on forest landscape.

**Visual Landscape Management:** The identification, assessment, design, and manipulation of the visual features or values of a landscape, and the consideration of these values in the integrated management of provincial forest and range lands. Different consideration may be given to the management of the foreground (the immediate forest edge/landscape along roads and waterways), the midground and background landscapes. Mining activities are managed for the Ministry of Forests Visual Quality Objectives in terms of stages of these activities. That is, early exploration generally is managed to correspond with Preservation and Retention VQOs, advanced stages of exploration to correspond with Retention and Partial Retention VQOs, and mineral production to correspond with a Modification VQO.

**Visual Quality:** The character, condition, and quality of a scenic landscape or other visual resource and how it is perceived, preferred, or otherwise valued by the public.

**Visual Quality Objective (VQO):** A resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO are commonly used: preservation; retention; partial retention; modification; and maximum modification.

**Visual Sensitivity:** A component of the visual landscape inventory that estimates the sensitivity of the landscape based on the visual prominence or importance of features, conditions that affect visual perception, and social factors that contribute to viewer perceptions.

**Watershed:** An area of land that collects and discharges water into a single main stream through a series of smaller tributaries.

**Watershed Assessment:** An evaluation of the present state of watersheds and the cumulative impact of proposed development on peak flows, suspended sediment, bedload, and stream channel stability within the watershed.

**Wetland:** A swamp, marsh or other similar area that supports natural vegetation that is distinct from adjacent upland areas.

**Wild Quality:** Consideration of visual aesthetics and rehabilitation of disturbance in planning resource activities.

**Wilderness:** An area of land generally greater than 1000 hectares that predominantly retains its natural character and on which the impact of man is transitory and, in the long run, substantially unnoticeable.

**Wilderness Area:** A part of the provincial forest designated by Order-in-Council as a wilderness area.

**Wilderness Lodge/Camp:** The lodge or camp of a tourism business which is dependent upon wilderness-based recreation, natural resources, and the attributes of wilderness.

**Wilderness Tourism:** The business of supplying a wilderness experience and outdoor activities to guests who are away from their home environment. Food, lodging, and/or guide services are provided to guests.

**Wildlife:** Raptors, threatened species, endangered species, game, and other species of vertebrates prescribed as wildlife by regulation.

**Wildlife Habitat:** Areas of land and water that support specific wildlife or groups of wildlife.

**Wildlife Habitat Feature:** Defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as

- (a) a significant mineral lick or wallow;
- (b) an active nest of a bald eagle, osprey or great blue heron; or
- (c) any other localized feature agreed to by the District Manager and a designated environment official.

**Wildlife Management:** The application of scientific and technical principles to wildlife populations and habitats to maintain such populations (particularly mammals, birds and fish) essentially for recreational and/or scientific purposes.

### Appendix 3 - Conservation Data Centre Listings for the Fort St. James Forest District

#### B.C. Conservation Data Centre: Rare Plant Association Tracking List Fort St. James Forest District April 26, 1999

This list is incomplete, especially with respect to wetland, alpine, and grassland plant associations. Please note that the ranks below reflect the rarity of plant association occurrences that have not been disturbed by humans or domestic animals, and are in a natural or "climax" state. Some plant associations are often confused with more common successional plant associations (e.g. *Pseudotsuga menziesii* / *Gaultheria shallon*), or they may occur commonly in degraded conditions (e.g. *Elymus spicatus* - *Koeleria macrantha*), but undisturbed occurrences are rare. Please consult our website or contact the CDC for more information on rare plant associations.

SCIENTIFIC NAME	COMMON NAME	BEC UNIT*	PROV RANK	PROV LIST
ABIES LASIOCARPA - PICEA MARIANA / LEDUM GROENLANDICUM	SUBALPINE FIR - BLACK SPRUCE / LABRADOR TEA		S3	BLUE
PICEA ENGELMANII X GLAUCA / SPIRAEA DOUGLASII	HYBRID WHITE SPRUCE / PINK SPIREA		S3	BLUE
PICEA MARIANA / VACCINIUM MEMBRANACEUM / PETASITES	BLACK SPRUCE / BLACK HUCKLEBERRY / COLTSFOOT		S3	BLUE
PSEUDOTSUGA MENZIESII - PICEA ENGELMANII X GLAUCA / RUBUS PARVIFLORUS	HYBRID WHITE SPRUCE - DOUGLAS-FIR / THIMBLEBERRY		S3?	BLUE
4 PLANT ASSOCIATIONS LISTED				

BEC Unit: Biogeoclimatic Ecosystem Classification unit in which each plant association can occur. These units are described in the Ministry of Forests' "Field Guide to Site Identification and Interpretation" for the appropriate Forest Region. Please note that the BEC units listed are for the entire Forest Region, and may not all occur in this Forest District. Units numbered "00" have not yet been assigned site series numbers by the Ministry of Forests.

**B.C. Conservation Data Centre: Rare Vertebrate Animal Tracking List  
Fort St. James Forest District  
November 1, 1998**

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	PROVINCIAL RANK	PROVINCIAL LIST
<b>*** BIRDS</b>				
ASIO FLAMMEUS	SHORT-EARED OWL	G5	S2N, S3B	BLUE
BOTAURUS LENTIGINOSUS	AMERICAN BITTERN	G4	S3B, S2N	BLUE
CYGNUS BUCCINATOR	TRUMPETER SWAN	G4	S3S4B, S4N	BLUE
GRUS CANADENSIS	SANDHILL CRANE	G5	S3B, S2N	BLUE
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	G4	S4	YELLOW
<b>*** FRESHWATER FISH</b>				
ACIPENSER TRANSMONTANUS POP 3	WHITE STURGEON (NECHAKO RIVER POPULATION)	G4T1Q	S1	RED
SALVELINUS CONFLUENTUS	BULL TROUT	G3	S3	BLUE
THYMALLUS ARCTICUS POP 1	ARCTIC GRAYLING, WILLISTON WATERSHED POPULATION	G5T1Q	S1	RED
<b>*** MAMMALS</b>				
GULO GULO LUSCUS	WOLVERINE, LUSCUS SUBSPECIES	G4T4	S3	BLUE
MARTES PENNANTI	FISHER	G5	S3	BLUE
URSUS ARCTOS	GRIZZLY BEAR	G4	S3	BLUE
<b>11 TAXA LISTED</b>				

**B.C. Conservation Data Centre: Rare Vascular Plant Tracking List  
Fort St. James Forest District  
April 26, 1999**

SCIENTIFIC NAME	COMMON NAME	GLOBAL RANK	PROVINCIAL RANK	PROVINCIAL LIST
CAREX BICOLOR	TWO-COLOURED SEDGE	G5	S2S3	BLUE
CHENOPODIUM ATROVIRENS	DARK LAMB'S-QUARTERS	G5	S1	RED
POLEMONIUM BOREALE	NORTHERN JACOB'S-LADDER	G5	S2S3	BLUE
POLEMONIUM ELEGANS	ELEGANT JACOB'S-LADDER	G4	S2S3	BLUE
POLYSTICHUM KRUCKEBERGII	KRUCKEBERG'S SWORD FERN	G4	S2S3	BLUE
WOODSIA ALPINA	NORTHERN WOODSIA	G4	S1?	BLUE
<b>6 TAXA LISTED</b>				