

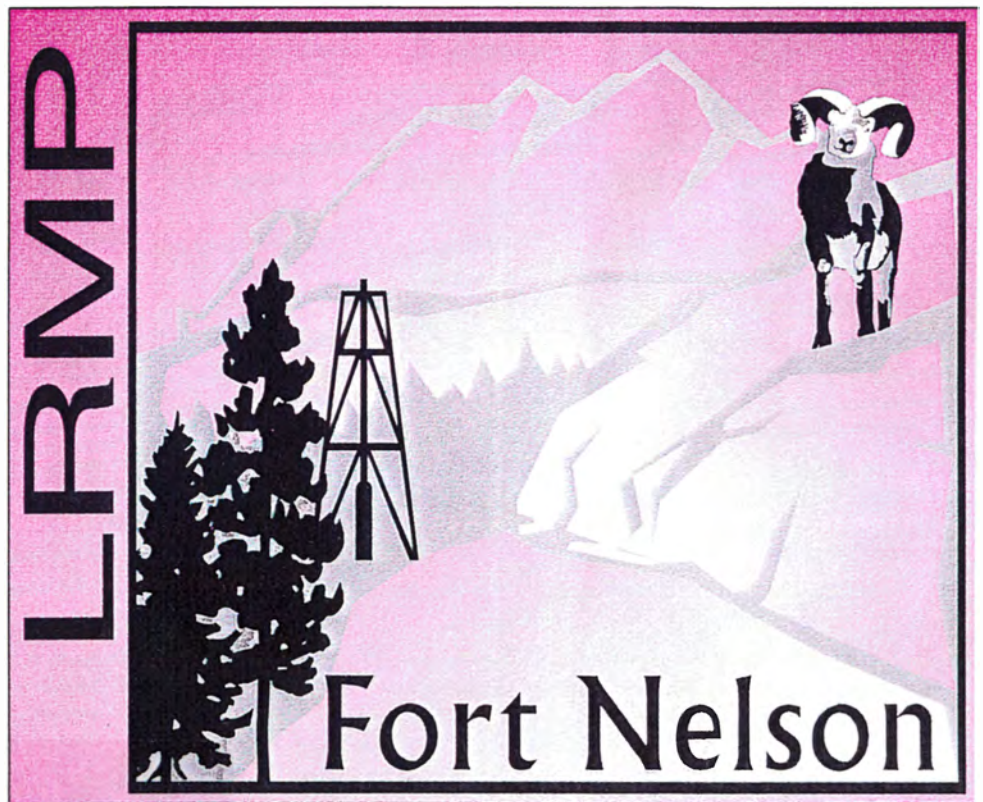
SCHEDULE 4

RECOMMENDED FORT NELSON LAND AND RESOURCE MANAGEMENT PLAN



*A Component of
British Columbia's
Land Use Strategy*

Recommended Fort Nelson Land and Resource Management Plan



BRITISH
COLUMBIA

June, 1997

REF.

EXECUTIVE SUMMARY

The Fort Nelson Land and Resource Management Plan (LRMP) is a full consensus recommendation on all aspects of land and resource management within a 98 000 square kilometre area built through participation by the public, local industry and government resource agencies. This Plan results in no anticipated job losses, stability for all resource-based industries such as tourism, oil and gas, mining and timber; seven proposed protected areas; a recommendation for a planning framework to provide co-operative and co-ordinated planning management in the Muskwa-Kechika; and an improved outlook for recreational activities and wildlife.

The Fort Nelson Land and Resource Management Plan (LRMP) recommendations have been built over a four year time-frame by a core group of 30 people. This group consisted of a solid cross section of public participants with local, regional and provincial interests, and agency staff, representing a wide range of values including access, agriculture, biodiversity, energy, forestry, guide outfitting, minerals, outdoor recreation and tourism, soil, transportation and utility corridors, trapping, visual quality, water and wildlife. The LRMP table worked with an "open-door" policy, using sector based negotiations.

Local First Nations expressed an interest in the process, but chose not to participate. This was in part due to concerns that participation may compromise treaty negotiations, in addition to staffing and resource constraints. They were apprised of the LRMP progress through personal contacts, formal communications and the LRMP update packages, which were widely distributed. Although First Nations were not formally represented at the LRMP Working Group, archaeological, cultural and heritage values were strongly endorsed by all the LRMP participants.

This LRMP divides a 9.8 million hectare land base into thirty-seven Resource Management Zones (RMZs), which are grouped into four different categories.

- 1. Enhanced Resource Development** - Representing approximately 36% (3,564,900 hectares) of the land base. This category gives direction to manage land for oil and gas, mineral and timber resources, with an emphasis on the recreation and tourism resources along the Alaska Highway corridor. This category is made up of the Resource Management Zones where investments in resource development are

encouraged. This category builds on existing legislation and regulations. There are 4 RMZs in this category.

2. **General Resource Development** - Representing approximately 24% (2,445,000 hectares) of the land base. The intent in this category is to manage for a wide array of integrated resource values. In these RMZs resource development will be integrated with the requirements of other resource values. Developments are subject to all applicable provincial regulations. There are 10 RMZs in this category.

Major River Corridors Sub-Category - Identified to highlight the management of the important values within the river corridors such as archaeological, cultural, heritage, recreational, scenic, timber and energy.

3. **Muskwa-Kechika Special Management** - Representing approximately 29% (2,911,700 hectares) of the land base. This category gives direction to manage in such a way that resource development can proceed while minimizing impacts on other resource values. The Resource Management Zones within this category contain the most restrictive objectives and strategies for development. There are 16 RMZs in this category.

Major River Corridors Sub-Category - Identified to highlight management of all the important values within the river corridors such as archaeological, cultural, heritage, recreational, riparian, wildlife habitat and industrial.

4. **Proposed Protected Area** - Representing approximately 11% (1,051,000 hectares) of the land base. This category contains the zones that are proposed for protected area designation for natural, cultural, heritage and/or recreational values as defined by the Protected Area Strategy for BC. Logging, mining, energy and hydroelectric exploration and development are prohibited in those areas designated under the *Park Act*. There are 7 Goal 1 Resource Management Zones and 13 Goal 2 sites identified in this category. All the Proposed Protected Areas stand alone within the Fort Nelson Plan area as functioning units. Additionally, long-term solutions were developed for the tenured oil and gas interest in the Thinatea and Prophet River Recreation Area Proposed Protected Areas.

- **Denetiah (97,200 ha)** - This area provides a cross-section of the Rocky Mountain Trench, other special features are Dall and Denetiah lakes, with the intact Denetiah watershed, and the historic Davie Trail. The remote nature of this area enhances its recreation experience. Access corridor will be allowed; the section across the Rocky Mountain Trench to be designated in such a way as to maintain the opportunity for access.

- **Klua Lakes (28,600 ha)** - Located in the south-eastern portion of the plan area this zone has significant archaeological value with a traditional historic commercial fishery site, a significant native village, native pack trails, an old wagon trail and a spiritual site. The entire area has very high scenic qualities of escarpments/cuesta topography, along with high recreation use. This area provides representation of the Muskwa Plateau Ecosection.
- **Liard River Corridor (81,900 ha)** - Featuring the Grand Canyon of the Liard, ammonite fossils, a bolted steel and wooden oil derrick, Hudson's Bay Trading Post, archaeological sites and significant grizzly bear habitat. The Liard River Corridor is representative of the Hyland Highlands Ecosection and could be considered as a Heritage River candidate. Designation on this area has to take into account the Alaska Highway Pipeline reserve. Any access for utility through this proposed protected area will be subject to the management plan.
- **Maxhamish Lake (27,600 ha)** - Featuring a large lake with white sandy beaches this Proposed Protected Area supports significant recreational opportunity in an area rich with waterfowl and fish values. This area also provides representation of the Etsho Plateau Ecosection. The type of designation on this area has to allow for the opportunity in the future for an access route to the lake for recreational purposes.
- **Northern Rocky Mountains (635,900 ha)** - The largest of the Proposed Protected Areas this zone rests in the southern portion of the plan area and provides a core for the large intact predator/prey system that exists together with high density and diversity of large mammal species. The zones has some of the highest, most rugged mountains, and is substantially unroaded and undeveloped. This area has high wildlife and recreation value; and is very significant for wilderness and back country recreation experiences. This area provides excellent representation of the Eastern Muskwa Ranges and Muskwa Foothills ecosections. Within it there are special features such as Sleeping Chief Mountain, Mount Sylvia, Mount Mary Henry, significant wetlands along the Tuchodi River and the historic Bedeaux Trail. The Northern Rocky Mountains is the centre piece proposed protected area - combined with adjacent existing and proposed protected areas, a new Protected Area of 771,793 hectares in size will protect significant values in the area.
- **Thinatea (19,500 ha)** - This area provides representation of the Petitot Plain Ecosection. It is a good example of muskeg mixed with

some associated upland forest. There is a significant stand of Jackpine in the RMZ; the area is important for habitat values, especially for waterfowl. The designation on the area has to consider existing oil and gas tenures with the Proposed Protected Area, and provide for the opportunity to directionally drill for pipeline purposes under the north arm.

- **Wokkpash (37,500 ha)** - This zone is a Recreation Area. It has attained international significance with the Wokkpash Gorge (hoodoo canyon - 5 Km in length 30 m in height); Forlorn Gorge (narrow cleft - 150 m deep and 25 m wide); Fusillier Glacier and stepped lakes; with significant recreation values such as hiking, camping, wildlife viewing, fishing, horseback riding and hunting.
- **Goal 2 - 13 small areas (8,500 ha)** - Site specific features such as provincially or regionally significant hot springs, archaeological sites, rare ecosystems and recreation areas. The LRMP WG has allotted 1800 ha for the protection of old growth into this total; the location and stand type has not been determined yet. (A LRMP Working Group Subcommittee has been charged with the completion of this task, and is to report back by the first annual monitoring meeting).

The Plan has developed three levels of management direction.

1. General Management Direction:
 - applies to all values and resources on Crown land;
 - applies as a baseline for management; and
 - enhances and supports legislation, policies, existing processes and operational guidelines.
2. Category Management Direction:
 - combination of similar Resource Management Zones;
 - refines management regimes for the combination of RMZs;
 - reflects interest-based nature of the plan; and
3. RMZ Specific Direction:
 - objectives and strategies for specific values;
 - further defines or clarifies activities or uses;
 - gives fine-tuned direction based on information for each zone; and
 - builds on the general and category management directions.

There are no unresolved issues in this Plan; the Working Group reached consensus on every point negotiated. The Working Group has also

developed positive working relationships, including high trust-levels, extensive individual knowledge on multiple resource values and an ability to negotiate in good faith. This, in addition to the innovative integration of many interests through clear and concise direction supplied in the Plan, will carry the LRMP through a smooth implementation. The Working Group has also designed a system of annual and biennial public meetings which will assess the successes and challenges of implementing the Plan.

Public endorsement and smooth transition and to implementation is expected, as this Plan articulates the common vision for the land base which the resource managers and the local residents are already striving toward. The only new initiative brought into the Plan is the Protected Area Strategy - which serves to integrate important conservation interests.

No job loss is anticipated from implementing the LRMP.

Wildlife and wilderness interests are integrated with economic interests through the recommendation for formal designation for the Muskwa-Kechika Special Management Zone. This recommendation provides certainty to both the environmental and industrial sectors regarding resource management.

It is anticipated that the implementation of the Plan will not have a major impact on resource agencies and staffing, as the majority of the recommendations are expected to fall under current mandates. The exceptions are: the need for additional Agency support to undertake the inventories identified in the Muskwa-Kechika Special Management Category of Resource Management Zones. Additionally, the new Protected Areas will impact on BC Parks (and other affected agencies) resources and staffing.

General access management principals were developed to provide licensed and government authorized resource users access through a number of innovative strategies. Further refinement will be developed in more detailed planning processes. Where public access restrictions are recommended, in order to manage critical values such as wildlife habitats, public consultation and educational processes are endorsed.

All recommendations are consistent with the Forest Practices Code and work to guide, rather than fetter, the designated official's ability to implement appropriate management practices. All the policy recommendations identified through the course of developing the Plan were separated out of the LRMP. These will be submitted separately to Government for consideration.

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Terms of Reference

Fort Nelson LRMP Base Case

Fort Nelson LRMP Socioeconomic/Environmental
Impact Assessment Report

Resource and Recreation Use Guidelines for Protected
Areas

Criteria for Directional Drilling Beneath Proposed
Protected Areas

BC Conservation Data Centre: Rare Vertebrate Animal
Tracking List Fort Nelson Forest District June 10, 1996

1.0 Introduction

This report contains the recommendations for the Fort Nelson Land and Resource Management Plan (LRMP), a sub-regional land use plan, covering 9.8 million hectares of north eastern British Columbia (**Figure 1**). This LRMP is the result of several years of work by a table of public stakeholders and government representatives. Their consensus based negotiating process considered all interests and values on provincial Crown land base, presented by the stakeholders, interest groups, local government, the public and information provided by government agencies

When complete, the Fort Nelson LRMP will form one part of British Columbia's Land Use Strategy, and will direct the management of all provincial Crown land in the plan area for the next ten years.

As many of the recommendations are innovative, this plan will be subject to monitoring and review as it is implemented. Annual and biennial reviews by the LRMP Working Group will take place, and the major public involvement process to review and revise this plan will start in the year 8, to be completed by year 10.

Part of the LRMP plan may be declared a higher level plan under the *Forest Practices Code of British Columbia Act*. Those portions of the plan approved as a higher level plan under the Code provide strategic direction for forest resource management activities incorporated into operational or local level forest plans such as Five-Year Development plans, Range Use plans and Co-ordinated Access Management Plans among others.

Recommendations in the LRMP are primarily organized by four categories of Resource Management Zones (RMZs). After identifying the resource values, management objectives and strategy statements are developed and incorporated into the plan to manage for these identified values. These statements provide strategic direction for resource uses like forest management, oil and gas exploration and development, mining, recreation and agriculture. These recommendations also account for environment values (e.g. fish, wildlife habitat, biodiversity and water) and highlight management objectives and strategies that provide for these values.

Recommendations for management direction, and the process used to develop them are consistent with provincial government policy for land use planning as well as all other government policies, as described in the Provincial Land Use Charter (1992) and the Principals and Process of LRMP (1993).

This report contains:

- a description of the plan area including social, economic and environmental aspects
- an overview of the planning process
- recommendations for land use zonation and related resource management objective and strategy statements
- a summary of social, environmental and economic impact assessment
- recommendations for implementation, monitoring and amendment of the plan and

1.1 The Plan Area

The Fort Nelson LRMP encompasses an area of approximately 9.8 million hectares of Crown land and is defined by the boundaries of the Fort Nelson Forest District (8.3 million hectares) and a portion of the Cassiar Forest District (1.5 million hectares), referred to as the Kechika Addition. The Fort Nelson-Liard Regional District is within the planning area and includes the Town of Fort Nelson and the settlements of Prophet River, Toad River, Muncho Lake and Coal River. There are five First Nations within the area: the Fort Nelson First Nation, Prophet River First Nation, Fort Liard First Nation, Lower Post First Nation and Dene Tha First Nation. The entire plan area is within the area covered by Treaty 8. In total about 5,500 (1991) people live within the plan boundaries.

This planning area is bounded on the south by the 58th parallel (which is also the boundary of the Fort Nelson Forest District and the Peace River Regional District), on the west by the Cassiar-Stikine area and the Rocky Mountains, on the east by the Alberta border, and on the north by the Yukon/Northwest Territories border. The topography forms a gradient of increasing relief from east to west. The area encompasses parts of the Alberta plateau, the Rocky Mountain Foothills, the Liard Plateau, and the Liard Plain. This entire region is within the Arctic watershed and is largely drained by the Liard River and its major tributaries; the larger ones including the Fort Nelson, Prophet, Muskwa, Toad, Kechika and the Petitot Rivers.

Ecosystems in BC are broadly classified into geographical zones with similar landforms, vegetation and climate called ecosections (Demarchi 1993). The province has been subdivided into 116 ecosections, 10 of which occur in the

Fort Nelson Planning Area. These 10 ecosections are: Cassiar Ranges, Eastern Muskwa Ranges, Etsho Plateau, Fort Nelson Lowland, Hyland Highland, Kechika Mountains, Liard Plain, Muskwa Foothills, Muskwa Plateau and Petitot Plain.

Biogeoclimatic units are a classification of ecounits based on climate, vegetation and site. The three biogeoclimatic units found in the plan area are: Alpine Tundra (13%), Boreal White and Black Spruce (68%) and Spruce-Willow-Birch (19%).

The planning area has timber, oil and gas and mineral values. The boreal white and black spruce zone is recognized as containing some of the highest productive land in the boreal forest zone.

The planning area is home to a number of big game species, and an abundance of wildlife uncharacteristic of the rest of the province. A number of these species have been characterized as rare, threatened or endangered.

A portion of the planning area overlaps with the Muskwa-Kechika, which covers some five million hectares in the north-eastern region of the province. The Muskwa-Kechika is a remote and relatively undeveloped area of bountiful resources. It is a significant wildlife area that supports a diverse range and sizeable populations of large mammals. Beneath the mountains and valleys, there is a well defined potential for accumulations of natural gas and mineral resources; the northern portion of this area has timber values. The remote and inaccessible nature of the area is the largest factor that has restricted the exploration of the subsurface resources, yet it is this same wilderness character that is of greatest value to preserving the wildlife habitat systems intact. (Note: for the remainder of this report the term Muskwa-Kechika will refer to that portion of the Muskwa-Kechika which lies within the Fort Nelson LRMP boundary).

The economy of the area is dominated by Forestry (about 40%), public sector incomes (30%-35%), oil/gas (10%-20%), and tourism (10%). Approximately 80% of the area's 1991 labour force of 2650 workers reside in Fort Nelson. Overall, the town's labour force held steady at about 2100 during the 1981-91 period, with wood processing and energy exploration/extraction showing quite strong growth, but being offset by declines in construction, and parts of the service sector. Tourism employment (using the accommodation and food service labour force as a proxy) appeared to hold steady.

While quantitative estimates are not available, the evidence (i.e. increased oil/gas activity, higher forest product prices, construction of the Orientated Strand Board (OSB) plant, accommodation room revenue growth, and

population estimates) indicates that employment growth has been stronger in the 1990s than in the previous decade. The population of the planning area is estimated to have grown from 1991 - 1996 by a relatively strong annual average of 2.7%, since the last official Census count of 5184 in 1991.

1.2 THE PLANNING PROCESS

1.2.1 Vision

The vision of this planning process is to produce a Land and Resource Management Plan that will:

- serve as a land use strategy for provincial Crown land and resources within the Plan Area, and may provide guidance in the planning for use and development of private lands;
- provide a forum for participation by the general public, interest groups, stakeholders, First nations and government agencies.
- be based on consensus;
- result in a framework for planned resource use that embraces the principals of sustainable development;
- consider and attempt to mitigate (if necessary) the impacts of land use decisions on community stability based on social, economic and environmental criteria;
- provide more certainty for investment in the planning area.

1.2.2 Objectives

To achieve this vision, the following were objectives of the planning process:

- 1) To ensure that land use and resource management decisions are based on an assessment of resource, social, economic and environmental values. All known resource values were considered in the LRMP planning process.
- 2) To provide resource agencies, the general public, First Nations and resource users with opportunities for participation throughout the process. A co-operative team

approach in which participants are viewed as equal partners will be used in the planning process. The planning process will respect aboriginal and treaty rights and shall not prejudice ongoing and future treaty negotiations.

- 3) To assemble and use the most relevant and up-to-date biophysical, social and economic information in the development of the plan. If information proves inadequate to address a resource issue, plan preparation will continue, and the final plan will identify further information needs.
- 4) To seek consensus among participants when developing recommendations on use of land and resources. Where consensus cannot be reached, the areas of disagreement will be documented and handled through the dispute resolution process.
- 5) To develop a planning process with enough flexibility to allow for incorporation of new direction in integrated resource management.
- 6) To provide local governments with a context within which they can respond to resource management issues when they develop or amend Official Community Plans and Implement Bylaws.
- 7) To provide a mechanism for ensuring that the final plan will be implemented, monitored, amended and updated as required.

1.2.3 Process Overview

In 1992, the Ministry of Forests published an Options Report as part of timber harvest planning for the Fort Nelson Timber Supply Area. Public and agency replies to a questionnaire contained in the Options Report demanded a more comprehensive, open and consensus-based integrated land and resource use planning process, including consideration of Protected Areas. An Interagency Planning Team (IPT) was formed and initiated a new approach to planning in the area.

In February 1993, a public meeting was held in Fort Nelson introduce a new process for land use planning in British Columbia. This approach would be based on public participation, interagency co-operation, full consideration of all resource values and consensus decision making. Out of this February meeting, a group agreed to embark on the new planning process for the Fort Nelson Forest District. In October 1993, government produced a final

Process Steps

Preliminary Organization



Plan Initiation



Information Assembly



Scenario Development



Building an Agreement



Approval



Implementation



Monitoring & Review



Amendment

document entitled 'A Statement of Principles and Process for Land and Resource Management Planning (LRMP)', which summarized guidelines for this new process.

Public participation is the cornerstone of the LRMP planning process. All the major economic sectors, organizations and interest groups were identified at the beginning of the process and invited to participate. During the first few months of the process, through public meetings and workshops, the planning process and sector representation were identified. A group of about 30 core members continued to meet over the next three years; this group formed the LRMP Working Group (WG).

The group generally met once a month for two day sessions. Over the course of the first year, each participant was invited to submit an interest statement or description of their values and priorities. A Terms of Reference was produced by the Working Group and approved by government in September 1994. That document outlined the vision, objectives, principles for public participation, general planning sequence, organizational structure (membership), decision making (consensus) and the approval process.

The next step in the process was to divide the area into units of land called Resource Units. Information, such as physical description, resource inventories, tenures, uses and issues were identified by the Working Group.

In May 1994, the Working Group began developing smaller units, with more detailed descriptions around values and uses. These units were called Resource Management Zones and were the basis for the development of the general management direction and the more specific objectives and strategies.

In June 1994, the Fort Nelson LRMP Working Group proposed to take the lead role in strategic planning for the Kechika, in consultation with Dease Lake (Cassiar Forest District). Through this proposal, the Fort Nelson LRMP plan area was amended to include the Kechika Addition. A sub-committee was developed, which quickly brought the information and zoning for the amended area up to date with the rest of the planning area.

By February 1995, resource descriptions, objectives and management strategies were developed by sub-committees. The committees then presented their findings for consideration by the whole working group. After all RMZs had been completed, the Interagency Planning Team took the information, rolled up similar units (originally 101 RMZs) into 37 RMZs and developed draft management objectives and strategies, and drafted general direction statement for presentation to the Working Group. The group

(IPT)
Inter Agency Planning Team
 Ministry of Agriculture,
 Fisheries & Food
 Ministry of
 Employment & Investment
 Ministry of Environment,
 Lands & Parks
 Ministry of Forest

Working Group
 Trappers
 Regional District
 Oil & Gas Production
 Geophysical Exploration
 Hardwoods
 Softwoods
 Guide Outfitting
 Farmers
 Environmental/
 Conservation
 Workforce
 Tourism
 Outdoor Recreation/
 Hunters/Anglers
 Utilities/Pipelines
 Transportation
 Rural Residents Committee
 Independent Contractors
 Town Council
 Mining
 IPT

provided revisions and a package was developed which would become the building blocks to this recommended plan.

In October 1995, the Working Group switched it's focus from resource management zones to the Protected Areas Strategy. A number of Protected Areas Strategy Areas of Interest (AOIs) were identified by the Regional Protected Areas Team for consideration. The Working Group studied these AOI proposals during the fall and winter of 1995. Once the proposed Protected Areas and Resource Management Zones were agreed to by the Working Group, the focus shifted between March 1996 and June 1996, to the preparation of an outline for implementation and monitoring, including a framework for formal designation for the portion of the Muskwa-Kechika that falls within the Fort Nelson LRMP planning area.

Throughout the process, the Working Group members remained committed to development of this land use plan. Considerable efforts were made to inform the general public and invite their comments and input. There have been open houses in Fort Nelson, Toad River and Lower Post, along with occasional coverage by the local newspaper. All meetings were open to any member of the public who wanted to attend and provide input. Working Group members kept their sectors informed about the process and ensured that their concerns were addressed.

1.3 First Nations

1.3.1 Involvement

The Fort Nelson Working Group encouraged First Nations to participate throughout the LRMP process. Local First Nations did not have formal representation at the Working Group, but were kept apprised of the LRMP progress through personal contacts, formal communications and the LRMP monthly information packages.

Known First Nations archaeological, cultural and heritage values were endorsed by all of the LRMP participants.

Once Table consensus was reached, Table members visited the local First Nations communities to present the Fort Nelson LRMP Plan to First Nations living in the plan area.

The LRMP WG recognizes that Treaty #8, signed in 1910, covers the land base in the LRMP plan area and that the use, ownership of the lands, and the jurisdiction to manage the lands in question, may change as a result of treaty negotiations.

The recommendations put forward within the Plan are without prejudice to aboriginal and treaty rights, and ongoing and/or future treaty negotiations.

1.3.2 Community Profiles

There are five First Nations who traditionally reside in the area covered by the plan; the Fort Nelson Indian Band, the Dene Tsaa Tse K'Nai First Nations of Prophet River, the Kaska-Dena of the Lower Post First Nations, the Fort Liard Indian Band and the Dene Tha' First Nations of Assumption, Alberta.

1. Fort Nelson Indian Band

Four reserves on 9,558 hectares. The majority community is on the Fort Nelson Indian Reserve #2, 6 km south of Fort Nelson. The other reserves being Fontas River, Snake River, Moose Lake, Sandy Creek and Khantah. There are also four small reserves at Maxhamish Lake. Reserves obtained under Treaty 8, one of two treaties signed in BC. Treaty 8 covers the entire Fort Nelson LRMP planning area. Originally called the Slavey River Indian Band, the name was changed in 1962 to the Fort Nelson Indian Band. The Band split in 1974 when part of the membership broke away to form the Prophet River Band. The Band is characterized by Slavey, Cree and Beaver cultures. Athapaskan linguistic group. Approximately 550+ members (1996).

2. Dene Tsaa Tse K'Nai First Nations, Prophet River Indian Band

One 374 hectare reserve. The Prophet River Indian Band was created when it split from the Fort Nelson Indian Band in 1974. The community is located just off the Alaska Highway, approximately 100km south of Fort Nelson. The Beaver people recognized certain people as "Dreamers" or "Prophets" who could foretell certain events. The Band may be named for the recent Prophet of the Beaver people, Notseta, or it may be named for Decutla, a Prophet of an earlier generation. The band is covered by Treaty 8 and was originally part of the Slavey band, which changed its name to the Fort Nelson Indian Band in 1962. The Prophet River band was created when it split from the Fort Nelson Band in 1974. The band is part of the Nahanni linguistic group and has Slavey, Beaver and Cree cultures. Approximately 100+ band members (1996).

3. Lower Liard Indian Band #3, also referred to as the Lower Post First Nations

The main community, 65 hectares in size, is located 1 km off of the Alaska Highway approximately 27 km south of Watson Lake, Yukon, or 500 km (6.5 hours) north-west of Fort Nelson with smaller communities located at Fireside and Muncho Lake. The Lower Post First Nations is headquartered in Lower Post, BC, and is a sub-group of the larger Kaska Nation which includes all Kaska in BC and the Yukon. The Lower Post

First Nations has a subsidiary body, the Kaska-Dena Council, who is presently negotiating a land claim with the BC Treaty Commission. Treaty negotiations began July 1995. The traditional land use area of these First Nations covers the western half portion of the Fort Nelson LRMP area. The band is characterized by the Kaska-Dena culture and is part of the Athapaskan linguistic group. Approximately 200+ members.

4. Fort Liard Indian Band

The Band council is referred to as Acho Dene Koe meaning, in the Slavey dialect, "the meeting place of the people beside the big river". No allocated reserve, the Hamlet of Fort Liard is a mixture of Treaty First Nations, Metis and non-native people. Fort Liard is located 1km off of the Liard Highway, 207km (2,5 hours) north of Fort Nelson. The First Nations of this community are signatories to Treaty 11 signed in the NWT in 1921. The traditional land use area of the First Nations of Fort Liard extends into the north-central Fort Nelson LRMP area. The Band is characterized by the Slavey (also referred to as Dene') culture. Linguistic group is Athapaskan. Approximate population of entire community is 500+ with no available number for just First Nations.

5. Hay Lakes # 209, also referred to as the Dene Tha' First Nations from Assumption, Alberta.

The Hay Lakes Band resides in Assumption, also referred to as Chateh. The reserve is 19,000 hectares in size. Located in Alberta east of High Level on highway 58. A signatory to Treaty 8, Hay Lakes signed in 1899. The Hay Lakes area was historically used as a First Nation community area. The traditional land use area of the Dene Tha' First Nations, within the Fort Nelson LRMP plan area, extends from the Hay Lakes area, west towards the Alaska Highway. The band is characterized by Cree, Beaver and Slavey cultures. The linguistic dialect is Athapaskan. Approximate population is 1,200.

1.4 Local Government

The Fort Nelson LRMP process recognized local government as an order of government throughout all stages, from process design to plan approval and implementation. All communication with local government in association with the LRMP was in a manner and form that reflected its status as an order of government.

The local government in Fort Nelson was formally offered briefings at key stages of the LRMP process to identify the degree of support and any outstanding areas of concern.

The local government was given the opportunity to comment on the results of the LRMP prior to final approval of the recommendations by the Working Group, even though local government participated as a member of the Working Group.

The local government structure in Fort Nelson is the most unique in British Columbia, as it has integrated the regional and municipal boards. The Fort Nelson-Liard Regional Board consists of a Chair, who is also the Mayor of the Town of Fort Nelson; and 7 Directors, 4 of whom serve as Town Councillors. As elsewhere in BC., general elections are held every three years.

The Fort Nelson LRMP Working Group membership includes two representatives from local government; one from the Fort Nelson-Liard Regional District and one from the Town of Fort Nelson. Both members participated fully in the planning process and support these recommendations.

2.0 RECOMMENDED MANAGEMENT DIRECTION

The intent of this strategic land and resource management use plan for the Fort Nelson Planning Area is to provide direction for management of land, water, ecosystems and resources. The plan was developed with a commitment to balance the economic, environmental and social needs of the people in the planning area, region and province.

Resource management objectives and strategies statements have been developed by the WG to address values, concerns and management issues that were identified through the process.

Management direction for the land and resources is given through three levels of objectives and strategies: General Management Direction; Category Management Direction and RMZ Specific Direction. All three levels have to be reviewed to understand the management intent for a specific unit of land. The three levels of objective and strategy statements are:

General Management Direction

- applies to all values and resources on provincial Crown Land;
- applies as a baseline for management; and
- enhances legislation, policies, existing processes and operational guidelines.

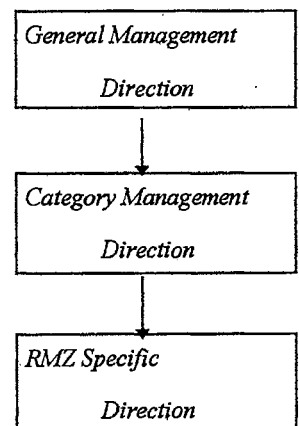
Category Management Direction

- combination of similar RMZs;
- refines management regimes for the combination of RMZs
- reflects the interest-based nature of the plan; and

Resource Management Zone Direction

- objectives and strategies for specific values;
- further defines or clarifies activities or uses;
- gives fine-tuned direction based on information for each zone; and
- builds on the general and category management directions.

3 levels of Objectives and Strategies to guide management intent

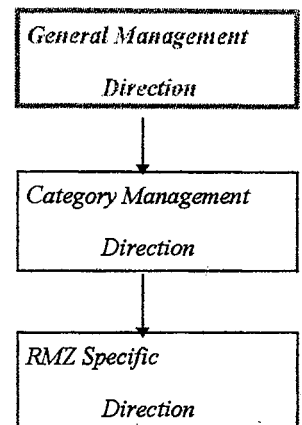


2.1 General Management Direction

General management direction is outlined for all values and interests identified by the Working Group: First Nations, heritage and culture; access for resource development; agriculture and grazing; biodiversity; energy; forestry; guide outfitting; jobs and community stability; minerals; outdoor recreation and tourism; protected areas; soil; transportation and utility corridors; trapping; visual quality; water; and wildlife. The general management direction identifies how the land and resources are to be managed so that outside of protected areas the lands are open for integrated resource development, including the development of roads where necessary, subject to the existing regulatory framework and zone specific strategies. If no objective or strategy is listed for a resource within the Category management or RMZ specific direction, then only the General Management Direction applies.

The objectives and strategies outlined under General Management apply to all agencies, resources and activities, and are the fundamental building blocks of the plan. They are enhanced and supported by a large array of complementary legislation, policies, processes and operational guidelines. These include but not limited to:

- existing legislation such as the *Agricultural Land Reserve Act*, *Environmental Assessment Act*, *Federal Fisheries Act*, *Forest Act*, *Forest Land Reserve Act*, *Forest Practices Code of B. C. Act*, *Heritage Conservation Act*, *Land Act*, *Mineral Tenure Act*, *Mines Act*, *Ministry of Forests Act*, *Petroleum and Natural Gas Act*, *Waste Management Act*, *Water Act* and *Wildlife Act*,
- other strategic and operational planning processes including but not limited to landscape unit plans, local resource use plans, coordinated access management plans, and protected area management plans.
- existing regulations, standards and guidelines, including but not limited to the Forest Practices Code Operational Planning Regulations and Guidebooks, forest and mining road standards, Mineral Exploration Guidelines, British Columbia Oil and Gas Handbook, range management practices, and Mine Health, Safety and Reclamation Code of BC.



2.1.1. Access Management

Managing access to conserve identified resource values and to provide a variety of recreational experiences is a primary objective for the LRMP; the intent is to ensure that the natural characteristics and wildlife habitat are maintained over time while ensuring opportunities for responsible resource development are maintained, which includes road development.

Government licenced and authorized resource users will have access to development to all the RMZs, with the exception of mining, oil and gas exploration and development, timber harvesting and hydroelectric development in the Proposed Protected Areas.

Subject to legislation, regulations, RMZ objectives and strategies road access related to industrial activity is an acceptable use of the land.

Comprehensive and coordinated access management plans will be developed for specific RMZs as required. These will clearly identify the status of all roads and trails for industrial, commercial and recreational users, as well as the option for new roads, if required. Even though it is recognized that access is managed throughout the land base, the LRMP has identified areas where additional access management is endorsed.

Access controls are an important component of access management planning and will be used only when other existing strategies, regulations and restrictions will not meet the resource management objective. In areas where industrial activities are to occur, existing roads will be used where practical, and the amount of new road constructed will be minimized. All roads will be built and deactivated according to existing and future standards (e.g. Forest Practices Code, Mines Act and Petroleum and Natural Gas Act) to ensure minimal impact on other resource values.

Access Management

Objectives	Strategies
<ul style="list-style-type: none">• Provide for a level of access that meets the objectives of each RMZ (road and trail construction, maintenance and deactivation and other surface disturbances and construction)	<ul style="list-style-type: none">• Where significant access concerns exist conduct an interagency access management planning process• Utilize existing corridors and crossings where practical
	<ul style="list-style-type: none">• Provide opportunity for stakeholder participation in access management planning• Ensure that resource tenure holders are notified when planning for road deactivation

An example of enhanced access management for RMZs such as the Special Management Category of Resource Management Zones is the following strategy adopted to address the conservation of other resource values when planning and developing access.

- A more detailed planning process may identify high fish and wildlife values, or other significant features (e.g. licks, hot springs). Where there is a significant risk that these resources may suffer an unacceptable level of negative impact, access may be limited, restricted, or on a site-specific basis, prohibited (e.g. avoid critical habitat components and special features where identified). However, where an access route is prohibited alternative routes will be identified where possible.

The intent of this strategy is to allow development to proceed while mitigating impacts on significant resource values (e.g. critical fish or wildlife habitat) through: the location of roads; the frequency or limitations on use during certain periods; and, if necessary, restrictions through road closures.

2.1.2 Agriculture

The Fort Nelson LRMP plan area contains both documented (as defined by the Agriculture Land Reserve (ALR)) and undocumented Crown land resources. There is approximately 46,000 hectares of ALR, almost all of which is contained in the one Resource Management Zone that surrounds the Town of Fort Nelson. Approximately one third of this zone is covered by ALR.

The agriculture land resource is characterized by a low level of development and is the largest base of virgin agriculture land in British Columbia east of the Rocky Mountains.

Current agricultural enterprises in the area are small in size and function in a non-intensive fashion. The products produced include domestic and game farmed livestock, feed grains, honey and vegetables. Forage crop production forms an integral component of almost all farms and is an important practice for soil conservation in the area.

The workforce associated with the agricultural industry is relatively permanent and supports other seasonal resource based industries such as forestry, guide outfitting and oil and gas. The agricultural industry workforce, which consists of native and non-native professional and trades

people has a history of contributing to the economic and community stability in the Fort Nelson area.

The intent of the management direction is to allow for agricultural enterprises to produce food, feed and fiber while being consistent with multiple use objectives that could sustain or stimulate rural communities.

Agriculture

Objectives	Strategies
<ul style="list-style-type: none"> Maintain resources with food production capability for current and future crop and livestock production. 	<ul style="list-style-type: none"> Crown lands with high agricultural potential, especially those adjacent to existing agricultural developments, to be identified and designated for agricultural use. Forage utilization near agricultural deeded lands will have an emphasis for domestic animals use. Crown ALR lands should be managed for agriculture and uses compatible with long-term agriculture potential, as defined by the Agriculture Land Reserve Act and Regulations
<ul style="list-style-type: none"> Provide opportunities for growth and expansion of Agriculture 	<ul style="list-style-type: none"> Ensure the integrity of the ALR through the Agricultural Land Reserve Act and Regulations. Support the intent of the ALR and conversion of high quality agricultural land through the Agricultural Land Reserve. Apply the provisions of the Soil Conservation Act and the FARM Practices Protection (Right to Farm Act)
	<ul style="list-style-type: none"> Redefine ALR boundaries at a more detailed scale to more accurately capture lands with agricultural capability Encourage farming practices that promote soil conservation Maintain livestock grazing opportunities on existing tenures and where appropriate provide opportunities for new tenures as the RMZ directs. Minimize and mitigate (where necessary) other land, vegetation and water uses or management activities which negatively impact agricultural productivity and sustainability (i.e. noxious weed control, problem wildlife)

Agriculture (cont'd)

	<ul style="list-style-type: none">Enhance the opportunity for agricultural enterprises that contribute to wildlife, environmental, and/or multiple use objectives that could sustain or stimulate rural communities.
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2.1.3. Air Quality

Air quality within the planning area is relatively good. Exceptions occur near isolated discharges of sulphur compounds (SO) and total reduced sulphur (TRS) compounds from oil and gas processing facilities and downwind of major industrial incinerators (bee-hive burners) associated with the wood processing industry. Smoke from forest fires, slash burning and habitat enhancement is also a routine concern of many residents.

Air Quality

Objectives	Strategies
<ul style="list-style-type: none">Maintain acceptable air quality	<ul style="list-style-type: none">All emissions to meet the Provincial air quality standards.

2.1.4. Biodiversity

Biodiversity is the diversity of plants, animals and other living organisms in all their forms and levels of organization. It includes the diversity of genes, species and ecosystems, and the functional and evolutionary processes that link them. Biodiversity must be managed across the entire plan area, on all landscapes and sites.

Biodiversity is threatened by:

- fragmentation and alienation;
- habitat degradation by industrial and recreational developments and practices or by urban encroachment; and
- direct impact on specific plant and animal species e.g. consumptive use by people.
- increased/improved access and increasing numbers of people.

Maintaining biodiversity depends on:

- the conservation and connectivity of large areas as ecological benchmarks at the regional level;

- providing habitat variety and connectivity at the landscape (watershed) level; and
- management practices at the stand level.

Biodiversity

Objectives	Strategies
<ul style="list-style-type: none"> • Maintain natural biodiversity throughout the plan area. 	<ul style="list-style-type: none"> • Initiate Landscape Unit planning in priority areas. • Manage natural seral stage distribution by landscape unit using knowledge of natural disturbance patterns. • Identify and map suitable sites for maintaining representative, natural functioning areas. • Link important habitats to maintain connectivity across the landscape.
<ul style="list-style-type: none"> • Maintain rare ecosystems, habitat types, plant and animal species. 	<ul style="list-style-type: none"> • Identify and map ecosystems, habitat types plant, and plant species designated for long-term monitoring.
<ul style="list-style-type: none"> • Maintain old-growth attributes on specified sites within landscapes. 	

2.1.5. Energy (Oil and Gas; Hydroelectric)

Northeastern British Columbia has been the focus of energy exploration and development since the 1950's and is the only area of the province presently producing oil and gas. These oil and gas fields lie within the Western Sedimentary Basin.

The energy sector is an important element in the economic stability of the Fort Nelson planning area.

This plan confirms that energy exploration and development are acceptable uses of the land outside of protected areas; while considering environmental values within the regulatory framework.

Recent drilling success in the planning area, the expansion of infrastructure and the construction of new pipelines for transportation of the resource provides an encouraging outlook for the energy sector. There is a well developed infrastructure throughout the area and Westcoast energy operates a natural gas processing plant at Mile 285 of the Alaska Highway, which is just south of Fort Nelson.

Energy

Objectives	Strategies
<ul style="list-style-type: none">• Maintain opportunities and access for oil and gas exploration, development and transportation	<ul style="list-style-type: none">• Promote and encourage oil and gas exploration through a timely and efficient permitting process• Provide for exploration and development of resources within the regulatory framework• Promote and encourage investment in energy exploration and development.

2.1.6. First Nations, Heritage and Culture

The cultural heritage resources reflect past and present uses by aboriginal and non aboriginal peoples. Three categories of resources are evident: archaeological sites containing physical remains of past human activity; historical sites often consisting of built structures or localities of events significant to living communities; and traditional use sites which often lack the physical evidence of human-made artifacts or structures, but maintain cultural significance to living communities.

The majority of the currently identified archaeological sites within the Fort Nelson area consist of burials, cabin locations and/or surface or thinly buried scatters of stone tools and/or flakes indicating where these tools were manufactured or repaired. More complex sites may include other types of features, such as the remains of trading posts, settlement areas and cooking hearths and post molds where temporary shelters and food drying racks were erected.

Some known historical sites of interest date from 2000 to 5000 BC

Natural heritage resources included in the Fort Nelson LRMP consist of archaeological sites.

Little historical and ethnographic material is available for this northeastern portion of BC; however Traditional Use Studies are in different stages of being done in this LRMP area. These are revealing significant archaeological, cultural and heritage sites and traditional use sites.

A Traditional Use Site is any geographically-defined site (on land or water) used traditionally by one or more groups of people for some type of activity. These sites may lack the physical evidence of human-made artifacts or structures, yet maintain cultural significance to a living community of people.

Traditional use sites may include: sacred sites, resource gathering sites such as berry picking and hunting rounds and sites of a legendary or past event of cultural significance.

An archaeological overview assessment for the Fort Nelson planning area was completed in March 1996 (Archaeological Overview of the Fort Nelson Land and Resource Management Plan Area, Heritage North et. al. 1996). The study was completed at the 1:250 000 scale and classified the planning area into zones with a low, moderate or high potential to contain archaeological sites. This information will be refined to the 1:50 000 or 1:20 000 scale to assist in operational decision making.

This LRMP Plan is consistent with the British Columbia Archaeological Impact Assessment Guidelines, the Forest Practices Code of BC, the Heritage Conservation Act and the Protocol Agreement on the Management of Cultural Heritage Resources between the Ministry of Small Business, Tourism and Culture and the Ministry of Forests.

The LRMP plan outlines objectives for the entire area, emphasizing recognition and respect of spiritual, cultural and traditional use values; heritage and archaeological sites and values; and Heritage Trails

The Province has a legal obligation to avoid infringement of Treaty and Aboriginal rights where resource management activities are proposed.

First Nations, Heritage and Culture

Objective	Strategy
<ul style="list-style-type: none">• Avoid infringement of aboriginal and treaty rights	<ul style="list-style-type: none">• Complete Traditional Use Study (TUS) for each native band• Encourage local band's participation in archaeological assessment• Follow existing policies, guidelines or procedures to protect aboriginal or treaty rights.• Identify areas where Treaty or aboriginal rights are being practiced
<ul style="list-style-type: none">• Recognize and maintain traditional uses and values	<ul style="list-style-type: none">• Conserve ecological integrity of areas to maintain opportunities for the pursuit of traditional uses

First Nations, Heritage and Culture (cont'd)

<ul style="list-style-type: none"> Recognize and maintain cultural and heritage resources 	<ul style="list-style-type: none"> Encourage mapping of areas containing cultural heritage Encourage Archaeological Impact Assessment (AIA)/Archaeological Impact Study (AIS) to supplement and refine Archaeological Overview Assessment (AOA) map Consider undertaking archaeological impact assessments in all areas of High and Medium potential
<ul style="list-style-type: none"> Identify, and manage significant Heritage Trails 	<ul style="list-style-type: none"> Locate and map trail locations with historical significance Develop a management strategy for significant heritage trails
<ul style="list-style-type: none"> Identify and manage heritage and archaeological sites and values (priority sites in the river corridors) 	<ul style="list-style-type: none"> Conserve heritage values through application of a buffer zone, where appropriate. The width of the buffer zone will be site specific and will be decided through lower level planning. All development in the buffer zone will respect and conserve the heritage values of these areas. Record known archeological sites with BC Archeological Branch. As part of archaeological impact assessments, consider selective impact assessments of Low Potential areas Encourage cultural heritage overviews in areas of known significance. Conduct activities in a way that is sensitive to known archaeological and heritage values Develop management strategies for specific sites at the operational planning process

2.1.7 Forestry

The forest sector is vital to the economy in the Fort Nelson planning area. In Fort Nelson there is a skilled work force, advanced technology, economic and political stability, a sophisticated commercial infrastructure and a high quality timber resource.

The general management strategy adopted by the Fort Nelson LRMP is that the forest in the area will be managed for a variety of values by encouraging harvest patterns and block sizes which emulate the natural disturbance patterns found within the planning area. This may require aggregating harvest areas to create forest openings larger than the 60 hectares identified in the Forest Practices Code of BC, along with larger leave strips. Further, the industry will have to move towards:

- enhanced management of forests; and
- increased value added manufacturing.

Management strategies have been designed to ensure a secure and sustainable forest land base and to provide for increased employment opportunities. This will ensure that the economic viability of the Fort Nelson/Liard communities is secured. Further, in key areas, access management and concentrated scheduling of harvesting and silvicultural activities will be a critical component of the integration of forest management with the maintenance of other values. This is especially valid in regard to maintaining a variety of recreational experiences and conserving important wildlife habitat and populations, and cultural and heritage resources.

The LRMP recommends innovative harvesting and silviculture practises in an effort to maintain integrated resource use across the entire plan area. Management strategies recommend silvicultural systems not typically associated with current practice in the timber types in this area (e.g. selective or aggregate harvesting areas). By necessity these processes will be experimental and will need to be evaluated continuously in the years following implementation to assess the success of the practice.

The Forest Practices Code forms the baseline for forest management across the zones and is being implemented to ensure good stewardship of all forest resources consistent with the interests of the stakeholders. Through integration of the rules governing forestry, the Forest Practises Code is intended to provide management flexibility to achieve the goals and objectives identified for forest lands. RMZs are intended to guide more detailed levels of planning. Landscape level planning has been identified as a priority for the implementation phase so that target levels for seral stage distributions can be set.

Forest Renewal BC has been created to provide funding for enhancing employment opportunities for the forest sector and communities. A significant issue in the Fort Nelson area is the amount of land classified as not-sufficiently restocked. With financial support from FRBC an objective of having all backlog areas reforested by the year 2005 has been recommended.

Forestry

Objectives	Strategies
<ul style="list-style-type: none"> Maintain and/or enhance the continued sustainable supply of timber 	<ul style="list-style-type: none"> Promote and encourage forest development through a timely and efficient approval process. Minimize non-recoverable losses through aggressive forest fire suppression and pest management, salvage of damaged or killed timber, and prompt reforestation and stand management regimes. Balance utilization levels in consideration of other resource values. Encourage silvicultural systems that are compatible with other resource values Appropriate lands will be included within the Forest Land Reserve (FLR) Promote investment in forest resources Improve forest resource inventory information Work toward reforesting all backlog Not Satisfactorily Restocked (NSR) areas with commercial species Rehabilitate previously disturbed forest land Encourage the identification, inventory and harvest of marginally forest types Quantify the Timber Harvesting Land Base (THLB) and develop policies to reduce the loss the THLB to roads, seismic lines, wellsites and other developments.

2.1.8. Guide Outfitting

Some 15 guide outfitting businesses operate within tenured guide outfitting areas that cover all but the extreme northeastern portion of the planning area. The guide outfitting sector is an important component of the local economy and back country tourism industry.

Guided hunts and fishing experiences have been the traditional source of income for the industry. In recent years a number of outfitters have expanded their operations to include non-hunting activities such as guided hikes, trail rides and wildlife viewing.

Historically the guide outfitters have been actively involved in the management of fish and wildlife habitats and populations; the recommendation is that this involvement continue.

Guide Outfitting

Objectives	Strategies
<ul style="list-style-type: none"> • Provide and maintain guide outfitting opportunities. 	<ul style="list-style-type: none"> • Minimize impacts of commercial and industrial activities on guide outfitter(s) areas. • Any coordinated access management planning will include the opportunity for participation by the affected guide outfitter(s). • Identify campsites, cabins and critical use areas. • Maintain and manage grazing activities associated with guide outfitting. • Recognize the rights of existing guide outfitting tenures. • Continue the role of guide outfitters in the management of fish and wildlife habitats and populations

2.1.9 Jobs and Community Stability

The residents in and around the Town of Fort Nelson are dependent on the forest and oil and gas industries.

The public and service sectors, tourism and mining round out the list of major employers in Fort Nelson, Toad River, Prophet River and other smaller communities. Due to the high dependence on natural resources, sustainability of the natural resource base is a primary interest of the Fort Nelson LRMP, along with jobs and community stability.

This LRMP recognizes the importance and value of industrial resource development to the district, region and province. Natural resources should be utilized to maintain or increase jobs; resource based industries should be maintained or enhanced; and the importance and value of industrial resource development should be addressed in lower level planning and permitting processes.

More information regarding the employment and community stability can be found in the Fort Nelson LRMP Base Case and

Socioeconomic/Environmental Impact Assessment Reports which are summarized in Section 3.0 and bound under separate cover as Appendices.

2.1.10 Minerals

Northeastern British Columbia has significant mineral resource potential supported by a mineral occurrence inventory, existing tenure and exploration and development activity. The area has had limited exploration; significant opportunity remains to identify and develop mineral resources. New and renewed interest in the area has been generated by geological theory; updated geological surveys; recent exploration success in the Gataga lead and zinc trend extending south of the Fort Nelson district; and new development in the Yukon. Mineral exploration and development (mining) are temporary uses of the land with stringent requirements for reclamation of all surface disturbances. Comprehensive review and approval processes exist for mining proposals to ensure all technical, social and environmental aspects are completely assessed. Only small areas of land are used for development, but access to a large land base is required for exploration.

This plan confirms that mining and related road access developments are acceptable uses of the land outside of protected areas; while considering environmental values within the regulatory framework. In combination with the management direction recommended through the objectives and strategies, the existing review and approval process will ensure that mining will be consistent with the level of management prescribed for each Category of Resource Management Zones and the individual Resource Management Zone. Advanced exploration and development activities clearly have an impact on small areas and this plan directs that these will be accommodated, to the degree possible. The first strategy in this section addresses the principal of adaptive management, which accommodates and integrates mineral development on the land base. This principal combined with the direction from the plan will define a regime that can provide for exploration and development activities in all zone categories, except the Protected Areas. The access management section of this plan, along with the general and specific objectives and strategies, provide further direction for access related to mineral exploration and development.

Minerals

Objectives	Strategies
<ul style="list-style-type: none">• Maintain opportunities and access for mineral exploration and development.	<ul style="list-style-type: none">• Accommodate localized impacts of advanced exploration and development activities

Minerals (cont'd)

	<ul style="list-style-type: none">• Implement revisions to standards of practice and the permitting process in order to address management issues and to provide consistency with the Forest Practices Code Act of BC.• Promote and encourage mineral exploration and development through a timely and efficient permitting process.• For proposed mine developments captured by the provincial Environmental Assessment Process, the assessment will consider RMZ objectives. For small mine and quarry developments, zone objectives will be addressed by the multi-agency regional mine development assessment process• Provide for exploration and development of resources within the regulatory framework• Promote and encourage investment in mineral exploration and development.• Ensure mineral tenure holders are notified prior to road deactivation.• Manage impacts to visual quality through following the appropriate regulations and guidelines in the Mines Act.
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2.1.11. Outdoor Recreation and Tourism

Within the LRMP planning area there is a high level of tourism/recreational use which is derived from outdoor related activities. Tourism and outdoor recreational use occur across a range of settings from remote wilderness experience with low probability of encountering other users to highway based recreational activities, both on land and water. They range from hiking, hunting, camping, trail riding wildlife viewing, fishing, canoeing, jet boating to cross country skiing and snowmobiling. Undisturbed natural settings, areas modified by development and accessible by the public, scenic areas and the opportunities to access wildlife and fisheries resources are important to experience the whole range of recreation opportunities.

The historic Alaska Highway is the main transportation corridor and dominant travel route through the plan area. Tourists enroute to and from Alaska enjoy the scenic areas along the main travel corridors. Maintaining, and in some cases expanding facilities along the highway will encourage travelers to stop and explore the area and generate additional tourism

revenues. Business travel is also another important tourism component because of Fort Nelson's role as a regional economic center.

To provide opportunities for growth in the back country component the LRMP recommends following the framework provided in the BC Lands Backcountry Recreation Policy.

In addition to the general and category objectives and strategies the LRMP has developed a specific strategy referring to the Ministry of Forests' Recreational Opportunity Spectrum (ROS). The ROS is used to identify the complete spectrum of recreational opportunities. The ROS objectives will be used to guide the management of recreational values, especially in wilderness areas, recognizing that these values may change over time as roads are built and deactivated. The intent of this objective is not to determine or recommend which activities are acceptable, but is designed to give general guidance and offer a comparison, from zone to zone, of the desired state of recreational opportunities over time. This will be achieved through temporal and spatial variations across the zones. (i.e., the ROS component can move across the landscape and the specified classification may fluctuate over time). A more detailed explanation of the ROS classification system is given in the glossary.

Outdoor Recreation and Tourism

Objectives	Strategies
<ul style="list-style-type: none"> • Provide opportunities for a diverse range of recreational values and uses across the biophysical settings of the planning area. 	<ul style="list-style-type: none"> • Identify broad areas of high recreation use or significance. Through operational, develop specific prescriptions that recognize the unique recreational features of these areas, and integrate recreational uses with other values that are present. • Operational plans will identify small, special recreation features such as sites and trails and develop site specific practices which recognize these features.
<ul style="list-style-type: none"> • Maintain or enhance ecological integrity in areas subject to impacts from recreational use. 	<ul style="list-style-type: none"> • More detailed plans will address the impact of recreational activity on ecological integrity, for example wildlife disruption, damage to plant communities and water quality. • Monitor to ensure public and commercial recreation activities do not exceed acceptable limits of use.
<ul style="list-style-type: none"> • Maintain quality of recreation activities. 	<ul style="list-style-type: none"> • Conduct visual quality inventories for recreation and tourism areas

Outdoor Recreation and Tourism (cont'd)

<ul style="list-style-type: none">• Provide tourism opportunities.• Ensure the continued existence of quality experience in areas used for commercial tourism.• Provide opportunities for existing operators to expand where appropriate, or new operators to come in if an area is able to sustain increased use	<ul style="list-style-type: none">• Identify and provide opportunities for use of Crown land suitable for future development of resort and wilderness tourism operations.• Manage levels of recreational use to maintain the quality of the experience and the natural environment.• Identify areas suitable for expansion through inventory.
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2.1.12. Protected Areas

The Fort Nelson LRMP table has made recommendations consistent with the direction provided in the Protected Areas Strategy (PAS) and by the Land Use Coordination Office (LUCO). The goals of the Protected Areas Strategy are: to protect specific lands for their special value for wildlife, wilderness, recreation, culture and heritage and as representative examples of natural diversity found in each of the province's ecosections; and to protect smaller natural, recreational and cultural features. The areas meeting the first goal of representation are usually larger than 3000 ha.

Logging, mining, hydroelectric and oil and gas exploration and development will not occur in Protected Areas unless specific recommendations have been made by the Working Group.

In June 1995, the Land Use Coordination Office directed the LRMPs in the Omineca-Peace, to recommend an aggregate 9% (including 1.9% of existing protected areas in the region). The Fort Nelson LRMP was directed to work towards a target of 11.4%; the LRMP has achieved this target.

The intent of the Working Group is that historic activities (e.g. trapping, grazing, guide outfitting, etc.) be allowed to continue.

General Management Direction for Protected Areas is based on *A Protected Area Strategy for British Columbia (1993)* and is outlined in the Resource and Recreation Use Guidelines for Protected Areas (August 1995), included in Appendix.

2.1.13 Soil

Soil is one of the most important resources in the planning area, as it provides the foundation for all vegetation. The intent of this plan is to ensure that the soil resource is adequately protected.

Soil

Objectives	Strategies
<ul style="list-style-type: none">• Minimize soil productivity losses.• Minimize off-site impacts due to soil disturbance.	<ul style="list-style-type: none">• Implement soil disturbance guidelines for all activities• Use road construction and maintenance procedures designed to minimize impacts

2.1.14. Transportation and Utility Corridors

Within the Fort Nelson LRMP plan area there are existing transportation and utility corridors and sites. The direction of the plan is to maintain and utilize existing corridors and sites whenever possible for future developments. Any corridor infrastructure or expansion needs will be coordinated with other users through a coordinated access management planning or other appropriate referral process. All maintenance and upgrading of corridors and sites will take place with sensitivity to the other values identified for the area. Planning for transportation and utility corridors will include deactivation, where it is appropriate (e.g. corridor or site no longer required). The deactivation plans will require that all affected agencies and stakeholders be contacted.

Transportation and Utility Corridors

Objectives	Strategies
<ul style="list-style-type: none">• Maintain transportation routes and utility corridors• Maintain opportunities for communication sites, repeater sites, airstrips.	<ul style="list-style-type: none">• Provide for highways to be improved.• Provide for utility corridors and sites to be constructed to accommodate tie-ins, upgrades to existing and twinning of existing pipelines.
<ul style="list-style-type: none">• Provide opportunities for new transportation, utility corridors and communication sites outside of protected areas.	<ul style="list-style-type: none">• Accommodate expansion of existing and development of new transportation, utility corridors and communication sites and airstrips.• Provide for new roads to be constructed for industrial, commercial and recreational use

Transportation and Utility Corridors (cont'd)

- | | |
|--|---|
| <ul style="list-style-type: none">• Reduce wildlife/vehicle interactions (e.g. caribou, moose) | <ul style="list-style-type: none">• Inventory and research to determine most effective method to use. Examples of projects that have been tried with some success are signing, seeding with non palatable species and use of road side deflectors |
|--|---|

2.1.15. Trapping

The diverse landscapes within the planning area are host to a variety of commercially harvested fur bearers including marten, lynx, beaver, coyote and fox. There are registered traplines or portions of traplines, covering the entire planning area.

Trapping is socially and economically important, especially among First Nations communities where traplines are often held by families.

A concern for many trappers is the need for adequate notification of pending land and resource developments that could potentially have a negative impact on their interests. The Ministry of Environment, Lands and Parks (BC Environment's Fish and Wildlife Branch) issues and administrates trapping tenures. In recent years, BC Environment provided resource developers with trapper information, however due to the *Freedom of Information Act*, BC Environment can no longer release a trapper's personal information without the permission of the trapper.

Other resource management agencies, such as the Ministry of Employment and Investment (Energy Resources Division) have initiated a Trapper Notification Program to ensure that trappers are adequately notified pending developments. To participate in the program, trappers must authorize the release of their personal information.

Trapping

Objectives	Strategies
<ul style="list-style-type: none">• Provide and maintain opportunities for trapping.	<ul style="list-style-type: none">• Commercial/industrial operators to work with trappers to minimize impacts of their activities on fur bearer habitat and trapline operations.• Coordinated access management planning will include the opportunity for participation by the trapline holder.• Identify campsites, cabins and critical use areas.• Recognize existing trapline tenure rights.

2.1.16. Visual Quality

Visual quality is the extent to which the aesthetic or scenic value of a landscape is maintained or altered compared to the pre-existing or natural condition. While resource development drives the economy of the Fort Nelson planning area, the community recognizes the importance of maintaining the aesthetic values of the landscape. Development in the energy, forestry and mineral sectors can occur while managing for visual quality associated with scenic areas, important recreational areas, rivers and streams and important natural features. Some of the important areas identified for visual quality management are the major rivers, Alaska Highway corridor and the more popular back country recreational areas.

Visual quality will be managed through existing legislation and regulation, including the Visual Quality Objective (VQS) management system of the Ministry of Forests.

Visual Quality Objectives are acceptable degrees of change from the natural appearing landscape caused by land-use alterations, such as logging or road-building.

The LRMP Working Group recognizes that events such as forest pest infestations, fires or major windthrow, or subsurface and other resource values may require a re-assessment of visual requirements. Establishment of a 'master VQO' means that a range of VQO's within the viewscape will exist (due to topographical variations), with an emphasis towards one type of VQO designation. Specific recommendations regarding visual sensitivity around lakes and other areas are made in each RMZ.

Visual Quality Objectives could be implemented through the following process: Conduct inventory and recommend VQO's ⇒ approve VQO's ⇒ design and propose activity to comply with VQO ⇒ approve activity and review results. It should be noted that Visual Quality Objectives may change over time, due to new inventory information and changing public values.

Visual Quality

Objectives	Strategies
<ul style="list-style-type: none">• Manage for visual quality	<ul style="list-style-type: none">• Identify visually sensitive areas, and recommend master VQO's.• Identify and assess visual values and consider these values in integrated resource management.

Visual Quality (cont'd)

	<ul style="list-style-type: none"> Where established VQO's will guide incidental timber cutting associated with other resource user activities.
<ul style="list-style-type: none"> Manage for visual quality associated with lakes, respecting their scenic values and visual sensitivities. 	<ul style="list-style-type: none"> Establish master VQO's for those lakes which currently do not have a VQO recommended.

2.1.17 Water

The water resources within the planning area are within the Arctic watershed. The plan area is drained by the Liard River and its major tributaries: the Fort Nelson, Prophet, Muskwa, Toad, Petitot and Kechika rivers. A minor portion of the area near the Alberta border is drained by the Hay River which flows toward the MacKenzie River.

Community water supplies require special consideration to maintain a high quality of drinking water and community health. The Town of Fort Nelson and Fort Nelson Indian Band draw their water supply from the Muskwa River. The community at Prophet River and the Indian Band draw water from Adsett Creek, and the community of Toad River draws its water from the Toad River. Groundwater reserves are scarce and are used sparingly.

Water

Objectives	Strategies
<ul style="list-style-type: none"> Ensure existence of acceptable levels of water quality and quantity 	<ul style="list-style-type: none"> Identify priority watersheds and conduct the appropriate level of watershed assessment and implement resulting recommendation in operational plans
<ul style="list-style-type: none"> Maintain watershed hydrological integrity. 	<ul style="list-style-type: none"> Upon review of applicable watersheds, implement procedures to rehabilitate negatively impacted watersheds to improve water quality and/or stream flow regimes to a sustainable level.
	<ul style="list-style-type: none"> Minimize man-made changes to stream configurations Manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative impacts to water quality Determine and maintain instream flow requirements for acceptable levels of quality and quantity

2.1.18. Wildlife

The area supports an abundance of wildlife in a mixture that differs from the rest of the province. The area includes the transition from the Northern Boreal Mountains to the Taiga Plains and provides for:

- 12 large mammal species (many at the highest population level in the province);
- relatively intact large predator-prey systems;
- wild and diverse fish stocks; and
- species at risk or of regional significance.

Wildlife includes vertebrates that are mammals, birds, reptiles or amphibians, fish, invertebrate crustaceans and mollusks. Key to conserving these wildlife species is the conservation of their habitat.

The management objective for wildlife in the planning area is to achieve the following goals:

- maintain the diversity and abundance of wildlife;
- maintain the integrity and diversity of existing habitats and ecosystems (including functional large predator-prey systems);
- maintain threatened and endangered habitats, and the habitats of rare and endangered species;
- pursue resource management alternatives that favour ecological integrity;
- protect life and property from wildlife; and
- provide for recreational use such as viewing, hunting and appreciation of wildlife.

The management objectives and strategies recommended in the plan are intended for all wildlife species, in some RMZs more specific management is directed at red- and blue-listed and regionally significant species (as defined in the Forest Practices Code). In some cases, one or several species are identified. In these cases the objectives and strategies are still meant for all wildlife, but the designated species require management emphasis.

Wildlife

Objectives	Strategies
<ul style="list-style-type: none">• Provide for habitat needs of all wildlife.	<ul style="list-style-type: none">• Special attention will be paid to those red- and blue-listed species, and regionally significant species.
<ul style="list-style-type: none">• Manage wildlife habitats and populations to meet both consumptive and non-consumptive demands within IRM goals and land capability	<ul style="list-style-type: none">• Identify and map important habitat elements.• Manage forests for a diversity of age classes and forest stand structure across the landscape.

Wildlife (cont'd)

	<ul style="list-style-type: none"> Identify critical ungulate winter habitats for consideration as Wildlife Habitat Areas. Ensure high capability sites are maintained in a suitable state. Manage wildlife to ensure sustainable populations.
<ul style="list-style-type: none"> Manage for fur bearer habitats 	<ul style="list-style-type: none"> Identify and map important fur bearer habitats and habitat components for consideration in more detailed strategic and operational planning process.
<ul style="list-style-type: none"> Maintain waterfowl habitat and minimize impacts on waterfowl 	<ul style="list-style-type: none"> Ensure industrial activity is sensitive to waterfowl habitat by minimizing disturbance and habitat loss Conserve critical waterfowl habitat by identifying critical waterbodies and reviewing for consideration as Wildlife Habitat Areas. Conserve trumpeter swan nesting habitat by providing visual screening, and minimizing disturbance by following guidelines.
<ul style="list-style-type: none"> Maintain a diversity of non-game wildlife. 	<ul style="list-style-type: none"> Identify and map stick and cliff nest sites to provide information for operational planning.
<ul style="list-style-type: none"> Maintain effective spatial and temporal habitat continuity 	<ul style="list-style-type: none"> Design connectivity corridors between important habitat areas where ecologically appropriate. (e.g. Wildlife Habitat Areas (WHAs), Forest Ecosystem Networks (FENs)) Identify riparian connectivity corridors based on riparian vegetation Industrial development should avoid riparian connectivity areas or where development proceeds, impacts should be minimized on riparian values.
<ul style="list-style-type: none"> Conserve and maintain the genetic diversity of wild fish stocks 	<ul style="list-style-type: none"> Establish a catalogue of wild fish stocks. Identify and map existing fish distributions
<ul style="list-style-type: none"> Maintain sports and sustenance fisheries Maintain habitat and water quality for priority fish species (e.g. bull trout, grayling, red-and blue-listed species) 	<ul style="list-style-type: none"> Manage fish harvest where and as required to maintain sustainable population levels.

2.2 Categories of Resource Management Zones (RMZ)

2.2.1 Introduction

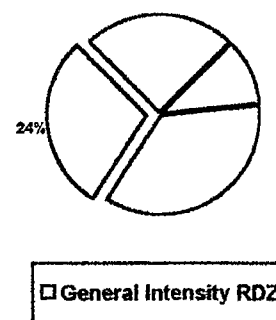
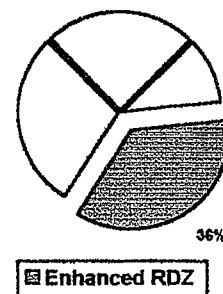
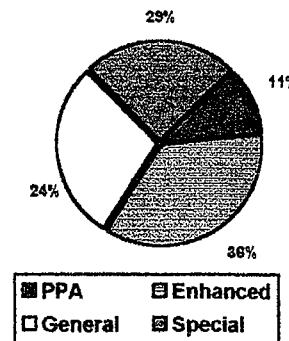
The plan area has been divided into 37 Resource Management Zones (RMZ), two of which have had subzones identified to give direction for local level planning (Etsho and River Corridors East). Each RMZ contains specific resource values and management objectives and strategies which set out the types of activities and level of intensity permitted in individual zones.

The LRMP identified a framework for four categories of land use which reflects the spectrum of activities and values represented at the planning table. Each category is made up of a combination of similar RMZs. Management objectives and strategies have been developed for each category based on information available about the resources. The management intent for each category is described through these objectives and strategies, rather than operational prescriptions, this is to reflect the interest-based nature of the plan and to encourage creative solutions to resource integration. The management strategies for a category may include direction to do more detailed strategic and operational plans.

The four categories of Resource Management Zones are:

1. **Enhanced Resource Development** - Representing approximately 36% (3,564,900 hectares) of the land base. This category gives direction to manage land for oil and gas, mineral and timber resources, with an emphasis on the recreation and tourism resources along the highway corridor. This category is made up of the Resource Management Zones where investments in resource development are encouraged. This category builds on existing legislation and regulations. There are 4 RMZs in this category.
2. **General Resource Development** - Representing approximately 24% (2,445,000 hectares) of the land base. The intent in this category is to manage for a wide array of integrated resource values. In these RMZs resource development will be integrated with the requirements of other resource values. Developments are subject to all applicable provincial regulations. There are 10 RMZs in this category.
3. **Muskwa-Kechika Special Management** - Representing approximately 29% (2,911,700 hectares) of the land base. This category gives direction to manage in such a way that resource development can proceed while minimizing impacts on other resource values. The Resource Management

4 Categories of RMZs



Zones within this category contain the most restrictive objectives and strategies for development. There are 16 RMZs in this category .

4. **Proposed Protected Area** - Representing approximately 11% (1,051,000 hectares) of the land base. This category contains the zones that are proposed for protected area designation for natural, cultural, heritage and/or recreational values as defined by the Protected Area Strategy for BC. Logging, mining, energy and hydroelectric exploration and development are prohibited. There are 7 Goal 1 Resource Management Zones and 13 Goal 2 sites identified in this category.

The General Resource Development and Special Management Categories have sub-categories to describe the Major River Corridors.

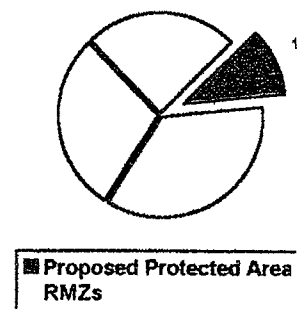
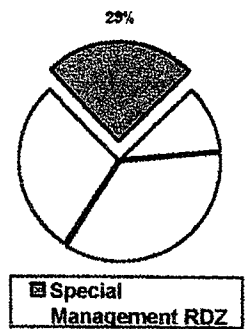
Major River Corridors form an important component of the landscape. Water generally flows north-east, from the mountains and foothills through the muskegs dominated plains towards the Arctic Ocean.

The river corridor ecosystems contain some of the highest diversity of plants and animal species; they provide critical habitats including home ranges, travel corridors, winter cover, nesting, foraging and reproductive sites. Wildlife for which these corridors are particularly important include fish, Grizzly bear, ungulates, fisher, marten, golden and bald eagles, neo-tropical migrants and waterfowl. As a component of landscape level biodiversity, the river corridors connect uplands to rivers, and upper headwaters to valley bottoms. These ecological linkages are essential for meeting stand and landscape level biological diversity objectives in land use management. The ecosystem of the river corridors are generally more sensitive to disturbance than the upland sites , and additional precautions are necessary to maintain the ecological integrity of these systems.

The forest stands found in the river corridors are more productive and have a lower frequency of natural disturbance than the upland sites, which increase their value for wildlife and the forest industry.

Major River Corridors are important due to high potential for archaeological and cultural/heritage sites and trails, and recreation and scenic value. All of the river corridors are used for these reasons. Users of the forest resource depend on the river corridors for transportation throughout the year.

There are five Resource Management Zones categorized as General Resource Development Major River Corridors and four as Special Management Major River Corridors.



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CATEGORIES OF RESOURCE MANAGEMENT ZONES

Enhanced Resource Development RMZs



General Resource Development RMZs



Major River Corridors



Special Management RMZs



Major River Corridors

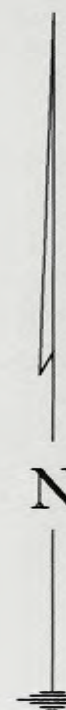
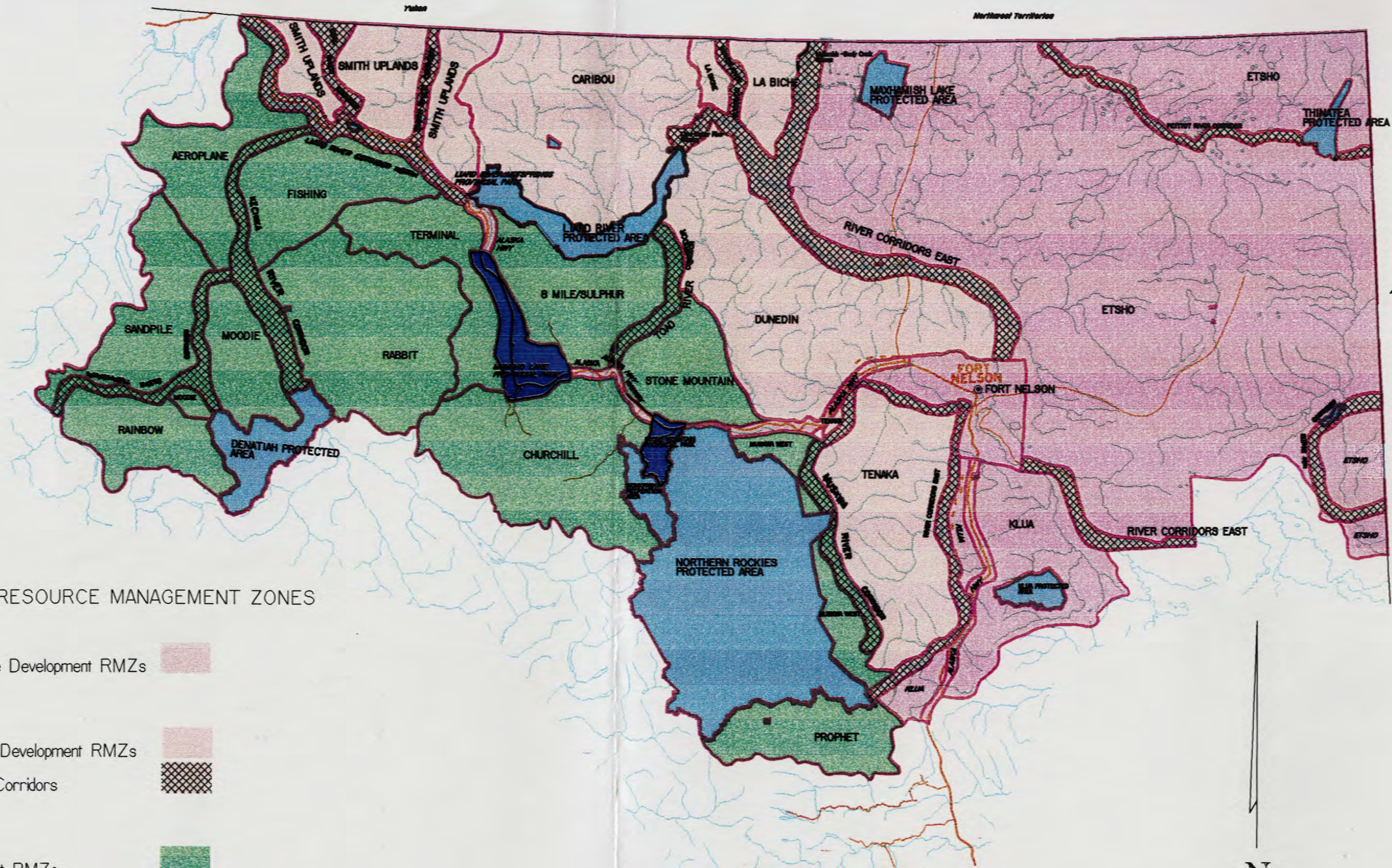


Proposed Protected RMZs



FORT NELSON LRMP

CATEGORIES OF RESOURCE MANAGEMENT ZONES



Scale 1:1,640,000
(Approximate)

2.2.2. Enhanced Resource Development Category of Resource Management Zones

Intent:

- To manage land for oil and gas, mineral and timber resources
- To manage the highway corridor to enhance the recreation and tourism resources.

The management intent for these RMZs is to provide for intensive development of resources such as timber, natural gas and minerals. The objectives and strategies for managing other resource values will be applied in such a way that recognises the resource development priority of the zone. The objectives and strategies also cover important cultural, heritage bird habitat and trapping values. Investments in resource development and enhancement will be encouraged in this category.

These zones have had a substantial amount of past activity from oil and gas exploration and development and timber harvesting activities.

The Enhanced Resource Development Category of RMZs is shown in Figure 3, and the RMZs are listed below:

Alaska Highway Corridor
Etsho
Fort Nelson
Klua

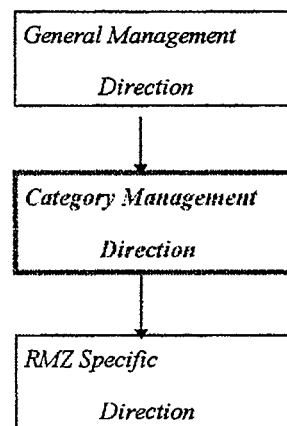
The following objectives strategies apply to all the RMZs in the Enhanced Resource Development Category (the second level of management direction). Where a specific objective or strategy is not listed for a resource value, the first level of management direction (given by the General Management Direction (Section 2.1)) applies. In addition each RMZ may have site specific objectives and strategies listed to accommodate specific resource values and concerns (the third level of management direction).

Objectives

- Manage for a component of Roaded Resource (ROS)

Strategies

- Where significant concerns exist new access will be co-ordinated with access requirements of other resource users through access management planning.
- Identify and map aggregate, sand and gravel inventory and potential.
- Identify and map important habitat elements of red- and blue-listed and regionally significant species for consideration for Wildlife Habitat Areas.



Enhanced Resource Development Category

2.2.2.1 Alaska Highway Corridor Resource Management Zone

Area: 93,700 ha

This RMZ contains the Alaska Highway from Trutch to the Liard River bridge. The rest of the Highway (west of the Liard River) is within the Liard River corridor North RMZ (Section 2.2.3.7).

The Alaska Highway Corridor is based upon the area that is visible from the Alaska Highway. The zone is represented as a corridor for simplicity, however it varies in width depending on topography. The boundaries of the RMZ are based on the Visual Quality Objectives.

This zone crosses four ecosections: Eastern Muskwa Ranges, Fort Nelson Lowlands, Muskwa Foothills and Muskwa Plateau; and is covered by two biogeoclimatic zones: Boreal White and Black Spruce and Spruce-Willow-Birch.

Communities along the highway include Prophet River, Fort Nelson, Toad River, Muncho Lake, Liard River, Fireside and Coal River. The last three communities are within the Liard River Corridor North RMZ.

Portions of the old Alaska Highway are of particular interest as historical sites. The highway was built in 1942 by the U.S. army as a land route to Alaska. The route followed traditional trails and many native and non-native trappers were used as guides. Due to the fact the highway followed traditional trails the potential for traditional use, heritage and cultural sites is high.

Most tourism revenues and employment in the area flow from highway traffic and associated businesses. Visitors travelling the highway take part in activities such as hiking, hunting, fishing, camping, wildlife viewing and general sight-seeing.

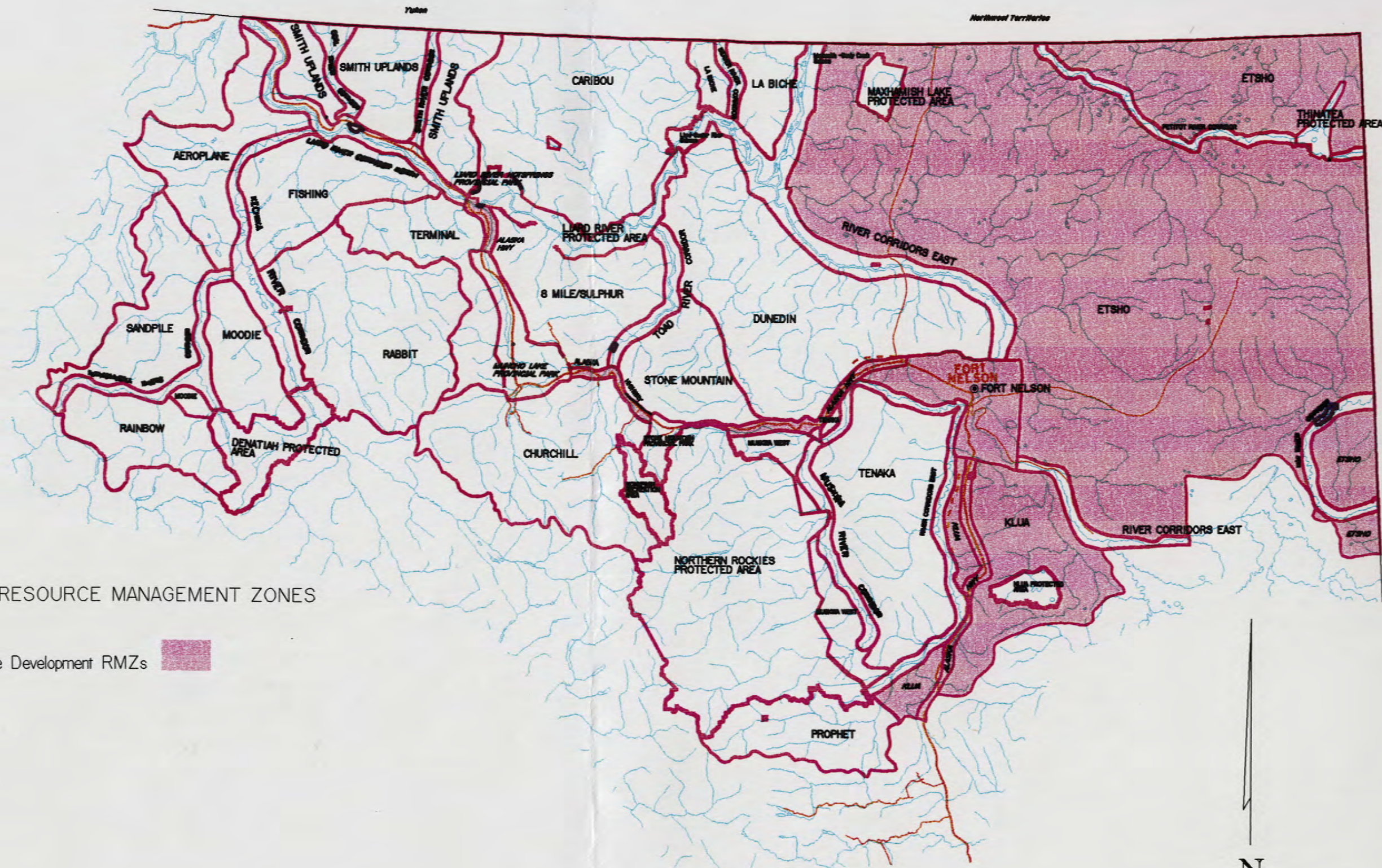
Industrial activities, (which include forest management, energy and mineral exploration and development) will be given direction through a variety of strategies designed to manage for visual quality.

This RMZ is important as a source for sand and gravel. The mineral assessment indicates there is significant potential for industrial minerals.

Vehicle accidents involving large wildlife species straying onto the highway is an ongoing safety concern.

CATEGORIES OF RESOURCE MANAGEMENT ZONES

Enhanced Resource Development RMZs



FORT NELSON LRMP

ENHANCED RESOURCE DEVELOPMENT CATEGORY
OF RESOURCE MANAGEMENT ZONES

Scale 1:1,640,000
(Approximate)

Enhanced Resource Development Category - Alaska Highway Corridor RMZ

There is a small area identified around the settlement of Toad River, referred to as the Toad River Residential Area. In this area the traditional use of All Terrain Vehicles (ATVs) will be reviewed in a local level planning process, which will include input from the community.

Tourism sector opportunities are important in this RMZ. The management in this zone encourages expansion of tourism related facilities (e.g. lodges) along the highway.

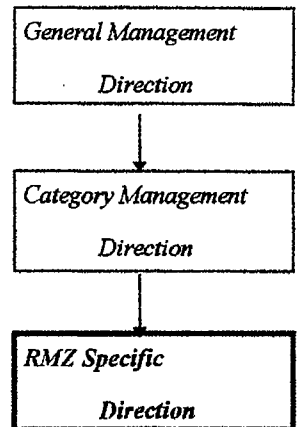
The original highway route followed the historic trail of the local First Nations. The highway has historical and current use by Sikani, Slavey, Cree, Beaver and Kaska cultures of the Prophet River, Fort Nelson and Lower Post First Nations. There are known traditional use, archaeological, heritage and cultural sites throughout the corridor. The Prophet River Indian Band community is located within this RMZ.

Objectives:

1. Maintain or enhance visual quality within the Alaska Highway Corridor and settlements area.
2. Provide for quality public and commercial recreational opportunities and values.
3. Reduce wildlife/vehicle interactions (i.e. caribou, moose).
4. An appropriate level of deactivation is required for all access no longer required for resource management. (Intent: minimize effects of roads on wildlife and wildlife habitat.)
5. Manage for a component of Roaded Resource(ROS).
6. Recognize and maintain traditional use, cultural and heritage sites.

Strategies:

- Manage all development activities in a manner that will achieve the VQO's
- Promote recreational activities that enhance highway based tourism with emphasis on destination activities.
- Identify the areas where the safety concerns are. MOTH and BCE to address at local level utilizing tools available (e.g. signs, seeding, etc.).
- More detailed strategic and operations plans should consider buffers for important wildlife habitat elements.
- Determine and maintain instream flow requirements for fish.



Enhanced Resource Development Category

2.2.2.2 Etsho Resource Management Zone

Area: 3,005,000 ha

This large area is made up of a rolling upland that rises above the Fort Nelson Lowlands to the south and the Petitot Plain to the north. It has extensive lowlands and low rolling plateau's that overlay flat-lying sedimentary rock. The entire area is covered by one biogeoclimatic zone: Boreal White and Black Spruce. The escarpments are dominated by aspen and white spruce forest stands; and there are extensive areas of muskeg, especially in the east. Historically the area has been disturbed frequently by wildfire.

The zone is resource based and several permanent camps and various seasonal ones exist in this area, associated with energy and forest development. All three of the all weather roads in the plan area are in or cross through this zone: the Alaska Highway, Liard Highway and the Sierra-Desan road. There are also many winter roads in this area including Cabin Lake and Pego roads, Kotcho, Patry, Pine and Liard mainlines. This area has potential and proven energy reserves along with significant natural gas production and infrastructure. The majority of existing oil and gas tenures, activity and existing infrastructure are located in this zone. There is a high potential for the discovery of new reserves. Gravel reserves exist in small pockets.

This area has both present and future operating areas for both the softwood and hardwood timber industries. There is potential for long-term timber management. Both deciduous and coniferous stands are in the Timber Harvesting Land Base as determined through the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Analysis. There will be areas within this RMZ where intensive forest management is practiced at the stand level to maintain or enhance the timber supply.

Healthy populations of large carnivores and ungulates are widespread throughout this area. Black bear are common, as are wolves, coyotes, and other large and small fur bearers. Caribou, moose, and deer prosper here. Small mammals, raptors, owls, cavity nester's, and waterfowl are commonly found throughout the area. Both bald and golden eagles are often sighted. The small lakes and ponds provide important nesting and staging sites for trumpeter swans and other water fowl. Fish species include bull trout, mountain whitefish, Arctic grayling, lake whitefish, northern pike, pickerel, inconnu, and cisco.

Enhanced Resource Development Category - Etsho RMZ

This area is very important to the trappers for its fur resources.

The recreational opportunities include hunting, fishing, boating, camping, hiking, picnicking, horseback riding and ATV use. The extensive network of roads and trails allows for access throughout the entire RMZ.

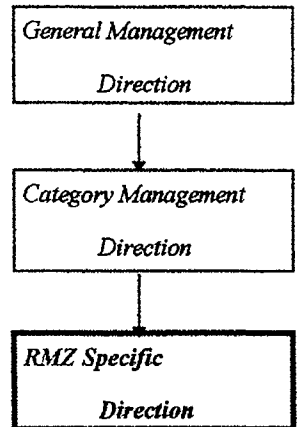
There is historic and current use of this RMZ by the Slavey, Beaver and Cree cultures of the Fort Nelson and Fort Liard First Nations. The eastern portion has use by the Dena Tha First Nations. There are numerous gathering, traditional use, heritage and cultural sites throughout the zone, most of these are linked to the trapping, hunting and fishing values. There is medium to high density of clustering of sites by all three First Nations. The known site locations are the: Kotcho Lake Village site and the associated trails are; Simpson heritage and Sierra.

Objectives

1. Enhance timber harvesting and a sustainable long-term timber supply

Strategies

- Establish general forest production targets for landscape units within the Resource Management Zone consistent with high intensity forest management.
- Reforest (within appropriate time frames, as determined through landscape unit planning) all potentially productive brush, non-commercial deciduous and Non Sufficiently Restocked (NSR) areas with ecologically and commercially suitable species while providing for critical wildlife habitat.
- Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks), to increase timber availability and reduce roading requirements
- Plan patch size, access, disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits identified in the biodiversity guide for this Natural Disturbance Type. Stand level biodiversity to focus on riparian areas and wildlife tree patches.
- Identify and map caribou populations and habitats to provide information for more detailed strategic or operational planning processes.



Enhanced Resource Development Category - Etsho RMZ

2. Maintain opportunities and access for oil and gas exploration, development and transportation.
 - Promote and encourage oil and gas exploration activities through a timely and efficient permitting process.
 - Encourage investment in exploration, development and transportation of energy resources.
3. Identify and provide for the protections of traditional use, archaeological, cultural and heritage sites.
 - Identify all known sites within this RMZ and develop appropriate management strategies.

2.2.2.2.1. Maxhamish - Sandy Creek Subzone

The area between Maxhamish Lake Proposed Protected Area, Sandy Creek and the Northwest Territories border has been identified as a subzone of the Etsho RMZ.

Within this subzone there is potential for timber harvesting, and has been identified as a current operating area by the forest industry. The timber within this subzone is included in the Timber Harvesting Land Base in the 1992 Coniferous Timber Supply Analysis.

The subzone has potential for oil and gas.

This area has historical and current use by the Slavey, Beaver and Cree cultures of the Fort Nelson and Fort Liard First Nations. There are currently traditional use, known heritage and cultural sites and values which have been identified. This area is also significant to the First Nations for its hunting, trapping and fishing values. The native settlement of Francois is in this subzone, as are large burial grounds.

This LRMP identified this as an area that requires special management strategies to be developed to accommodate the First Nations values together with the development of the forest and oil and gas resources. The LRMP direction is that this subzone is a priority for subsequent planning to develop management prescriptions. The subsequent planning process will include the government agencies, stakeholders and public who have an interest or concern in the area. A portion of this subzone is within the Rivers Corridors East RMZ. There is no additional direction given in that RMZ.

Enhanced Resource Development Category

2.2.2.3 Fort Nelson Resource Management Zone

Area: 143,100 ha

This RMZ consists of areas that provide for settlement use of Crown lands as outlined in an Official Community Plan, Crown Land Plan or LRMP. Significant uses in these lands are residential, commercial, industrial, agricultural and institutional. The boundaries for the zone are drawn from existing community, settlement and municipal plan boundaries. This zone surrounds existing settlement which is generally private land with some Crown Land included; this zone includes most of the Agriculture Land Reserve and the Fort Nelson Indian Band Reserve.

The Town of Fort Nelson and private lands are not included in the designation of Enhanced Resource Development Zone. This plan applies to the resources on provincial Crown land.

The significant activities include forestry and petroleum development. This zone has existing oil and gas tenures, Westcoast Energy's gas plant and a sulphur recovery plant. Also this RMZ is an important source of sand and gravel resources which are used at a local level.

All of the facilities supporting the forest industry are located in this zone, including a sawmill, plywood plant and oriented strand board plant.

This zone supports the area where it would be possible to provide opportunity for the expansion of agriculture. The main farming enterprise is cropping for hay; there are also beef, horse and bison enterprises. Most of the agricultural activity takes place in the McConachie Creek¹ and Jackfish Creek area.

This area has been used traditionally by First Nations and was home for the early commercial fur trapping industry prior to the construction of the Alaska Highway. Fort Nelson was established as a fur trade post in 1805 by the North West Company. It operated until 1823, when deterioration of the relationship between the natives and the Hudson Bay Company resulted in confrontations throughout the Region and the death of a number of company personnel. Fort Nelson was re-established twice at the confluence of the Muskwa River and Fort Nelson Rivers in 1865 which is a recognized heritage site. The original 1805 fort was approximately 95 kilometres

¹ Named for Grant McConachie, bush pilot and one of the founders of Canadian Pacific Airlines.

Enhanced Resource Development Category - Fort Nelson RMZ

downstream from the 1865 location. Trapping was the main activity in the area until the late 1930's. Fort Nelson was the administrative centre for the region with transportation links by way of the Fort Nelson and Liard rivers to Fort Simpson in the North West Territories, by trail to Fort St. John and Alberta. The strategic importance of the area during World War Two resulted in the development of Fort Nelson as a staging base for the construction of the Alaska Highway and the community was transformed from a small trading village to a transportation centre. Fort Nelson was incorporated into a village in 1971. In 1988 Fort Nelson was upgraded to Town status and the Fort Nelson Liard Regional District was incorporated on the same date.

The overall management intent in this RMZ is to meet the objectives set out in approved community and land use plans; provide crown land where it is identified in Official Community Plans for community; industrial and agricultural development; and ensure the opportunities for commercial enterprises are available around the town to provide service to the tourist and business traffic.

Historic and current use in this RMZ is by the Slavey, Beaver and Cree cultures of the Fort Nelson and Prophet River First Nations. There are numerous known traditional use, archaeological, heritage and cultural sites, especially along the river corridors, where there is high density clustering of sites. There are hunting, trapping and fishing values for the First Nations.

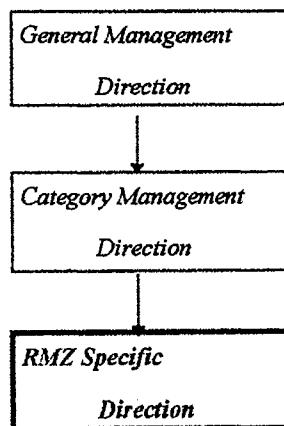
The Fort Nelson Indian Band reserve #2 is in this RMZ. Other features include the Old Fort Nelson Village Site #1 and #2.

Objectives:

1. Manage the visual quality around the Town of Fort Nelson.
2. Manage for a component of Roaded Resource. (ROS)
3. Manage to avoid negative bear/human interactions.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Provide input to municipal, agricultural or other planning as required.
- Promote recreational activities that enhance highway-based tourism with an emphasis on destination activities.
- To minimize negative bear/human interactions public education will focus on: informing the public on dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.



Enhanced Resource Development Category - Fort Nelson RMZ

- | | |
|---|--|
| 4. Maintain the structural and functional integrity of the watercourse/waterbody. | <ul style="list-style-type: none">• Limit man-made changes to stream configurations for 1km upstream of water intake for Fort Nelson town on Muskwa River. |
| 5. Provide opportunities for the growth of agriculture | <ul style="list-style-type: none">• Provide for Crown lands with suitable agriculture potential to be designated for agriculture development and use, within the appropriate regulatory framework• Develop target animal unit month (AUM) levels of use for both wild ungulates and domestic livestock. |
| 6. Enhance timber harvesting and a sustainable long-term timber supply | <ul style="list-style-type: none">• Establish general forest production targets for landscape units within the RMZ consistent with high intensity forest management regimes.• Reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non-commercial deciduous, and Non Satisfactorily Restocked (NSR) areas with ecologically suitable species while providing for critical wildlife habitat.• Plan patch size, access, disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits identified in the biodiversity guide for this Natural Disturbance Type. Stand level biodiversity to focus on riparian areas and wildlife tree patches.• Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks), to increase timber availability and reduce roading requirements. |
| 7. Maintain opportunities and access for oil and gas exploration, development and transportation. | <ul style="list-style-type: none">• Promote and encourage oil and gas exploration activities through a timely and efficient permitting process.• Encourage investment in exploration, development and transportation of energy resources. |

Enhanced Resource Development Category

2.2.2.4 Klua Resource Management Zone

Area: 323,100 ha

This RMZ is a part of the lowlands of the Muskwa Plateau and is characterized by black spruce complexes with intermittent muskeg areas. This zone is covered by one biogeoclimatic zone: boreal white and black spruce. The escarpments near the Klua Lakes are some of the noted landscape features and they are dominated by aspen and white spruce stands.

This area has existing oil and gas tenures. Oil and gas exploration, developments and infrastructure and associated activities are present in the area.

This area has both present and future operating areas for both the softwood and hardwood timber industries. There is potential for long-term timber management. Both deciduous and coniferous stands are in the Timber Harvesting Land Base as determined through the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Analysis. There may be areas within this RMZ where intensive forest management is practiced at the stand level to maintain or enhance the timber supply.

There is historical and current use in this RMZ by the Slavey, Beaver, Cree and Sikani cultures of the Fort Nelson and Prophet River First Nations. There are numerous known trails, grazing areas, traditional use, archaeological, heritage and cultural sites throughout. There are hunting, trapping and fishing values throughout the RMZ. The area in the Klua Lake drainage and between the Klua Lake Proposed Protected Area and the Alaska Highway is especially important to the Prophet River First Nations

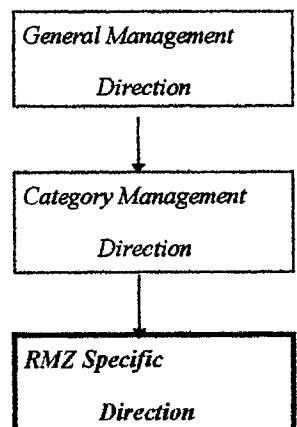
There are numerous native pack trails throughout, and the Fort Nelson-Klua heritage trail.

Objectives:

1. Manage visual quality from Alaska Highway Corridor, around Mt. Bigfoot and Mt. Yakatchie.
2. Provide opportunities for non-commercial back-country recreation uses.

Strategies

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Promote recreational activities that enhance highway-based tourism with emphasis on destination activities.



Enhanced Resource Development Category - Klua RMZ

3. Enhance timber harvesting and a sustainable long-term timber supply
 - Establish general forest production targets for landscape units within the RMZ consistent with high intensity forest management regimes.
 - Reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non-commercial deciduous, and Non Satisfactorily Restocked (NSR) areas with ecologically suitable species while providing for critical wildlife habitat.
 - Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks), to increase timber availability and reduce roading requirements.
 - Plan patch size, access disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits of the biodiversity guide for this Natural Disturbance Type. Stank level biodiversity to focus on riparian areas and wildlife tree patches.
4. Maintain opportunities and access for oil and gas exploration, development and transportation.
 - Promote and encourage oil and gas exploration activities through a timely and efficient permitting process.
 - Encourage investment in exploration, development and transportation of energy resources.
5. Identify and provide for the protection of traditional use, heritage and cultural sites.
 - Identify all known traditional use, heritage and cultural sites within the RMZ and develop appropriate management strategies.
6. For areas adjacent to Klua Lake protected area, consider management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - At the end of the industrial development cycle the area must be returned, as closely as possible and practical, to its natural state.
 - Identify and map important fish and wildlife habitat to provide information for a more detailed planning process.

2.2.3. General Resource Development Category of Resource Management Zones

Intent:

- **To manage for a wide range of integrated resource values**
- **Development will be integrated with requirement of other resource values.**

The intent for this zone is that the RMZs are to be managed for a wide array of resource values and uses. Guidelines for non-extractive resource values will be integrated with resource development activities. Investments in resource development and enhancement are encouraged and will be integrated with other management objectives. The long-term objective is to return the lands to their natural state, as much as possible, after development activity is completed.

The RMZs that take guidance from General Resource Development Category objectives and strategies are a portion of an intact large predator-prey ecosystem. Most lie next to the area referred to as the Muskwa-Kechika.

The General Resource Development Category Resource Management Zones are shown in Figure 4, and listed below:

**Caribou Range
Dunedin
LaBiche
Smith Uplands
Tenaka**

The General Resource Development Category has a sub-category to describe the major river corridors.

Intent:

- **To manage for all the important values within the river corridors such as archaeological, cultural, energy resource, heritage, recreational, riparian, scenic, and timber resource.**
- **To recognize that these areas are generally more sensitive to disturbance than the upland sites; additional precautions are necessary to maintain ecological integrity of the system.**

The General Resource Development Major River Corridors Sub-category Resource Management Zones are:

General Resource Development Category

**Beaver River Corridor
Liard River North Corridor
Petitot/Hay River Corridors
River Corridors East
Smith/Coal River Corridors**

A portion of Smith Uplands, Liard River Corridor North and Coal River Corridor are within the Cassiar Forest District (Prince Rupert Forest Region), even though these areas have been planned for in the Fort Nelson LRMP.

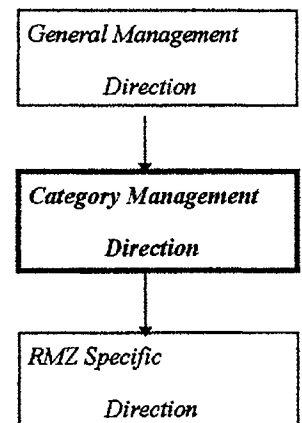
The following objectives and strategies apply to all the RMZs in the General Resource Development Category and the Major River Corridors Sub-category (the second level of management direction). Where a specific objective or strategy is not listed for a resource value the first level of management direction (given by the General Management Direction (Section 2.1)) applies. In addition each RMZ may have site specific objectives and strategies listed to accommodate specific resource values and concerns (the third level of management direction).

Objectives

- Maintain, and where appropriate, enhance the opportunity for environmentally responsible development of energy resources.
- Maintain quality of recreation activities.

Strategies:

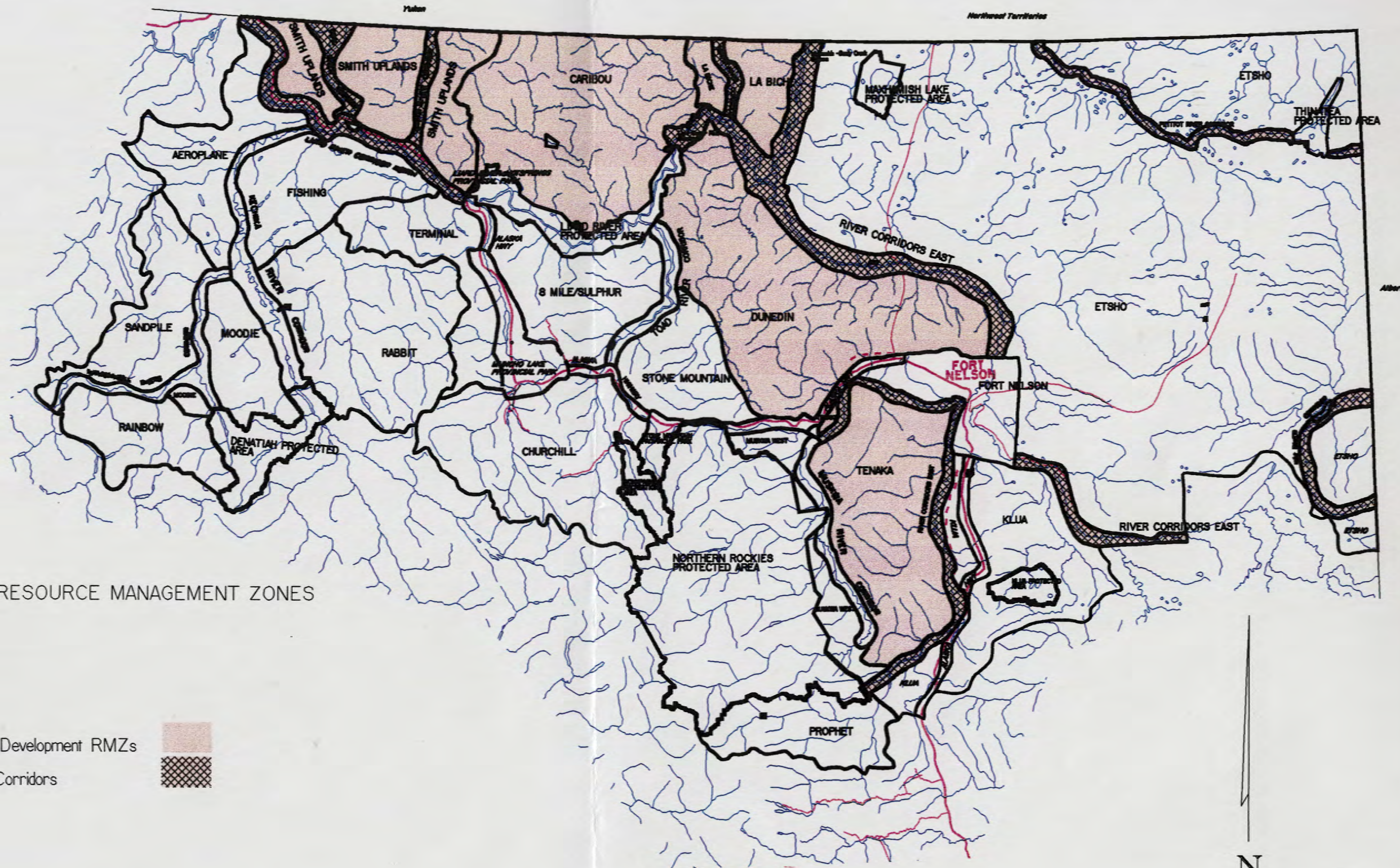
- Promote and encourage the oil and gas exploration activities through a timely and efficient permitting process.
- Encourage investment in the exploration, development and transportation of energy resources.
- At the end of the development cycle, the area must be returned, as closely as possible and practical, to its natural state.
- Ensure public and commercial recreational activities do not exceed acceptable limits of use



CATEGORIES OF RESOURCE MANAGEMENT ZONES

General Resource Development RMZs

Major River Corridors



FORT NELSON LRMP

GENERAL RESOURCE DEVELOPMENT CATEGORY OF
RESOURCE MANAGEMENT ZONES

Scale 1:1,640,000
(Approximate)

General Resource Development Category

2.2.3.1 Caribou Range Resource Management Zone.

Area: 513,200 ha

This RMZ is located north of the Liard River canyon. The topography of the unit is rolling and broken with numerous water courses intersecting it. One ecosection is represented: Hyland Highland. Boreal White and Black Spruce, Spruce-Willow-Birch and Alpine Tundra biogeoclimatic zones are found in the RMZ.

Lower elevations have mixed species forest with white spruce, black spruce, lodgepole pine, subalpine fir, birch, cottonwood and aspen present. Sub alpine forest is dominated by white spruce, black spruce and lodgepole pine on relatively well drained soils. The main disturbance agents in the area have been extensive forest fire and land slide activity.

Generally this area is unroaded and has healthy populations of grizzly bear, moose and caribou. Fur bearers, raptors, owls, cavity nesters, bats and water fowl are common throughout the area. Most of the streams and creeks contain sport fish, primarily Arctic grayling and bull trout.

There are significant timber resources in the lower elevations along the east, south and western edges of this RMZ. These resources were not included in the Timber Harvesting Land Base for the 1992 Coniferous and 1993 Deciduous Timber Supply Analysis. The expectation is that these areas will contribute in the next analysis of the timber supply review; future operating areas have been identified by the forest industry.

There has been oil and gas exploration and tenures in this area. There is a high potential for natural gas. Some potential for mineral exploration exists especially in the Caribou plateau area. The Grayling River hot springs (identified as a Goal 2 Proposed Protected Area) is located in the middle of the RMZ. This occurrence indicates potential for thermal energy.

Within this RMZ the mineral assessment shows potential for industrial minerals and fluorite prospects.

Trapping and outfitting are the main activities in the area at this time. There is potential for outdoor recreation activities such as hunting, camping, wildlife viewing, snowmobiling and ATV touring southern portions of the zone.

General Resource Development Category - Caribou Range RMZ

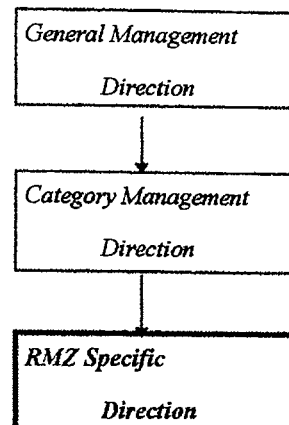
Within this RMZ there has been historic and current use by the Slavey (Dene) and Kaska Dena cultures of the Fort Liard and Lower Post First Nations. There are traditional use, heritage and cultural sites; as well as hunting, trapping and fishing values.

Objectives:

1. Manage to maintain forest attribute suitable for high capability low elevation caribou habitat.
2. Manage to maintain forest attributes suitable for high elevation caribou habitat.
3. Manage to maintain forest attributes suitable for high capability grizzly bear habitat.
4. Manage to avoid negative bear/human interactions.
5. Provide opportunities for timber harvesting and a sustainable long-term timber supply.

Strategies:

- Manage and maintain old growth and mature forest to provide low elevation caribou habitat.
- To prevent the creation of predator-corridors, long tangents with extended lines of sight should be avoided when planning linear disturbances.
- Identify the important high elevation caribou winter habitat areas for consideration as Wildlife Habitat Areas.
- Minimize development of new access. Manage new and existing access that would impact on grizzly bear and grizzly bear habitat.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to grizzly and caribou habitat.
- Identify and map important habitat elements of red-and blue-listed and regionally significant species for consideration for Wildlife Habitat Areas.
- To minimize negative bear/human interactions, public education will focus on: informing the public on dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
- Minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber.
- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.



General Resource Development Category - Caribou Range RMZ

- Provide for the opportunity to aggregate cutblocks to create openings larger than 60 hectares, where environmentally sound and appropriate.
 - Encourage appropriate harvesting systems to accommodate identified wildlife species.
 - Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks) to increase timber availability and reduce roading requirements.
 - An appropriate level of deactivation is required for all access no longer required for resource management. (Intent: minimize effects of roads on wildlife and wildlife habitat.)
5. For areas adjacent to Liard River Corridor and Grayling Hot Springs protected areas, consider management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
- Encourage use of low impact seismic. (Something different than normal cat cut e.g. avoidance cut).
 - Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.
 - For mineral exploration and development, road building into currently unroaded areas will be subject to review and approval through established procedures and all applicable legislation.
 - Minimize and manage creation of new access in unroaded areas.

General Resource Development Category

2.2.3.2 Dunedin Resource Management Zone

Area: 617,500 ha

This RMZ is located near the centre of the plan area; it is bounded by the Fort Nelson River, Liard River, Toad River and the Alaska Highway. It is characterized by distinctive plateau uplands intersected by rivers and streams with broad valleys. Two ecosections are represented: Etsho Plateau and Muskwa Plateau. Two biogeoclimatic zones are found in the zone: Boreal White and Black Spruce with a minor amount of Spruce-Willow-Birch. The lowlands have black spruce complexes with intermittent muskeg areas. The escarpments are dominated by aspen and white spruce, the plateau's have extensive lodgepole pine stands.

There are existing oil and gas tenures and infrastructure in this zone mainly in the south eastern portion. There has been some exploration activity throughout most of the zone and the potential for future gas reserves is medium to high.

Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The various forest companies have a number of operating units identified in the area. Merchantable timber includes balsam fir, white and black spruce, lodgepole pine, trembling aspen and balsam poplar.

The zone contains very diverse wildlife populations. These include: large ungulates, such as moose, caribou, mountain goat, elk, whitetail and mule deer, and Stone's sheep; and predators such as wolves, grizzly and black bears, coyotes and wolverine. Bald and golden eagles are found near the main rivers. The upper portions of the tributaries to the main rivers also have significant spawning and rearing habitat for many important fish species, such as arctic grayling, bull trout, northern pike and mountain whitefish.

Many recreational opportunities are available in the zone including hunting, hiking, boating, angling, camping and limited ATV use in the lower elevations. The major river corridors provide important access into the area for many of these activities. Back country activities include existing guide outfitter and trapper tenures throughout the zone.

Within this RMZ there has been historical and current use by the Slavey, Cree, and Beaver cultures of the Fort Liard and Fort Nelson First Nations.

General Resource Development Category - Dunedin RMZ

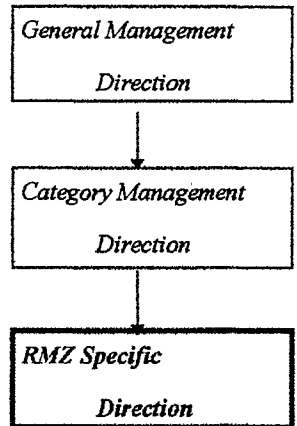
Throughout the zone there are traditional use, heritage and cultural sites as well as hunting, fishing and trapping values.

Objectives:

1. Manage for visual quality around Steamboat, Teetering Rock and Indian Head.
2. Manage to maintain forest attributes suitable for high capability grizzly bear habitat.
3. Manage to avoid negative bear/human interactions.
4. Minimize habitat fragmentation.
4. Provide opportunities for timber harvesting and a sustainable long-term timber supply.

Strategies:

- Where established, VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map aggregate (mineral) inventory and potential.
- Identify and map important fish & wildlife habitat for information for subsequent planning processes.
- Monitor and maintain sustainable populations of designated species (fish or wildlife).
- An appropriate level of deactivation is required for all access no longer required or resource management. (Intent: minimize effects of roads on wildlife and wildlife habitat).
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to stone sheep, grizzly, elk, moose and caribou habitat.
- Access planning to take into account connectivity corridors
- Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.
- Manage for wildlife habitat using range enhancement in a subsequent more detailed planning process.
- Minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber.



General Resource Development Category - Dunedin RMZ

- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
 - Provide for the opportunity to aggregate cutblocks to create openings larger than 60 hectares, where environmentally sound and appropriate.
 - Encourage appropriate harvesting systems to accommodate identified wildlife species.
 - Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks) to increase timber availability and reduce roading requirements.
5. For areas adjacent to the Liard River Corridor protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
- Identify and map existing fish distributions to provide information to operational planning processes.
 - Encourage use of low impact seismic line development (something different than normal cat cut e.g. avoidance cut).
 - Minimize number of river crossings. Utilize existing crossings whenever possible.

General Resource Development Category

2.2.3.3 La Biche Resource Management Zone

Area: 113,100 ha

This zone is located in the north of the plan area between Caribou Ranges RMZ and the Liard River. The Beaver River bisects the zone. The area is characterized by distinctive plateau uplands intersected by rivers and streams with broad valleys. One ecosection is represented, the Muskwa Plateau; and Boreal White and Black Spruce is the only biogeoclimatic zone.

This zone contains limited oil and gas tenures centred on the Beaver River gas field. There has been past production from this area and the infrastructure is still in place. The Beaver field has been looked at recently with the intent of reactivating production. The Westcoast transmission line from Pointed Mountain in the Yukon to Fort Nelson runs through this zone.

Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The various forest companies have a number of operating units identified in the area. Merchantable timber includes balsam, spruce, lodgepole pine and deciduous species.

The zone contains very diverse wildlife populations. These include: large ungulates, such as moose, caribou, mountain goat, elk, whitetail and mule deer, and Stone's sheep; and predators such as wolves, grizzly and black bears, coyotes and wolverine. Bald and golden eagles are found near the main rivers. The upper portions of the tributaries to the main rivers also have significant spawning and rearing habitat for many important fish species, such as arctic grayling, bull trout, northern pike and mountain whitefish.

Many recreational opportunities are available in the zone including hunting, hiking, boating, angling, camping and limited ATV use in the lower elevations. The major river corridors provide important access into the area for many of these activities. Back country activities include existing guide outfitter and trapper tenures throughout the zone.

This RMZ has historic and current use by the Slavey, Cree, Beaver and Kaska Dena cultures of the Fort Liard, Fort Nelson and Lower Post First Nations. Traditional use, heritage and cultural values and sites exist in the zone. These sites are numerous and the values are significant; therefore they warrant a higher level of consideration in strategic planning. First Nations use includes hunting, fishing and trapping activities.

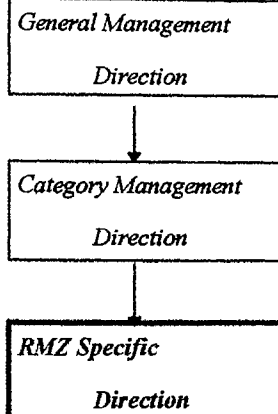
General Resource Development Category - LaBiche RMZ

Objectives

1. Identify and protect traditional use, heritage and cultural sites.
2. Provide opportunities for timber harvesting and a sustainable long-term timber supply.
2. Manage to avoid negative bear/human interactions.
3. Minimize habitat fragmentation.

Strategies:

- Identify all known traditional use, heritage and cultural sites within the RMZ and develop appropriate management strategies.
- Minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber.
- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
- Provide for the opportunity to aggregate cutblocks to create openings larger than 60 hectares, where environmentally sound and appropriate.
- Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks) to increase timber availability and reduce roading requirements.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters: bear behaviour: and the safest human behaviour while in bear country.
- Encourage appropriate timber harvesting systems to accommodate conservation of habitat for identified wildlife species.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to moose habitat.
- Minimize number of river crossings (e.g. winter crossings only). Utilize existing crossings whenever possible.
- Access planning to take into account connectivity corridors.
- An appropriate level of deactivation is required for all access no longer required for resource management. (Intent: minimize effects of roads on wildlife and wildlife habitat.)



General Resource Development Category - LaBiche RMZ

- Identify and map important fish & wildlife habitat and distributions.
- Identify and map aggregate (mineral) inventory and potential.
- 4. Identify and manage for the protection of traditional use, cultural and heritage sites.
 - Identify all known traditional use, cultural and heritage sites within the RMZ, and develop appropriate management strategies.

General Resource Development Category

2.2.3.4 Smith River Uplands Resource Management Zone

Area: 277,200 ha

This RMZ is located in the north western portion of the planning area between the Liard River and the Yukon Territory boundary. It is bounded by the Caribou plateau on the east and the Alaska Highway on the west. Two ecosections are represented: Liard Plain and a minor portion of Hyland Highland. Boreal White and Black Spruce, Spruce-Willow-Birch and Alpine Tundra are the biogeoclimatic zones. This zone has greater snow falls and colder temperatures than the zones to the south and east. The summers are generally warm and dry.

White spruce and aspen forest dominate on moderately well drained soils. There are also minor components of tamarack, cottonwood and birch. The primary disturbance type is forest fire with some wind and insect impacts. The timber in this zone was not included in the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Analysis. There is potential for future forest management activities, as currently forest development planning is occurring in the area.

There is medium to high natural gas potential.

The mineral assessment for this zone indicates significant potential for industrial minerals, fluorite and barite prospects; there has been a past producer of barite with remaining reserves.

Many small lakes with populations of sport fish dominate the landscapes of this zone. Lake trout, Arctic grayling, pike and bull trout are present in good numbers in most of the lakes and streams. The lakes are also important as nesting sites for swans. Raptors and many other species of smaller birds exist in the zone. There is also a variety of fur bearers present.

The area is relatively unroaded and supports limited recreation activities primarily associated with fishing in the lakes. As the timber resource is developed, access to more lakes could become available. Other activities which occur in site specific areas of the zone are hunting, camping, snowmobiling and ATV use.

Trapping is the primary activity that occurs on the land. There is also some commercial back country recreational activities associated with hunting and camping.

General Resource Development Category - Smith River Uplands RMZ

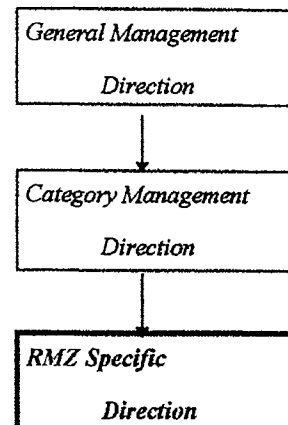
Within this RMZ there has been historic and current use by the Kaska Dena culture of the Lower Post First Nations. There are known cabin sites, traditional use, heritage and cultural sites with trapping, hunting and fishing values.

Objectives:

1. Manage to maintain visual quality around the various lakes.
2. Manage to maintain forest attributes for trumpeter swan nesting habitat.
3. Provide opportunities for timber harvesting and a sustainable long-term timber supply.
4. Minimize habitat fragmentation.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource activities.
- Encourage appropriate harvesting systems to accommodate identified wildlife species.
- Minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber.
- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
- Provide for the opportunity to aggregate cutblocks to create openings larger than 60 hectares, where environmentally sound and appropriate.
- Plan patch size, access, disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits identified in the biodiversity guide for this Natural Disturbance Type. Stand level biodiversity to focus on riparian areas and wildlife tree patches.
- Where appropriate, vary cutblock requirements (in accordance with Forest Practices code, the Green-up and Biodiversity guidebooks) to increase timber availability and reduce roading requirements.
- Identify and map caribou populations and habitats to provide information for more detailed planning processes.
- Access planning to take into account connectivity corridors.



General Resource Development Category - Smith River Uplands RMZ

5. Manage to avoid negative bear/human interactions.
 - To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
6. For areas adjacent to Smith River Ecological Reserve protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Encourage use of low impact seismic line development (something different than normal cat cut e.g. avoidance cut)
 - Minimize number of river crossings. Utilize existing crossings whenever possible.

General Resource Development Category

2.2.3.5 Tenaka Resource Management Zone

Area: 391,400 ha

This RMZ is located in the southern portion of the planning area between the Muskwa and Prophet rivers. It is characterized by plateau uplands that are intersected by rivers and streams with broad valleys. Two ecosections are represented: Muskwa Plateau and Fort Nelson Lowlands. The biogeoclimatic zones covering this zone are Boreal White and Black Spruce, with small amounts of Spruce-Willow-Birch and a very minor amount of Alpine Tundra.

The lowland areas have black spruce complexes with intermittent muskeg areas while the plateau's have extensive lodgepole pine forest types. Some of the merchantable timber species in this area include balsam, spruce, lodgepole pine, aspen and cottonwood. Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The various forest companies have a number of operating units identified in the area.

A small portion of this zone, south and east of Milo Lake, has been identified as having agricultural capability and is currently included within the Agricultural Land Reserve.

The zone has numerous existing oil and gas tenures with active exploration, development and infrastructure in place. The potential for additional gas reserves is medium to high.

The zone contains very diverse wildlife populations including large ungulates (moose, caribou, mountain goat, elk, whitetail and mule deer, and Stone's sheep) and predators (wolves, grizzly and black bears, coyotes and wolverine). Bald and golden eagles are found near the main rivers. The upper portions of the tributaries to the main rivers also have significant spawning and rearing habitat for many important fish species (Arctic grayling, bull trout, northern pike and mountain whitefish).

The area offers many recreational opportunities like hunting, hiking, boating, camping, and angling. Back country activities include existing guide outfitting and trapping tenures.

Within this RMZ there has been historic and current use by the Slavey, Cree, Beaver and Sekani cultures of the Fort Nelson and Prophet River First Nations. In this zone there are many known traditional use, heritage and

General Resource Development Category - Tenaka RMZ

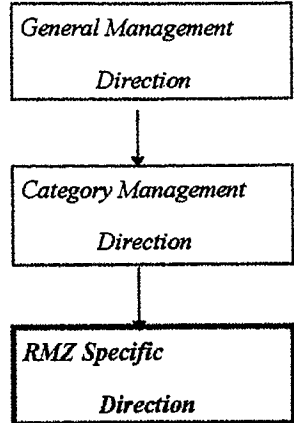
cultural sites, with trapping, hunting and fishing values. The known sites include pack and travel trails and traditional grazing areas.

Objectives

1. Provide opportunities for timber harvesting and a sustainable long-term timber supply.

Strategies:

- Minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber.
- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
- Where appropriate, vary cutblock adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity guidebooks) to increase timber availability and reduce roading requirements.
- Provide for the opportunity to aggregate cutblocks to create openings larger than 60 hectares, where environmentally sound and appropriate.
- Where significant concerns exist new access will be co-ordinated with access requirements of other resource users through access management planning. (The more detailed access management planning process will include public and stakeholder input on the issue of all weather access across the Muskwa and Prophet rivers.)
- Identify aggregate (mineral) inventory and potential
- Encourage use of low impact seismic line development (something different than normal cat cut, e.g. avoidance cut.)



General Resource Development Category
Major River Corridors Sub-Category

2.2.3.6 Beaver River Corridor Resource Management Zone

Area: 15,400 ha

The Beaver River, with its headwaters in the Yukon territory, is a large tributary of the Liard River. The land is in a transition zone and is dominated by low rolling hills, the Beaver River Valley is quite deep with a relatively narrow floor and rolling-broken side slopes. Fire and natural landslides dominate the disturbance regimes with alluvial influences adjacent to the river. This zone represents one ecosection: Liard Plain ; and one biogeoclimatic zone: Boreal White and Black Spruce.

Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The various forest companies have a number of operating units identified in the area. Merchantable timber includes balsam fir, white and black spruce, lodgepole pine, trembling aspen and balsam poplar. The potential for forest management activities in the zone is high.

Exploration for the oil and gas resources took place in this area during the 1950's. This zone contains limited oil and gas tenures centred on the Beaver River gas field. There has been past production from this area and the infrastructure is still in place. The Beaver field has been looked at recently with the intent of reactivating production. There has been exploration and development of the oil and gas resource in the adjacent RMZ (LaBiche), and the potential in this zone is medium to high. Aggregate exists in site specific locations within the zone and will be important for future infrastructure development.

The zone has some grizzly bear and healthy populations of moose. A small herd of wood buffalo live in the area adjacent to the Liard River. Many small birds live and nest in the zone. Fur bearers are important and exist in healthy populations. There are also populations of sport fish present in the river.

Trapping is carried out on existing traplines.

There is limited recreational potential along the Beaver River, these activities are mainly associated with boating and camping.

Within this RMZ there has been historic and current use by the Slavey, Cree and Beaver cultures of the Fort Liard First Nations. There is a high potential to find heritage and cultural sites, since the zone is a river corridor, the

General Resource Development Category

Major River Corridors Sub-category - Beaver River Corridor RMZ

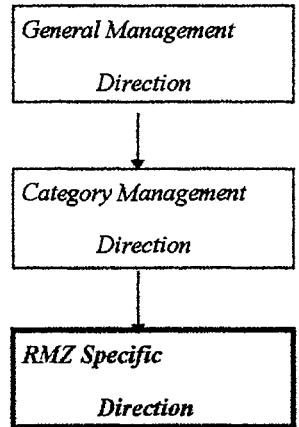
trapping, fishing and hunting values exist. Known traditional use sites include cabins and associated trails.

Objectives:

1. Manage to maintain forest attributes suitable for high capability grizzly bear habitat.
2. Manage to avoid negative bear/human interactions.
3. Manage for a component of Semi-Primitive Motorized. (ROS)
4. Provide for timber harvesting and forest management opportunities.

Strategies:

- Identify and map important fish & wildlife habitat for information for more detailed planning processes.
- Maintain integrity of island habitat.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
- Where significant access concerns exist new access will be co-ordinated with access requirements of other resource users through an access management planning process.
- Identify aggregate (mineral) inventory and potential.
- Quantify the Timber Harvesting Land Base and develop policies to reduce the loss to the Timber Harvesting Land Base to roads, landings, seismic lines, wellsites and other developments.
- Reforest (within appropriate time frames, as determined through landscape unit planning) all potentially productive brush, non-commercial deciduous, and Not Sufficiently Restocked (NSR) areas with ecologically and commercially suitable species while providing for critical wildlife habitat.
- Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.



General Resource Development Category

Major River Corridors Sub-category - Beaver River Corridor RMZ

4. Identify and provide for the protection of traditional use, heritage and cultural sites.
 - Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.

General Resource Development Category
Major River Corridors Sub-category

2.2.3.7 Liard River North Corridor Resource Management Zone

Area: 93,500 ha

This zone is located along the Liard River upstream of the Liard River Hot Springs Provincial Park to the boundary of the plan area. The corridor includes the Alaska Highway. The boundaries of the RMZ are based upon the view shed associated with the highway. Three ecosections are represented: Eastern Muskwa Ranges, Hyland Highland and Liard Plain. The biogeoclimatic zone is the Boreal White and Black Spruce with a minute amount of Spruce-Willow-Birch. Forest species include balsam poplar, white spruce, black spruce, lodgepole pine, minor components of tamarack and true fir, and aspen on relatively well drained soils. Extensive forest fire disturbance has occurred in the area and is the primary disturbance type, however alluvial disturbance occurs primarily along the lower benches and islands of the Liard River.

The river and tributaries contain approximately 20 species of fish that rely on the tributaries for spawning and rearing habitat. The zone also has habitat for grizzly bear, moose, elk, whitetail deer and smaller fur bearers. A variety of waterfowl are known to nest in the area; there are also passerines and shore birds. Bald eagles and other raptors are common. Bats are common around the hot springs.

The benches along the Liard River, as well as the upland, are very productive for growing timber. Timber in this zone did not contribute the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis or the 1994 Timber Supply Review in the Cassiar Timber Supply Area. The potential for forest management activities in the zone is high.

Some mining interests exist along the Liard River. This area borders on other zones that have medium to high potential for oil and gas. There is high geothermal energy potential associated with the hot springs. Because this RMZ is a major transportation corridor visual quality objectives are important, and industrial activities will be managed in a way that will minimize impacts on the VQO's.

Recreation activities are important in the zone. Tourism facilities are common along the highway, and the activities include wildlife viewing, hunting, fishing, boating and camping. The area known as Skook's landing is

General Resource Development Category

Major Rivers Corridors Sub-category - Liard River North RMZ

significant due to its use as a boat launch and provides access onto the Liard and Kechika rivers.

Traditionally used by First Nations the Liard River Hot Springs were noted by Robert Campbell, a HBC trader, when he travelled through the area in 1835. In the 1920's, John Smith homesteaded in the vicinity of the hot spring for about 10 years. In 1942, the US Army built a board walk and other structures to facilitate the use of the pools by personnel engaged in the building of the Alaska Highway.

There are historic trading posts dating back to the 1830's in the zone, the most significant being Fort Halkett, which has been identified as a Goal 2 Proposed Protected Area. The Liard river was one of the overland routes used during the gold rush to the Klondike in 1898.

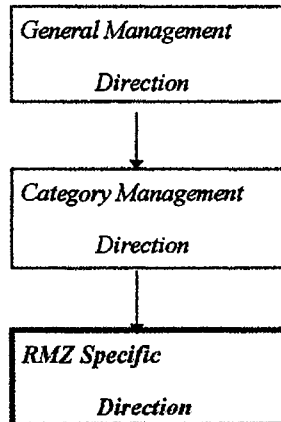
This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nations. This zone has high potential for archaeological, cultural and heritage resources. There are also known sites which include cabins and trails as well as hunting, fishing and trapping values. The Lower Liard Indian Reserve #3 is in this RMZ.

Objectives:

1. Manage for visual quality around Smith River Falls, Portage Brule Rapids, Whirlpool Canyon, Strawberry Rapids and Skook's Landing.
2. Reduce wildlife/vehicle interactions (i.e. caribou)
3. Promote recreational placer gold panning as a tourism element.
4. Manage to avoid negative bear/human interactions.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify the areas where the safety concerns are; MOTH and BCE to resolve at local level.
- Establish a recreational placer and panning reserve for use and enjoyment of the public and tourists.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.



General Resource Development Category

Major River Corridors Sub-category - Liard River North RMZ

5. For areas adjacent to Liard Hotsprings Provincial Park and Liard River Corridor protected areas, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Ensure industrial exploration and timber management activities are undertaken with sensitivity to wildlife habitat, visual, archaeological, heritage and cultural values.
 - Identify and map important habitat elements of red-and blue-listed and regionally significant species for consideration for Wildlife Habitat Areas.
 - Minimize and manage creation of new access in unroaded areas.
 - Minimize the impact of vegetation control near ecosystems, habitat types and plant species designated for long-term monitoring.
 - Identify and recommend a course of action for damaged or degraded habitat.
 - Encourage new operations to utilize existing private holdings where appropriate.
 - Promote recreational activities that enhance highway-based tourism with emphasis on destination activities.
6. Manage for a component of Roaded Resource (Alaska Highway)
 - Identify and map aggregate (mineral) inventory and potential.
7. Provide for timber harvesting and forest management opportunities.
 - Quantify the Timber Harvesting Land Base and develop policies to reduce the loss to the Timber Harvesting Land Base to roads, landings, seismic lines, wellsites and other developments.
 - Reforest (within appropriate time frames, as determined through landscape unit planning) all potentially productive brush, non-commercial deciduous, and Not Sufficiently Restocked (NSR) areas with ecologically and commercially suitable species while providing for critical wildlife habitat.
 - Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.

General Resource Development Category

Major River Corridors Sub-category - Liard River North RMZ

- Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
8. Identify and provide for the protection of traditional use, heritage and cultural sites.
- Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.

General Resource Development Category
Major River Corridors Sub-category

2.2.3.8 Petitot/Hay Rivers Corridor Resource Management Zone

Area:	80,100 ha	
	Petitot Corridor	46,000 ha
	Hay Corridor	34,100 ha

These two river valleys lie within the Taiga Plain. This is very flat low-lying terrain with extensive wetlands, slow moving streams and numerous lakes and potholes. Soils are dominantly crysols with areas of discontinuous permafrost. Muskeg predominates with extensive areas of wet land and black spruce bogs. Jack pine associations can be found in some of the more well drained areas. The Petitot River represents the Petitot Plain ecosection and the Hay River represents the Fort Nelson Lowlands ecosection. Both river corridors are covered by one biogeoclimatic zone, the Boreal White and Black Spruce.

Both river corridors and the RMZ they lie in (Etsho) are extensively covered by existing oil and gas tenures and infrastructure. Activity in the area has seen steady growth, with proposals to upgrade existing infrastructure such as all weather roaded access. The area is currently producing both oil and natural gas with medium potential for the discovery of new reserves. Due to the extremely wet nature of the area, access has been limited to winter operations.

Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous Fort Nelson Timber Supply Area Analysis. Merchantable timber includes balsam, spruce, lodgepole pine and deciduous species. There is potential for forest management activities in the zone.

Densities of moose, caribou and deer are lower in this zone than the areas to the south. The area is traversed by very important migratory routes for all birds except passerines. Other wildlife found include wolf, black bear, coyote, wolverine and many of the smaller fur bearers such as martin, fisher, fox, beaver, mink and otter. The fisheries values in the two rivers are quite high. The main sport fish species found are northern pike, walleye, inconnu, grayling and whitefish.

Recreational opportunities within the zone are seasonal and limited by poor access. Boating, hunting, fishing and camping are the major activities. There are few established campsites in the zone.

General Resource Development Category

Major River Corridors Sub-category - Petitot/Hay Rivers Corridor RMZ

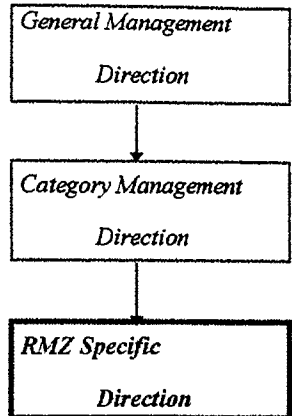
Within this RMZ there has been historic and current use by the Slavey, Cree, and Beaver cultures of the Fort Nelson, Fort Liard and Dene Tha First Nations. This zone has high potential for archaeological, cultural and heritage resources. There are known traditional use, heritage and cultural sites, and trapping, hunting and fishing values.

Objectives:

1. For areas adjacent to Thinatea and Hay River protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
2. Maintain integrity of island habitat.
3. Identify and provide for the protection of traditional use, heritage and cultural sites.

Strategies:

- Low development level campgrounds and small group sites are compatible with the setting.
- Identify and map existing fish distributions.
- Minimize and manage creation of new access in unroaded areas.
- Where significant access concerns exist new access will be co-ordinated with access requirements of other resource users through subsequent planning.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to riparian values
- Minimize number of river crossings. Utilize existing crossings whenever practical.
- Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.
- Identify and map aggregate inventory and potential.



General Resource Development Category
Major River Corridors Sub-category

2.2.3.9 River Corridors East Resource Management zone

Area: 293,200 ha

Fort Nelson River North/Liard	165,900 ha
Prophet River	75,400 ha
Fort Nelson River South	37,200 ha
Liard River - Scatter Cr. North	14,700 ha

This RMZ includes a number of the major river valleys within the plan area, these are the Prophet, the majority of the Fort Nelson, and a portion of the Liard rivers. Numerous ecosections are represented : Etsho Plateau (Liard and Fort Nelson rivers), Fort Nelson Lowlands (Fort Nelson, Muskwa and Prophet rivers) and Muskwa Plateau (Liard and Prophet rivers). The majority of the river corridors are covered by one biogeoclimatic zone: Boreal White and Black Spruce.

Oil and gas exploration and development activities occur within these corridors including existing, active tenured parcels of land. The river valleys fall within and intersect, areas of proven and medium to high potential for oil and gas reserves. There is also high potential for sand, gravel and industrial minerals.

The riparian areas in the valley bottoms are one of the most highly productive sites for growing timber. The forests in these areas are generally dense with areas of large older, mature stands. All the merchantable species can be found along the various river valleys. Timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The various forest companies have a number of operating units identified in the area. The potential for forest management activities in the zone is high; there has been past activity in this RMZ.

The riparian areas and river valleys are also very important for many wildlife species, especially moose, other large ungulates, fish and many bird species. The forest stands in the valleys are generally dense and moist with understories dominated by shrubs and forbs. This makes them excellent habitats for migratory songbirds, many of which are red- and blue-listed species. Coarse woody debris from large fallen trees and snags and seasonal flooding provide areas for fur bearers and bats, stabilize streambanks and provide protective cover for fish. The riparian habitat provides high capability winter habitat for moose, elk, deer and caribou, and also provides corridors for migration and daily travel.

General Resource Development Category

Major River Corridors Sub-category - River Corridors East RMZ

Within the river valley's of this zone, much of the valley bottoms are lands that have agricultural potential, and some are designated under the Agricultural Land Reserve.

Access management and control is an important objective for this zone. An emphasis has been placed on minimizing road construction and activities that would negatively impact these riparian values.

Water quality is also very important as many of these rivers are water sources for communities, such as Fort Nelson.

Due to their larger size and ease of access, these rivers are used as major recreation corridors in the plan area. All types of boating activities, as well as hiking, fishing, camping, picnicking and hunting are common along the length of many of the rivers. Many of the areas that this RMZ covers has high scenic/visual qualities. Proper management of activities in this vast area will ensure that the values that make the large rivers so appealing will not be lost.

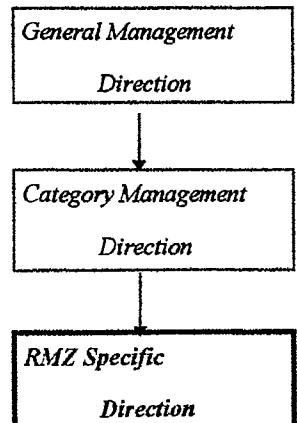
This zone has historic and current use by the Slavey, Cree, Beaver, Sikani and Kaska Dena cultures of the Fort Nelson, Prophet River and Fort Liard First Nations. This zone has high potential for archaeological, cultural and heritage resources. There are numerous known cabin locations archaeological, cultural and heritage sites recorded, as well as traditional use areas such as grazing areas and trails. These sites are clustered mainly along the Nelson, Liard and Prophet rivers. Some of the known sites include: the village of Francois at the confluence of Sandy Creek and Liard River; Nelson Forks at the confluence of Capot-Blanc Creek and Fort Nelson River; LaJolie Butte at the confluence of Ella Creek and Liard River; Hudson Bay Company Trading Post #2 located 90 Kilometres upstream on the Nelson River; Kiwigana (Deer) River Indian Reserve located at the confluence of the Kiwigana and Nelson rivers; Snake River Indian Reserve located at the confluence of the Snake and Nelson rivers; and Fontas River Indian Reserve located at the confluence of the Fontas and Nelson rivers.

Objectives:

1. Manage for visual quality from the rivers.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.



General Resource Development Category

Major River Corridors Sub-category - River Corridors East RMZ

- | | |
|---|---|
| 2. Manage to avoid negative bear/human interactions. | <ul style="list-style-type: none">• To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country. |
| 3. Maintain the structural and functional integrity of the watercourse/waterbody. | <ul style="list-style-type: none">• Ensure industrial exploration activities are undertaken with sensitivity to riparian values• Minimize and manage creation of new access in unroaded areas.
(Access management planning process will include public and stakeholder input on the issue of all weather access across the Muskwa and Prophet rivers.)• Revegetate disturbed areas. Use local, native plant species, where appropriate and possible. |
| 4. Maintain the structural and functional integrity of riparian areas. | <ul style="list-style-type: none">• Maintain integrity of island habitat.• Establish appropriate buffers for important habitat elements.• Minimize roads parallel to rivers and reduce roads in Riparian Management Areas where possible.• Minimize the impact of vegetation control near ecosystems, habitat types and plant species designated for long-term monitoring.• Encourage use of low impact seismic line development (something other than cat cut e.g. hand cut) |
| 5. Provide for timber harvesting and forest management opportunities. | <ul style="list-style-type: none">• Quantify the Timber Harvesting Land Base and develop policies to reduce the loss to the Timber Harvesting Land Base to roads, landings, seismic lines, wellsites and other developments.• Reforest (within appropriate time frames, as determined through landscape unit planning) all potentially productive brush, non-commercial deciduous, and Not Sufficiently Restocked (NSR) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. |

General Resource Development Category

Major River Corridors Sub-category - River Corridors East RMZ

- Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
 - Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
- 6. Identify and provide for the protection of traditional use, heritage and cultural sites.
 - Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.
- 7. Identify and manage significant Heritage trails.
 - Develop a management strategy for significant heritage trails.

2.2.3.9.1. Liard - Scatter River Subzone

A subzone has been identified on the Liard River, from Scatter River downstream to the 'big bend'.

The intent of identifying this subzone is to give direction to a more detailed strategic planning process required as a follow-up to this plan. The follow-up planning process has to address issues of conservation of river valley, old growth, braided stream channels and integrity of the islands, together with development of the forest resource. The follow-up planning process will identify if the legislation, regulation and guidelines in the Forest Practices Code of BC is adequate or if additional management strategies need to be developed. The follow-up planning process will include all stakeholders and members of the public who have an interest or concern in the area.

This subzone has historic and current use by the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post, Fort Liard and Fort Nelson First Nations. There is high potential for archaeological, cultural and heritage resources in this subzone.

General Resource Development Category
Major River Corridors sub-category

2.2.3.10 Smith/Coal Rivers Corridor Resource Management Zone

Area:	50,400 ha	
	Smith Corridor	20,200 ha
	Coal Corridor	30,200 ha

The Smith and Coal rivers are two separate corridors in the Smith Uplands RMZ. Both these rivers are moderately sized tributaries of the Liard River and have their headwaters in the Yukon Territory. Both rivers flow south within relatively narrow valleys that cut through rolling country with low hills. Both the river corridors are representative of one ecosection: Liard Plain, and both are within the Boreal White and Black Spruce biogeoclimatic zone. Both valleys have experienced extensive disturbance by fire in the 1980's.

Both the Smith and Coal rivers contain healthy populations of sport fish, primarily bull trout and Arctic grayling. Spawning and rearing habitats are important in these zones. Moose are present in both valleys and there have been occasional reports of grizzly bear.

There is medium to high natural gas potential.

There are coal deposits which could be developed in the future, along the Coal River. The mineral assessment shows a potential for industrial minerals in this RMZ.

There are some timber values in the zones in the lower reaches of the rivers. Both valleys have extensive areas of early seral forest with lodgepole pine, white spruce aspen and black spruce regeneration. The soils in these valleys are relatively well drained and the potential for production of forest crops is high. There are some mature to old growth stands within these valleys, however, immature forest is the dominate feature. The primary contribution of these valleys to potential timber supply is through this immature forest. The timber in the Smith River Corridor was not included in the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. The area is being considered in the short and long term for forest operations. The Coal River Corridor is within the Cassiar Forest District, the timber resource not identified in the Timber Harvesting Land Base in the 1994 Timber Supply Review for the Cassiar Timber Supply Area.

General Resource Development Category

Major River Corridors Sub-category - Smith/Coal Rivers Corridor RMZ

The Smith River Corridor contains one of the few back country roads that is suitable for motor vehicle access. The road leads up to the old military site and airstrip, and also provides access to West and Crooked lakes for recreational purposes. Camping, fishing, boating and hunting are the primary activities in the zone. Special features to note are: the warm pool near Crooked Lake; and the Smith River Falls (located in the Liard River North Corridor RMZ and identified as a Goal 2 Proposed Protected Area).

Within the Coal River Corridor there is no roaded access, but recreational opportunities similar to those in the Smith River Corridor exist. The Coal River Corridor is important for kayaking opportunities due to the class of river. Special features include the canyons and the Coal River Falls.

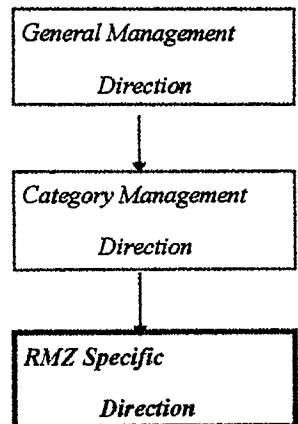
This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nations. High potential for archaeological, cultural and heritage resources exist in this zone. Traditional use, cultural and heritage sites, such as cabins and associated trails, exist in the zone along with significant hunting, trapping and fishing values.

Objectives:

1. Manage for visual quality from the rivers.
2. Manage for a component of Semi-Primitive Motorized. (ROS)
3. Maintain the water-based recreation routes in the Coal River Corridor
4. For areas adjacent to Portage Brule Rapids, Smith River/Fort Halkett, and Smith River Ecological Reserve protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
5. Manage to avoid negative bear/human interactions.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Access planning to take into account connectivity corridors.
- Identify and map caribou populations and habitats to provide information for more detailed planning processes.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour, and the safest human behaviour while in bear country.



General Resource Development Category

Major River Corridors Sub-category - Smith/Coal Rivers Corridor RMZ

6. Provide for timber harvesting and forest management opportunities.
 - Quantify the Timber Harvesting Land Base and develop policies to reduce the loss to the Timber Harvesting Land Base to roads, landings, seismic lines, wellsites and other developments.
 - Reforest (within appropriate time frames, as determined through landscape unit planning) all potentially productive brush, non-commercial deciduous, and Not Sufficiently Restocked (NSR) areas with ecologically and commercially suitable species while providing for critical wildlife habitat.
 - Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
 - Promptly and aggressively reforest and manage cutovers and wildfires, within the Timber Harvesting Land Base, to maintain sustainable timber harvest levels.
7. Identify and provide for the protection of traditional use, heritage and cultural sites.
 - Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.

2.2.4. Muskwa-Kechika Special Management Category of Resource Management Zones

Intent:

- **Resource development can proceed while minimizing impacts on other resource values.**
- **Ensure that the wilderness characteristics and wildlife habitat are maintained over time while allowing resource development, including roaded resource development.**

A portion of this large pristine area falls within the planning area. The Muskwa-Kechika is situated where extensive boreal plains and muskeg of the east meet the mountains to the west. It is one of the few remaining large areas, with few roads, south of the 60th parallel.

The significance of the Muskwa-Kechika is that it supports a diverse number of large mammals in population densities of global importance. Few other places in the world match the features of the Muskwa-Kechika in terms of species groupings, remoteness, minimal development and low human population.

Over the course of the geologic history of the Muskwa-Kechika the variety of rock sequences and the complex faulting and mountain building periods all contributed to the formation of rich energy and mineral resources throughout the area. While there is some geographic overlap of the distribution of energy and mineral resources, in general oil and gas resources dominate the eastern portion of the area while a variety of metallic and non-metallic resources can be found in the central and western portions of the area.

Due to the fact that the Muskwa-Kechika area is of international significance for wildlife and wilderness resources; and that it has significant mineral, natural gas values with development potential, as well portions of the area contain immature and mature timber; the LRMP WG is recommending that some type of formal designation be placed over this area. The intention is to give certainty to both the environmental and industrial interests regarding management within the RMZs that make up the Muskwa-Kechika; certainty for industry regarding the opportunity for development to attract investors to British Columbia who are willing to undertake the high risks and expense of subsurface exploration and development. Also certainty to the environmental and conservation interests regarding the management of all developments.

The management intent in the resource management zones is to ensure wilderness characteristics and wildlife habitat are maintained over time while allowing resource development, including roaded resource development.

Resource development activities, such as logging, mineral exploration and mining, oil and gas exploration and development are acceptable activities in the Muskwa-Kechika Special Management Category of Resource Management Zones. Such activities are subject to provincial guidelines and standards and will be carried out in a manner which respects sensitive natural values. The long-term objective is to return the lands to their natural state, as much as possible, after development activity is completed.

The Muskwa-Kechika Special Management Category Resource Management Zones are shown in Figure 5, and listed below:

**8 Mile/Sulpher
Aeroplane
Churchill
Fishing
Moodie
Muskwa West
Prophet
Rabbit
Rainbow
Sandpile
Stone Mountain
Terminal**

The Muskwa-Kechika Special Resource Development Category has a sub-category to describe the major river corridors.

Intent:

- **To manage for all the important resource values within the river corridors such as archaeological, cultural, energy, heritage, recreational, riparian, scenic, timber and wildlife habitat.**
- **To recognize that these areas are generally more sensitive to disturbance than the upland sites; additional precautions are necessary to maintain ecological integrity of the system.**

The Muskwa-Kechika Special Management Major River Corridors Sub-category Resource Management Zones are:

**Kechika River Corridor
Muskwa River Corridor
Toad River Corridor
Turnagain/Dall Rivers Corridor**

Muskwa-Kechika Special Management Category

A portion of Fishing, and all of Aeroplane, Moodie, Rabbit, Rainbow, Sandpile, Kechika River Corridor, and Turnagain/Dall Rivers Corridor are within the Cassiar Forest District (Prince Rupert Forest Region), even though they have been planned for in the Fort Nelson LRMP.

The following objectives and strategies apply to all the RMZs in the Muskwa-Kechika Special Management Category and the Major River Corridors Sub-category, (the second level of management directions). Where a specific objective or strategy is not listed for a resource value the first level of management direction (given by the General Management Direction (Section 2.1)) applies. In addition each RMZ may have site specific objectives and strategies listed to accommodate specific resource values and concerns (the third level of management direction).

Objectives:

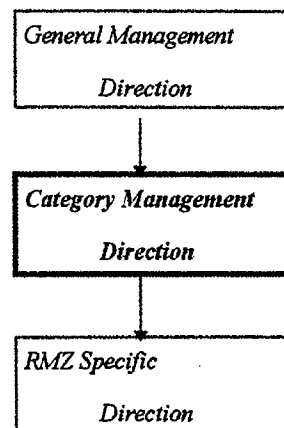
1. Ensure Commercial Backcountry Recreation activities are consistent with the objectives and strategies of the RMZ, and maintain a balance with public recreation and other use.
2. Licensed and authorized resource users will have access to all the RMZs. Access will be managed to provide a variety of recreational experiences and to conserve other resource values over time. Resource users will be licensed or authorized by the appropriate line agency (e.g. Ministry of Environment, Land and Parks, Ministry of Employment and Investment or Ministry of Forests).
3. Provide opportunities to develop access while ensuring that this activity will be undertaken in a way that is sensitive to the non-extractive resources.

Strategies:

- An inventory of existing and potential CBR opportunities is required to guide the allocation. CBR activities must be consistent with:
 - acceptable limits of use;
 - environmental sustainability;
 - greatest benefit to local community, region and province;
 - equitable forage allocation between commercial and non-commercial use; and
 - equitable allocation of suitable campsites.

- Motorized access (including recreational motorized activities) will be managed consistent with the intent of the Muskwa-Kechika Access Management Area Regulation (BC Reg. 218/94) as determined through a subsequent planning process.

A more detailed planning process may identify high fish and wildlife values, or other significant features (e.g. licks, hot springs). Where there is a significant risk that these resources may suffer an unacceptable level of negative impact, access may be limited, restricted, or on a site-specific basis, prohibited (e.g. avoid critical habitat components and special features where identified). However, where an access route is prohibited alternative



Muskwa-Kechika Special Management Category

routes will be identified.

- Minimize and manage creation of new access in unroaded areas.
 - New access to mine sites will be managed with access control points.
 - For new access developments, maintain the pre-existing levels of public motorized access.
 - At the end of the development cycle, the area must be returned, as closely as possible and practical, to its natural state. (Intent: to minimize effects on wildlife and wildlife habitat).
 - Operational plans in this area will include information on the deactivation of all access routes proposed.
 - For mineral exploration and development, road building into currently unroaded areas will be subject to review and approval through established procedures and all applicable legislation.
4. The opportunities for the appropriate range of recreation experiences, values and uses will be maintained and in some cases enhanced.
- Low development level campgrounds and small group sites are compatible with the setting.
 - Ensure public and commercial recreation activities do not exceed acceptable limits of use.
 - Identify and map important fish and wildlife habitat for information for more detailed planning processes.
 - ATV travel will be on designated routes only. (The routes to be designated for ATV use will be determined through a more detailed planning process which will invite public input.)

CATEGORIES OF RESOURCE MANAGEMENT ZONES

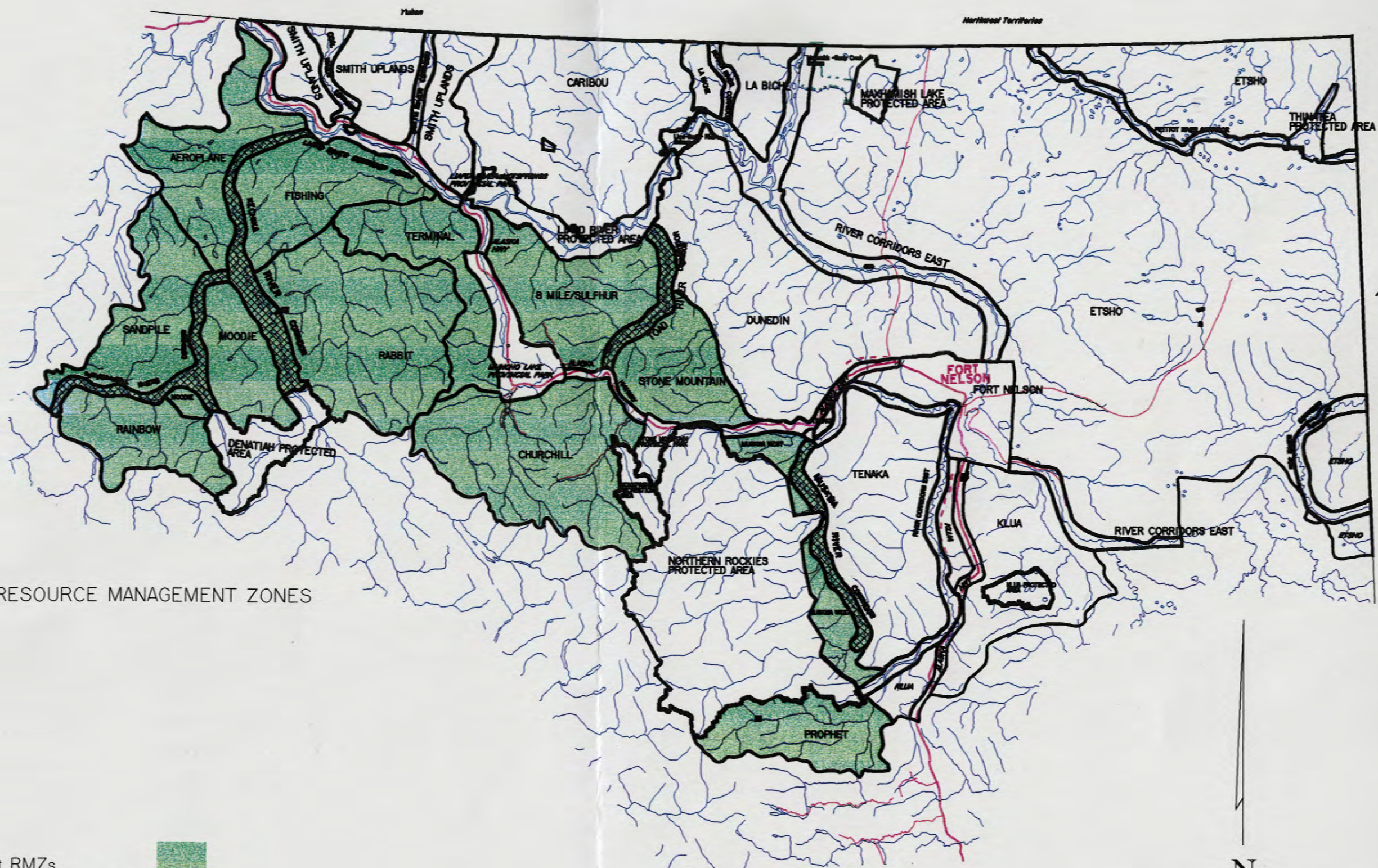
Special Management RMZs
Major River Corridors



FORT NELSON LRMP

SPECIAL MANAGEMENT CATEGORY OF RESOURCE MANAGEMENT ZONES

Scale 1:1,640,000
(Approximate)



Muskwa-Kechika Special Management Category

2.2.4.1 8 Mile/Sulphur Resource Management Zone

Area: 249,500 ha

This RMZ is located in the middle of the planning area bounded on the south and east by the Alaska Highway, the north the Liard River Corridor Proposed Protected Area, and the west the Toad River Corridor. Most of this zone is mountainous, the northern extension of the Stone Range. The most north westerly portion includes the Sentinel Range. Two ecosections are represented: Eastern Muskwa Ranges and Muskwa Foothills. Three biogeoclimatic zones cover the RMZ: Alpine Tundra predominates with Spruce-Willow-Birch and a minute amount of Boreal White and Black Spruce.

In this zone the rain shadow east of the Rocky Mountains provides low snow depths and frequent chinooks that influence the vegetation and result in abundant wildlife, and frequent fires.

This RMZ has large active floodplains and has been subjected to frequent disturbance from forest and range fires which has resulted in an exceptionally diverse vegetative mosaic. The results of this are a high density and diversity of mammals and exceptional viewsapes. The RMZ is a part of a larger intact predator prey system and is home to caribou, Stone's sheep, moose, elk, grizzly and black bear, mountain goat, and wolves.

This RMZ is virtually unroaded. There are a few lakes in the zone and the back country recreation opportunities include activities such as wildlife viewing, hunting, horseback riding, hiking, boating, camping and angling. Guide outfitters and other commercial back country operators provide services.

The mineral assessment for this zone shows significant industrial mineral potential. There are three developed prospects of barite with established reserves. Although this zone is largely unexplored for oil and gas, the eastern portion falls within the high potential areas of the western Canada Sedimentary Basin. Future prospects for oil and gas discovery are considered to be medium to high. There is potential for development of the timber resource along the west side of the Toad River.

This zone has historic and current use by the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post and Fort Nelson First Nations. Traditional use, heritage and cultural sites; and fishing, hunting and trapping values are present in the zone.

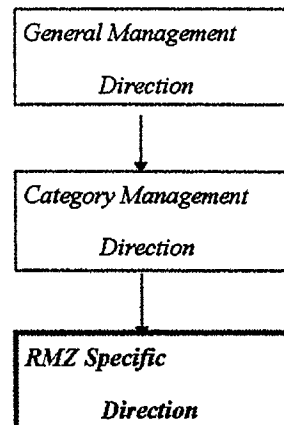
Muskwa-Kechika Special Management Category - 8 Mile/Sulphur RMZ

Objectives:

1. Maintain visual quality from Nonda Tower.
2. Manage to maintain forest attributes suitable for habitat for elk, Stone's sheep, grizzly and moose.
3. Manage to maintain forest attributes suitable for high capability grizzly bear habitat.
4. Manage to avoid negative bear/human interactions.
5. For areas adjacent to Muncho Lake Provincial Park and Liard River Corridor protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
6. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS)

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource activities.
- Ensure industrial exploration activities are undertaken with sensitivity to elk, Stone's sheep, grizzly bear and moose habitat.
- Manage wildlife habitat enhancement through subsequent planning processes.
- Access planning will take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Encourage use of low impact seismic. (Something different than normal cat cut e.g. hand cut).
- To minimize negative bear/human interactions, public education will focus on informing the public on dealing with bear/human encounters, bear behaviour and the safest human behaviour while in bear country.
- Promote recreational activities that enhance highway-based tourism with emphasis on destination activities
- Recurring aircraft use and access will be sensitive to RMZ values and resource user activities.



Muskwa-Kechika Special Management Category

2.2.4.2 Aeroplane Lake Resource Management Zone

Area: 206,300 ha

This RMZ lies on the north west edge of the plan area. The entire RMZ is in the Cassiar Forest District. It is bounded by the Liard River on the north, the Kechika River on the east and the Sandpile RMZ on the south. It is a broad rolling lowland with a cold sub-Arctic climate. The zone is representative of the Liard Plain Ecoregion and is covered by three biogeoclimatic zones. Boreal White and Black Spruce covers over half the zone, most of the remainder is covered by Spruce-Willow-Birch and a very small amount in the higher elevations is Alpine Tundra.

Lodgepole pine is the dominant tree species in this zone with trembling aspen, black and white spruce, and willow occupying the rest of the landscape. The timber in this zone contributed to the Timber Harvesting Land Base identified in the 1994 Timber Supply Review for the Cassiar Timber Supply Area, however development potential of this resource is low.

This RMZ is located outside the Western Sedimentary Basin. There is no oil and gas tenures in the zone, and the potential is considered low.

The mineral assessment for the RMZ indicates significant metallic and industrial mineral potential. There is one prospect.

The zone is a significant wintering area for caribou which migrate from the Kechika Mountains and other surrounding areas. This RMZ is part of a larger intact predator prey system and is home to moose, caribou, grizzly bear, wolves, and Stone's sheep, as well as significant numbers of fur bearers. The numerous lakes in the zone are valuable for the various fish species which include lake trout, northern pike and Arctic grayling.

Hunting and fishing are the primary recreational activities. There are numerous lakes, the larger ones are Aeroplane, Twin Island and Birches, and many unnamed smaller ones which have the potential to be utilized for future recreational opportunities. The management intent for this area is directed toward restricting the use of access routes by recreationalists. This is to minimize the impacts on wildlife, especially the caribou populations, and wilderness values.

Special features in the zone include the historic Davie Trail which has significant heritage value.

Muskwa-Kechika Special Management Category - Aeroplane Lake RMZ

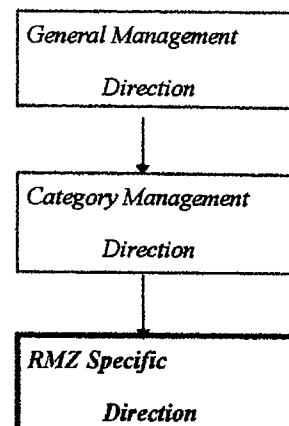
This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nations. Traditional use, heritage and cultural sites, as well as hunting, fishing and trapping values exist throughout. A portion of the Davie Trail, which is an important part of a traditional travel corridor, is in this RMZ.

Objectives:

1. Manage for visual quality around the lakes.
2. Manage to maintain forest attributes suitable for habitat for caribou and Stone's sheep.
3. Minimize habitat fragmentation.
4. Manage for a component of Semi-Primitive Non-motorized (ROS).
5. Maintain timber harvesting and forest management opportunities.
6. Identify and manage significant Heritage trails.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map caribou populations and habitats for information into more detailed planning processes.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to caribou and Stone's sheep habitat.
- Encourage appropriate harvesting systems to accommodate identified wildlife species.
- Access planning to take into account connectivity corridors.
- Encourage the use of low impact seismic (something other than normal cat cut e.g. hand cut).
- Recurring aircraft use and access will be sensitive to RMZ values and resource user activities.
- Establish general forest production targets for landscape units with the RMZ consistent with low intensity forest management regimes.
- Locate and map trail locations.
- Develop a management strategy for significant heritage trails.



Muskwa-Kechika Special Management Category

2.2.4.3 Churchill Resource Management Zone

Area: 384,900 ha

This RMZ is located in the middle western part of the planning area. It is bounded on the north by the Alaska Highway and Muncho Lake Provincial Park, on the east by Stone Mountain provincial Park and Wokkash Recreation Area, and on the south by the height of land which is the planning area boundary. This zone is very mountainous and is representative of one ecosection: Eastern Muskwa Ranges. Three biogeoclimatic zones cover this RMZ, two thirds of the area being covered by Alpine Tundra, a very small amount by Boreal White and Black Spruce and the rest by Spruce-Willow-Birch. The RMZ includes the Racing River and upper Toad River valleys and is dominated by the Battle of Britain Range with major peaks like Mount Churchill and Mount Dieppe to 2859 metres in elevation.

The lower elevations in the zone are forested, have large active floodplains and frequent fire disturbances. These types of disturbances provide for very diverse mosaic of vegetation, which results in exceptional viewsapes and an abundant diversity of large mammals. The zone is part of a larger intact predator prey system and is home to caribou, Stone's sheep, moose, elk grizzly and black bear, mountain goat, and wolves. The fish species present in the rivers and streams include bull trout, whitefish and Arctic grayling.

Virtually unroaded, this zone provides a number of back country recreation opportunities including wildlife viewing, hunting, horseback riding, hiking, boating, camping and angling. Guide outfitters and other commercial back country operators provide services.

This zone has high potential for mine development. Some mining activity has occurred in the past (Davies-Keays and Churchill Copper mine sites). The mineral assessment for this RMZ indicates industrial mineral potential and significant metallic potential with numerous copper showings. There are three developed prospects and one past producer with significant reserves remaining. Although this zone is largely unexplored for oil and gas, the eastern portion falls within high potential areas of the Western Canada Sedimentary Basin. Future prospects for oil and gas discovery are considered to be medium to high. There is also limited potential for timber resources.

This zone has historic and current use by the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post and Fort Nelson First Nations. Traditional use, archaeological, heritage and cultural sites exist throughout as well as

Muskwa-Kechika Special Management Category - Churchill RMZ

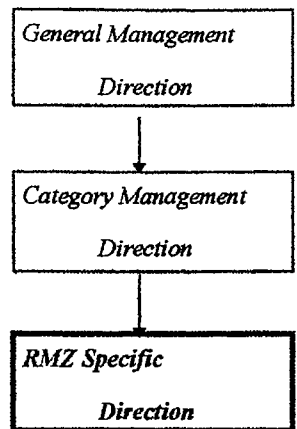
fishing, hunting and trapping values. Portions of this zone has significant use by the McDonald family.

Objectives:

1. Maintain visual quality from the Toad and Racing rivers
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, caribou and goats.
3. Minimize habitat fragmentation.
4. For areas adjacent to Stone Mountain and Muncho Lake provincial parks, Northern Rocky Mountains and Wokkash protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation
5. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS).
6. Identify and provide for the protection of traditional use, cultural and heritage sites.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map caribou populations and habitats for information for more detailed planning processes.
- Identify and map important fish & wildlife habitat for information for more detailed planning processes.
- Ensure industrial exploration activities are undertaken with sensitivity to Stone's sheep, caribou and goat habitat.
- Encourage use of low impact seismic line development (something different than normal cat cut e.g. hand cut).
- Identify and recommend a course of action for damaged or degraded habitat.
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Maintain existing waterbased recreation opportunities.
- Promote recreational activities that enhance highway-based tourism with emphasis on destination activities.
- Recurring aircraft use and access to be sensitive to RMZ values and resource user activities.
- Identify all known traditional use, cultural and heritage sites within the RMZ and develop appropriate management strategies.



Muskwa-Kechika Special Management Category

2.2.4.4 Fishing Resource Management Zone

Area: 212,700 ha

This RMZ lies in the north west portion of the plan area. It is bounded by the Liard River on the north, the Kechika River on the west and the Rabbit and Terminal RMZs on the south. This zone is split between the Fort Nelson and Cassiar Forest Districts. The terrain is upland with rolling hills and relatively low relief. There are several large lakes with moderately large rivers and creeks associated with them. It is representative of one ecosection: the Liard Plain. The Boreal White and Black Spruce biogeoclimatic zone covers the RMZ.

The forest is dominated by lodgepole pine, white and black spruce, trembling aspen and balsam poplar on relatively well drained soils. The timber producing lands in this zone did not contribute to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis or the 1994 Timber Supply Review in the Cassiar Timber Supply Area. The potential for timber resource development exists.

The potential for mineral resources is moderate and there are existing mineral tenures in the zone. The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential. There are two prospects. The eastern portion of this zone lies within the sedimentary basin. The potential for oil and gas is considered low.

The lakes contain healthy populations of sport fish especially lake trout, bull trout and Arctic grayling. Moose, caribou, grizzly bear and small fur bearers also occur in the zone. Waterfowl and small song birds live throughout the area, raptors and cavity nesters are present as well.

Recreational activities include fishing, hunting and camping. There is potential for snowmobiling and ATV touring in this unit as industrial activity opens up access. The management intent for this area is directed toward restricting the use of access routes by recreationalists. This is to minimize the impacts on wildlife, especially the caribou populations, and wilderness values.

Trapping and operators offering back country recreational activities are the primary commercial operations in this zone.

Muskwa-Kechika Special Management Category - Fishing RMZ

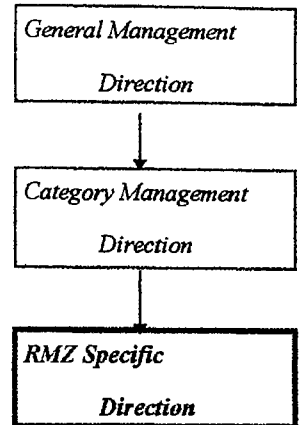
This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nation. Traditional use such as cabins and associated trails, archaeological, cultural and heritage sites exist throughout, as well as trapping, hunting and fishing values.

Objectives:

1. Manage visual quality around the lakes.
2. Manage to maintain forest attributes suitable for habitat for grizzly bear, caribou and moose habitat.
3. Manage to avoid negative bear/human interactions.
4. Maintain natural stand attributes.
5. Maintain timber harvesting and forest management opportunities.
6. Manage for a component of Semi-Primitive Non-Motorized. (ROS)

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map caribou populations and habitats for information for more detailed planning processes.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to grizzly bear, caribou and moose habitat.
- Encourage appropriate harvesting systems to accommodate identified wildlife species
- Encourage the use of low impact seismic line development (something other than normal cat cut e.g. hand cut).
- To minimize negative bear/human interactions, public education will focus on informing the public on dealing with bear/human encounters, bear behaviour and the safest human behaviour while in bear country.
- Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.
- Establish general forest production target for landscape units within the RMZ consistent with low intensity forest management regimes.



Muskwa-Kechika Special Management Category

2.2.4.5 Moodie Resource Management Zone

Area: 142,400 ha

This zone is located in the western portion of the planning area and is bounded by the Kechika and Turnagain rivers. There are glacial fluvial deposits throughout this zone. Outwash plains are common with small lakes scattered throughout. The area shows the generalized geology of folded sedimentary rocks. The major peak is Mount Winston at 2358 metres. The area has dominantly brunisolic soils. This whole RMZ falls within the Cassiar Forest District. The zone is representative of the Kechika Mountains ecosection and includes three biogeoclimatic zones: Boreal White and Black Spruce, Spruce-Willow-Birch and Alpine Tundra.

Logging has not occurred within this zone except for the construction of facilities used by trappers, miners and guide outfitters. Lower elevations of this zone are characterized by open forests of primarily white spruce and subalpine fir; upper elevations are dominated by deciduous shrubs including birch and willows. In some high, wide valleys, cold air collects, resulting in a mosaic of shrubs, grassland, and wetlands on valley floors below a band of forest on the valley sides.

The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential.

The area is part of a large intact predator/prey system with moose, mountain goat, Stone's sheep, grizzly bear and wolves being common throughout the zone. The area is notable for winter range for caribou and is significant for Stone Sheep and fur bearers. A small herd of Rocky Mountain elk utilizes parts of this zone. Fish species include grayling, northern pike, bull trout, rainbow trout, whitefish, and lake trout.

The remote nature of the area enhances its recreational activity; big game hunting is the primary recreational activity. Fishing would be considered to be the next major activity with scenery viewing and hiking a future opportunity.

This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nation. Traditional use such as cabins and associated trails, archaeological, cultural and heritage sites exist throughout, as well as trapping, hunting and fishing values.

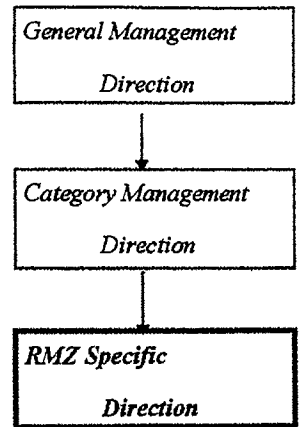
Muskwa-Kechika Special Management Category - Moodie RMZ

Objectives:

1. Manage visual quality from rivers and Moodie Lakes.
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, elk and goats.
3. Minimize habitat fragmentation
4. For areas adjacent to the Denetiah protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
5. Manage for a component of Semi-Primitive Non-Motorized and Primitive. (ROS)

Strategies:

- Where established VQO's will guided incidental timber cutting associated with other resource user activities.
- Ensure industrial exploration activities are undertaken with sensitivity to stone sheep, grizzly and elk habitat.
- Manage for wildlife habitat enhancement through subsequent planning processes.
- Identify and recommend a course of action for damaged or degraded habitat.
- Manage access to avoid disturbance within ungulate winter habitat and minimize disturbance near winter habitat.
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.



Muskwa-Kechika Special Management Category

2.2.4.6 Muskwa West Resource Management Zone

Area: 146,800 ha

This zone is located in the western portion of the plan area between the Muskwa River Corridor and the Northern Rocky Mountains Proposed Protected Area. It is characterized by subdued mountains, isolated by wide valleys, and is the foothills of the Rocky Mountains. The zone lies in the rain shadow of the Rocky Mountains to the west and is commonly influenced by cold arctic air in the winter. Cool wet summers and dry warm winters with low snow accumulations are typical. The east/west valley's typical to this zone are low moisture areas, drier than the mountains in-between them. One ecosection is represented: Muskwa Plateau. Dominantly brunisolic soils there are two main biogeoclimatic zones: Boreal White and Black Spruce and Spruce-Willow-Birch.

This zone is generally unroaded and undeveloped with large forest openings and natural sub-alpine complexes. Merchantable timber in this zone includes balsam, spruce, lodgepole pine aspen and cottonwood species. Portions of the zone contributed to the Timber Harvesting Land Base as identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis. Potential to develop the timber resource exists.

Some oil and gas tenures are found on the eastern edge of this zone and exploration has been done throughout much of the area. Future prospects for oil and gas discovery are medium to high and the area falls within a high to very high potential portion of the sedimentary basin.

The mineral assessment for this RMZ indicates a potential for industrial minerals.

The zone contains very diverse wildlife populations. These include: large ungulates, such as moose, caribou, mountain goat, elk, whitetail and mule deer, and Stone's sheep; and predators such as wolves, grizzly and black bears, coyotes and wolverine. This zone has high productivity for forage species. Bald and golden eagles are found near the main rivers. The upper portions of the tributaries to the rivers have significant spawning and rearing habitat for arctic grayling, bull trout, northern pike and mountain whitefish. A large proportion of the spawning habitat occurs within this zone due to the impassable steep gradients and waterfalls upstream.

This zone offers many recreational opportunities for hunting, hiking angling and camping. A viewscape in this area may include steep rolling hills with

Muskwa-Kechika Special Management Category - Muskwa West RMZ

grassy uplands and high tundra areas. The major river corridors provide access into the area for many recreational activities.

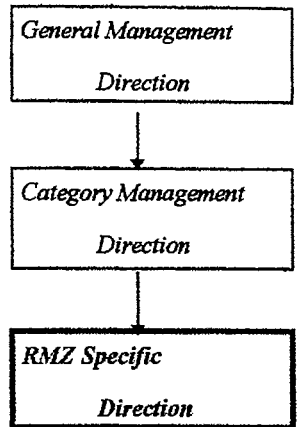
This zone has historic and current use by the Slavey, Cree, Beaver and Sekani cultures of the Fort Nelson and Prophet River First Nations. There is potential for traditional use, archaeological, cultural and heritage sites, and there are existing trapping, fishing and hunting values.

Objectives:

1. Manage visual quality from the rivers.
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, elk, caribou, moose and goats.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
 - Ensure industrial exploration and timber management activities are undertaken with sensitivity to elk, moose, Stone's sheep and caribou habitat.
 - Monitor and maintain sustainable populations of designated species (fish or wildlife).
 - Encourage use of low impact seismic line development (something different than normal cat cut e.g. hand cut).
 - Encourage appropriate harvesting systems to accommodate designated wildlife species.
 - Encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization.
 - More detailed strategic and operational plans should consider buffers for important habitat elements.
 - Manage access to avoid disturbance within ungulate winter habitat and minimize disturbance near winter habitat.
 - Minimize roads parallel to rivers and reduce roads in Riparian Management Areas where possible.
 - Access planning to take into account connectivity corridors.
 - Minimize and manage creation of new access in unroaded areas.
3. Minimize habitat fragmentation.



Muskwa-Kechika Special Management Category - Muskwa West RMZ

4. For areas adjacent to the Northern Rocky Mountains protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Recurring aircraft use and access will be sensitive to RMZ values and resource user activities.
 - New access will be co-ordinated with access requirements of other resource users through lower level planning.
5. Maintain timber harvesting and forest management opportunities.
 - Establish general forest production targets for landscape units within the RMZ consistent with low intensity forest management regimes.
 - Plan patch size, access and disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits identified in the biodiversity guide for this Natural Disturbance Type. Stand level biodiversity to focus on riparian areas and wildlife tree patches.
 - Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
6. Manage for a component of Semi-Primitive Non-Motorized (ROS).

Muskwa-Kechika Special Management Category

2.2.4.7 Prophet Resource Management Zone

Area: 157,500 ha

This zone is located in the most southerly unit in the planning area. It is bounded on the west, south and east by the height of land which is also the boundary of the plan area, and on the north by the Northern Rocky Mountains Proposed Protected Area. The zone includes the Prophet River valley and watershed. Two ecosections are represented: Eastern Muskwa Ranges and Muskwa Foothills. A small portion of the area in the river valleys is covered by Boreal White and Black Spruce, the rest is covered by Spruce-Willow-Birch in the mid elevations and Alpine Tundra in the peaks. The zone is mostly in the rain shadow east of the Rocky Mountains providing the low snow depths and frequent chinooks that influence the vegetation and result in abundant wildlife and frequent fire disturbance.

The mineral assessment for this RMZ indicates potential for metallic and significant potential for industrial minerals. There are numerous showings and three prospects. Future prospects for oil and gas discovery are considered high and the area falls within a high to very high potential portion of the sedimentary basin. Subsurface resource development, in this area, will be done in an efficient and rational manner to minimize surface disturbances and to maximize subsurface resource utilization. There has been some seismic work done along with some limited exploratory drilling. The gas potential for this zone is high. There is potential for forest resource development in the eastern low elevation portion of the Prophet River valley.

The lower elevations are forested with a diverse vegetative mosaic. This provides for an abundant diversity of large mammals as well as exceptional views. This RMZ is a part of a larger intact predator prey system and is home to large numbers of Stone's sheep, moose, caribou, elk, grizzly and black bear, mountain goat, and wolves. The more abundant fish species that occur in the rivers and streams include bull trout, whitefish and Arctic grayling.

This RMZ is unroaded and provides opportunities for many back country recreation activities such as hunting, camping, hiking, wildlife viewing, horseback riding, boating and angling. Commercial back country recreation operators provide visitor services in this zone.

Some special feature in this zone include the Eastern Rockies High Trail, a traditional route for horse travel, and the Bedeaux Trail cross through the

Muskwa-Kechika Special Management Category - Prophet RMZ

middle of the zone. The Prophet River hot springs, a Goal 2 Proposed Protected Area is also within this zone.

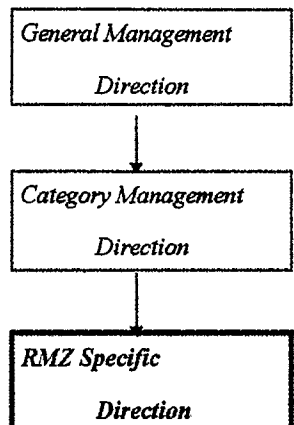
This zone has historic and current use by the Sekani, Slavey, Cree and Beaver cultures of the Prophet River and halfway First Nations. There are know traditional use, archaeological, cultural and heritage sites throughout.

Objectives:

1. Manage visual quality from the rivers and Bedeaux and High trails.
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, elk, caribou, moose and goats.
3. For areas adjacent to the Northern Rocky Mountains protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
4. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS)

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to Stone's sheep, elk, caribou, moose and goat habitat
- Monitor and maintain sustainable populations of designated species (fish or wildlife).
- Manage for wildlife habitat enhancement through subsequent planning processes.
- More detailed strategic and operational plans should consider buffers for important habitat elements.
- Manage access to avoid disturbance within ungulate winter habitat and minimize disturbance near winter habitat.
- Encourage use of low impact seismic line development (something different than normal cat cut, e.g. hand cut)
- Encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization.
- Maintain existing waterbased recreation opportunities.
- Recurring aircraft use and access will be sensitive to RMZ values and resource user activities.



Muskwa-Kechika Special Management Category - Prophet RMZ

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| 5. Minimize habitat fragmentation. | <ul style="list-style-type: none">• New access will be co-ordinated with access requirements of other resource users through lower level planning.• Minimize roads parallel to rivers and reduce roads in Riparian Management Areas where possible.• The determination of linear development, including roaded development, will be through current review and approval processes and legislation. A more detailed planning process may identify high fish and wildlife values, or other significant features (e.g. licks, hot springs). Where there is a significant risk that these resources may suffer an unacceptable level of negative impact, access may be limited, restricted, or on a site-specific basis, prohibited (e.g. avoid critical habitat components and special features where identified). However, where an access route is prohibited alternative routes will be identified.
Roads and development sites will be reclaimed by the tenure holder when the activities are completed and the road and/or site is no longer needed. |
| 6. Maintain timber harvesting and forest management opportunities. | <ul style="list-style-type: none">• Establish general forest production targets for landscape units within the RMZ consistent with low intensity forest management regime. |
| 7. Identify and manage significant Heritage trails. | <ul style="list-style-type: none">• Locate and map trails with historical significance.• Develop a management strategy for significant heritage trails. |

Muskwa-Kechika Special Management Category

2.2.4.8 Rabbit RMZ

Area: 419,800 ha

This zone is located in the western portion of the plan area and is completely within the Cassiar Forest District. The area is part of the Northern Rocky Mountains with glacial fluvial deposits throughout. Outwash plains are common interspersed with small lakes. The area shows the generalized geology of folded sedimentary rocks. The major peaks are Terminus Mountain at 1910 metres and Gataga Mountain at 2281 metres. The Terminus area has unique weather that is warmer and has less snow than normal for the surrounding area. The area has dominantly brunisolic soils. This zone represents one ecosection: Kechika Mountains. Three biogeoclimatic zones cover the RMZ: Boreal White and Black Spruce, Spruce-Willow-Birch and Alpine Tundra. The area has had large natural fires and some man caused fires set for the purpose of wildlife habitat enhancement.

There is potential for forest resource development in the lower elevation portions of the river valleys. The majority of the area is completely unroaded and undeveloped.

The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential.

The area has large intact predator prey relationships with moose, caribou, mountain goat, Stone's sheep, grizzly bear and wolves being common throughout the valleys. The area is notable winter range for caribou and is significant for Stone Sheep and fur bearers. There is also some use by expanding elk herds. All major bird groups are represented in the area, the Rocky Mountain Trench being significant for migrating waterfowl. The fish, in the area represent species from the Columbia, Mississippi, Arctic and Pacific river drainage's. Fish species include lake trout, northern pike, bull trout, rainbow trout, whitefish, grayling, and burbot.

The remote nature of the area enhances its recreational potential, with big game hunting the primary recreational activity, fishing secondary and viewing and hiking.

This zone has historic and current use by the Kaska Dena culture from the Lower Post First Nations. There is potential for archaeological, traditional use, cultural and heritage sites as well as hunting, fishing and trapping values.

Muskwa-Kechika Special Management Category - Rabbit RMZ

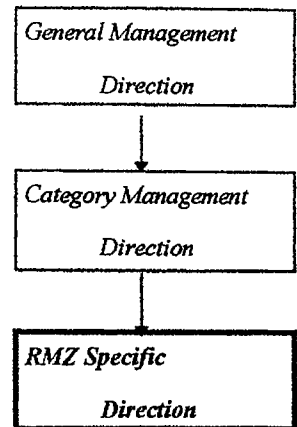
There are old cabins and trails associated with trapping activity in the area.

Objectives:

1. Manage visual quality in the Kechika Valley
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, caribou and grizzly bear.
3. Minimize habitat fragmentation.
4. For areas adjacent to the Denetiah protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
5. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS)

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource activities.
- Identify and map caribou populations and habitats for information for more detailed planning processes.
- Ensure industrial exploration activities are undertaken with sensitivity to Stone's sheep, caribou and grizzly habitat.
- Manage for wildlife habitat enhancement through subsequent planning processes.
- Manage access to avoid disturbance within ungulate winter habitat and minimize disturbance near winter habitat.
- Access planning to take into account connectivity corridors
- Minimize and manage creation of new access in unroaded areas.
- Maintain existing waterbased recreation opportunities.



Muskwa-Kechika Special Management Category

2.2.4.9 Rainbow Resource Management Zone

Area: 162,000 ha

This RMZ is located in the most western portion of the plan area. This area contains the highest mountains within the Cassiar Ranges, Sharktooth Mountain at 2347 metres. the western boundary of the RMZ is the most westerly point of the plan area and follows from the height of land at the south end of the western Rainbow lake and then along the west shoreline of Rainbow lake to Kutcho Creek. Kutcho Creek is the boundary to the point where it intersects with the Turnagain corridor., The north boundary is the Turnagain River corridor and the east boundary is the Denetiah Proposed Protected Area to its intersection with Moodie RMZ which is common. This zone represents one ecosection: Cassiar Ranges. The Alpine Tundra biogeoclimatic zone covers most of the zone, with a small portion of Spruce-Willow-Birch. This area has not had the extensive fire disturbance that other zones have had, and provides good representation of the two biogeoclimatic zones.

The majority of this zone is unroaded.

The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential.

The zone has a wildlife population which includes moose, goat, Stone's sheep, caribou grizzly bear and wolves. Rainbow Lakes have an established population of rainbow trout. The fish in this zone originate from the Liard River drainage and the other species include lake trout, northern pike, bull trout, whitefish, and grayling.

The remote nature of this area enhances its opportunity for back country recreation activities, with big game hunting being the primary activity and fishing the secondary. There is potential for other activities such as hiking, camping and wildlife viewing.

This zone has historic and current use by the Kaska Dena culture of the Lower Post first Nations and the Tahltan First Nations people. There is potential for archaeological, traditional use, cultural and heritage sites. There are trapping, fishing and hunting values.

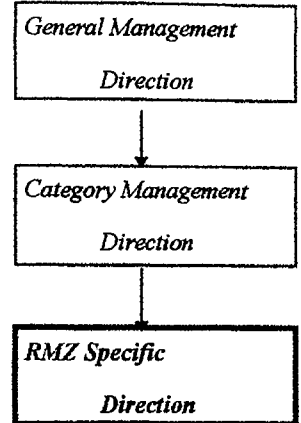
Muskwa-Kechika Special Management Category - Rainbow RMZ

Objectives:

1. Manage visual quality from and around the various lakes.
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, goat, moose and grizzly bear.
3. Minimize habitat fragmentation.
4. For areas adjacent to the Denetiah protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
5. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS)

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map important fish & wildlife habitat for information for more detailed planning processes.
- Identify and recommend a course of action for damaged or degraded habitat.
- Ensure industrial exploration activities are undertaken with sensitivity to Stone's sheep, goat and grizzly habitat.
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Maintain existing waterbased recreation opportunities.



Muskwa-Kechika Special Management Category

2.2.4.10 Sandpile Resource Management Zone

Area: 224,700 ha

This area is made up of high mountains in the rain shadow of the Cassiar Ranges to the west. It is bordered by the Turnagain River corridor on the south and east, and the planning area boundary on the west.

This area is a portion of the Kechika Mountains ecosection, it is covered by two biogeoclimatic zones: Spruce-willow-Birch and Alpine Tundra.

The area is part of the Northern Rocky Mountains with glacial fluvial deposits throughout. Outwash plains are common interspersed with small lakes. The Four Brothers Mountain Range shows the generalized geology of folded sedimentary rocks. The area has dominantly brunisolic soils.

There is potential for forest resource development in the lower elevation portions of the river valleys. The majority of the area is completely unroaded and undeveloped.

The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential. There are two prospects.

The area has had large natural fires with some man caused fires for the purpose of wildlife habitat enhancement.

The area has large intact predator prey relationships with moose, caribou, mountain goat, Stone's sheep, grizzly bear and wolves being common throughout the valleys. The area is notable for winter range for caribou and is significant for Stone Sheep and fur bearers. There is also some use by the expanding elk herds. The fish are representative of species found in the Columbia, Mississippi, Arctic and Pacific drainage's. Fish species include lake trout, northern pike, bull trout, rainbow trout, whitefish and grayling.

The remote nature of the area enhances its recreational potential with big game hunting the primary recreational activity, fishing secondary and viewing and hiking.

This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nations and the Tahltan First Nations people. There is potential for archaeological, traditional use, cultural and heritage sites. There are trapping, fishing and hunting values.

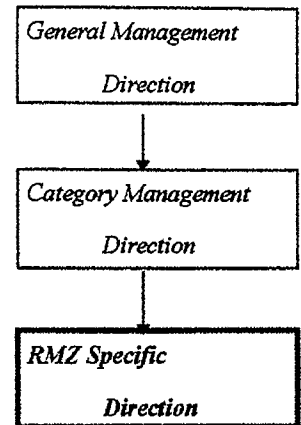
Muskwa-Kechika Special Management Category - Sandpile RMZ

Objectives:

1. Manage visual quality in around the various lakes, Four Brother Range and Horse Ranch Range.
2. Minimize habitat fragmentation.
3. Manage to avoid negative bear/human interactions.
4. Manage for a component of Semi-Primitive Motorized. (ROS) The intent is not to impact on the use of boats on the lakes.
5. Maintain timber harvesting and forest management opportunities.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Monitor and maintain sustainable populations of designated species (fish or wildlife)
- Ensure industrial exploration activities are undertaken with sensitivity to Stone's sheep, goat, elk and caribou habitat.
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Manage for wildlife habitat enhancement through subsequent planning processes.
- To minimize negative bear/human interactions, public education will focus on informing the public on dealing with bear/human encounters, bear behaviour and the safest human behaviour while in bear country.
- Establish general forest production targets for landscape units within the RMZ consistent with low intensity forest management regimes.



Muskwa-Kechika Special Management Category

2.2.4.11 Stone Mountain Resource Management Zone

Area: 161,000 ha

This zone is located in the middle of the planning area and is bounded by the Alaska Highway on the south and east, the Toad River Corridor. The terrain in this zone is predominantly mountains of the Stone Range. Three ecosections are represented: Eastern Muskwa Ranges, Muskwa Foothills and the Muskwa Plateau. Three biogeoclimatic zones cover this RMZ, Boreal White and Black Spruce and Spruce-Willow-Birch in the valleys and side slopes and Alpine Tundra at the high elevations. This zone is in the rain shadow east of the Rocky Mountains, that provides for low snow depths and frequent chinooks that influence vegetation and result in abundant wildlife and frequent fire disturbance.

Mostly forested this zone has active floodplains on even the smaller streams. This together with the frequent fire history provides a diversity of vegetation. There is also a high density and diversity of large mammals present, such as caribou, Stone's sheep, moose, elk, grizzly and black bear and wolves. This zone is part of a larger intact predator prey system.

The mineral assessment for this RMZ indicates potential for industrial minerals. There has been very little exploration and presently no tenures for oil and gas. This zone lies within the western edge of the sedimentary basin and future prospects for oil and gas discovery are medium to high. There is potential for forest development along the eastern edge.

Virtually unroaded, but with a few lakes this zone has opportunities for recreational activities such as wildlife viewing, hunting, horseback riding, hiking and camping. Commercial back country operators provide some visitor services.

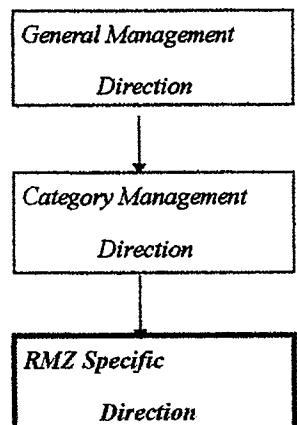
This zone has historic and current use by the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post and Fort Nelson First Nations people. There is potential for archaeological, traditional use, cultural and heritage sites. There are trapping, fishing and hunting values.

Objectives:

1. Manage visual quality from the Alaska Highway

Strategies:

Where established VQO's will guide incidental timber cutting associated with other resource user activities.



Muskwa-Kechika Special Management Category - Stone Mountain RMZ

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| 2. Manage to maintain forest attributes suitable for high elevation caribou habitat. | <ul style="list-style-type: none"> Identify the important high elevation caribou winter habitat areas for consideration as Wildlife Habitat Areas. |
| 3. Manage to avoid negative bear/human interactions. | <ul style="list-style-type: none"> To minimize negative bear/human interactions, public education will focus on informing the public on dealing with bear/human encounters, bear behaviour and the safest human behaviour while in bear country. |
| 4. Manage to maintain forest attributes suitable for habitat for Stone's sheep, caribou, goat and moose. | <ul style="list-style-type: none"> Ensure industrial exploration and timber management activities are undertaken with sensitivity to grizzly, Stone's sheep, caribou, goat and moose habitat. |
| 5. Manage to maintain forest attributes suitable for high capability grizzly bear habitat. | <ul style="list-style-type: none"> Encourage appropriate harvesting systems to accommodate identified wildlife species. Encourage use of low impact seismic. (Something different than normal cat cut e.g. hand cut). Manage for wildlife habitat enhancement through subsequent planning processes. Identify and recommend a course of action for damaged or degraded habitat. Revegetate disturbed areas. Use local, native plant species, where appropriate and possible. |
| 6. Minimize habitat fragmentation. | <ul style="list-style-type: none"> Access planning to take into account connectivity corridors. |
| 7. For areas adjacent to the Stone Mountain Park, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation. | <ul style="list-style-type: none"> Promote recreational activities that enhance highway-based tourism with emphasis on destination activities. |
| 8. Manage for a component of Semi-Primitive Non-Motorized and Primitive. (ROS) | <ul style="list-style-type: none"> Recurring aircraft use and access will be sensitive to RMZ values and resource user activities. |
| 9. Maintain timber harvesting and forest management opportunities. | <ul style="list-style-type: none"> Establish general forest production targets for landscape units within the RMZ consistent with low intensity forest management regimes. Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber. |

Muskwa-Kechika Special Management Category

2.2.4.12 Terminal Resource Management Zone

Area: 180,000 ha

The area is part of the Northern Rocky Mountains with glacial fluvial deposits throughout. Outwash plains are common with interspersed small lakes. The area shows the generalized geology of folded sedimentary rocks. The area has dominantly brunisolic soils. This zone represents two ecosections: Eastern Muskwa Ranges and Kechika Mountains and is covered by three biogeoclimatic zones: Boreal White and Black Spruce in very small amount in the lowest elevations, Spruce-Willow-Birch and Alpine Tundra in the highest elevations.

Merchantable species include balsam fir, white and black spruce, and lodgepole pine. There is potential for forest resource development in the lower elevation portions of the river valleys on the northern edge of the zone. The majority of the area is completely unroaded and undeveloped. The area has had large natural fires with some man caused fires for the purpose of wildlife habitat enhancement.

The mineral assessment for this RMZ indicates significant metallic and industrial mineral potential.

The area has large intact predator prey relationships with moose, caribou, mountain goat, Stone's sheep, grizzly bear and wolves being common throughout the valleys. The area is notable for winter range for caribou and is significant for Stone Sheep and fur bearers. There is also some use by the expanding elk herds. The fish in the area are representative of the Columbia, Mississippi, Arctic and Pacific drainage's. Fish species include lake trout, northern pike, bull trout, whitefish, and grayling.

The remote nature of this area enhances its opportunity for back country recreation activities, with big game hunting being the primary activity and fishing the secondary. There is potential for other activities such as hiking, camping and wildlife viewing.

This zone has historic and current use by the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post and Fort Nelson First Nations people. There is potential for archaeological, traditional use, cultural and heritage sites. There are trapping, fishing and hunting values.

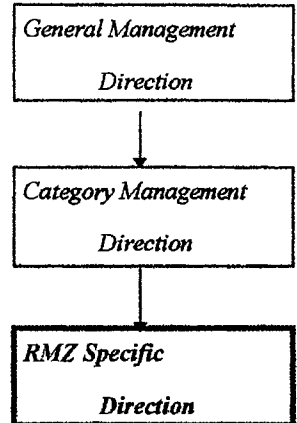
Muskwa-Kechika Special Management Category - Terminal RMZ

Objectives:

1. Manage visual quality around the various lakes.
2. Manage to maintain forest attributes suitable for habitat for caribou, Stone's sheep and grizzly bear.
3. Minimize habitat fragmentation.
4. For areas adjacent to Muncho Lake Provincial Park, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
5. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS)
6. Maintain timber harvesting and forest management opportunities.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Identify and map caribou populations and habitats for information for more detailed planning process.
- Identify and map important fish & wildlife habitat for information for more detailed planning process.
- Ensure industrial exploration activities are undertaken with sensitivity to stone sheep, caribou and grizzly habitat.
- Encourage use of low impact seismic line development (something different than normal cat cut e.g., hand cut).
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Maintain existing waterbased recreation opportunities.
- Establish general forest production targets for landscape units within the RMZ consistent with low intensity forest management regimes.



Muskwa-Kechika Special Management Corridors

Major River Corridors Sub-Category

2.2.4.13 Kechika River Corridor Resource Management Zone

Area: 130,400 ha

This zone is located in the north western part of the plan area. The corridor includes the wide river valley and immediate escarpments of the Kechika River. In this section the river runs mainly south to north. This portion of the river is the northern end of the Rocky Mountain Trench, and the river valley is the separation between the Kechika and Muskwa ranges. This zone is covered by through three ecosections: Liard Plain, Kechika Mountains and Cassiar Ranges. The majority of the area is covered by one biogeoclimatic zone: Boreal White and Black Spruce with some of the escarpments covered by Spruce-Willow-Birch. This zone is influenced by rain shadows and has lower snow depths and frequent chinooks that create a unique climatic variant for it's latitude.

This RMZ is a significant transportation and access corridor for adjacent RMZs which show high metallic and industrial mineral potential. The timber in this zone did not contribute to the Timber Harvesting Land Base identified in the 1994 Timber Supply Review in the Cassiar Timber Supply Area. The potential for timber resource development exists.

Mostly forested this zone has large active floodplains, and some fire disturbance; this results in a diverse vegetation mosaic. The RMZ is a part of a larger intact predator prey system and is home to Stone's sheep, moose, elk, grizzly and black bear, mountain goat and wolves. The floodplains and riparian areas are listed as high capability for ungulates and grizzly and black bear; they are also important staging and migration areas for a variety of mammals and birds including eagles and sandhill cranes. The dominant fish species found in the river include bull trout, whitefish and Arctic grayling. Lake trout are found in some of the lakes within the RMZ.

Currently unroaded, this zone provided opportunities for back country recreation activities such as river boating, hunting, horseback riding, camping and angling. The river corridor is used heavily as an access route to the other RMZs and has high scenic values. Commercial back country operators provide visitor services.

This zone has high historic and current use by the Kaska Dena culture of the Lower Post First Nations. There is high potential for traditional use, archaeological, cultural and heritage sites. Important as a traditional travel corridor there are a number of historic trails including the Davie Trail.

Muskwa-Kechika Special Management Corridors

Major River Corridors Sub-Category - Kechika River Corridor

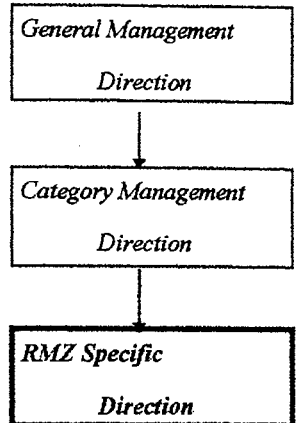
RMZ

Objectives:

1. Manage visual quality from the Kechika River.
2. Manage to maintain forest attributes for habitat for Stone's sheep, goats, elk and grizzly bear.
3. Manage to avoid negative bear/human interactions.
4. Minimize habitat fragmentation.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.
- Ensure industrial exploration and timber management activities are undertaken with sensitivity to wildlife habitat, visual, riparian and recreational values.
- Identify and map important fish & wildlife habitat.
- Maintain integrity of island habitat.
- Encourage appropriate harvesting systems to accommodate identified wildlife species.
- Manage for wildlife habitat enhancement through operational plans.
- Recurring aircraft and river boat use and access will be sensitive to RMZ values and resource user activities.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
- Minimize number of river crossings Utilize existing crossings whenever possible and practical.
- Encourage the use of low impact seismic line development (something different than normal cat cut e.g. hand cut).
- Access planning to take into account connectivity corridors.
- Minimize and manage creation of new access in unroaded areas.
- Minimize the impact of vegetation control near ecosystems, habitat types and plant species designated for long-term monitoring.



Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category - Kechika River Corridor
RMZ

- Identify and recommend a course of action for damaged and degraded habitat.
 - Revegetate disturbed areas. Use local native plant species, where appropriate and possible.
- 5. For areas adjacent to Denetiah protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Low development level campgrounds and small group sites are compatible with the setting.
- 6. Manage for components of Semi-Primitive Non-Motorized and Primitive. (ROS) The intent is not to impact on river boat traffic.
 - Promote recreational activities which are water-based; and the use of rivers as access and recreational corridors.
 - Maintain the levels of public motorized access that existed prior to any new access developments.
 - Ensure industrial exploration activities are undertaken with sensitivity to riparian values.
- 7. Maintain timber harvesting and forest management opportunities.
 - Establish general forest production targets for landscape units within the RMZ consistent with low forest management regimes.
- 8. Identify and provide for the protection of traditional use, archaeological, cultural and heritage sites.
 - Identify all known sites within the RMZ and develop appropriate management strategies.
- 9. Identify and manage significant heritage trails.
 - Locate and map trails with historical significance.
 - Develop a management strategy for significant heritage trails.

Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category

2.2.4.14 Muskwa River Corridor Resource Management Zone

Area: 43,200 ha

This zone is located along the east side of the Muskwa West RMZ in the southern portion of the plan area. The corridor includes the river valley and immediate escarpments of the Muskwa river. This section of the river runs from south to north so the RMZ is a long linear corridor. The zone represents one ecosection: Muskwa Plateau; and the entire RMZ is covered by one biogeoclimatic zone: Boreal White and Black Spruce.

Within this RMZ there is high potential for gravel and other mineral resources as well as energy resources. There are already a number of existing seismic lines and well sites. There is potential to develop the forest resource and some of the timber within this zone contributed to the Timber Harvesting Land Base identified in the 1992 Coniferous and 1993 Deciduous Fort Nelson Timber Supply Area Analysis.

Mostly forested, this zone has large active floodplains and frequent disturbance from fire which results in a diverse vegetative mosaic. The RMZ is part of a larger intact predator prey system and is home to caribou, moose, elk, grizzly and black bear, and wolves. Both the floodplains and riparian areas are high capability for grizzly bear habitat and important staging and migration areas for a variety of mammals and birds such as eagles and sandhill cranes. The most abundant fish species include bull trout, whitefish and Arctic grayling.

Currently unroaded this zone provides opportunities for back country recreation activities such as hunting, horseback riding, camping and boating. There is ATV use on the east side of the Muskwa River. The river is used as a major access route to the adjacent RMZ and has high scenic values.

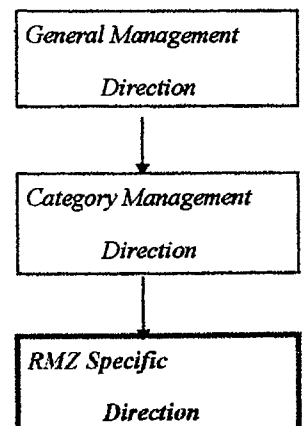
This zone has historic and current use by the Sekani, Slavey, Cree and Beaver cultures of the Prophet River and Fort Nelson First Nations. There is high potential for archaeological, traditional use, cultural and heritage sites. There are pack trails throughout and trapping, hunting and fishing values.

Objectives:

1. Manage visual quality from the Muskwa River.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with resource user activities.



Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category - Muskwa River Corridor
RMZ

2. Maintain the structural and functional integrity of the watercourse/waterbody.
 - Ensure industrial exploration and timber management activities are undertaken with sensitivity to wildlife habitat, visual and recreational values.
 - Minimize roads parallel to rivers and reduce roads in Riparian Management Areas where possible.
 - New access to mine sites will be managed with Special Use Permit (SUP) elements that control access (i.e. elements of Eskay and Muddy Lake roads SUPs).
 - Minimize and manage creation of new access in unroaded areas.
 - Identify and map aggregate (mineral) inventory and potential.
 - Identify and map important fish & wildlife habitat.
 - Identify and map important habitat elements of red-and blue-listed and regionally significant species for consideration for Wildlife Habitat Areas.
 - Identify and map migration routes.
 - Minimize the impact of vegetation control near ecosystems, habitat types and plant species designated for long-term monitoring.
 - Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.
3. For areas adjacent to the Northern Rocky Mountains protected area, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Low development level campgrounds and small group sites are compatible with the setting.
4. Manage for components of Semi-Primitive Motorized and Semi-Primitive Non-Motorized. (ROS)
 - Maintain the levels of public motorized access that existed prior to any new access developments.

Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category - Muskwa River Corridor
RMZ

- Recurring aircraft and river boat use and access will be sensitive to RMZ values and resource user activities.
 - Ensure industrial exploration activities are undertaken with sensitivity to riparian values.
- 6. Maintain timber harvesting and forest management opportunities.
 - Establish general forest production targets for landscape units within the RMZ consistent with low forest management regimes.
 - Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
- 7. Identify and provide for the protection of traditional use, archaeological, cultural and heritage sites.
 - Identify all known sites within the RMZ and develop appropriate management strategies.
- 8. Identify and manage significant heritage trails.
 - Locate and map trails with historical significance.
 - Develop a management strategy for significant heritage trails.

Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category

2.2.4.15 Toad River Corridor Resource Management Zone

Area: 39,300 ha

This RMZ includes the Toad River valley and immediate escarpments. In this section the river runs basically from south to north, and separates Stone Mountain from 8 Mile/Sulphur RMZ. At the north end of this corridor is the Liard River Corridor Proposed Protected Area. The river flows through two ecosections: Muskwa Foothills and Muskwa Plateau. Two biogeoclimatic zones cover the river corridor, most of the area is covered by Boreal White and Black Spruce with a minor portion covered by Spruce-Willow-Birch.

There is high potential for gravel; the mineral assessment for the RMZ indicates potential for industrial minerals. This zone borders on other zones that have medium to high potential for oil and gas prospects in the near future. There is also high potential for geothermal resources. There is potential for development of the forest resource on the lower portion of the Toad River.

This zone has large active floodplains and is disturbed by fire which results in a diverse vegetative mosaic. The RMZ is part of a larger intact predator prey system and is home to Stone's sheep, elk, grizzly and black bear, caribou, moose, deer and wolves. The floodplains and riparian areas have high capability for grizzly bear and are also important staging and migration sites for a variety of mammals, and birds such as eagles and sandhill cranes. The most abundant fish species include bull trout, whitefish and Arctic grayling.

Currently unroaded, this zone provides opportunities for back country recreation activities such as hunting, horseback riding, camping and boating. The river could be used as an access corridor to the adjacent RMZs and has high scenic values.

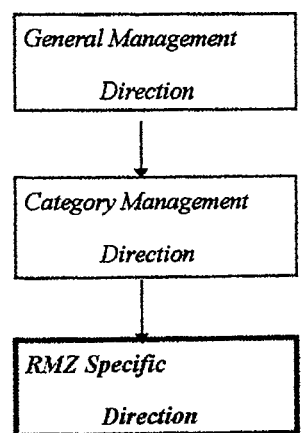
This zone has historical and current use by the Kaska Dena culture of the Lower Post and Fort Nelson First Nations. There are known archaeological, traditional use, cultural and heritage sites, and a high potential for others. As well there are hunting, trapping and fishing values.

Objectives:

1. Manage visual quality from the Toad River.

Strategies:

- Where established VQO's will guide incidental timber cutting associated with other resource user activities.



Muskwa-Kechika Special Management Category

Major River Corridors Sub-Category - Toad River Corridor RMZ

- | | |
|---|--|
| <p>2. Manage to maintain forest attributes suitable for habitat for grizzly, Stone's sheep and elk.</p> | <ul style="list-style-type: none"> • Identify and map important fish & wildlife habitat. • Identify and map existing fish distributions. |
| <p>3. Manage to maintain forest attributes suitable for high capability grizzly bear habitat.</p> | <ul style="list-style-type: none"> • Ensure industrial exploration and timber management activities are undertaken with sensitivity to grizzly, Stone's sheep and elk habitat; visual and recreational values. • Encourage appropriate harvesting systems to accommodate identified wildlife species. • Manage for wildlife habitat enhancement through operational plans. • Encourage use of low impact seismic line development (something different than normal cat cut, e.g. hand cut). • Minimize the impact of vegetation control near ecosystems, habitat types and plant species designated for long-term monitoring. • Revegetate disturbed areas. Use local, native plant species, where appropriate and possible. |
| <p>4. Manage to avoid negative bear/human interactions.</p> | <ul style="list-style-type: none"> • To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country. |
| <p>5. Minimize habitat fragmentation.</p> | <ul style="list-style-type: none"> • Minimize number of river crossings. Utilize existing crossings whenever possible and practical. • Access planning to take into account connectivity corridors. • Plan patch size, access and disturbance to emulate natural disturbance patterns. Utilizing aggregate cutblocks and clustered harvest patterns, focus on patch sizes at the upper limits identified in the biodiversity guide for this Natural Disturbance Type. Stand level biodiversity to focus on riparian areas and wildlife tree patches. |

Muskwa-Kechika Special Management Category

Major River Corridors Sub-Category - Toad River Corridor RMZ

6. For areas adjacent to the Toad River Hot Springs and Liard River Corridor protected areas, encourage management of resource development that supports the intended objectives and acceptable uses of the protected area, including conservation and recreation.
 - Promote recreational activities which are water-based; and the use of rivers as access and recreation corridors.
7. Manage for a component of Semi-Primitive Non-Motorized and Primitive. (ROS)
 - Recurring river boat use and access will be sensitive to RMZ values and resource user activities.
 - Maintain the levels of public motorized access that existed prior to any new access developments.
 - Ensure that industrial exploration activities are undertaken with sensitivity to riparian values.
8. Maintain timber harvesting and forest management opportunities.
 - Establish general forest production targets for landscape units within the RMZ consistent with low forest management regimes.
 - Minimize losses from damaging agents through prompt fire and pest management, including the salvage of damaged or killed timber.
9. Identify and provide for the protection of traditional use, archaeological, cultural and heritage sites.
 - Identify all known sites within the RMZ and develop appropriate management strategies.

Muskwa-Kechika Special Management Category
Major River Corridors Sub-Category

2.2.4.16 Turnagain/Dall Rivers Corridor Resource Management Zone

Area: 54,200 ha

This RMZ is located between the Sandpile, Rainbow, and Moodie RMZs. The corridor contains the Turnagain and Dall River valleys to the point where it intersects the Kechika corridor on the east and the Denetiah Proposed Protected Area. Meanders on the lower portions of the river explains its name "Turnagain". The lower Turnagain is navigable by river boats up to a series of falls, west of the confluence of the Cassiar River. This RMZ crosses both the Cassiar Mountains and Kechika Mountains and forms a natural corridor between the Kechika River Valley and the upper Turnagain and Dall Lake area. This RMZ is with the Boreal Black and White Spruce biogeoclimatic zone with the exception of the western portion which changes to the Spruce Willow Birch biogeoclimatic zone. This RMZ is influenced by rain shadows resulting in lower snow depths and warm Chinook winds that create unique climatic variant for its latitude.

Significant changes have been made to this RMZ as a result of natural and man made fires. There are large open areas along the rivers with the main forested area being those areas that have escaped any burning to date.

This RMZ is a significant transportation and access corridor for adjacent RMZs which have high metallic and industrial mineral potential.

The RMZ is part of a larger intact predator prey system and is home to Stone Sheep, Moose, Elk, Grizzly Bear, mountain Goats, Black Bear, caribou and wolves. the flood plain and Riparian areas have high capability for ungulates and Grizzly Bears. Bull trout, Whitefish Arctic Grayling, Burbot, and Rainbow trout are the most abundant fish species.

This RMZ is currently unroaded and primitive. This has provided a number of backcountry opportunities both public and include; hunting, trapping fishing, boating, and camping. The use of the Turnagain River as a recreation area continues to grow as it has become known to the public.

This zone has historic and current use by the Kaska Dena culture of the Lower Post First Nation and Tahltan First Nations. There is high potential for archaeological, traditional use, cultural and heritage sites. The zone also has hunting, trapping and fishing values.

Muskwa-Kechika Special Management Category

Major River Corridors Sub-Category - Turnagain/Dall Rivers

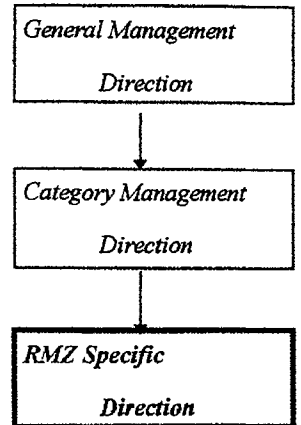
Corridor RMZ

Objectives:

1. Manage visual quality from Turnagain and Dall Rivers.
2. Manage to maintain forest attributes suitable for habitat for Stone's sheep, mountain goat and elk.
3. Maintain opportunities to develop access while ensuring that this activity will be undertaken with sensitivity to the resource(s) emphasized for the RMZ.
4. Manage for a component of Semi-Primitive Motorized (lower section) and Semi-Primitive Non-Motorized (above the Cassiar River). (ROS)
4. Minimize habitat fragmentation.

Strategies:

- Where established VQO's will guide the incidental timber cutting associated with other resource user activities.
- Ensure industrial exploration activities are undertaken with sensitivity to wildlife habitat, visual and recreational values.
- Access planning to take into account connectivity corridors.
- Maintain the levels of public motorized access that existed prior to any new access developments.
- Recurring aircraft and river boat use and access will be sensitive to RMZ values and resource user activities.
- Minimize and manage creation of new access in unroaded areas.
- Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.
- Low development level campgrounds and small group sites are compatible with the setting.
- Ensure that industrial exploration activities are undertaken with sensitivity to riparian values.



2.2.5. Proposed Protection Category of Resource Management Zones Intent:

- **To designate large-scale areas for the protection of viable representative examples of natural diversity, and protect special natural, recreational and cultural heritage values and features in accordance with the government's Protected Areas Strategy.**
- **To provide recognition and special consideration to existing tenures, licences, authorizations and public use where uses are compatible with the objectives for which the area was established.**

Planning processes are the primary means of delivering the government's Protected Areas Strategy (PAS). The policy, released in July 1993, sets out in considerable detail protected area conservation, recreation and culture heritage objectives, candidate area selection criteria and technical methods for analyzing protected area gaps. The policy sets a target for a protected area system of 12% of the province by the year 2000. To offer guidance for achieving the provincial goal, in June 1995, the Land Use Co-ordination Office set a target of 9% protected areas for the Omineca-Peace Region. In addition, to help guide the planning tables in the region, each LRMP was assigned planning targets. The target for the Fort Nelson Planning Area is 11.4%.

The protected area strategy is the result of significant commitment from government and public groups in its development. The Parks and Wilderness for the '90s initiative, the Old Growth Strategy initiative, preparation of resource inventories, and technical gap analysis with PAS implementation have all contributed to an impressive information base. The detailed and systematic PAS documentation, the concentrated government commitment to its development and delivery, and the negotiation and information results from the LRMP WG provide a solid basis upon which to make protected area designation recommendations for the Fort Nelson plan area.

Currently 1.8 % of the plan area has either full or partial protected area designation. The most well known of these are the two large parks in the area: Muncho Lake and Stone Mountain. The rest of the percentage is made up of smaller campgrounds along the Alaska Highway, recreation areas and ecological reserves.

PAS government planners and environmental interest groups have compiled relatively extensive information on the range of potential opportunities for adding to the existing protected area system in the plan area. Many agree that biological conservation is best achieved by protected area additions which comprise relatively undisturbed and unfragmented natural areas.

Proposed Protected Area Category

Obviously, this selection criterion limits the areas where suitable candidates could be located, given past patterns of development and to a lesser extent human settlement. Conservation and recreation objectives in this area can also be addressed through the protection of the same large wilderness areas.

The LRMP WG was able to reach consensus on proposed protected areas within the 11.4% target. The chosen areas are compatible with the Regional Protected Areas Team (RPAT) recommendations, and shows the balanced participation of sectors representing the full spectrum of values.

The proposed protected areas make important advances in the representation of a number of ecosystems. Representation in some ecosystems, however, remains low, particularly in the boreal white and black spruce ecosystems of the mid to eastern portions of the planning area. The pattern of resource development throughout the area precludes good options for protected area representation. To a small degree, the representation of these poorly represented ecosystems can be addressed through the implementation of the PAS Goal 2 recommendations to protect special features. Many protected area proposals contain areas of known and potential archaeological, traditional use, cultural and heritage significance. Some areas include known historical trade routes, trails and sustenance areas.

The New Proposed Protection Category of Resource Management Zones is shown in Figure 6, and listed below:

Goal 1

**Denetiah
Klua Lakes
Liard River Corridor
Maxhamish
Northern Rocky Mountains
Thinatea
Wokkpash**

Goal 2

**Grayling Hot Springs
Goguka Creek
Hay River
Horneline Creek
Jackpine Remnant
Kotcho Lake Village Site
Old Growth
Prophet River Hot Springs
Portage Brule Rapids
Smith River/Fort Halkett
Toad River Hot Springs**

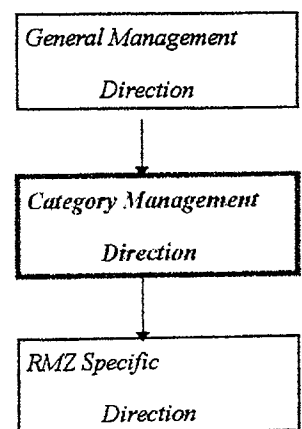
Logging, mining, hydroelectric and oil and gas exploration (unless otherwise noted) and development will not be allowed to occur in Protection RMZs. Allowable uses will be subject to the Protected Area Management Plan

Proposed Protected Areas Category

(PAMP) which will be developed at some future date. The planning and management of new Protection RMZs will be carried out in a co-operative manner by all agencies and affected stakeholders. Local level planning processes will develop the management plans for individual Proposed Protection RMZs, consistent with the acceptable uses outlined in the following pages, and will encourage the involvement of all parties, including the public, with a key interest or stake in the plan.

The following additions and changes are recommended to the Acceptable Uses Matrix which will apply to all the RMZs in the Proposed Protected Areas category. In addition, each RMZ also has site specific objectives and strategies listed to accommodate specific resource values and concerns.

Activity/Use/Facility	Comments
Trapping	<ul style="list-style-type: none">Trapping activity will be allowed. Trapline tenures will be renewable and transferable.
Pack animal use	<ul style="list-style-type: none">Exotics, such as llamas and ostriches, are not to be used as pack animals. The reasons for this recommendation is an attempt to avoid any diseases being introduced, as this would compromise the integrity of the areas. Over time horses and mules have proven to be compatible with the environment. With time and research it may be proven that exotics are also compatible with the natural environment; if this turns out to be the case then this recommendation can be revisited and amended.
Off-road activities - motorized	<ul style="list-style-type: none">Some types of off-road motorized recreational vehicles and boats may be restricted either by type of vehicle, time of year or areas designated for use. The specifics will be developed through the Protected Area Management Planning process, which is a public process.
Objective:	Strategies: <ul style="list-style-type: none">Revegetate disturbed areas. Use local, native plant species, where appropriate and possible.Identify and recommend a course of action for damaged or degraded habitat.



CATEGORIES OF RESOURCE MANAGEMENT ZONES

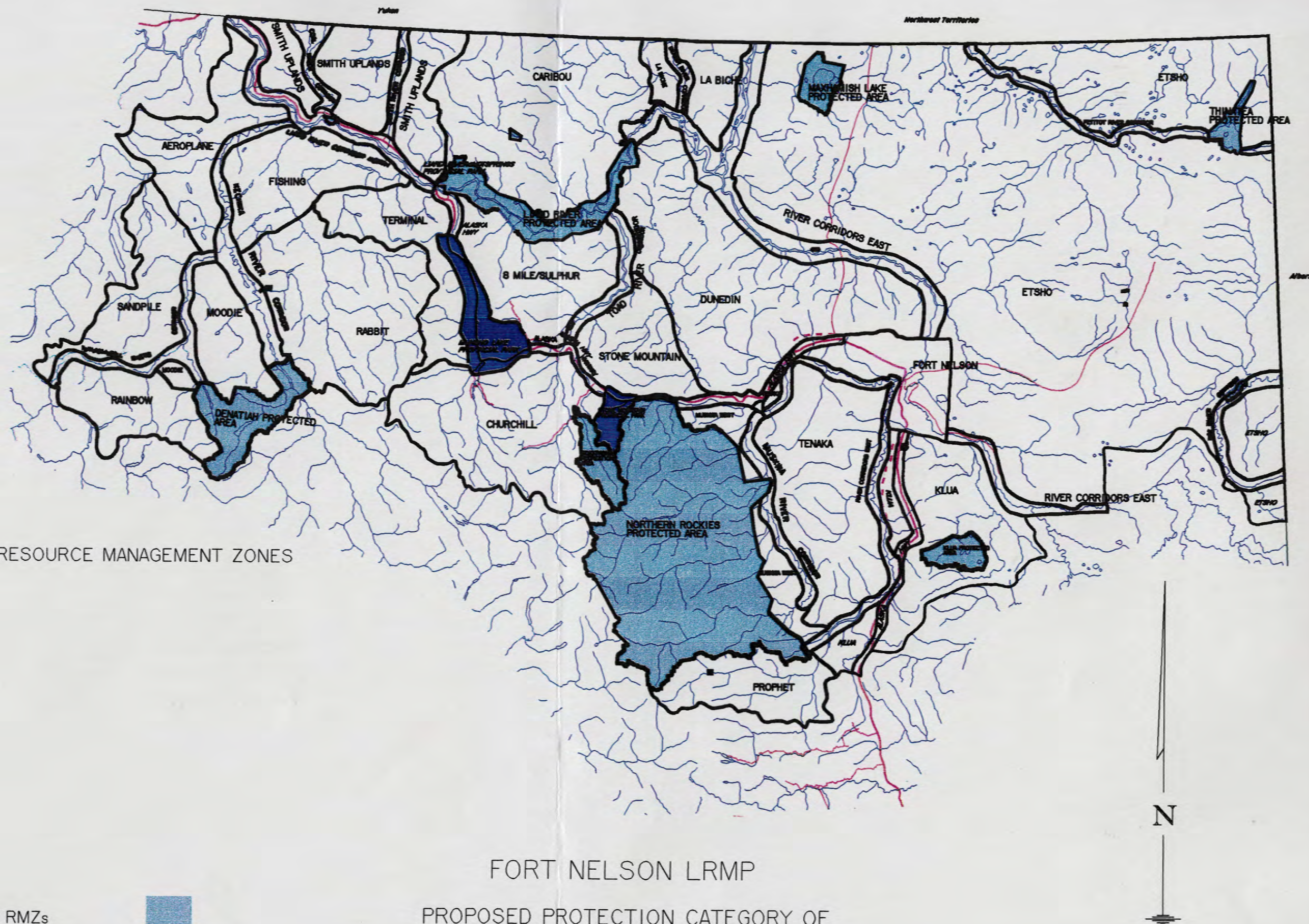
Proposed Protected RMZs



FORT NELSON LRMP

PROPOSED PROTECTION CATEGORY OF
RESOURCE MANAGEMENT ZONES

Scale 1:1,640,000
(Approximate)



Proposed Protected Areas Category

2.2.5.1 Denetiah Protected Area

Area: 97,200 ha

The Denetiah proposed protected area is located on the west side of the plan area. It includes the entire Denetiah Lake watershed, a cross-section of the Rocky Mountain Trench and Kechika River (Heritage River Candidate). It is entirely within the Cassiar Forest District.

The area represents the Kechika Mountains and Cassiar Ranges ecosections. It is a component of a large intact predator-prey system. Provincially significant wildlife values including moose, caribou, Stone's sheep mountain goat, wolves and grizzly bears, significant mineral licks and dry micro-climate at Terminus Mountain. Big game hunting is the primary recreational activity, fishing is secondary. Some canoeing, rafting, and jet-boating activities, along with wildlife viewing and hiking occur.

The special features of this area are the Dall and Denetiah Lakes, with the intact Denetiah watershed and the historic Davie Trail from Fort Ware to Lower Post.

This area has historic and current use by the Kaska Dena culture of the Lower Post First Nations and Tahltan First Nations. Even though there is limited documentation there is high potential for archaeological, cultural and heritage resources. There are hunting, fishing and trapping values. The area includes a historic fur trading route and related historic trapper cabin sites. The Davie Trail runs through a portion of this area.

The location of the Denetiah Proposed Protected Area, if designated under the *Park Act*, would block road access to a large relatively under-explored area lying immediately to the south. There is a diversity of opinion amongst the members of the Working Group regarding the acceptability of future road access through the proposed protected area. However, in order to preserve the opportunity for a future access corridor through this area, the Working Group recommends that a portion of the Denetiah Proposed Protected Area (Kechika River corridor) be designated under the *Environment and Land Use Act*. The determination of future individual access proposals, including road development, will be made through existing processes, as appropriate, in effect at the time the proposals come forward, which will include full public and stakeholder involvement. In the case of a major mine development, this will include the Environment Assessment Process.

Proposed Protected Areas Category - Denetiah

LRMP Working Group Recommendation for Acceptable Uses:

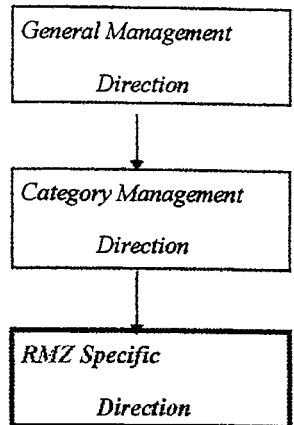
Activity/Use/Facility	Comments
Water: motorized activities	Traditional motorized boat use allowed on rivers and lakes.
Grazing	Allowed subject to management plan. New tenures can be issued as necessary to support commercial back country recreation opportunities.
Roads within Protected Areas	Allowed subject to management plan. The intent is to preserve the opportunity for future access across this area.

Objectives

1. Ensure Commercial Backcountry Recreation activities are consistent with the objectives and strategies of the RMZ, and maintain a balance between public recreation and other use.
2. Manage to avoid negative bear/ human interactions.

Strategies

- An inventory of existing and potential CBR opportunities is required to guide the allocation. CBR activities must be consistent with:
 - acceptable limits of use;
 - environmental sustainability;
 - greatest benefit to local community, region and province;
 - equitable forage allocation between commercial and non-commercial use; and
 - equitable allocation of suitable campsites.
- To minimize negative bear/human interactions, public education will focus on informing the public on: dealing with bear/human encounters; bear behaviour; and the safest human behaviour while in bear country.
- Recurring aircraft use and access will be sensitive to RMZ values and resource user activities.
- Should road access proposals be approved, proponents will be required to include plans to:
 - implement the access controls required to maintain, over time, impacted wildlife values;
 - reclaim roads and development sites when the tenure holder has completed activities and the road and/or site is no longer needed;
 - meet the intent of all Resource Management Zone objectives and strategies within the framework of the access corridor.



Proposed Protected Areas Category

2.2.5.2 Klua Lakes Protected Area

Area: 28,600 ha

The Klua Lakes proposed protected area is located in the southern part of the plan area, a few kilometres east of the Alaska Highway in the Prophet River area.

The Klua Lakes area represents the Muskwa Plateau Ecosection and includes examples of escarpments and cuesta topography. This area provides wildlife habitat for Trumpeter swans, peregrine falcons, mountain goats, grizzly bear, ungulates, fur bearers, as well as significant diversified fish species in the lake (whitefish, walleye, northern pike, white sucker and burbot). The area has recreation sport fishing values of the native walleye population; other important fish species include red-listed species such as cisco and spottail shiners.

This area has historic and current use by the Sekani, Slavey, Cree and Beaver cultures of the Prophet River and Fort Nelson First Nations. There is high potential for archaeological, cultural and heritage resources. This zone has hunting, trapping and fishing values.

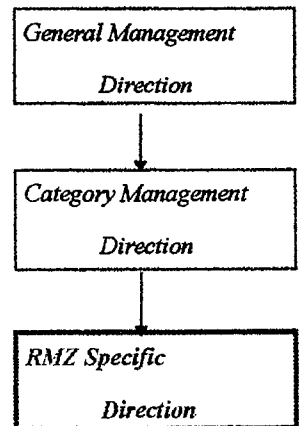
The area has significant cultural value including a traditional historic commercial fishery site, a significant native village which was abandoned after World War Two, native pack trails, an old wagon trail and a spiritual site. The chief of the Klua Lakes families was named Mekenacha (Bigfoot). He was the chief of Prophet River who signed adhesion to Treaty 8 in 1911. Mount Bigfoot located south-west of the Klua Lakes is named for him.¹

The word "Klua" means "fish" in the Slavey language.

LRMP Working Group Recommendation for Acceptable Uses:

Activity/Use/Facility
Grazing

Comments
Allowed subject to management plan. New tenures can be issued as necessary to support commercial back country recreation opportunities.



¹ The Mount Bigfoot on maps is different than the Mount Bigfoot recognized by the First Nations.

Proposed Protected Areas Category

2.2.5.3 Liard River Corridor Protected Area

Area: 81,900 ha

The Liard River Corridor proposed protected area is located adjacent to the Liard Hot Springs Provincial Park. It encompasses the river valley and uplands to the height of land on both the north and south of the river as far east as Scatter River.

The area includes the following special features: the Grand Canyon, archaeological sites, fossils, old growth spruce in the alluvial areas, an oil derrick constructed for exploration in 1953, significant grizzly habitat, a population of wood bison, and Hudson's Bay Trading Post. This area is also important for wildlife as a staging area for shorebirds and sandhill cranes; and as a component of a larger predator-prey system. The recreational values along the river are high and include opportunities for activities such as hunting, wildlife viewing and spelunking. River recreation opportunities include fishing for arctic grayling, bull trout, mountain whitefish, northern pike and lake trout. Other important fish species include inconnu, cisco and chum salmon.

The Liard River Corridor represents the Highland Hyland Ecosection.

This area falls within the territory of the Kaska Dena, Slavey, Cree and Beaver cultures of the Lower Post, Fort Nelson and Fort Liard First Nations. There is high potential for archaeological, cultural and heritage resources. The Liard River corridor has significant cultural and heritage values related to traditional native activities and fur trading dating back to the early 1800's.

The portion of the Liard Proposed Protected Area affected by the Alaska Highway Pipeline reserve should be declared under the *Environment and Land Use Act*.

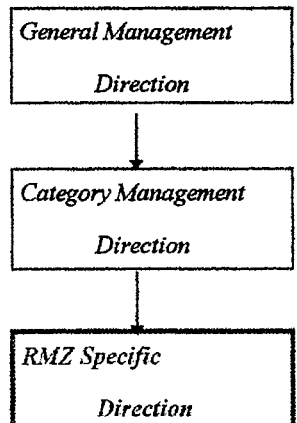
LRMP Working Group Recommendations for Acceptable Uses:

Activity/Use/Facility

Pipeline/transmission line and other rights-of-way.

Comments

There is a reserve in place for the Alaska Highway Pipeline which runs across the proposed protected area. The pipeline will be allowed if there is no practical or feasible alternative.



Proposed Protected Areas Category - Liard River Corridor

Roads within protected areas

Existing road allowed to remain. Corridor will be identified and maintenance will be subject to the management plan.

Grazing

Allowed subject to management plan. New tenures can be issued as necessary to support commercial back country recreation opportunities.

Proposed Protected Areas Category

2.2.5.4 Maxhamish Lake Protected Area

Area: 27,600 ha

The Maxhamish Lake proposed protected area is located in the north of the plan area close to the British Columbia/ Northwest Territory border. It is east of the Liard River. The lake has sandy beaches and the potential to be a popular recreation area. The proposed protected area includes the existing Maxhamish Lake Park (668 hectares).

The Maxhamish area is an ecological and geographical representation of the Etsho Plateau. The area has a high wildlife value due to waterfowl, pike, walleye, a unique fish species found here, and the red-listed cisco and spottail shiner. The maintenance and enhancement of fish and wildlife habitat and populations must be given a high priority. The Protected Area Management Plan will outline how visual quality will be maintained in high scenic quality areas.

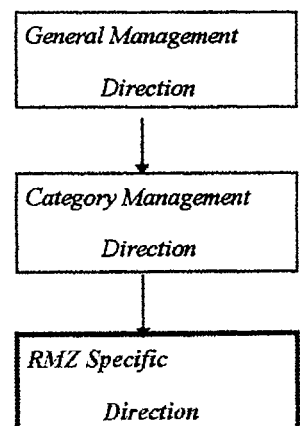
This area has significant historic and current use by the Slavey, Beaver, cultures of the Fort Nelson and Fort Liard First Nations. There is high potential for archaeological, cultural and heritage resources. There are known hunting, fishing and trapping values. The lake is significant to the First Nations for food fishery values. There are known historic native village, Indian Reserve Lands, cabins, trails and traditional use areas.

Maxhamish lake is referred to as Sandy Lake by the local First Nations.

LRMP Working Group Recommendation for Acceptable Uses

Activity/Uses/Facility
Roads within protected area

Comments
Proposed road route, for access to lake, for recreation purposes, must be identified in Protected Area Management Plan. This is consistent with the recreational purposes of the proposed protected area. (The decision regarding any road proposal will be made at a subsequent planning process which will involve public and First Nations.)



Proposed Protected Areas Category

2.2.5.5 Northern Rocky Mountains Protected Area

Area: 635,900 ha

The Northern Rocky Mountains proposed protected area is located in the west of the plan area in the core of the Rocky Mountains. It is the largest proposed protected area, and is adjacent to Stone Mountain Provincial Park and Wokkash Recreation Area.

The entire area is excellent ecosystem representation of Eastern Muskwa Ranges and Muskwa Foothills. The special features include the spectacular geological formations, escarpments and chevron folds of Sleeping Chief Mountain, Mount Sylvia (2942 metres) and Mount Mary Henry (2614 metres), significant wetlands and areas of old growth forests along the Tuchodi River and the historical High Trail travelled by a 1934 expedition attempting to establish an east-west route through the Rockies. The area is in a natural state. Other features include transition from foothills to the Rocky Mountains.

Other features of the area are that it is a part of a larger intact predator-prey system with a high density and diversity of large mammal species. Ungulates include moose, caribou, whitetail deer, mule deer, mountain goat, elk, and Stone's sheep. There are also wolves, grizzly bear, black bear, wolverine, coyote, many smaller mammals and rare sightings of mountain lion. Various bird species use portions of the area as important staging and migration routes. This area provides key winter ranges for wildlife populations. Prescribed fires have been historically used for wildlife habitat enhancement.

The area has historic and current use by the Kaska Dena, Sekani, Slavey and Beaver cultures of the Lower Post, Prophet River and Fort Nelson First Nations. There is potential for archaeological, cultural and heritage resources. There are hunting, trapping and fishing values.

Cominco has applied to have mineral claims registered within the boundary of the proposed protected area in the Crehan Creek area. The Working Group has made the following recommendations based on this development:

- The claims in question and a buffer area half the width of that requested by Cominco (around the northernmost claim) to be designated under the Muskwa-Kechika *Order-In-Council* such that both claims are allowed for a period of ten years.
- New exploration tenures for oil and natural gas exploration to be allowed for period of five years.

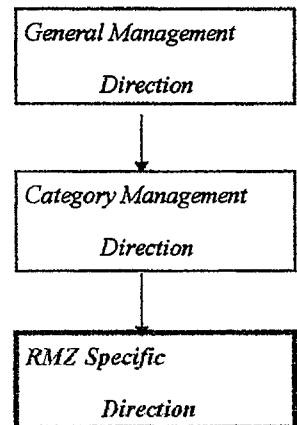
Proposed Protected Areas Category - Northern Rocky Mountains

- Natural gas production tenures to be allowed until cessation of production of natural gas.
- After ten years, if no mine exists, mining tenures to be automatically and voluntarily surrendered with no compensation. The ten year time frame is to begin after approval of LRMP.
- After ten years, if no mine exists, the two mining tenures and all of the watershed flowing into the Muskwa (watershed of Crehan Creek) to automatically roll into Protected Area under the *Parks Act*, except for areas under natural gas production tenures (should there be any) which will remain under the *Order-In-Council* designation until cessation of production.
- Mining tenures to be renewable after period of ten years only if a mine exists.
- All activities to be conducted with a sensitivity compatible with eventual Class A Park designation.
- If a mine is developed, once production ceases, and a reasonable time for reclamation is given, then the area should roll into the *Park Act*.²

LRMP Working Group Recommendation for Acceptable Uses

Activity/Uses/Facility	Comments
Grazing	Allowed subject to management plan. New tenures can be issued as necessary to support commercial back country recreation opportunities.
Water control structures	Small scale water diversion structure allowed (not to be used for small scale hydro-electric development). Intent is to allow commercial operators to provide water supply to base camps.
Roads within protected areas.	Roads not allowed.
Water: motorized activities	No motorized boats above Tuchodi Lakes
Objectives:	Strategies:
1. Ensure Commercial Back Country Recreation (CBR) are consistent with the objective and strategies of the RMZ, and maintain a balance between public recreation and other use.	<ul style="list-style-type: none"> • An inventory of existing and potential CBR opportunities is required to guide the allocation. CBR activities must be consistent with: <ul style="list-style-type: none"> • acceptable limits of use; • environmental sustainability; • greatest benefit to local community; region and province; • equitable forage allocation between

² The recommendations regarding the Cominco mineral claims have been made without the participation of either representatives from Cominco and the mining industry.



Proposed Protected Areas Category - Northern Rocky Mountains

- commercial and non-commercial use; and
 - equitable allocation of suitable campsites.
 - Manage for wildlife habitat enhancement through subsequent planning processes.
2. Manage to avoid negative bear/human interactions.
- To minimize negative bear/human interactions, public education will focus on informing the public on dealing with bear/human encounters, bear behaviour and the safest human behaviour while in bear country.
 - Recurring aircraft and river boat use and access will be sensitive to RMZ values and resource user activities.

Proposed Protected Areas Category

2.2.5.6 Thinatea Protected Area

Area: 19,500 ha

The Thinatea proposed protected area is located in the north east corner of the plan area near the confluence of Thinatea Creek and the Petitot River. It completely encompasses Thinatea Lake and sections of the creek both north and south of the lake.

The area is the best representation of the Petitot Plain Ecosection; it is a good example of muskeg, mixed with some associated upland forest including significant jackpine stands. The area has a high capability rating for Trumpeter swans, and is also important for moose and other waterfowl. The area is significant for food and medicinal values for First Nations.

The area has historic and current use by the Slavey, Cree and Beaver cultures of the Dene Tha and Fort Nelson First Nations. There is potential for archaeological, cultural and heritage resources. There are known fishing, hunting and trapping values.

The word Thinatea means "where the giants laid down." in the Slavey language.

The Working Group is recommending that the following points be considered when designating the Thinatea area:

- Directional drilling for a linear corridor under the north arm of the area may be permitted. The intent is to avoid a pipeline across the surface.
- Directional drilling for the extraction of energy resources be permitted under the north arm.
- Existing oil and gas tenures will be grandparented.
- the south portion of area be designated under the *Environment and Land Use Act*, or similar designation that would allow for new tenures for directional drilling (note that the northern portion of the Thinatea has been previously recommended for a designation that allows directional drilling under slightly different conditions than that brought forward here).
- Designation to allow no surface disturbances, including seismic.
- After period of ten years, Protected Area to automatically roll into *Parks Act* except for areas under tenure, which will roll into *Parks Act* designation when tenures expire.
- During the ten year period, the area is to be managed as a Protected Area similar to a Class A Park, with the exception of allowing directional drilling from beyond the perimeter.

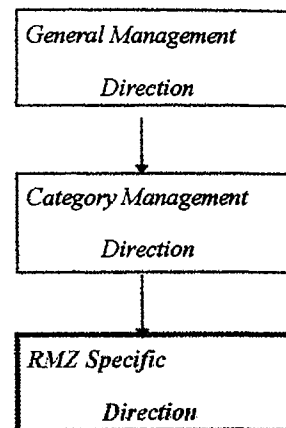
- After ten year period, no new exploration tenures will be allowed, but natural gas production tenures to be renewable until cessation of production.

For directional drilling to occur all criteria identified by the subcommittee must be met. The subcommittees information and criteria on directional drilling under Proposed Protected Areas is included as an Appendix.

LRMP Working Group Recommendation for Acceptable Uses

Activity/Use/Facility
Roads within protected areas

Comments
No new roads will be allowed except in grandparented tenures.



Proposed Protected Area Category

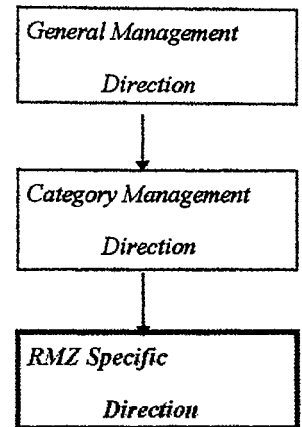
2.2.2.7 Wokkpash Protected Area

Area: 37,500 ha

The Wokkpash proposed protected area is currently an existing Recreation Area, (since 1987). It is located south west of Stone Mountain Provincial Park and the Alaska Highway. This area spans the Wokkpash Creek watershed .

The Wokkpash area has attained international significance due to its unique geographical features, including the: Wokkpash gorge which has hoodoos up to 30 metres in height along its 5 kilometre length; Forlorn Gorge which is a narrow cleft 150 meters deep and 25 meters wide; Fusillier Glacier; and Stepped Lakes. There are significant recreation opportunities for activities such as hiking, camping, wildlife viewing, fishing, horseback riding and hunting.

This area is in the traditional area of the Kaska Dena, Sekani, Cree, Beaver and Slavey cultures of the Lower post, Fort nelson and Prophet River First Nations. There is potential for archaeological, cultural and heritage resources, and there are known hunting, fishing and trapping values.



Proposed Protected Areas Category

2.2.5.8 Goal 2 Protected Areas

Andy Bailey Recreation Area - 170 ha
Grayling Hot Springs - 1,410 ha
Goguka Creek - 380 ha
Hay River - 2,310 ha
Horneline Creek - 300 ha
Jackpine Remnant - 160 ha
Kotcho Lake Village Site - 60 ha
Old Growth - 1,800 ha
Portage Brule Rapids - 1,000 ha
Prophet River Hot Springs - 180 ha
Prophet River Recreation Area - 120 ha
Smith River/ Fort Halkett - 240 ha
Toad River Hot Springs - 400 ha

Goals:

Andy Bailey Recreation Area

Ecosection representation of Fort Nelson Lowlands.
An existing recreation area developed into a 12 unit
campsite, boat launch and picnic area.

Goguka Creek

Ecosection representation of the Fort Nelson Lowlands
The ecological reserve proposal to protect an example of
Chamaedaphe bog and pitcher plant.
Designation should allow for directional drilling to extract
energy resources.
For directional drilling to occur all criteria identified by the
subcommittee must be met. The subcommittees
information and criteria on directional drilling under
Proposed Protected Areas is included as an Appendix.

Grayling Hot Springs

Ecosection representation of the Hyland Highland.
This is a significant hotspring complex in Canada due to its
ecological values

Hay River

Ecosection representation of the Fort Nelson Lowlands
Historical use by Wood Bison and First Nations people.

Proposed Protected Areas Category - Goal 2 Areas

An outstanding example of river meadows with associated wildlife values.

Designation should allow for directional drilling to extract energy resources.

For directional drilling to occur all criteria identified by the subcommittee must be met. The subcommittees information and criteria on directional drilling under Proposed Protected Areas is included as an Appendix.

Horneline Creek

Ecosection representation of Kechika Mountains.

There is a significant mineral lick for the goat population.

Jackpine Remnant

Ecosection representation of the Fort Nelson Lowlands

Western extension of Jack pine

Designation should allow for directional drilling to extract energy resources.

For directional drilling to occur all criteria identified by the subcommittee must be met. The subcommittees information and criteria on directional drilling under Proposed Protected Areas is included as an Appendix.

Kotcho Lake Village Site

Ecosection representation of the Etsho Plateau

An area of First Nations values.

Old Growth

Alluvial influenced, riparian white spruce old growth forest.

The Fort Nelson working group has agreed to the protection of 1800 Ha of alluvial influenced, riparian white spruce old growth forest. The working group has not finalized the site for this Goal 2 Protected Area. The current Protected Areas figures includes the 1800 Ha. in anticipation of a site being identified for protection.

Therefore, the working group recommends that:

- a subcommittee address the need to identify a maximum of 1800 Ha. that satisfies the LRMP objectives for the Goal 2 protection of alluvial old growth forest within the Liard - Scatter River Subzone;

Proposed Protected Areas Category - Goal 2 Areas

- the subcommittee would provide its recommendations at the first annual review of the Fort Nelson LRMP implementation, and;
- the subcommittee would comprise interests represented by the Fort Nelson LRMP Working Group.

Portage Brule Rapids

Ecosystem representation of the Liard Plain

The ecological reserve proposal to protect the Hotsprings and unusual vegetation, an example of a forest on alluvial terraces in the BWBS Zone.

Prophet River Hot Springs

There is a locally significant hot spring

Ecosystem representation of the Eastern Muskwa Ranges.

Significant value for First Nations.

Prophet River Recreation Area

Ecosystem representation of the Fort Nelson Lowlands

There is a 36 unit campsite on the banks of the Prophet River. This campsite/area is managed by BC Parks

Smith River/ Fort Halkett

Ecosystem representation of the Liard Plain

The old site of Fort Halkett is located at the mouth of the Smith River which has a large two step waterfall, 35 metres in height.

Toad River Hot Springs

Ecosection representation of the Muskwa Foothills.

There is regionally significant hot springs, for wildlife viewing, hiking and First Nations values.

3.0 Social, Environmental and Economic Impact Assessment.

3.1 Introduction, Overview and the Significance of the "Base Case"

The vision statement and its stated objectives in the LRMP document include the desire to recognise and balance social, economic, and environmental values in the recommended land use plan. In June 1996, the Ministry presented to the Working Group (WG) a "Base Case" analysis of the planning area's social, economic, and environmental characteristics and trends in the absence of a land use plan.¹ Subsequently, the WG reached a draft consensus land use plan (the Plan), essentially the same as the plan detailed in the preceding chapter.

The socioeconomic and environmental implications of the Plan were independently assessed and presented to the WG in September 1996; the report was produced by the Policy Development Branch of the Ministry of Employment and Investment (MEI) and its consultants - socioeconomic expertise was provided by Robinson Consulting & Associates and J. Paul & Associates and the environmental analysis was by Eliot Terry (R.P. Bio.) of Keystone Wildlife Research. The work also relied on resource analysis from the government's Inter-Agency Planning Team (IPT) for the Ft. Nelson LRMP and Geographic Information Systems (GIS) area statistics provided by the Ministry of Forests (MoF). The following is essentially a summary of that assessment, but also is updated to address some concerns raised at the September presentation and is slightly adjusted for some changes to RMZ labels agreed to by WG since that time.²

¹ *Fort Nelson LRMP Base Case*. Prepared by ARA Consulting Group Inc., Keystone Wildlife Research, Aquatic Resources Ltd. in cooperation with the Fort Nelson LRMP Inter-Agency Planning Team, June 1996.

² After the September assessment, the LRMP confirmed that classification of the Aeroplane, Fishing, and Muskwa-West RMZs should be "Special Management" (High Biodiversity) - these zones were previously assessed as "General Resource Development" (Intermediate Biodiversity.) However, the management objective and strategies did not change. An assessment of this change concluded that there is a negligible impact on timber supply, no impacts on mineral exploration and development and that there would be reduced risks to Caribou and general levels of biodiversity.

The consequences of the Plan potentially span a broad spectrum, from effects on the community, employment, incomes, and government revenue, to implications for wildlife populations and other environmental values. In British Columbia, a "Multiple Accounts" framework is used for conveying the different impacts of LRMP's on different resource values³. This framework organises both descriptive and numerical information so that all of the significant effects are presented in a value neutral manner, and the assessment attempts to reach relatively clear conclusions about the key "big-picture" trade-offs associated with the land use plan.

It is evident that in the absence of the LRMP process, current government policies such as the Timber Supply Review (TSR), Forest Practices Code (FPC) and Protected Areas Strategy (PAS) would be implemented in the "Base Case" land use scenario. With respect to PAS, the provincial Regional Protected Areas Team (RPAT) recommended Protected Areas of which closely met government's Protected Areas target of 11.4% (+ or - 0.25%) for the planning area.⁴ Note that while the RPAT areas did not restrict the LRMP from designating alternative areas for protection, due to current provincial policy (i.e. the Protected Areas Strategy, or "PAS"), these represent the best estimate of which lands would become Protected Areas in the absence of the LRMP.

Therefore the impact of the Plan is the change relative to what would have occurred in the Base Case. The IPT provided its best estimate of the Base Case crown land management regime that would likely prevail in the absence of the LRMP, by classifying the RMZs according to same four management labels utilized by the LRMP: Protected, Muskwa-Kechika Special Management, General Development, and Enhanced Resource Development. These labels correspond to the four categories of management intent discussed in Section 2.2. (For the Base Case, this exercise is necessarily speculative, but not to do so would exaggerate the impacts of the Plan. For example, the FPC and government interest in the Muskwa-Kechika is evidence that incremental constraints on resource extraction are

³ *Social and Economic Impact Assessment for Land and Resource Management Planning in British Columbia, Interim Guidelines*, August 1993, Province of British Columbia.

⁴ In theory, there should be no difference between the amount of protected areas in the Base Case and the Land Use Plan, since the government stipulated that a protected area target of 11.4% should be met - this percentage was applied to an area of 9,249,249 ha., comprised of the Ft. Nelson TSA and a portion of the Cassiar TSA. However, the RPAT recommended PAS areas in the Base Case totalled only about 991,000 ha., or about 60,000 ha. short of the target amount of 1,054,000 ha. Note also that the actual LRMP planning area was expanded further into the Cassiar TSA after the target was provided, and totalled about 9,879,000 ha.

occurring over time, which may not be reflected in the "Status Quo" management regime.

A general indication of the implications of the Base Case and Land Use Plan is provided by the area roll-up (total gross land base of area assessed is 9,879,415 hectares) of the GIS analysis, broken down by RMZ designation:

	<i>Protected Areas</i>	<i>Muskwa-Kechika Special Resource Mgt. Category</i>	<i>General Development Category</i>	<i>Enhanced Resource Development Category</i>
Base Case	10%	27%	18%	45%
Land Use Plan	11%	28%	25%	36%

The various implications of the Base Case and the Plan will occur over a long period of time and few significant socioeconomic and environmental implications from the Base Case and the Land Use Plan are expected to occur in the next few decades. Rather, they will occur gradually over the long term and therefore are difficult to quantify. However, it should be stated at the outset that no existing jobs are expected to be lost as a result of either Base Case initiatives or the Plan, only that long term economic growth in the petroleum industry may be somewhat less than otherwise would occur. At the same time, risks to wildlife populations and backcountry recreation/tourism activities are reduced due to the Forest Practices Code, new Protected Areas, and the Land Use Plan.

The summary of the social and economic impacts begins with an description of the sector, followed by a discussion of the expected implications of the Base Case and the Plan management regimes. Where it was feasible to do so, quantitative (i.e., numeric) impacts were estimated. Otherwise the impact is indicated in qualitative (i.e., descriptive) terms.

3.2 Socioeconomic Assessment

3.2.1 Petroleum Sector

The planning area's petroleum reserves are provincially significant. To date, development has centered on the Fort Nelson catchment area (roughly the eastern part of the planning area on the Alberta plateau and to a lesser extent, the Liard catchment area). Production from several fields in the Fort Nelson area began nearly 25 years ago, and are depleting rapidly. Highly promising, but lightly explored land lies to the west, in the Northern Foothills and Muskwa-Kechika areas. It is anticipated that an increasing share of future reserves and production will come from this latter area, with production commencing as early as the year 2005. This area's share of total production

is speculated to increase over time as currently producing fields are exhausted.

According to the Minerals, Oil, and Gas Section of MEI, as of 1994 an estimated 1500 persons in the planning area were employed in the sector, likely in mainly seasonal occupations. Since most of these individuals do not reside in the area, using 1991 Census data and internal MEI information as benchmarks⁵, it is estimated that 250-450 area residents are employed in the energy sector on a relatively permanent basis, accounting for 10%-20% of the local economy. The Census also indicates that there is almost 100 local gas processing jobs, and given the high amount of oil/gas activity in the mid-1990s, there may now exist up to about 350 local full-time and seasonal jobs⁶ in natural gas exploration/extraction. It is these 350 jobs that are the most sensitive to changes in Crown land use, since gas production is likely to continue to grow from proven reserves over at least the next 20 years in spite of land use changes, according to MEI petroleum analysts.

The Base Case and Plan are not expected to impact proven oil and gas reserves, of which the latter is most important and estimated at 2.5 Trillion cubic feet (Tcf). Rather, the impact is most likely on the exploration for and development of future potential gas reserve additions. Potential reserves that lie below proposed protected areas are assumed to be precluded, since present laws prohibit gas exploration/development in parks. On other lands subject to relatively more stringent controls (i.e., Muskwa-Kechika Special Management Category of Resource Management Zones) fewer reserves are developed because of increased costs. The Petroleum Geology Branch of MEI estimates at total of about 10.9 Tcf of potential natural gas reserves to exist in the planning area. Under the Base Case regime, the potential declines 18% (3% due to FPC and 15% due to PAS) to an estimated 9.0 Tcf, and by a further 6% to 8.4 Tcf due to the management strategies in the Plan.⁷ These cumulative impacts arise mainly because about 22% of the Higher Potential gas lands (with an estimated >40,000 m³/ha., covering 28% of the planning area) would be precluded by protected areas and 21% would be

⁵ MEI estimates that 30% of industry exploration expenditures in the Peace region are made by B.C. firms, and prorating the 1500 in current employment by 30% results in the 450 estimate. However, the 1991 Census data indicates there were about 250 petroleum sector jobs in the planning area at that time.

⁶ This number may be an over-estimate, in that the 1991 Census data indicates that in the planning area's workforce, there were about 120 individuals associated with the "extractive" energy sector, a total of 80 in non-forestry manufacturing (most of which is likely gas processing), and 45 in utilities (which would include gas distribution.) See *Ft. Nelson LRMP Base Case*, ARA Consulting, June 1996, p. 1-6.

⁷ To provide the appropriate context, there was 0.18 Tcf of marketable gas produced in the planning area in 1994.

located in Muskwa-Kechika Special Management Category of Resource Management Zones.

An economic model of the provincial and North American energy industry was modified to estimate the timing and magnitude of the reserve reductions on natural gas production. Over the 20-year forecast period, the planning area's production is still forecast to grow from the present volume under the both Base Case and the Plan, only somewhat more slowly than would be the case under the "Status Quo" land management regime. Thus no losses of existing jobs are expected, just slower growth than otherwise would occur. Using the model's projections, it is estimated that under the Status Quo situation, employment in the Ft. Nelson planning area should rise to about 770 by the year 2016, or an average of 550 over the 20 year period. Pro-rating the 24% in potential gas reserve reductions to this Base Case 20-year average employment level, it still appears that resident employment will exceed the current 350 estimate well into the future.

The 20-year total net present value of those B.C. government revenues which are estimated to be sensitive to Crown land use planning (i.e. the sum of annual production royalties and land bonus bid revenues, discounted at a rate of 6%) is estimated to be \$1246 million in the Status Quo, \$930 million in the Base Case, and \$892 million with the Land Use Plan. Therefore the approximate "opportunity cost" of FPC, protected areas, and the Plan on these revenues is a net present value of \$354 million or about a \$28 million annual annuity (\$25 million for Base Case and \$3 million for the Land Use Plan) for 20 years; this represents about \$20.40 annually in foregone direct natural gas tax revenues per B.C. household (based on 1.373 million households in 1994). The Table below summarizes the key impact estimates.

Estimated 20-Year Average Impacts of Base Case & Land Use Plan on Gas Potential, Direct Resident Employment, and B.C. Government Revenues for the Ft. Nelson Planning Area

	Status Quo Regime	Base Case		Land Use Plan	Cumulative Result
		PAS	FPC		
Total Estimated Potential Gas Volume (Trillion cubic feet)	10.9	9.3 (-15%)	9.0 (-3%)	8.4 (-6%)	8.4 (-24%)
Average Total Direct Resident Exploration/Extraction Jobs over 20 years (1991-96 Jobs = ~ 350)	550	468 (- 15%)	451 (-3%)	418 (-6%)	418 (-24%)
Average Annual B.C. Government Revenue Cost in \$ millions	0	\$25 mill.		\$3 mill.	\$28 mill.

Annual Revenue Cost per Household	0	\$18.21	\$2.18	\$20.40
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Sources: MEI, CERL, Robinson Consulting & Associates, and Ft. St. John LRMP Base Case Report (ARA Consulting, March 1996)

Note that a small portion of these impacts could be mitigated due to the Plan recommendation that "directional drilling" (i.e. drilling underneath an area from a position outside the area) be allowed under three small "Goal 2" protected areas (Hay River, Goguka Creek, and Jackpine Remnant) and under a small portion of the Thinahtea "Goal 1" protected area.

3.2.2 Hydro Electricity Sector

The Liard River Corridor is a proposed protected area (82,000 ha.) in both the Base Case and the Plan. This would preclude B.C. Hydro's now dormant Liard River project in both situations, since the Protected Areas Strategy does not allow hydro-electric development and the Plan recommends that water control structures (such as dams) not be allowed in this protected area. BC Lands staff state that the flood reserve is no longer in place BC Hydro staff indicate that the corporation would not be interested in developing such energy potential for well in excess of 20 years, if at all. Therefore, there is no incremental impact of the Plan on this resource and BC Hydro personnel ascertain no other implications on the corporations hydro-electricity interests from the Plan.

3.2.3 Mining Sector

Presently in the planning area, there are no major metal mines operating or applications in the Environmental Assessment Process. This sector's current activity involves exploration projects, and small scale mining of sand and gravel. Significant opportunity remains to identify and develop mineral resources. Current employment is estimated at some 25-30 Fort Nelson residents directly or indirectly employed in this sector (about 1% of local employment). Anecdotal evidence suggests that non-resident employment (i.e. exploration crews flying into the planning area from locales such as Vancouver) generally exceeds the employment of local residents.

Prior to the implementation of the Protected Area Strategy, about 140,000 ha. in the area had park designation, i.e. Muncho Lake, Stone Mountain, a portion of Kwadacha, and some smaller areas. This would increase to about 990,000 hectares in the Base Case and 1,058,000 hectares in the Plan. Mining in the Wokkpash Recreation Area, is allowed under the Status Quo, however is excluded in both the Base Case and the Plan.

In the Land Use Plan, less than 1% of high potential metallic mineral lands are included in the protected areas, but over 99% is located in 5 Resource Management Zones in the Muskwa-Kechika Special Management Category (Rainbow, Sandpile, Moodie, Terminal, and Rabbit); also, 95% of Medium Metallic Potential lands are located in Muskwa-Kechika Special Management Category of Resource Management Zones. About 14% of the 12,000 ha. in mineral tenures are in protected areas and all 7 developed prospects (i.e., the most promising known mineral occurrences with estimated grades/tonnages) are located in the Churchill and 8 Mile/Sulphur Resource Management Zones.

The impact of the Plan on mining, in terms of RMZ designations, is virtually identical to the Base Case, with the exception that the Plan offers documented management objectives and strategies which could pose some incremental constraints and costs on the sector. Notwithstanding, among the Plan's objectives is the confirmation that mining and related road access development outside the protected areas is acceptable. These activities will be subject to the same provincial review processes as are the proposed mineral development activities that might be proposed in the medium and high intensity management areas. The key difference is that for major mine development, the environmental assessment processes will take into consideration the management objectives and strategies applicable to the RMZ as per the Land Use Plan. Similarly for exploration and development, existing review and permitting processes will take into consideration the management objectives and strategies applicable to the RMZ as per the Land Use Plan. This may require the tenure holder to conduct exploration activities in a more costly manner to avoid or minimize the impact on the other values.

Specifically, the Muskwa-Kechika Special Management Category of RMZs cover much of the planning area's most prospective mineral lands. While there is some risk that the cumulative effect of these strategies may be to render some exploration and development uneconomic, it is also possible that these high potential areas may be better able to accommodate cost increases and remain attractive to explorationists. Also, exploration could be diverted to less encumbered RMZs (or to other portions of the same RMZ), especially since the area is relatively unexplored.

In summary, while there may be some foregone opportunities and possibly some reduced exploration activity by non-area residents, no existing local jobs are expected to be lost in this sector as a result of either Base Case or Land Use Plan initiatives.

3.2.4 Forestry Sector

The forest industry is one of the economic mainstays of the planning area economy. As of the early 1990s, the sector's resident employment was about 550-600 jobs (woodlands and mills), plus an additional 280 positions as the new Oriented Strandboard (OSB) plant reaches full production. With the new OSB mill, it is estimated that about 40% of the Ft. Nelson planning area economy will be "driven" by the forest sector.

As of January 1, 1995 the Allowable Annual Cut (AAC) was set at 600,000 m³/yr. for coniferous harvest and 900,000 m³/yr. for deciduous. However, the Timber Harvesting Land Base (THLB)⁸ on which the current AAC is based is considered to be conservative, and currently be re-evaluated by the Ministry of Forests.

No completed timber supply forecast of annual harvest flows for either the Base Case or the Plan was available at the time this assessment was prepared. However, based on the likelihood that the THLB supporting the most recent AAC determination is likely to increase,⁹ MoF's assessment is that while the FPC, new protected areas, and the Plan will create some new constraints on the THLB, it expects these can be fully offset for both the Base Case and the Plan. Moreover, even these new constraints are minimal, primarily because, in the Plan: (1) less than 4% of the both mature coniferous and deciduous volumes are precluded by protected areas, and (2) about 7% of mature coniferous volumes and under 3% of mature deciduous volumes are located in Muskwa-Kechika Special Management Category Resource Management Zones. (This is mainly due to the fact that the majority of the new protected and Muskwa-Kechika Special Management Category of Resource Management Zones are located in the western portion of the planning area, in mountainous/less accessible areas that contribute relatively little to the THLB.) Therefore no risks to existing jobs are anticipated from these land use initiatives, and long term stability is expected in this sector.

3.2.5. Agriculture Sector

The most recent information available indicates that there are 12 ranchers within the planning area, about 400 head of cattle, 21 Ministry of Forests

⁸ The Ministry of Forests defines the THLB as "The portion of the total land area of a management unit considered to contribute to, and be available for, long term timber supply."

⁹ The Timber Supply Review (TSR Discussion Paper, August 1993, p. 7) alluded to such a possibility, as it states that use of more pine/spruce mixed stands was possible and that there are additional opportunities for increased future utilization of lower volume per hectare spruce stands and coniferous-leading mixed wood stands.

range tenures, and about 50 B.C. Lands agricultural leases. There are currently about 25-50 people working full-time (with additional part-timers) in this sector, accounting for about 1% of the local economy.

The only mapped agricultural information available is the Agriculture Land Reserve (ALR), which indicates an estimated 49,309 hectares of ALR (although the amount of arable and potentially arable land exceeds this amount) within the planning area, all situated close to Fort Nelson. In the Base Case, 89% of the ALR land area falls within the Enhanced Resource Development Category of Resource Management Zones and less than 1% is located within the RPAT proposed protected areas. There may, however, be some cost implications arising from the FPC, especially in riparian areas of the Ft. Nelson River and Prophet River corridors.

As for the Land Use Plan, the amount of ALR which falls within protected areas is the same as the Base Case, with 74% in the Enhanced Resource Development Category of Resource Management Zones and 25% in the General Development Category of Resource Management Zones, but there are no discernible implications for agriculture resulting from this reallocation. The areas where additional costs may arise due to the Plan's management strategies are those agricultural lands which fall within the aforementioned Ft. Nelson RMZ (Enhanced Resource Development Category), the Rivers Corridors East RMZ (General Development Category), and possibly the Toad River Corridor RMZ (Muskwa-Kechika Special Management Category) and the Tenaka RMZ (General Development Category). Impacts on grazing tenures appear to be negligible, and the Plan states that grazing on existing tenures is to be maintained.

Finally, if market demand for the area's agricultural products stimulate future agricultural expansion, there is enough potentially arable land (but possibly less accessible and more costly) not being currently utilized for agriculture such that the overall (and especially longer term) implications of both the Base Case and Plan are minor. Moreover, some of the strategies in the Plan should enhance the viability of the sector, e.g. identifying lands with high agricultural potential.

3.2.6. Tourism, Guide-Outfitting, and Wilderness Recreation

Both the Peace Region and the Fort Nelson planning area are experiencing growth in commercial tourism and general public outdoor recreation. The planning area also offers nature-based tourism and outdoor recreation experiences with significant longer term potential. It is this "backcountry" component that is quite dependent on relatively pristine environmental resources to attract visitors, and therefore is the portion of the sector that is most sensitive to changes in Crown land use. The industry can therefore be

divided into two main categories: "front-country" (i.e., highway / community) tourism and "back-country" (i.e., nature-based) tourism, which collectively drive from 5% to 15% of the local economy. The front-country component accounts for the majority of the area's 250-300 tourism jobs, and much of this activity is currently dependent on accommodation, food, etc. expenditures made by workers in the resource industries. The back-country portion consists mainly of the guide-outfitters, who are responsible for an estimated 47 "person years" of employment, but due to the seasonal nature of the work, there are actually about 180 individuals who work at least part of the year in this sector.¹⁰

In both the Base Case and the Plan, front-country tourism will continue to grow, largely based on expanding summer traffic along the Alaska Highway and expected growth in the resource industries for the next several decades. This type of tourism could also benefit from the improvements in visual quality offered by the plan, in that 36% of the 326,712 ha. that has been identified as having high visual sensitivity will be located in protected areas, with 32% in Muskwa-Kechika Special Management Category. Also, in key corridors such as the Alaska Highway, River Corridors East (i.e. Ft. Nelson River North & South, Prophet River, and Liard River/Scatter Creek North), Toad River, Kechika River, Muskwa River, and Turnagain/Dall Rivers, there are specific objectives and strategies in place to avoid impacts that would affect visual quality.

The new protected areas provide for wilderness settings in key parts of the region, and the Muskwa-Kechika Special Management Category provide measures to more appropriately manage those areas where sensitive wilderness values occur. In terms of zone designations, both the Base Case and the Plan have similar impacts, which is a definite improvement relative to the Status Quo regime for both backcountry tourism and recreation. For example, in the Plan, 24% and 75% of the estimated 1,881,158 ha. in "Primitive Non-Motorized Areas" (i.e. areas more than 8 km from a 4-wheel drive road and greater than 5000 ha. in size) are located in protected areas and Muskwa-Kechika Special Management Category respectively. Similarly, 22% and 69% of the 2,876,121 ha. in "Undeveloped Watersheds over 5000 ha." are in protected areas and Muskwa-Kechika Special Management Category. Notwithstanding the foregoing, roads, seismic lines, etc. are still allowed outside of protected areas, and therefore over the long term, the majority of these now pristine areas are likely to experience declines in wilderness values as access increases over time.

¹⁰ Source: J. Paul and Associates. Based upon personal interviews which concluded that there is estimated average of 12 employees for each of the planning area's 15 guide-outfitting territories. This implies that, on average, each of the 47 "person-years" of employment consists of work for about 3.5 individuals.

The Plan should offer greater certainty to the area's guiding industry for at least the foreseeable future since 8 of the area's 15 guide-outfitting territories at least partially overlap protected areas, within which this activity is an allowable use subject to permit. In addition, several other territories guide outfitting territories overlay in the Muskwa-Kechika Special Management Category of Resource Management Zones. While the outlook is therefore reasonably optimistic, future growth in back-country tourism could be constrained in the long term due to expanding timber harvesting and petroleum/mineral activities into currently unaccessed areas.

3.2.7 Trapping

There are about 90 registered trap lines in the planning area. It appears that trapping is primarily a seasonal pursuit, but nonetheless is an important part of the lifestyles of those engaged in the activity. Activity in this sector is obviously sensitive to furbearer populations. The Base Case management regime indicates a relatively high risk to marten and fisher, as significant habitat is located in the General Development Category and Enhanced Resource Development Category, and thus longer term decreases in populations would be likely. This decline in populations would obviously negatively affect trapping activity.

The Plan moderately improves the outlook for marten and fisher by introducing some supportive management objective and strategies (e.g., "Ensure that impacts of commercial/industrial activities on trappers are minimized") but the environmental assessment concludes longer term population declines may still occur, thus creating the potential for negatively impacting future trapping incomes.

3.2.8. Community and First Nations Implications

The population of the Planning Area at the time of the last 1991 Census was 5142 persons. The 1994 population was estimated by B.C. Stats to be 5471, indicating quite strong growth, likely due to more activity in the forestry and petroleum sectors. Fort Nelson is the largest community, with a population of 4104 as of 1994. Most of the remaining population is found along the Alaska Highway corridor. Anecdotal evidence also indicates that there is a relatively large non-resident labour component. That is, significant amounts of seasonal work in forestry, mineral exploration, gas exploration, and guide outfitting is taken by provincial residents residing outside the planning area, including residents of Alberta.

Community implications mainly arise from the changes in industrial sectors, which can impact jobs/incomes, population levels, the local tax base, community services, local incomes, etc. As is apparent from the sectoral

analyses above, neither the Base Case nor the Plan are expected to negatively impact current employment. The large untapped resource base of the planning area will continue to support cyclical economic growth, although at a somewhat slower pace over the longer term than if there were no FPC, new protected areas, or a Land Use Plan.

Local First Nations are the Ft. Nelson, Prophet River, Ft. Liard, Lower Post Bands, and Alberta's Dene Tha. First Nation total population (on and off reserve) is estimated to be 400-500 individuals. The implications of the Base Case and Plan on First Nations is more difficult to assess, mainly because they were not highly involved in the Ft. Nelson LRMP process. The Plan itself specifies several strategies to protect heritage/archaeological sites and values, accommodate aboriginal/treaty rights, recognise spiritual/cultural values, and conserve key environmental values that are important for traditional uses. Therefore, the Plan should provide an improvement in the management of aboriginal values vs. the Base Case.

3.3 Environmental Assessment

3.3.1 Overview - Biodiversity Implications

The environmental implications of implementing the proposed Land Use Plan are generally positive. The incremental benefits compared to the Base Case are largely due to the reduction (9% less of the Gross Land Base) in the amount of land allocated to Enhanced Resource Development Category of Resource Management Zones, which was reallocated primarily in the various river corridor RMZs which are classified in the General Development Category. The reduced intensity of development proposed in these areas should provide more natural levels of biodiversity and moderately improves the outlook for species and habitats that occur within these zones.

Overall, the proposed Land Use Plan improves the outlook for many species and their habitats. This is mainly due to the allocation of the Muskwa-Kechika Special Management Category (28% of Gross Land Base) and 11% in new protected areas in the western portion of the planning area, where significant wildlife and wilderness values occur. Allocating this large amount of land to low levels of resource development reduces the risks to wildlife populations and ecosystem processes (e.g., predator-prey relationships). Furthermore, by allocating so much of the western portion of the plan area (i.e., contiguous) as protected areas and Muskwa-Kechika Special Management Category with supportive management strategies, the Plan reduces the risks of regional fragmentation. This should provide for more

natural levels of connectivity which also minimizes the risks to wildlife populations and biodiversity in general.

3.3.2. Proposed Protected Areas and Ecosystem Representation

The proposed Land Use Plan provides for 11% of the Gross Land Base as protected areas, of which the Northern Rockies protected area would contribute over 50% (620 759 ha). This new park, together with the management strategies outlined by the Plan, ensures the significant conservation values that occur in this area will be maintained. This new park would provide excellent representation of the Eastern Muskwa Ranges and Muskwa Foothills ecosections and, primarily due to its large size, provides favourable outlooks for many of the plant and animal species dependent on large, relatively intact ecosystems. In addition, the protected area and the Muskwa-Kechika Special Management Category in surrounding areas provide for relatively low risks to provincially significant populations of Stone's sheep, elk and mountain goat.

The Land Use Plan and the Base Case provide ecosystem representation for 6 of 7 biogeoclimatic subzones. However, the Land Use Plan provides increased representation in 2 subzones that have high biodiversity values. Most notably, the Denetiah proposed protected area results in a doubling (increase of 9000 ha) of the amount of the dry-cool Boreal White and Black Spruce (BWBSdk1) biogeoclimatic subzone. This subzone supports many provincially significant wildlife species including caribou, moose, wolf, and grizzly bears. Although the moist-cool Spruce-Willow-Birch (SWBmk) biogeoclimatic subzone is well represented at 19% in the Base Case, the Land Use Plan allocates an additional 62 000 ha in new parks which results in a total of 22% of the SWBmk within protected areas.

In contrast, most of the eastern portion of the plan area will continue to be managed in Enhanced Resource Development Category of Resource Management Zones (36% of land base) which means a significant proportion of the moist warm variants (BWBSmw1 and mw2) are under represented in protected areas and implies that biodiversity may be maintained significantly below more natural levels.

Although most of the other proposed protected areas are expected to have positive impacts on wildlife populations and wilderness values, the reduction in size (14,000 ha) of the Grayling-Liard proposed Protected Area increases the risks to riparian cottonwood habitats compared to the Base Case. Lower-level planning processes, however, may partly mitigate the potential adverse effects of managing this river ecosystem as a part of the General Development Category.

3.3.2.1. Red and Blue-Listed Species

Several aspects of the Land Use Plan improve the outlook for species considered endangered (Red-listed) or vulnerable (Blue-listed). Most importantly, the significant reduction (almost 50%) in the amount of mature deciduous forest to be managed as Enhanced Resource Development Category Resource Management Zones reduces the risks to many riparian species, including red and blue-listed warblers dependent on habitats that occur within the River Corridor RMZs. In addition, the Plan outlines specific management direction to identify and map critical wildlife habitats of concern. Although this is an incremental improvement over the Base Case, moderate risks remain to species dependent on upland riparian communities.

3.3.2.2. Fisheries

The reallocation of the River Corridor RMZs from the Enhanced to General Resource Development category reduces the risks to key watershed and fisheries habitat values. While the *Forest Practices Code* will significantly improve protection for fisheries habitat by requiring the use of *Riparian Management Zones*, reduced resource development and management strategies outlined by the Plan to mitigate potential adverse effects further reduce the risks to water and fishery resources.

3.3.2.3. Ungulate Winter Ranges

Except for a portion of caribou habitat that has been designated as part of the General Development Category (Caribou RMZ), winter ranges for caribou, Stone's sheep, elk and mountain goat would likely have been specially managed and/or in protected areas under the Base Case. This allocation minimizes the risks to ungulate winter ranges through reduced access (forestry, oil and gas) and forest harvesting. Similar land use allocations under the Plan also pose relatively low risks to ungulate winter ranges including the larger predator-prey ecosystems that occur within these areas. In addition, RMZ objectives and access management strategies outlined by the Land Use Plan, further reduce the risks to these large mammal populations.

3.3.3 Muskwa-Kechika Access Management Area

Although some access management in the Muskwa-Kechika would continue to be implemented in the absence of a land use plan, the management strategies outlined in the Plan further reduce the risks to large mammal populations (e.g., grizzly bears, ungulates). These strategies reduce the risks by providing a greater degree of certainty that wildlife populations vulnerable to increased access will be given adequate consideration during lower level

planning processes. So, although many of these areas would have received similar management attention under the Base Case scenario, the Land Use Plan provides clearer direction and a protocol which together provide a greater degree of certainty and commitment that effective access management will be implemented. The possible legislated status of this area under a formal designation should also provide more certainty that the management objectives and strategies for those RMZs located in the Muskwa-Kechika will be implemented as intended in the Plan.

4.0 IMPLEMENTATION

Portions of the Fort Nelson LRMP may become a government approved higher level plan. It is a working document that will be implemented by all relevant government agencies through agency-specific management activities, more detailed strategic and operational plans, resource development permits and land disposition. In the absence of more detailed and operational plans, all resource-specific development plans or permits will take guidance from the resource management zone objectives and strategies described in this plan.

All subsequent strategic and operational plans will include a section that describes the linkages to the Fort Nelson LRMP. This will include an explanation of how the plan meets the objectives and implements the strategies outlined in the LRMP. Conversely, it is recognised that the resource management zone objectives and strategies in this plan may be amended in the future based on feedback from the subsequent level of planning.

4.1 Resource Management Zones and the Forest Practices Code

Resource Management Zones can come into force in two different ways. One approach is that Cabinet would approve the LRMP and give it the effect of 'policy to be implemented by all relevant government agencies.' The second approach is that Cabinet could declare all or parts of the intents, zones, objectives and strategies under Part 1 of the Forest Practices Code Act of British Columbia. This would give the provisions the force of law in their implementation.

4.2 Formal Designation - Muskwa-Kechika

The intent is to ensure that wilderness characteristics and wildlife habitat are maintained over time while allowing resource development, including roaded resource development.

The Fort Nelson Working Group recommends that a portion of the planning area, specifically the following resource management zones: 8 Mile/ Sulphur, Aeroplane, Churchill, Fishing, Moodie, Muskwa West, Prophet, Rabbit, Rainbow, Sandpile, Stone Mountain,, Terminal, Kechika River Corridor,

Turnagain/ Dall Rivers Corridor, that portion of the Alaska Highway Corridor that falls within the Muskwa-Kechika boundary, that portion of the Toad River Corridor above Scaffold Creek, and the west portion of the Muskwa River Corridor (boundary to follow river) be formally designated in a manner that meets the following fourteen points. The spirit and intent of the fourteen points is to foster a co-operative management approach for the Muskwa-Kechika.

1. Covers the Muskwa-Kechika area.
2. Captures the intent of the objectives and strategies for the respective resource management zones.
3. Authority for operational planning and approvals remain within the jurisdiction of line agencies.
4. The intent is to ensure that wilderness characteristics and wildlife habitat are maintained over time while allowing resource development, including roaded resource development.
5. Joint approval is required for off-site mineral pre-development plans (e.g. airstrips, access roads), pre-tenure plans for oil and gas, landscape unit plans for forestry or equivalent for all other tenured activities.
6. Ensure adequate government resources (inventory data, government staffing) are provided to allow for timely development plans.
7. No additional delays in operational decision making by line agencies - plans and permits to be approved in a timely and efficient process consistent with normal permitting time frames experienced in the Fort Nelson LRMP area.
8. The Muskwa-Kechika designation will not result in operational delays especially those leading to job loss.
9. The Muskwa-Kechika designation does not infer future protected area status.
10. The Environment Assessment Process applies to reviewable projects
11. Dispute resolution mechanisms will be in accordance with the administrative protocols in place, under development and/or being developed. Examples include:
 - 2005;

- Forest Practices Code; or
 - similar post-tenure mechanism for mining.
12. There will be a role for an advisory body, based on the LRMP Working Group; to provide interpretation of the intent of the plan with respect to management issues within the Muskwa-Kechika.
 13. The proposed protected areas will be formally designated as appropriate, and incorporated within the Muskwa-Kechika designation to ensure management consistency.
 14. Government agencies to manage the protected areas in a co-operative manner; this includes a continued role for the Ministry of Forests to contribute to the management within the protected areas.

4.3 Protected Area Designation Process

Concurrent with the approval of the Fort Nelson LRMP by cabinet, legal description for the recommended protected areas will be prepared by the IPT. A complete land and tenure status report and clear documentation about the intent of special consideration of each protected area will be forwarded to the Land-Use Co-ordination Office.

4.4 Roles and Responsibilities

4.4.1 Interagency Management Committee

The responsibilities of the Interagency Management Committee are as follows:

- co-ordinate and ensure implementation;
- review and provide recommendations on proposed amendments;

4.4.2 Agencies

All relevant agencies are responsible for the following items:

- prepare an annual, or biennial monitoring report on plan implementation;
- prepare implementation matrix and action plan to ensure strategies and objectives are carried out;
- review existing more detailed strategic and operational plans, and resource management plans to ensure consistency with the LRMP; and,

- distribute a copy of the plan to all licensed resource users, resource agency staff, stakeholders and interested public

4.4.3 First Nations

Government is committed to work with First Nations on a government-to-government basis. The LRMP will be without prejudice to aboriginal and treaty rights, and ongoing and future treaty negotiations. First Nations will be encouraged to play a direct role in the implementation and monitoring of the Plan.

4.4.4 Public

It is recognised that the public, in partnership with the different government agencies and First Nations, is an important contributor to the effective implementation and monitoring of the plan.

4.5 Direction for Local Level Planning

Local level plans may be a wide range of local or more detailed planning processes including, but not limited to landscape unit objectives, local resource plans, co-ordinated access management plans and protected area management plans. Where this is no other planning process for a defined area, plans are to be developed by the appropriate agencies and will provide an opportunity for public review. Any concerns with specific resource management practices should be raised directly with the resource agency mandated to manage those specific values.

4.6 Criteria that Apply to All Local Level Plans

All parties with a key interest or stake in the plan must be invited and encouraged to:

- Participate
- Strive for consensus through an interest-based decision making process
- Ensure all local level plans are consistent with the LRMP
- Address resource user conflicts.

4.7 Public Education

It is recognized that public education is an important part of the LRMP planning process. All Working Group members should work to educate the public with regards to the content of LRMP recommendations, including the Proposed Protected Area designations, recognition of resource values, resource management objectives and strategies and the justification for proposed management strategies. Working Group members should also understand and be able to communicate the potential economic impacts of those strategies.

In particular, the Working Group recognizes that there is a need to educate motorized outdoor recreation users about the potential impacts of that motorized recreational vehicles (e.g., ATV's, four wheel drives, snowmobiles and off-road motor bikes) can have on the landscape and to ecosystems.

5.0 Transition Strategy

It is recognized by the Working Group that there is a need to provide the necessary flexibility for relevant agencies to adapt to changing circumstances and apply scarce resource in an efficient manner while also assuring the public that LRMP implementation is occurring. It is already apparent that the management intent is being incorporated into daily resource management activities.

Licensed resource tenure holders have generally been involved in a substantive way during the development of the Fort Nelson LRMP. They require some time and opportunity to design and institute management practices that will ultimately be consistent with the general intent of this plan. To ensure continuity of operational plan activity the LRMP will include phase-in provisions. These provisions, which will be developed at a later date, will include input from the stakeholders on how to phase-in the recommendations.

6.0 Monitoring and Amendment

6.1 Plan Term and Review Schedule

The term of the LRMP will be ten (10) years with a formal review in year five (5). The scheduled amendment and review process to renew the LRMP will begin in year eight (8).

6.2 Monitoring Committee and Reporting

6.2.1. LRMP Monitoring Committee and Reporting

The Fort Nelson LRMP recommends that the LRMP Working Group be used as the plan's monitoring committee and assist the Inter-agency Management Committee (IAMC) with reviewing the annual or biennial monitoring report.

The monitoring report will indicate how the objectives and strategies outlined in the Land and Resource Management Plan are being met through agency-specific resource management activities, subsequent planning processes and resource development plans or permits.

The resource agencies will prepare a LRMP monitoring report for the Working Group to review, annually for the first two years, and biennially thereafter. The report will include:

- actions taken to conform with plan direction
- compliance with plan requirements
- instances where the intent of the plan had to be clarified
- an update on the more detailed strategic plan schedule.

The monitoring report will review and collate indicator information and assess how well the plan is meeting stated management objectives. Each appropriate government agency will be responsible for collecting and collating indicator information, revising the indicators as necessary, and raising issues that need to be addressed.

Following the release of the Monitoring Report, the LRMP Working Group will hold a meeting to review the report and solicit public comment. The meeting will be an opportunity for the public to raise issues that may require update or amendment of the plan.

6.2.2 Muskwa Kechika Advisory Committee

The Muskwa-Kechika Advisory Committee is intended to provide a long term mechanism that will allow both non-government and government agencies to co-operatively provide interpretation and intent of the plan with respect to management issues on the Muskwa-Kechika, within both the Protected Areas and surrounding Special management Zones. This group will consist of agency representatives, interested LRMP working group members and other representatives as needed in the future.

6.3 Plan Amendment

Local or operational planning processed may, through more detailed mapping, research or public involvement, recommend changes to the land and Resource Management Plan. The outcome of the LRMP Monitoring Committee or the Muskwa-Kechika Advisory Committee meetings may also recommend amendments to the plan. These recommendations would be circulated to all the LRMP Working Group members. The amendments to the plan would be communicated by the LRMP Chairperson (or IAMC designate) to the Omineca-Peace Interagency Management Committee for their consideration.

6.3.1 Plan Updates (Minor Amendments)

Plan updates are any minor changes to the plan and may include:

- revision of wording;
- revised priorities for local level plans
- small changes to boundaries of Resource Management Zones (Max 500 ha) suggested by local level plans
- refinements to objectives and strategies suggested by local level plans; and,

The Monitoring Report will contain proposed plan updates. The IAMC will be responsible for review and approval plan updates. All changes to the plan will be documented and circulated to the public interest groups and tenure holders.

6.3.2 Unscheduled (Major) Amendments

The LRMP Working Group, public or agencies may identify issues that require an unscheduled amendment. These will be identified in the Monitoring Report or at the Monitoring Committee's meeting. When issues arise that require a major amendment, the IAMC will establish the schedule and Terms of Reference for the amendment process, consistent with existing legislation and regulations.

The LRMP Working Group and public will be involved in the plan amendment process.

An unscheduled amendment is a major or significant change to the plan including:

- large changes to Resource Management Zone boundaries (500 ha or more);
- major revisions to targets set out in the plan

6.3.3 Scheduled Amendments

A scheduled amendment will review the entire plan and include a detailed examination of significant revisions. The process to amend the plan will begin eight years following plan approval. The IAMC will establish the Terms of Reference for the amendment process, consistent with existing legislation and regulations. The public will be involved in the amendment process.

7.0 Interpretation and Appeal

From time to time, the LRMP Working group, public or agencies may become concerned about how the plan is being interpreted or about specific practices that are occurring. In all instances, the concerns will be dealt with in the same spirit that the plan was developed.

7.1 Interpretation of Land Use Objective and Strategies

Where a concern is raised over land use objectives and strategies, the concern will be addressed directly to the affected agency(s). The responsible manager(s) will respond to the concern in writing. If the matter is not satisfactorily resolved, the concern will be forwarded to the Omineca-Peace Interagency Management Committee, or other designated committee, for resolution.

7.2 Appeal of Resource Management Practices

Where the public or agencies raise concerns with specific resource management practices that are occurring in the LRMP, they will raise the issue directly with the affected agencies. Where there is an existing review or appeal process, the concern will be dealt with through it. For example, concerns over forest road construction will be dealt with under the Forest Practices Code.

7.3 Reconvening the LRMP Working Group

At the annual meeting and review, or if the LRMP Working Group is reconvened, the Working Group will have an opportunity to provide interpretation and input on specific issues relating to the Fort Nelson LRMP. A group of Working Group members may make a request to the Interagency Management Committee that the Fort Nelson LRMP Working Group be reconvened to address specific issues related to interpretation of the plan.

8.0 Issues

The Fort Nelson LRMP Working Group identified several issues that directly or indirectly affect land-use within the Fort Nelson Planning Area, and were related to existing government policy. The following section outlines the recommended policy changes.

It is important to note that these changes to policy recommendations are included for information purposes. **The approval of the Recommended Fort Nelson Land and Resource Management Plan should not be delayed pending resolution of these policy issues.** The policy issues will be formalized and forwarded under separate cover to the Omineca-Peace Interagency Management Committee. Not all of these issues are consensus recommendations; some are of interest to only one or two sector representatives.

8.1 Recommended Policy Directions

8.1.1 Commercial Backcountry Recreation

The management of public and commercial recreation within the Proposed Protected Areas and Muskwa-Kechika Special Management Category of Resource Management Zones was discussed at length by the table. The Fort Nelson LRMP Working Group provides the following recommendations that will affect the management of commercial backcountry recreation (CBR) activities. The intent of this recommended guidance is to maintain a balance between non-commercial public use and other use.

- An inventory should be completed of existing and potential CBR opportunities to guide the allocation of future CBR tenures.
- Commercial backcountry recreation activities must be consistent with:
 - acceptable limits of use
 - environmental sustainability
 - greatest benefit to local community, region and province
 - equitable forage allocation between commercial and non-commercial use
 - equitable allocation of suitable campsites.

8.1.2 Management of Protected Areas

The Northern Rocky Mountains and Denetiah Proposed Protected Areas cover a large portion of the proposed protected areas within the Fort Nelson planning area. There are significant wildlife and recreation values found within these two areas and the table has concerns regarding the future management of these areas. The table suggests that these large protected areas be managed in a way that recognizes their unique historical use patterns and recommends that the 'status-quo' remains relative to recreational use. The following specific concerns should be incorporated into the more detailed planning for these two protected areas:

- Traditional backcountry use has provided for the use of firearms outside of lawful hunting seasons for personal protection.
- Horse and pack stock use has been a traditional method of traversing these areas. Given that they will continue to be used, non-commercial 'horse-use' permits should not be required until such time as they are required to protect other values within these areas.
- Horses should not be limited to existing trails unless required to protect other important values. (e.g. sensitive habitats)
- There should be no duplication of requirements for commercial operations in and adjacent to these protected areas. Permits required for commercial operators should not increase because of changes in land status associated with these protected areas.
- For these new Protected Areas, statements on management direction will be drafted as soon as possible, which reflect the intent of the LRMP recommendations. The statements will be prepared by the appropriate agency designated to manage the Protected Area, in co-operation with other agencies that have a management interest in the area. The Management Direction Statements will provide commitment to co-operative management of the protected areas between agencies; and will provide the management direction until comprehensive Protected Area Management Plans are prepared through an open and inclusive public process.
- The proposed protected areas should be managed for the reasons for which they were recommended for protection, more specifically, their respective wilderness and wildlife values, not just for human use. This should not preclude restrictions on the amount or type of recreational use if the level of use is compromising these wilderness or wildlife values.

- Sufficient staff and resources need to be committed to ensure the proper management of the proposed protected areas contained within this plan.

8.1.3. Drilling Under Proposed Protected Areas

The Fort Nelson LRMP Working Group recommends that the sale of subsurface rights and drilling for petroleum resources be allowed under specific proposed Protected Areas if doing so would not compromise the values for which the areas were protected. This does not include surface access to or through these Protected Areas. This policy would allow for some economic recovery of these sub-surface resources and would possibly mitigate compensation issues. It is the Working Group's understanding that this would require a modification of existing government policy.

A subcommittee of the Environmental Conservation and Oil and Gas Sectors met in December 1996 to determine if the sectors could reach consensus on areas that might be appropriate for directional drilling under proposed Protected Areas in the Fort Nelson, Fort St. John and Dawson Creek planning areas. The subcommittee reviewed the proposed Goal 1 and 2 areas, and developed draft criteria for determining if directional drilling should be supported underneath proposed Protected Areas. The information was intended as a recommendation from the subcommittee to the Working Group. A list of their recommendations and criteria used to develop them are found in the Appendix.

The proposed protected areas which are affected by this issue are:

- Goal 1: Thinatea Proposed Protected Area
- Goal 2: Hay River Proposed Protected Area
- Goguka Creek Proposed Protected Area
- Jackpine Remnant Proposed Protected Area

8.1.4. Trapping in Proposed Protected Areas

The Fort Nelson LRMP planning area has historically been subject to trapping. Trapping remains socially important, especially amongst First Nations communities, where traplines are often held by families.

Therefore, the Working Group recommends that trapping be an "allowed use" in the Proposed Protected Areas, maintaining existing full rights. In addition the long term goal of maintaining trapping opportunities in the

Proposed Protected Areas should be implemented through the Protected Area management planning process.

8.1.5. Access and the Use of Gates

A considerable amount of the direction contained within this plan relates directly or indirectly to the management of access to crown lands. For a variety of reasons, this plan directs that access be controlled in certain circumstances to protect other resource values such as wildlife or wilderness. There are a variety of measures that can be taken to achieve this objective depending on the exact nature of the access control required.

The table has concerns that the use of gates for purposes other than public safety may lead to further complications if not used or monitored correctly. Problems in the past have been noted where certain individuals have gate privileges while others do not. To this end, the Working Group recommends the following with regards to the use of gates as an access control mechanism:

- Land Managers should use alternate access control measures where they are feasible.
- When gates are chosen as the tool to control access, it must be advertised with sufficient time for public concerns to be addressed.

8.1.6. Expansion of Lodges within Provincial Parks

The Fort Nelson LRMP Working Group recommends that BC Parks allow for tourism operators to expand their holding and operations within the existing Provincial Parks, if such an expansion is feasible.

8.1.7. Development of Operational Plans for Habitat Enhancement by BC Environment

The conversion of vegetation to forage through the use of fire was discussed by the Fort Nelson LRMP Working Group. As a result of these discussions the Working Group provides the following direction:

- Manage for wildlife habitat enhancement through a subsequent planning process.

The intent of this strategy is to give direction for the development of operational plans which cover range burning activities. It is the Working Group's understanding that this is a policy issue for BC Environment.

8.2 Inventory and Research Priorities.

The following priorities are recommended:

- Undertake research on the social, economic and environmental impacts of implementing LRMP objectives and strategies.
- Undertake research on the impacts of implementing biodiversity strategies
- Implement an adaptive management research program into biodiversity to ensure overall objectives for biodiversity are achieved in the long term
- Initiate a research program to improve our understanding of the behaviour and biology of caribou populations and the effect of resource development on caribou habitat
- Undertake research to update forest inventory information and provide for the ability to maintain current database information at all times.
- Conduct research into range and integrated resource management issues such as agro-forestry, integrating multiple uses on crown range land
- Undertake research into different types of vegetation management and alternatives to herbicides.

GLOSSARY OF TERMS

ABORIGINAL RIGHTS	<ul style="list-style-type: none"> a practice, tradition or custom which has been a central and significant part of the society's distinctive culture prior to contact with European society (R.v. Van der Pear, Supreme Court of Canada, August 1996). Examples of recognized aboriginal rights include (but are not limited to) fishing, berry picking, hunting and trapping for food, and the use of land and resources for shelter, medicinal, spiritual and ceremonial purposes.
ACCEPTABLE LIMIT OF USE	<ul style="list-style-type: none"> term to indicate a benchmark or threshold or disturbance on the land. Once the threshold has been reached, or passed, the use is no longer acceptable and strategies to restore the site could be considered.
ACCESS	<ul style="list-style-type: none"> a way or means of approach, (includes paths, trails, routes, corridors, roads, rails, etc.), to a specified interest.
ACCESS MANAGEMENT	<ul style="list-style-type: none"> the process of planning, developing, regulating and deactivating a way or means of approach to a specified interest.
AGE CLASS	<ul style="list-style-type: none"> any interval into which the age ranges of trees, forests, stands or forest types is divided for classification and use; forest inventories commonly group trees into 20 year age class groups.
AGGREGATE	<ul style="list-style-type: none"> formed by the gathering of smaller units into one large unit (e.g. cut blocks)
AGRICULTURE	<ul style="list-style-type: none"> the practice of growing and harvesting plants or animals, on land (including substrates) or in water, for the production of food, fibre, fuel, medicine, ornamentals and industrial products or uses associated with or ancillary to the production of food, fibre, fuel, medicine, ornamentals and industrial items.
AGRICULTURE LAND	<ul style="list-style-type: none"> land that is used for farming, including ranching, and land that has biophysical attributes that make it suitable for agricultural use. The latter includes lands identified by the Canada Land Inventory agricultural classes 1 to 5, as well as unique lands that have the capability to sustain agriculture in the regional context.
AGRICULTURE LAND RESERVE (ALR)	<ul style="list-style-type: none"> land designated and reserved for agricultural purposes under the <i>Agriculture Land Commission Act</i> (the reserve covers about 5% of the provincial land base and includes most of BC's high quality agricultural land). It includes both private and public lands, and covers land being farmed and land with agricultural potential. Non-agricultural uses on the ALR are regulated.
ALLUVIAL	<ul style="list-style-type: none"> sand, clay, or gravel and other soil materials gradually deposited along river beds and floodplains, by running water.

ARCHAEOLOGICAL SITES	<ul style="list-style-type: none"> • locations that contain physical evidence of past human activity for which the application of scientific methods of inquiry (i.e. survey, excavation, data analysis, etc.) are the primary source of information. These resources do not necessarily hold direct associations with living communities. Examples of archaeological sites include shell middens, lithic scatters, cache pits and pit house remains. <p><i>(from: Douglas Glaum communication, April 1996)</i></p>
BEST MANAGEMENT PRACTICES	<ul style="list-style-type: none"> • accepted methods for controlling non-point sources pollution, may include one or more conservation practices.
BIODIVERSITY	<ul style="list-style-type: none"> • or biological diversity, is the diversity of plants, animals and other living organisms in all their forms and levels of organization, and includes the diversity of genes, species and ecosystems, as well as the evolutionary and functional processes that link them. <p>The underlying assumption of applying the biodiversity management approach is that all native species and ecological processes are more likely to be maintained if managed forests are made to resemble those forests created by the activities of natural disturbance agents such as fire, wind, insects and disease. The composition, size, age and distribution of forest types and structural characteristics of forest stands have been determined by these natural processes.</p> <p>Applying biodiversity emphasis options to landscape units across a planning area is a key biodiversity management strategy.</p> <p>When landscape level biodiversity management options have been established, the requirement for maintaining biodiversity in individual stands can be determined from Biodiversity Field Guide.</p> <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
BIODIVERSITY - STAND LEVEL	<ul style="list-style-type: none"> • Stand level - <i>stand management to maintain biodiversity</i>, stand level recommendations for biodiversity are designed to maintain or restore important structural attributes such as wildlife trees (including standing dead or dying trees), coarse woody debris, tree species diversity and under storey vegetation diversity. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
BIOGEOCLIMATIC ZONES	<ul style="list-style-type: none"> • are geographic areas having similar patterns of energy flow, vegetation and soils as a result of broadly homogeneous climate. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p> <ul style="list-style-type: none"> • a classification of forest or range lands incorporating primarily climate, soil and vegetation data.

BLUE LISTED SPECIES	<ul style="list-style-type: none"> • taxa that are considered to be vulnerable and "at risk", but not yet endangered or threatened. Populations of these species may not be in decline, but 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.
BUFFER ZONE	<ul style="list-style-type: none"> • a zone of vegetation around a sensitive area intended to filter impacts of adjacent activities, such as road building, on the resource being protected - some activities may be permitted within buffer zones. Often used in conjunction with <i>leave strips</i> - an undisturbed strip of vegetation around a sensitive resource area. (from: <i>Environmental Guidelines for Seismic and Drilling Operations in Northeast British Columbia (Interim)</i>, MELP, November 1994.)
CARIBOU MANAGEMENT ZONE	<ul style="list-style-type: none"> • areas where operable timber supply has been reduced to meet the habitat requirements of caribou.
CERTAIN	<ul style="list-style-type: none"> • fixed; settled • proved to be true • dependable, reliable • indisputable, undeniable
CERTAINTY	<ul style="list-style-type: none"> • something that is certain; the state of being certain
COLIFORMS	<ul style="list-style-type: none"> • bacteria present in the intestinal tracts of humans and other warm blooded animals and excreted in large numbers in faecal wastes. Water is not a natural medium for coliform organisms and their presence is indicative of faecal pollution. Total coliform counts are used as an indicator of the treatment adequacy in drinking water supply systems. Total coliforms include a wide variety of bacteria, many of which are not pathogenic and not associated with human waste. The faecal coliforms counts are specific for faecal pollution. (from: <i>Draft Community Watershed Guidebook</i>, March 1996)
CONFLUENCE	<ul style="list-style-type: none"> • place where streams meet
CONNECTIVITY	<ul style="list-style-type: none"> • a qualitative term used to describe the degree to which late successional ecosystems are linked to one another to form an interconnected network. The degree and characteristics of these linkages are determined by topography and Natural Disturbance Type (NDT). • Specific types of connectivity are: <ul style="list-style-type: none"> • upland to upland • upland to stream • upland to wetland • cross-elevational <p>(from: <i>Biodiversity Guidebook</i>, September 1995)</p>

CONSERVATION DATA CENTER	<ul style="list-style-type: none"> a division of B.C. Environment that tracks species and plant communities that are considered threatened or endangered at the provincial, national or global level.
CONSERVE	<ul style="list-style-type: none"> to keep in a safe or sound state; to avoid wasteful or destructive use of
CRITICAL HABITAT	<ul style="list-style-type: none"> part or all of a specific place occupied by a wildlife species or a population of such species and recognized as being essential for the maintenance of the population or ecosystem processes. The habitats may be well defined, geographically concentrated, critical niches or species-specific critical ecological components widely distributed across the landscape. <p><i>(from: Draft Wildlife Habitat Areas Field Guide, October 1994)</i></p>
CRITICAL USE AREAS	<ul style="list-style-type: none"> area important to the operations
CUESTA	<ul style="list-style-type: none"> a ridge with a steep face on one side, and a gentle slope on the other
DEVELOPED PROSPECT	<ul style="list-style-type: none"> mineral occurrence with resources/reserves defined by advanced exploration
DISCOURAGE	<ul style="list-style-type: none"> to hinder by disfavouring; deter; to attempt to dissuade
ECOSECTION	<ul style="list-style-type: none"> large, defined geographic units based primarily on landform and climate that are used to divide the province into large physiographic units. areas with minor physiographic, climatic and oceanographic differences. There are 116 ecosections in BC.
ECOSECTION REPRESENTATION	<ul style="list-style-type: none"> the degree to which an area represents the biophysical features of the ecosection, especially its ability to capture the full range of biogeoclimatic units
ECOSYSTEM	<ul style="list-style-type: none"> a community of animals, plants and bacteria and its interrelated physical and chemical environment
ENCOURAGE	<ul style="list-style-type: none"> to spur on : stimulate; to give help or patronage to : foster
ENDANGERED	<ul style="list-style-type: none"> a species facing imminent extirpation or extinction, COSEWIC.
ENHANCE	<ul style="list-style-type: none"> to add or contribute to as: improve; increase
ENSURE	<ul style="list-style-type: none"> to make sure, certain, or safe : guarantee making certain or inevitable of an outcome, but INSURE sometimes stresses the taking of necessary measures beforehand
FACILITATE	<ul style="list-style-type: none"> to make easier
FLYWAY	<ul style="list-style-type: none"> specific air route taken by birds during migration.

**FOREST ECOSYSTEM
NETWORK (FENs)**

- planned landscape zones that serve to maintain or restore natural connectivity within a landscape unit. FENs are contiguous networks of representative old-growth and mature forest and are composed of a variety of protected and classified areas (e.g., protected areas, old-growth management areas, riparian management areas and reserve zones, wildlife habitat areas and other sensitive areas such as unstable terrain, high visual quality or any other inoperable areas).

(from: Biodiversity Guidebook, September 1995)

FOREST PRACTICE

- timber harvesting, road construction, road maintenance, road deactivation, silviculture treatments, botanical forest product collecting, grazing, hay cutting, forest use, control, suppression and any other activity that is
 - carried out on land that is
 - Crown Land
 - range land, or
 - private land that is subject to tree farm license or a woodlot license, and
 - carried out by
 - any person (A) under an agreement under the Forest Act or Range Act, (B) for a commercial purpose under this Act or the regulations, or (C) to rehabilitate forest resources after an activity referred to in clause (A) or (B), or
 - the government.

(from: Forest Practices Code, April 1995)

**FOREST PRACTICES
CODE OF BRITISH
COLUMBIA**

- part of an overall strategy introduced by the provincial government for land use planning and resource management in B.C.. The Code is based on the goal of sustainable use which includes:
 - managing forests to meet present needs without compromising the needs of future generations,
 - providing stewardship of forests based on an ethic of respect for the land,
 - balancing productive, spiritual, ecological and recreational values of forests to meet the economic and cultural needs of peoples and communities, including First Nations,
 - conserving biological diversity, soil, water, fish, wildlife, scenic diversity and other forest resources; and,
 - restoring damaged ecosystems

(from: Draft Administrative Guide for Strategic Planning, January 1995)

FRAGMENTATION	<ul style="list-style-type: none"> a process whereby large contiguous forest patches are transformed into one or more smaller patches surrounded by disturbed areas. Fragmentation occurs naturally by fire, disease, wind and insect attack. It also occurs in managed forests, influenced by the rate of cut, cutblock size, cutblock distribution and silvicultural systems used to re-forest. Fragmentation due to forest harvesting should be viewed and managed to mimic fragmentation resulting from natural disturbances. <p>Fragmentation can lead to declines in biodiversity in three ways:</p> <ul style="list-style-type: none"> the loss of habitat through the conversion of natural forest stands to managed forest stands the increase in micro-climatic and biotic edge effects through the reduction in size of forest patches the imposition of barriers to gene flow and dispersal through the increasing isolation of remaining forest patches <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
GROUNDWATER	<ul style="list-style-type: none"> subsurface water found in the zone of saturation; found in the aquifer
GROUNDWATER RECHARGE	<ul style="list-style-type: none"> the inflow to an aquifer
HABITAT	<ul style="list-style-type: none"> an area in which a plant or animal naturally lives; part of a broader unit, the ecosystem
HEADWATERS	<ul style="list-style-type: none"> the source and upper reaches of a stream, also the upper reaches of a reservoir
HIGHER LEVEL PLAN (HLP)	<ul style="list-style-type: none"> a plan formulated pursuant to section 4 (c) FO the <i>Ministry of Forests Act</i> a management plan an objective for a resource management zone an objective for a landscape unit or sensitive area an objective for a recreation site, recreation trail or interpretative forest site, and a plan or agreement declared to be a higher level plan by <ul style="list-style-type: none"> the Ministers, or the Lieutenant Governor in Council under this or any other Act. <p><i>(from: Draft - Administrative Guide for Strategic Planning, January 1995)</i></p>
HYDROLOGY	<ul style="list-style-type: none"> the science of waters of the earth, waters properties, circulation, principles and distribution
IDENTIFIED WILDLIFE	<ul style="list-style-type: none"> those species at risk that the Deputy Minister of Environment, Lands and Parks or a person authorized by that deputy minister and the chief forester agree will be managed through a higher level plan, wildlife habitat area or general wildlife measure.

IMPROVE	<ul style="list-style-type: none"> • to enhance in value or quality : make better • to use to good purpose • to advance or make progress in what is desirable • to make useful additions or amendments
INDUSTRIAL MINERAL	<ul style="list-style-type: none"> • non-fuel, non-metallic minerals and rocks that often require bulk processing, transportation and marketing to meet commercial and industrial uses. Examples include but are not limited to: limestone for industrial or commercial needs, barite, gypsum, clay, glass sand and dimension stone.
INSTREAM FLOW REQUIREMENT	<ul style="list-style-type: none"> • the minimum amount of water required in a stream to maintain the existing aquatic resources and associated wildlife and riparian habitat
INTEGRITY	<ul style="list-style-type: none"> • an unimpaired condition; soundness • the quality or state of being complete or undivided; completeness
LANDSCAPE	<ul style="list-style-type: none"> • a watershed or series of similar and interacting watersheds, usually between 5 000 and 100 000 ha in size
LANDSCAPE UNIT	<ul style="list-style-type: none"> • a planning area, delineated according to topographic or geographic features such as a watershed or series of watersheds and, as designated by a district forest manager <i>(from: Biodiversity Guidebook, September 1995)</i>
LARGE WOODY DEBRIS	<ul style="list-style-type: none"> • Woody debris functioning as fish habitat, during at least part of the year, with a diameter of 10 cm or greater and a length of 2 meters or greater.
LAND AND RESOURCE MANAGEMENT PLANNING	<ul style="list-style-type: none"> • The sub-regional integrated resource planning process for British Columbia. LRMP considers all resource values and requires public participation, interagency co-ordination and consensus-building in land and resource management decisions.
LINEAR DEVELOPMENT	<ul style="list-style-type: none"> • straight line industrial development that is typically of powerlines, highways, gas lines and seismic activities.
LOWER LEVEL PLANS	<ul style="list-style-type: none"> • see Operational Plans
MAINTAIN	<ul style="list-style-type: none"> • to keep in an existing state (as of repair, efficiency, or validity) : preserve from failure or decline
MANAGE	<ul style="list-style-type: none"> • to handle or direct with a degree of skill or address • to treat with care • to exercise executive, administrative, and supervisory direction of
MANAGEMENT STRATEGY	<ul style="list-style-type: none"> • a method for achieving an end or objective

MATURE GROWTH	<ul style="list-style-type: none"> • or <i>mature seral stage</i>, is a forest composed primarily of co-dominant trees, with canopies that vary vertically, horizontally, or both. Generally refers to trees 80 to 120 years old or greater, depending upon species and site conditions. The age and structure of mature seral-stage forests varies significantly by forest type and from one biogeoclimatic zone to another. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
MAXIMIZE	<ul style="list-style-type: none"> • to increase to a maximum • to make the most of
METALLIC MINERAL	<ul style="list-style-type: none"> • ore minerals that contain metal. Metallic ores are almost always transported from a mine in a concentrated form for further processing.
MINERAL ASSESSMENT	<ul style="list-style-type: none"> • a description of the known and potential or estimated mineral values of the land base. Discovered deposits comprise the known value component; and predicted or estimated resources based on occurrences, past production, exploration expenditures and expert knowledge, comprise the potential value component. Mineral assessment classifies tracts of land from 1 (lowest) to 10 (highest). Metallic and industrial mineral (non-metallic, non-fuel minerals) values are assessed separately. The assessments in this document were completed by the provincial Geological Survey Branch and based on a refined version of the assessment process used by the United States Geological Survey.
MINING	<ul style="list-style-type: none"> • Mining means both mineral exploration and development • Development means final stages of advanced exploration, construction of production facilities and production of minerals
MINIMIZE	<ul style="list-style-type: none"> • to reduce to a minimum
NATURAL DISTURBANCE TYPES (NDTs)	<ul style="list-style-type: none"> • characterize areas with different natural disturbance regimes. Natural stand-initiating disturbances are those processes that largely terminate the existing forest stand and initiate secondary succession in order to produce a new stand. For the purpose of setting biodiversity objectives, five natural disturbance types are recognized as occurring in BC. These are: <ul style="list-style-type: none"> • NDT 1 - ecosystems with rare stand-initiating events • NDT 2 - ecosystems with infrequent stand-initiating events • NDT 3 - ecosystems with frequent stand-initiating events • NDT 4 - ecosystems with frequent stand-maintaining fires • NDT 5 - Alpine Tundra and Sub-alpine Parkland ecosystems <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
NATURAL STREAM FLOW	<ul style="list-style-type: none"> • the flow of a stream as it would be if unaltered by upstream diversion, storage, import, export or changes in upstream consumption use caused by development
NOT SATISFACTORILY RESTOCKED (NSR)	<ul style="list-style-type: none"> • productive forest lands that has been denuded and has bailed, partially or completely, to regenerate either naturally or artificially.

OLD GROWTH MANAGEMENT AREA (OGMA)	<ul style="list-style-type: none"> mapped-out special management areas that contain or are managed to replace specific structural old-growth attributes. They are intended to capture old-growth or mature seral stages within landscape units to meet retention objectives and can be harvested (using timber harvesting and silvicultural practices consistent with management objectives for the OGMA) when equivalent old -seral stage areas are available. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
OLD-GROWTH	<ul style="list-style-type: none"> or <i>old seral stage</i> is a climax forest that contains live and dead trees of various sizes, species, composition and age class structure. The age and structure of old growth forests varies significantly by forest type and from one biogeoclimatic zone to another. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
OPERATIONAL PLAN	<ul style="list-style-type: none"> 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. These include forest development plan, logging plan, access management plan, range use plan, silviculture prescription, stand management prescription and 5 year silvicultural plan. <p><i>(from: Higher Level Plans: Policies and Procedures, May 1996)</i></p>
PAST PRODUCER	<ul style="list-style-type: none"> past producing mine, often with potential for expanding existing reserves and mining.
PATCH	<ul style="list-style-type: none"> a stand of similar-aged forest that differs in age from adjacent patches by more than 20 years. The term is used in landscape level planning to either refer to the size of an opening created by a natural disturbance that led to even-aged forests or an opening created by cutblocks. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
POLLUTION	<ul style="list-style-type: none"> any alteration in character of quality of the environment which renders it unfit or less suited for certain uses
POTABLE	<ul style="list-style-type: none"> water fit for human consumption without further treatment
PRE-EXISTING LEVELS	<ul style="list-style-type: none"> in reference to motorized access. the number of routes available for use by recreational motorists before any new developments
PREDATOR-PREY SYSTEM	<ul style="list-style-type: none"> a combination of a population of large predator, a complex of prey populations, and the environment in which this relationship exists. In the Fort Nelson Forest District, there are two large predator-prey systems: bears and wild ungulates; and wolves and wild ungulates. Any network of areas designed to maintain large predator-prey populations must include the centres of their occurrence and the vital linkages or movement corridors between them.

PRESCRIPTION	<ul style="list-style-type: none"> a set of detailed directions for managing habitat for identified wildlife (from: <i>Draft Managing Identified Wildlife Guidebook, February 1996</i>)
PRESERVE	<ul style="list-style-type: none"> to keep safe from injury, harm, or destruction : protect to keep up and reserve for personal or special use
PRIORITY FISH SPECIES	<ul style="list-style-type: none"> freshwater game fish species such as rainbow trout, bull trout, walleye and burbot. (from: <i>Fish-stream Identification Guidebook, July 1995</i>)
PRODUCER	<ul style="list-style-type: none"> a current mining operation.
PROMOTE	<ul style="list-style-type: none"> to contribute to the growth or prosperity of : further
PROSPECT	<ul style="list-style-type: none"> mineral occurrence with some indication of dimension and value.
PROTECTED AREA	<ul style="list-style-type: none"> areas such as provincial parks, federal parks, wilderness areas, ecological reserves, and recreation areas that have protected designations according to federal and provincial statutes. Protected areas are land and freshwater to marine areas set aside to protect the province's diverse natural and cultural heritage.
PROTECT	<ul style="list-style-type: none"> to cover or shield from exposure, injury, or destruction : guard
PROVIDE	<ul style="list-style-type: none"> to make a proviso or stipulation to make preparation to meet a need : to supply something for sustenance or support
RARE ECOSYSTEM	<ul style="list-style-type: none"> an ecosystem (either <i>site series</i> - sites capable of producing the same late seral or climax plant communities within a biogeoclimatic zone or variant, or <i>surrogate</i> - to elect as substitute) that makes up less than 2% of a landscape unit and is not common in adjacent landscape units. (from: <i>Biodiversity Guidebook, September 1995</i>)
RECLAMATION	<ul style="list-style-type: none"> to put into a desired condition
RED-LISTED SPECIES	<ul style="list-style-type: none"> the taxa on the red list are either extirpated, endangered or threatened, or are being considered for such status. Any indigenous taxon (species or subspecies) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in B.C. is endangered. Threatened taxa are those indigenous species or subspecies that are likely to become endangered in B.C. if factors are not reversed.
REGIONALLY IMPORTANT SPECIES	<ul style="list-style-type: none"> species that 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.
RECOGNIZE	<ul style="list-style-type: none"> to acknowledge formally; as to admit as being of a particular status; to acknowledge the de facto existence or the independence of to acknowledge or take notice of in some definite way "as: to acknowledge with a show of appreciation; to acknowledge acquaintance with
REHABILITATION	<ul style="list-style-type: none"> re-establish to condition of good health

RESERVE	<ul style="list-style-type: none"> • to hold in reserve : keep back • to set aside • an area of forest land, that by law or policy, is not available for timber harvesting or production. <p><i>(from: Biodiversity Guidebook, September 1995)</i></p>
RESOURCE MANAGEMENT ZONE	<ul style="list-style-type: none"> • a land use designation category under the Forest Practices Code that establishes strategic objectives and special requirements to guide subsequent subregional/local and operational planning.
RESTORATION	<ul style="list-style-type: none"> • ecological restoration is the process of repairing damage caused by humans to the diversity and dynamics of indigenous ecosystems
RIPARIAN HABITAT	<ul style="list-style-type: none"> • a distinct wildlife habitat zone located in riparian areas (land adjacent to the banks of rivers, streams, lakes and wetlands). Riparian areas are dominated by continuous high moisture content and influenced by adjacent upland vegetation. They incorporate ecosystems that are biologically diverse, frequently containing the highest number of plant and animal species found in a forest. Riparian areas provide critical habitats, home ranges and travel corridors for wildlife and serve to maintain ecological linkages throughout the forest landscape by connecting hillsides to streams and upper-elevation stream headwater areas to valley bottoms. <p><i>(from: Riparian Management Area Guidebook, March 1995)</i></p>
RIPARIAN MANAGEMENT AREA	<ul style="list-style-type: none"> • an area determined in accordance with the Forest Practices Code Riparian Management Areas, that <ul style="list-style-type: none"> • is adjacent to a stream or wetland, or lake with a riparian class of L2, L3 or L4, and • consists of a riparian management zone and, depending on the riparian class of the stream, wetland or lake, a riparian reserve zone. <p><i>(from: Riparian Management Area Guidebook, March 1995)</i></p>
RIPARIAN MANAGEMENT AREAS GUIDEBOOK	<ul style="list-style-type: none"> • a guidebook to the establishment of riparian management areas and reserve zones under the Forest Practices Code of B.C.. <p><i>(from: Riparian Management Area Guidebook, March 1995)</i></p>
RIPARIAN MANAGEMENT ZONE	<ul style="list-style-type: none"> • an area adjacent to a stream, wetland or lake where constraints to forest practices apply for the purpose of maintaining the integrity of the stream, wetland or lake and associated wildlife habitat. <p><i>(from: Draft 2 - Riparian Management Area Guidebook, March 1995)</i></p>
RIPARIAN RESERVE ZONES	<ul style="list-style-type: none"> • an area adjacent to a stream, wetland, or lake, within the Resource Management Zone, where no forest practices may occur. <p><i>(from: Riparian Management Area Guidebook, March 1995)</i></p>

**ROS (RECREATION
OPPORTUNITY
SPECTRUM)
DELINEATION
CRITERIA**

- ROS classes are determined by considering the three basic criteria of remoteness, size, and evidence of humans.
- **Remoteness:** Remoteness from the sights and sounds of human activities is used as one of the criteria for the opportunity to experience greater or lesser amounts of social interaction and primitive to rural influences as one moves across the spectrum. To identify remoteness, delineate all roads, railroads and trails on the base map or overlay. Distinguish between two levels of roads: primitive roads and better-than-primitive roads. Trails with motorized use are included in the primitive road category.
- **Road Classification:** For roads which are difficult to classify into the primitive road or better-than-primitive road categories, apply these definitions:
 - better-than-primitive roads are constructed and maintained for the use of highway-type vehicles having more than two wheels
 - primitive roads are not constructed or maintained for vehicles primarily intended for highway use
- **Road Patterns:** In most cases all roads and trails are mapped. In areas with dense road patterns it may not be necessary to identify each road for ROS class delineation. Based on main roads alone, the entire area may be road-influenced and become the same ROS class. In these cases only the roads along the periphery of the densely roaded area are needed to define the Recreation Opportunity Spectrum class boundaries.
- **Traffic Volume:** Although volume of traffic may vary widely on the better-than-primitive roads, depending upon the specific road involved, volume need not be recorded on the base map or overlay. The physical presence and sight of a road, even with no traffic on it still affects the visitor experience, and is accounted for through the Recreation Opportunity Spectrum criteria. If traffic volume results in sounds from a road at distances greater than the line of sight, then sound may become the determinant criterion in delineating the appropriate ROS class.
- **Water Travel:** Where motorized water travel routes provide the only access, consider them in a manner similar to primitive roads. These specialized types of access may also provide a basis to determine the need for subclasses within the ROS continuum.

ROS (RECREATION OPPORTUNITY SPECTRUM) CLASSES

CLASS	REMOTENESS	EVIDENCE OF HUMAN CRITERIA
Primitive	<ul style="list-style-type: none"> > 8 km from a 4-wheel drive road > 5000 hectares 	<ul style="list-style-type: none"> • Very high probability of experiencing solitude, closeness to nature, self-reliance and challenge • Unmodified natural environment • Very low interaction with other people • Little on-the-ground evidence of other people • Restrictions and controls generally not evident • Non-motorized access and travel on trails, cross-country waterways • Generally no facilities except where required for safety & sanitation • Generally no site modification
Semi-Primitive Non-Motorized	<ul style="list-style-type: none"> > 1 km from a 4-wheel drive road > 1000 hectares 	<ul style="list-style-type: none"> • High probability of experiencing solitude, closeness to nature, self-reliance and challenge • Natural or natural-appearing environment • Low interaction with other people • Some on-the-ground evidence of other people, some on-site controls • Non-motorized access and travel on trails, cross-country waterways • Facilities may be present for signing and for sanitary and safety needs using natural, rustic materials wherever possible • Minimal to no site modification
Semi-Primitive Motorized	<ul style="list-style-type: none"> > 1 km from a 2-wheel drive road > 1000 hectares 	<ul style="list-style-type: none"> • Moderate opportunity for solitude, closeness to nature; high degree of self-reliance and challenge in using motorized equipment • Natural or natural-appearing environment • Low interaction with other people • Some on-the-ground evidence of other people, some on-site controls • Motorized access on trails, primitive roads & cross-country may occur • Limited facilities for signing, sanitary and safety needs using natural, rustic materials wherever possible • Minimal site modification
Roaded Resource Land	Often within 1 km of a 2-wheel drive road with a gravel or dirt surface	<ul style="list-style-type: none"> • Opportunities for both privacy and social interaction; feelings of independence and freedom • Natural environment may be substantially modified • On-the-ground evidence of other people, some on-site controls • Access and travel is by motorized vehicle • Facilities generally present; natural, rustic materials preferred,
SCENIC AREA		
	<ul style="list-style-type: none"> • any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager. 	

SENSITIVE SPECIES	<ul style="list-style-type: none"> those plant or animal species susceptible or vulnerable to activity impacts or habitat alterations
SERIAL STAGES	<ul style="list-style-type: none"> the stages of ecological succession of a plant community, e.g., from young stage to old stage. The characteristic sequence of biotic communities that successively occupy and replace each other by which some components of the physical environment becomes altered over time.
SHOWING	mineral occurrence insufficiently defined to allow for a resource estimation.
SILVICULTURAL SYSTEMS	<ul style="list-style-type: none"> a planned cycle of activities by which a forest stand, or group of trees, is harvested, regenerated and tended over time.
SPECIAL MANAGEMENT AREA	<ul style="list-style-type: none"> a land use designation under the plan used to identify areas where enhanced levels of management are required to address sensitive values such as fish and wildlife habitat, visual quality, recreation and cultural heritage features, etc. The management intent is to maintain these values while allowing compatible human use and development.
SPECIES AT RISK	<ul style="list-style-type: none"> (a) any species that in the opinion of the deputy minister of MELP 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 MELP or a person authorized by that deputy minister, as requiring protection, and (c) regionally important wildlife as determined by the deputy minister of MELP or a person authorized by that deputy minister.
STAND	<ul style="list-style-type: none"> a community of trees with common characteristics; one stand can be distinguished from another by age, species, site type and other characteristics
STAND ATTRIBUTES	<ul style="list-style-type: none"> components of a forest stand that are to be retained to maintain biodiversity. These components include but are not limited to: dead wood, standing dead trees, coarse woody debris, large living trees, tree species diversity, structural diversity and forest soils. <i>(from: Biodiversity Guidebook, September 1995)</i>
STAND LEVEL	<ul style="list-style-type: none"> the level of forest management at which a relatively homogeneous land unit can be managed under a single prescription, or set of treatments, to meet well-defined objectives
STIMULATE	<ul style="list-style-type: none"> to excite to activity or growth or to greater activity
STRUCTURAL ATTRIBUTES	<ul style="list-style-type: none"> components of a forest stand (including living and dead standing trees, canopy architecture and fallen trees) which together determine stand structure. <i>(from: Biodiversity Guidebook, September 1995)</i>
THREATENED OR ENDANGERED SPECIES	<ul style="list-style-type: none"> indigenous species that are either threatened or endangered, and identified as 'red-listed' by the Ministry of Environment, Lands and Parks. <i>(from: Biodiversity Guidebook, September 1995)</i>
TOPOGRAPHY	<ul style="list-style-type: none"> the general configuration of the land surface, including relief and position of natural and man-made features

TRADITIONAL USE SITES	<ul style="list-style-type: none"> any geographically defined site that has been traditionally used by one or more groups of people for some type of activity. These sites will often lack the physical evidence of human-made artifacts or structures, but will maintain cultural significance to a living community of people. Traditional use sites are usually documented with the assistance of oral, historical and archival sources. Examples of such sites include: sacred sites, ritual bathing pools, resource gathering sites and sites of a legendary past event of cultural significance. <p><i>(from: Douglas Glaum communication, April 1996)</i></p>
TRIBUTARY	<ul style="list-style-type: none"> a stream that contributes its water to another stream or body of water
TURBIDITY	<ul style="list-style-type: none"> describes the cloudy or hazy characteristics of water which is usually due to the presence of suspended particles of silt and clay. <p><i>(from: Draft Community Watershed Guidebook, March 1996)</i></p>
UNGULATE	<ul style="list-style-type: none"> a hoofed mammal
VIABLE POPULATION	<ul style="list-style-type: none"> a population that can withstand the normal cycles of environmental factors without going to extinction.
VISUAL QUALITY OBJECTIVE	<ul style="list-style-type: none"> 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 concerns for the area.
VULNERABLE SPECIES	<ul style="list-style-type: none"> species that are not threatened or endangered but are sensitive and particularly at risk and identified as 'blue-listed' by the Ministry of Environment, Lands and Parks. <p><i>(from: Draft Wildlife Habitat Areas Field Guide, October 1994)</i></p>
WATER LEVEL STREAMFLOW	<ul style="list-style-type: none"> measure of the water flowing in the stream at any point in time. <p><i>(from: Draft Community Watershed Guidebook, March 1996)</i></p>
WATER QUALITY PARAMETERS	<ul style="list-style-type: none"> includes turbidity, bacteria counts (total and faecal coliforms), and water level streamflow. These would be used to characterize existing water quality conditions and to establish a reference database for future comparison. <p><i>(from: Draft Community Watershed Guidebook, March 1996)</i></p>
WATERSHED	<ul style="list-style-type: none"> an area drained by a particular stream or river. A large watershed may contain several smaller watersheds.

WATERSHED ASSESSMENT	<ul style="list-style-type: none"> an evaluation of the cumulative impact that proposed activities and developments will have on stream flows, suspended sediment, landslide and stream channel stability within the watershed. The assessment has three levels: <ul style="list-style-type: none"> Level I: reconnaissance level analysis; identifies watersheds at risk and cumulative effects and identifies specific hazards that need to be addressed, such as peak flow, suspended sediment and landslides. Level II: an overview channel stability assessment, only conducted on streams that have a high impact based on Level I analysis. Level III: detailed field investigation by a watershed specialist on highly impacted streams and is used to develop management prescriptions to mitigate hydrological impacts.
WETLAND	<ul style="list-style-type: none"> swamp, marsh or other similar area that supports natural vegetation that is distinct from the adjacent upland areas. More specifically, an area where a water table is at, near or above the surface or where soils are water saturated for sufficient length of time that excess water and resulting low oxygen levels are principle determinants of vegetative soil development.
WILDERNESS	<ul style="list-style-type: none"> an area generally greater than 1000 hectares that predominantly retains its natural character and on which human impact is transitory, minor and in the long-run substantially unnoticeable.
WILDLIFE	<ul style="list-style-type: none"> (a) a vertebrate that is a mammal, bird, reptile or amphibian prescribed as wildlife in the <i>Wildlife Act</i>, S.B.C. 1982, c.57 (b) a fish, or including (i) any vertebrate of the order Petromyzoniformes (lampreys) or class Osteichthyes (bony fishes), or (ii) any invertebrate of the class Crustacea (crustaceans) or class Mollusca (mollusks), from the non-tidal waters of the Province, and (c) an invertebrate or plant listed by the Minister of Environment, Lands and Parks as an endangered, a threatened or a vulnerable species, and includes the eggs and juvenile stages of these vertebrates, invertebrates and plants.
WILDLIFE HABITAT AREA	<ul style="list-style-type: none"> a mapable unit of land necessary to meet the requirements of identified wildlife.
WILDLIFE MANAGEMENT AREA	<ul style="list-style-type: none"> areas of critical wildlife habitat or rare ecosystems that are administered by the Wildlife Branch, BC Environment. WMAs are not equivalent to wildlife habitat areas (WHAs).
WILDLIFE TREE	<ul style="list-style-type: none"> a standing live or dead tree with special characteristics that provide wildlife habitat for the conservation or enhancement of wildlife. Characteristics include large diameter, height for the site, current use by wildlife, declining or dead condition, value as a spawning location and relative scarcity. <p>(from: <i>Biodiversity Guidebook</i>, September 1995)</p>

**WILDLIFE TREE
PATCH**

- synonymous with a *group reserve* and is an area specifically identified for the retention and recruitment of suitable wildlife trees. It can contain a single wildlife tree or many
(from: Biodiversity Guidebook, September 1995)
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**YELLOW-LISTED
SPECIES**

- species identified by the Ministry of Environment, Lands and Parks that require a management emphasis on a regional basis.
(from: Conservation Data Centre)
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List of Acronyms

ADM	Assistant Deputy Minister
AOI	Area of Interest
ALR	Agricultural Land Reserve
AST	Approval Support Team
BC	British Columbia
CAMP	Coordinated Access Management Plan
CBR	Commercial Back Country Recreation
COSEWIC	
DD	Directional Drilling
DFO	Department of Fisheries and Oceans
DM	Deputy Minister
	District Manager
DO	Designated Official
ELUC	Environment and Land Use Committee
FN	First Nations
FPC	Forest Practices Code
GMD	General Management Direction
HLP	Higher Level Plan
IAMC	Interagency Management Committee
IPT	Interagency Planning Team
IRM	Integrated Resource Management
LRMP	Land and Resource Management Plan
LUCO	Land Use Coordination Office
LUS	Land Use Strategy
MAFF	Ministry of Agriculture, Fisheries and Food
MEI	Ministry of Employment and Investment
MELP	Ministry of Environment, Lands and Parks
M-K	Muskwa-Kechika
MOF	Ministry of Forests
MOTH	Ministry of Transportation and Highways
OIC	Order-In-Council
PAS	Protected Area Strategy
RMP	Resource Management Plan
RMZ	Resource Management Zone
RPAT	Regional Protected Areas Team
SEA	Socioeconomic Assessment
TOR	Terms of Reference
TSA	Timber Supply Area
TUS	Traditional Use Study