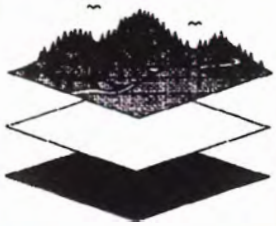
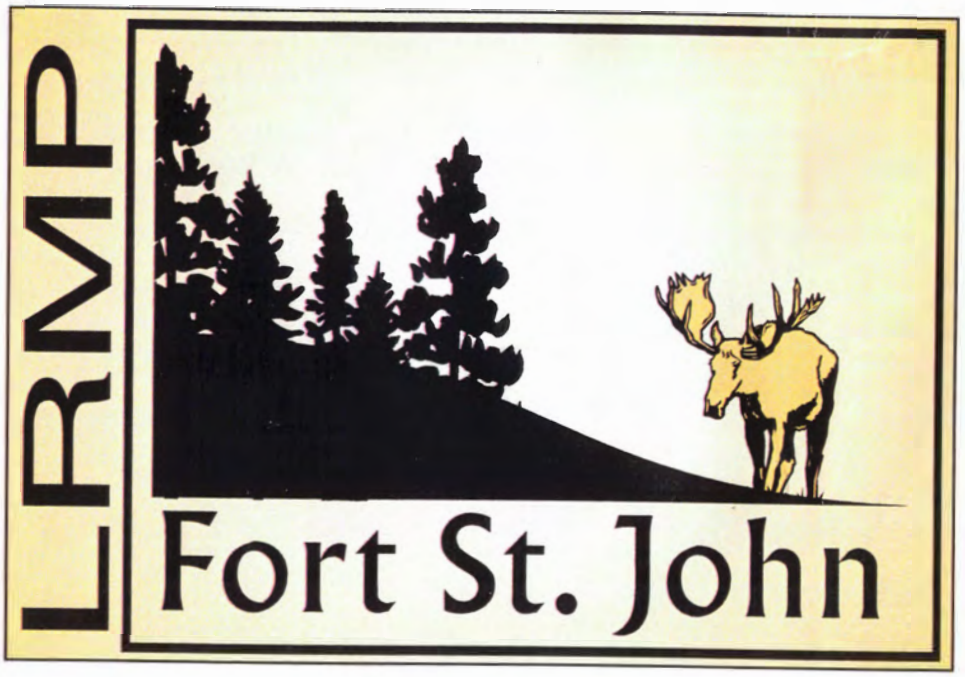
SCHEDULE 5

RECOMMENDED FORT ST. JOHN LAND AND RESOURCE MANAGEMENT PLAN



A Component of British Columbia's Land Use Strategy

Recommended Fort St. John Land and Resource Management Plan



BRITISH COLUMBIA

April, 1997

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EXECUTIVE SUMMARY

Overview

The Fort St. John Land and Resource Management Plan (LRMP) incorporates the principles of integrated resource management into a long-term plan for Crown land and resource development within the planning area, the Fort St. John Forest District.

Many residents of this area value the economic opportunities provided by natural resource development and the outdoor and wilderness recreation experiences that are readily available in this area. These two important values have been combined to form a vision statement for the plan:

> *Our vision is to maintain resource development opportunities to sustain the economic base of planning area communities while maintaining high outdoor recreation, wilderness, wildlife and biodiversity values for future generations.*

The Fort St. John LRMP provides a stable strategic planning framework for resource development industries and ensures continued access to these natural resources outside of Protected Areas. At the same time, the plan incorporates the protection of environmental and recreation resource values through the development and implementation of objectives and strategies to manage and maintain these values over the planning area. After ratification and adoption by government, implementation of the plan should provide greater economic stability for residents and communities within the planning area and increased environmental awareness, management and protection.

Planning Area Description

The Fort St. John Forest District is one of the largest in British Columbia covering approximately 4.6 million hectares. Crown lands within the legal boundary of the Forest District are essentially, the planning area. The southern district boundary is the Peace River. The north boundary is shared between the Fort St. John and Fort Nelson Forest Districts.

Bisected by the Alaska Highway, the planning area can be roughly described as two major areas: east of the Alaska Highway and west of the Alaska Highway. The topography east of the highway is flatter or gently rolling terrain, part of the extensive Alberta Plateau extending all the way to the BC/Alberta provincial boundary. West of the highway, the terrain becomes increasingly more rugged as part of the Rocky Mountain Foothills. Further west lies the Rocky Mountains, the western boundary of the planning area.

The Fort St. John planning area is unique in several ways. Oil and gas exploration and development has occurred throughout most of the planning area over the past few decades. The southern and southeastern portion of the planning area is predominantly used for agriculture and has a high concentration of privately-held lands. Forest harvesting and management, although a major part of the current local economy, is relatively recent with many areas yet to be developed for timber harvesting. The mineral resources of the area are relatively unexplored and significant potential exists in the western portion of the planning area near the Rocky Mountains. Energy development is the largest economic sector in this planning area, with agriculture and forestry ranked second and third, respectively, in terms of local employment.

Nationally and internationally important wildlife resources are an important feature, especially in the "wilderness" areas in the western portion of the planning area. The planning area incorporates the southern portion of the access management area known as the Muskwa-Kechika, part of the Northern Rockies. Management of this area for its high wildlife, biodiversity and wilderness values is a key objective for several sectors and several provincial, national and international groups.

Process

The Land and Resource Management Planning process is an integral part of the Province's Land Use Strategy. This process differs from previous or other land use planning processes in that:

- The general public and a wide selection of interest groups were invited and encouraged to participate in the planning process.
- The plan's recommendations are an outcome of the deliberations of the Fort St. John planning table – private citizens, stakeholders (industrial sectors, environmental groups, etc.) and government agency representatives who live, work or who have an interest in how Crown lands and resources are managed in the planning area. Table representatives provided presentations of their land and resource management interests.
- Despite governments sincere attempts to involve local First Nations, they chose not to participate in the planning exercise. First Nations were kept informed through regular mailings of meeting agendas and minutes. Copies of the draft plans were forwarded to First Nations for comment. Although the process had minimal direct involvement of First Nations and their communities, their cultural, archaeological and heritage values were endorsed by the Table and incorporated into the planning exercise where identified.
- The Fort St. John LRMP process incorporated a form of consensus-based decision-making. Resource sector representatives were not directed to steadfastly support all positions and recommendations. The overall planning objective was to identify land and resource management issues and then develop solutions and recommendations that sector representatives "could live with". General agreement was reached on all issues.

The Fort St. John LRMP is an organized set of recommendations which will be applied to the management of Crown lands and resources in the planning area. These recommendations included: resource management zone boundaries, proposed Protected Areas, resource management objectives and strategies and a list of selected indicators to monitor the outcome of the different strategies. Policy change recommendations were included for those issues that the Table wished to send a strong message to government.

Recommendations in the plan are directed to the BC Provincial Government Cabinet. The Fort St. John LRMP has developed recommendations for a number of resources including; energy, forestry, recreation, agriculture, range, minerals, fish, wildlife, transportation, heritage, culture and water resources. In addition, this plan has developed a comprehensive set of access management objectives and strategies to address access concerns on Crown lands. Once approved by government, the entire plan or portions of the plan provides strategic direction to land and resource planning, management and development for a period of ten years.

An important aspect of government approval is how an LRMP fits within the strategic planning framework of the *Forest Practices Code of British Columbia Act* (FPC). All or part of an LRMP can be declared a higher level plan under the FPC. Those portions of an LRMP declared as higher level plans under the FPC provide strategic direction for forest management activities and more detailed plans (for example Forest Development Plans, Range Use Plans, Access Management Plans, etc.).

Key Features of the Plan

- The planning area is divided into 27 resource management zones (RMZ's) based on resource values, existing economic activity, environmentally important areas and Agricultural Land Reserve (ALR) boundaries.
- Using provincially-adopted land-use categories, the planning area can be subdivided by percent area, into five broad categories: Agriculture/Settlement - 12%, Enhanced Resource Development - 20%, General Resource Development - 46%, Special Management -14%, Major River Corridors - 4% and Protected Areas - 4%.
- Industrial activity is permitted in all RMZ's with the exception of proposed Protected Areas. Although resource development and access may be limited or restricted in some RMZ's, the plan provides appropriate strategic direction for more detailed planning to allow responsible resource development in the vast majority of the planning area.
- Resource developers and users will be required to manage for environmental and conservation values using a range of management strategies. In general, management intensity decreases from east to west across the planning area (from general resource development to special management).
- Access management is critical to maintaining wildlife, recreation, wilderness and biodiversity values, especially in environmentally sensitive areas like major river valleys and the western region of the planning area. This plan includes specific access management objectives and strategies to achieve the objectives for each RMZ.
- Opportunities for the expansion of lands for agriculture (including grazing) are a priority for areas identified as having significant agricultural potential. Appropriate strategies have been developed to achieve this objective.
- Existing and traditional uses of the land within proposed Protected Areas that are not in conflict with the provincial Protected Area Strategy are being recommended in the plan to continue. Recommended uses include trapping, hunting, fishing, guide outfitting and limited livestock grazing in support of these activities.
- Directional drilling for petroleum and natural gas, under proposed Protected Areas, should be allowed if it does not compromise other values.

Implementation and Monitoring

Once approved by government, the plan will be generally implemented as follows:

- The plan will guide land and resource development on Crown lands for a period of ten years.
- Resource managers will incorporate appropriate strategic direction from the plan into more detailed plans. These plans include a wide range of existing and improved regulatory processes, including inter-agency planning, referral, and joint management provisions (defined in the Glossary of this report).
- Draft indicators to monitor the implementation of the plan's resource management strategies have been developed. Resource management agencies will monitor the indicators to ensure that resource management objectives are met or exceeded.
- Public concerns regarding specific operational practices within the planning area will be directed to the appropriate resource management agency.
- Government agencies will use information in the plan to guide budget deliberation exercises, especially where resource inventory gaps have been identified.
- An appropriate time frame, method and format will be developed to ensure that Table members and the public are informed of the plan's progress. Special circumstances and/or scheduled update meetings may require that Table members be reconvened to try and resolve any new issues or plan interpretation issues.
- Concerns or conflicts related to overlapping mandates of government agencies or different interpretations of the plan by industry or one or more agencies will first be forwarded to the line manager for clarification. The line managers may consult with the LRMP Table for clarification on major issues. Conflicts not resolved will be elevated to the Omineca-Peace Inter-Agency Management Committee for resolution.

Summary Recommendations

I Plan Adoption

The Fort St. John LRMP recommends that the BC Government:

1. Approve the Fort St. John LRMP document as general policy and guidance to strategic Crown land and resource management planning for the planning area.
2. Declare appropriate portions of the Fort St. John LRMP a *HigherLevel Plan* under the *Forest Practices Code of British Columbia Act.*
3. Approve and adopt the areas recommended for Goal 1 and 2 Protected Area status (approximately 4.25% of the land base) as required under the *Protected Areas Strategy.*

II Policy Recommendations

The Fort St. John LRMP recommends that the BC Government:

a. Recognize that the Besa-Halfway-Chowade, Graham-Laurier, Redfern-Keily and Graham North resource management zones (with their related management objectives and strategies as developed and recommended by the Fort St. John LRMP Table), be included in any formal designation established for the area known as Muskwa-Kechika.
b. Confirm that the introduction and implementation of the Commercial Backcountry Recreation Policy shall fully consider non-commercial recreation in the adjudication of commercial backcountry proposals so that historic and traditional non-commercial recreational use is maintained.
c. Address the issue of permitting access (using appropriate technology) to petroleum and natural gas resources located under proposed Protected Areas. This should not preclude the balance of the Fort St. John LRMP from going forward to the Provincial Government for approval. (see Appendix B)
d. Endorse the establishment of funding for the Fort St. John LRMP planning area to meet the grazing objectives of the proposed plan.
e. Consider protecting the islands within the Peace River Valley (that are currently within the BC Hydro and Power Authority's flood reserve) using appropriate legislation until BC Hydro reviews the Site C project.
f. Consider advising BC Hydro to re-evaluate their hydro-electric development proposals on the Peace River prior to the onset of a future LRMP process within an eight year time frame.
g. Consider directing resource managers to adopt a comprehensive public consultation process where access control gates, that are required for reasons other than safety, are a realistic and preferred option used to regulate access on Crown lands.

Lastly, although not a formal recommendation, the Table wishes to lend its support to any provincial initiative to review the Ministry of Environment, Lands and Parks, Crown Lands Agricultural Lease Policy, to ensure that it is meeting the needs of both the agriculture sector and government.

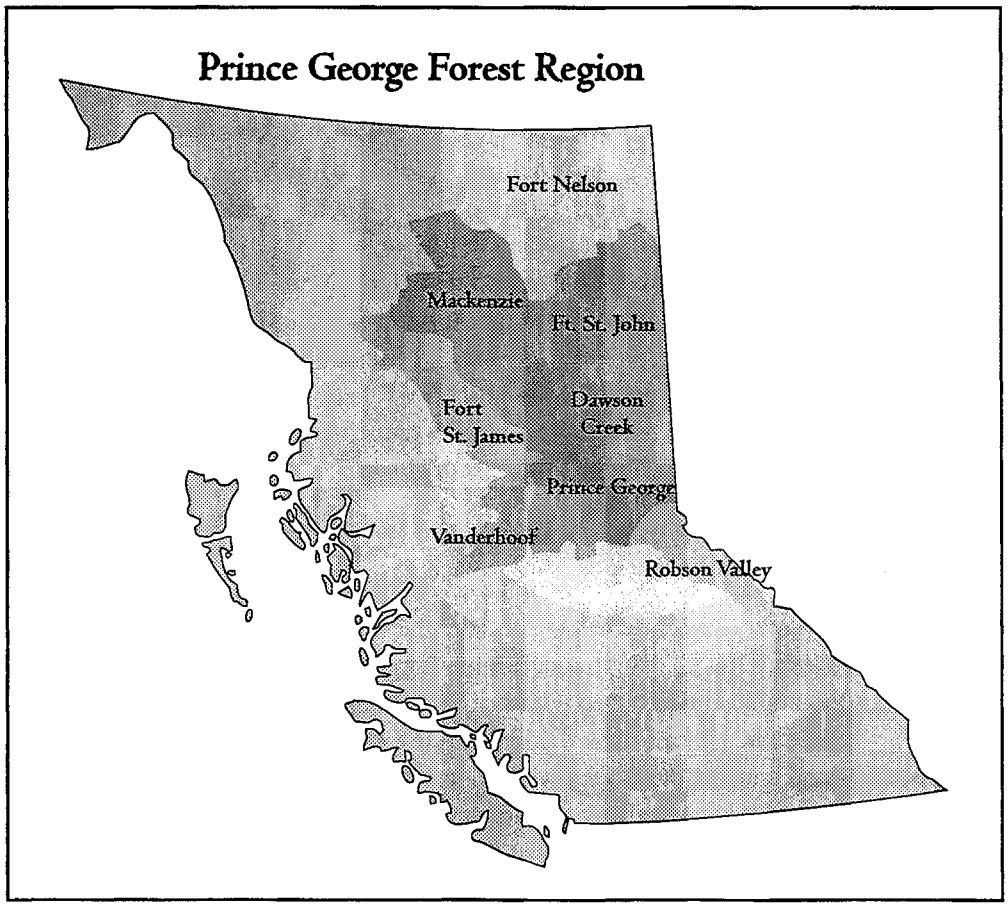
1.0 INTRODUCTION

Since 1993, a group of people from the Fort St. John area have been working on a Land and Resource Management Plan for their area. The plan is a recommendation to the BC Government that will guide all land use activities on Crown lands within the Fort St. John planning area over the next ten years.

This document, ***The Fort St. John Land and Resource Management Plan*** contains:

- a map of the planning area
- a socio-economic and physical description of the area and an overview of the planning process (Section 1.0)
- a summary of important values, resources and general management direction (Section 2.0)
- Resource Management Zone (RMZ) descriptions, values, objectives and strategies (Section 3.0)
- Proposed Protected Areas including values, objectives and management strategies (Section 4.0)
- socio-economic and environmental assessment of the plan (Section 5.0)
- implementation and recommendations (Section 6.0)
- monitoring and amendment provisions (Section 7.0)
- interpretation and appeal of the plan (Section 8.0)
- a glossary and list of Table members (Appendices)

Additional background information, including the "Preliminary Socio-economic/Environmental Assessment of Base Case and Land Use Scenarios" and the "Planning Process Terms of Reference" can be viewed at the Ministry of Forests office in Fort St. John or other government agencies.



I.I The Planning Area

The Fort St. John LRMP area covers over 46,000 square kilometres of land. It is only slightly smaller than the Province of Nova Scotia, and about 1.5 times the size of Vancouver Island. This is one of the largest LRMP areas in the province.

The planning area boundaries follow the Fort St. John Forest District boundaries in northeastern British Columbia. The area is bounded on the east by Alberta, on the south by the Peace River, to the west by the height of land of the Rocky Mountains and to the north by the Fort Nelson planning area at about the 58th parallel.

I.I.I Socio-economic Description

The Cree, Beaver, Sekani and Slavey First Nations are the original inhabitants of the Fort St. John planning area. In 1899 (northern bands) and 1900 (Beaver), Treaty 8 was signed by the Crown and representatives of the First Nations bands that traditionally use the LRMP area: the Halfway River Band, the Prophet River Band, the Blueberry River Band and the Doig River Band. Nothing in this document can, nor was intended, to change the nature of Treaty 8 rights.

European settlement began over two hundred years ago with the establishment of the Northwest Company fur trading post. Rocky Mountain Fort was located at the junction of the Peace and Moberly Rivers. The population grew slowly until the Alaska Highway was completed in 1942. The Highway opened the area to development and a wave of immigration. Another influx of people arrived with the discovery of oil and gas in 1957. Transportation and sales of North Peace natural resources have improved since the Pacific Great Railway arrived in 1958. The W.A.C. Bennett hydroelectric dam was constructed in 1967, flooding the upper Peace River and creates the Williston Lake Reservoir. Each of these developments has contributed to the population growth and economic development of the region.

Over the past two decades the population of the planning area has risen and fallen, with the level of activity and economics of the energy sector. The current population is estimated at 23,940 people and is expected to grow by about 1% per year. Settlement is concentrated in Fort St. John (14,818 population) and Taylor (933 population). The economies of the communities of Fort St. John, Taylor and Wonowon are dependent on providing services to the three major resource based industries: oil and gas exploration and development, agriculture and ranching, and timber harvesting, processing and related forest management activity. Taylor's industrial base includes a gas processing plant, a pulpmill and a sawmill. The remaining population lives in a number of small settlements scattered throughout the region. About 800 people live in the First Nations settlements at the Halfway River, Blueberry River, Doig River and Prophet River Indian reserves.

Energy is the largest economic sector in the planning area. It provides 23% of the basic employment and 22% of the personal income. The public sector follows, with about 20% of both employment and income. Agriculture (13%), tourism (10%), forestry (9%) and mining (2%) comprise the remainder of the natural resource sectors.

I.I.2 Physical Description

Glaciation, tectonic forces (movement of the earth's plates) and climate have created the soils, vegetation, forest ecosystems and subsurface formations that exist today. The vast flat plateau that dominates the eastern regions of the planning area was formed by retreating glaciers. Soils are generally fine textured with deeply incised streams. The northeastern area tends towards saturated soils and muskeg while southeastern soils are drier. Moving westward, the topography rises to the rolling and hilly landscapes of the foothills and ends in the Rocky Mountains. River systems originating in the mountains cut deeply through bedrock and can be straight, meandering or braided.

Rivers are the dominant hydrological feature in the planning area. The major river systems include the Halfway, Graham, Beatton, Sikanni-Chief, Fontas and Peace River systems. Where lakes exist, they tend to be small and shallow with low to moderate productivity. Significant lakes include Charlie Lake and Redfern Lake. Over 40 fish species, including mountain whitefish, bull trout, Arctic grayling, rainbow trout, lake whitefish and walleye are found, mostly in the large rivers and streams.

The area has a fairly typical northern continental climate. Cold winters, short growing seasons and low precipitation limit the vegetation, agricultural crops and forest ecosystems that can thrive here. Mean daily temperatures range from -19.4° C to +21.5° C. Most of the moisture carried by the prevailing westerly winds falls on the west side of the Rocky Mountains, outside of the planning area. Average annual precipitation is 295.9 mm of rainfall and about 198.2 mm in equivalent snow cover. Some areas can suffer a water deficit, especially during summer. The short growing season is somewhat offset by the long sunny northern days during spring and summer.

Substantial populations of large mammals such as deer, elk, sheep, goat and moose inhabit the LRMP area. Both black and grizzly bear are found across the planning area. Other significant wildlife include furbearers such as marten and a variety of birds, including waterfowl and warblers.

White spruce, lodgepole pine and trembling aspen are the main commercial tree species, accounting for most of the timber harvested in the planning area.

1.1.3 Ecosystem Classifications

The natural ecosystems of British Columbia have been divided into ecosections, based on climate, landforms and vegetation. Ecosection classification is significant because management strategies are often based on ecosystems to respect and mimic natural processes. Nine of the 116 ecosections are found in the planning area. These are: the Clear Hills, the Halfway Plateau, the Peace Lowlands, the Peace Foothills, the Fort Nelson Lowlands, the Muskwa Foothills, the Muskwa Plateau, the Eastern Muskwa Ranges and the Missinchinka Ranges.

Biogeoclimatic units are a classification of ecounits based on climate, vegetation and site. The four biogeoclimatic zones found in the LRMP area are:

- Alpine Tundra (AT) - Alpine Tundra is found above the tree line. It is characterized by short growing seasons and long, cold winters with deep snow. White and Engelmann spruce and subalpine fir are the dominant tree species. Trees generally exhibit a stunted or 'krummholz' growth form. Vegetation consists of shrubs, heathers, herbs, mosses and lichens. Alpine Tundra supports Stone's sheep, caribou, grizzly bear, wolf, wolverine and small mammals such as marmots and ground squirrels.

- Engelmann Spruce-Subalpine Fir (ESSF) -These coniferous forests include Engelmann spruce, subalpine fir and lodgepole pine with shrub-dominated understorys. The growing season is short and cool, with long cold winters and deep snow depths. Mountain goat and caribou have adapted well to winter in this zone. Coniferous forests provide habitat for furbearing animals and a variety of seed-eating birds. Avalanche tracks provide spring and summer habitats for grizzly bear and ungulates. These large mammals spend summer in the parkland meadows.

- Boreal White and Black Spruce (BWBS) - Extensive BWBS forests in the area contain lodgepole pine, white and black spruce and trembling aspen along with many bogs and fens. Common understory plants are highbush cranberry, rose, forbs and moss. Fires are common. Two subzones are found within the BWBS: moist warm (mw), and wet cool (wk). The BWBS zone with its low to moderate snow accumulation provide important ungulate wintering habitat. Deciduous forests established after fires are also useful to ungulates and many species of birds and small mammals.

• Spruce-Willow-Birch (SWB) - The SWB zone is found at lower elevations. These areas are generally forested with white spruce and subalpine fir, and lesser amounts of lodgepole pine, black spruce and trembling aspen. Wildfires are less common and extensive than in the BWBS. Wetlands can be white spruce and tall willow swamps, sedge fens and marshes. Deep snows in the winter make this zone less productive for wintering ungulates.

I.2 The LRMP Planning 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. The Fort St. John LRMP Table included representatives from the energy, forestry, agriculture, ranching, trapping, tourism, non-commercial anglers and hunters, small business sectors, local governments, labour, guide outfitters, environmental, and culture and heritage interests.

Representatives of the government ministries involved in land and resource management participated in the LRMP process as supporters. They included the Ministry of Forests (MOF), Ministry of Environment, Lands and Parks (MELP), Ministry of Agriculture, Fisheries and Food (MAFF), and the Ministry of Employment and Investment (MEI). The role of the government representatives was to provide information, answer questions, chair meetings and support the process.

The LRMP process uses consensus-based decision making, as opposed to majority rule. This means that the entire Table must come to common agreement on issues before a decision is reached. Consensus decision making requires full cooperation and commitment (not to mention tremendous patience and good will) on the part of everyone involved. While this principle was at times difficult for the participants, it has resulted in a plan that is supported by the entire Table.

I.2.I Defining the Process

The Fort St. John LRMP process dates back to June 1993 when a public workshop was held in Fort St. John describing the process, identifying the sectors and inviting all interested parties to join. A Working Group of about 30 core members continued to meet over the next three years to draft the Plan. This group formed the LRMP Table.

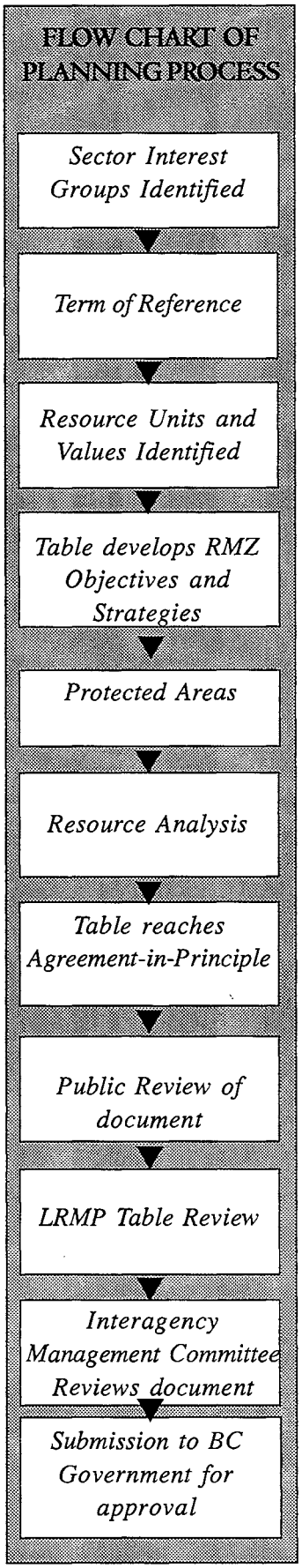
The Terms of Reference was produced by the Table and adopted in October 1994. That document outlined the vision, objectives, principles for public participation, general planning sequence, organizational structure (membership), decision making (consensus) and the approval processes. The Terms of Reference document states:

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

- *guide the use and development of Crown land at a strategic level, based on the principles of sustainability, meeting the needs of the present without compromising the ability of future generations to meet their own needs;*
- *present Crown land and resource use options which will identify and consider all resource values, along with social, economic and environmental needs;*
- *provide information that may assist in the planning and future development of private land, and;*
- *provide a forum for shared decision making on broad land and resource use issues, based on consensus."*

I.2.2 Establishing the Resource Management Zones

The first step was to subdivide the planning area into Resource Units (RU's). Land resource values were identified for each of the resource units. RU's were then combined into somewhat larger Resource Management Zones (RMZ's). Ultimately the Table identified 27 RMZ's; three of these zones are Protected Area Strategy Goal 1 recommendations.



For each of the RMZ's, land and resource management objectives and strategies were developed to address each of the resource values identified. After general agreement was reached on the objectives and strategies, common statements were identified and used to define General Management Directions. These statements define broad land and resource management objectives and strategies that apply to the entire planning area.

A number of Areas of Interest (AOI's) were identified for consideration as Protected Areas under the Protected Area Strategy. The Table studied these Protected Areas proposals during the spring of 1996. All of the proposed Protected Areas were ultimately recommended for protection, although many boundaries were changed to satisfy concerns about representation, to protect specific ecological or geographical features or to exclude areas of commercial and economic interest.

The Graham-Laurier and Milligan Hills proposed Protected Areas were the subject of considerable debate. Several alternative boundaries were proposed by various sectors. The final boundaries were agreed upon by the Table after reviewing the socio-economic effects of various proposals. Lastly, preliminary RMZ's with resource management objectives and strategies were communicated to adjacent LRMP Tables to harmonize RMZ boundaries, objectives and strategies.

1.2.3 Public Participation

Throughout the process, the Table made considerable efforts to inform the public and invite their comments and input. LRMP meetings received local media coverage. Many meetings were broadcast on the local cable channel and articles appeared in the local paper. In the fall of 1995, every household in the Fort St. John planning area received a flyer outlining the progress of the LRMP and inviting the public to become involved. The public was invited to attend the meetings and individuals could make presentations to the Table. Table members kept their sectors informed about the process and ensured that the concerns of their interest group were addressed. Each interested sector had the opportunity to make formal presentations to the Table and to express their interests and concerns regarding Crown land. A series of open houses were held to present the draft plan, including: Upper Pine School, Hudson's Hope Hall, Buick Creek School, Fort St. John and the Upper Halfway Community Hall.

1.3 First Nations

The province of British Columbia is committed to avoiding the infringement of Treaty and Aboriginal rights in areas where resource management activities are proposed. In this regard, government agencies consult with First Nations to determine the nature and extent of Treaty and Aboriginal rights and to also determine if infringement of those rights could occur by government decisions. The First Nations in the LRMP that have signed Treaty 8 have Treaty Rights.

Despite governments sincere attempts to involve them, the First Nations peoples chose not to participate in the Fort St. John LRMP. Although the First Nations peoples were not formally represented at the LRMP Table, their archaeological, cultural and heritage values were recognized by all of the LRMP participants. The Table attempted to incorporate any First Nation interests that were known by Table members at the time.The recommendations put forward by the Plan are without prejudice to Treaty and Aboriginal rights.

2.0 GENERAL MANAGEMENT DIRECTION

2.1 Introduction

The overall objective of the Fort St. John Land and Resource Management Plan (LRMP) is to ensure sustainable management of land, resources, water and ecosystems within the Fort St. John Forest District (i.e. the planning area). The plan provides greater certainty for the planning of resource developments by maintaining opportunities for responsible land and resource development. Throughout the planning process, the LRMP working group maintained its commitment to balancing the social, economic and environmental needs of the people, industries and communities with environmental conservation and protection within the planning area.

The Fort St. John LRMP adopts the principles of:

- *Sustainable use of renewable natural resources, and;*
- *The management of any one resource shall take into consideration other resource values, rights, tenures, and development opportunities and shall recognize the biological and physical limitations of the land and resources. In addition, land and resource management objectives and strategies will incorporate the need to maintain or enhance the local quality of life, social and economic stability, and vitality of the local communities.*

The *General Management Direction* for each of the resource sectors is intended to provide strategic direction to land and resource management across Crown lands within the planning area. The direction addresses the values, needs and interests of resource users and are based on the following guiding principles:

- Industrial and commercial activities (commercial backcountry recreation, forest resource development and mineral resource exploration and development, etc.) are acceptable uses of Crown lands.
- Industrial development planning shall give full consideration to other land and resource values. The conservation of these values shall be incorporated into more detailed plans and operational activities.
- All land and resource developments shall comply with the existing regulatory framework (i.e. appropriate regulation, legislation and government policies).
- Land and resource development is subject to the Fort St. John LRMP *General Management Direction* and, where appropriate, Resource Management Zone (RMZ) specific resource management objectives and strategies developed and recommended by the LRMP Table.
- In areas recommended for Protected Area status, acceptable uses shall be in compliance with the Protected Area Strategy and government policy. Further, existing land and resource uses within proposed Protected Areas that are not in contravention with government policies shall be identified and recommended for preservation by the LRMP Table.
- The Fort St. John LRMP plan relies on the spirit and intent of the *Forest Practices Code of BC Act* to protect and conserve many values not specifically mentioned in the land use plan. Although practices may change over time, the intent of the FPC at the time of plan approval, is considered by the Table as integral to the proposed Fort St. John Land and Resource Management Plan.

2.2 Agriculture

Agriculture dates back to the late 1800's when the first settlers began arriving in the area. These early farmers depended on income from a variety of sources including forestry, fur trapping and agriculture. Since the most productive agricultural lands are in the Taylor and Baldonnel area, the village of Taylor was the dominant agricultural settlement until the 1940's. Today, more than 800 farmers occupy 4,700 square kilometres, or 9% of the Plan area. The North Peace area of BC is similar to the prairie agricultural regions to the east. Cereal crops, beef cattle and speciality field crops form the bulk of the agricultural operations.

The Peace River region accounts for over one third of the Province's Agricultural Land Reserve (ALR). About one half of those lands are in the Fort St. John LRMP area. Most ALR Crown lands tend to be of lower agricultural capability than lands already in production, but are well suited to forage production.

Agriculture is an important component of the economic and social fabric of the Plan area. The industry provides about 13% of direct employment. It also sustains a local pool of skilled, adaptable workers for other industries such as guide outfitting, forest harvesting, wood processing, oil and gas exploration and development, and infrastructure maintenance for roads and railways.

Agriculture is subject to wide swings in profitability due to global commodity supply and demand. The dramatic improvement in agricultural commodity prices during the mid 1990's will create pressure to bring more land into agricultural production.

The LRMP Working Group recognizes the need for agricultural expansion on ALR lands, and recommends that integrated land use be accommodated wherever possible and feasible.

> ***The Fort St. John LRMP adopts the general management direction*** *that within the Agricultural Land Reserve, agriculture will have a high priority. Compatible land and resource uses will be permitted and multiple land and resource uses encouraged, where appropriate and achievable. Crown lands with appropriate agriculture potential will be made available to potential users under the BC Crown Lands Agricultural Policy. The integrity of the Agricultural Land Reserve will be protected under existing legislation and regulations.*
>
> ***The Fort St. John LRMP adopts the general management direction*** *of conserving soil productivity. Agricultural soil productivity will be maintained through implementation of practices contained in the Agriculture Land Reserve Guidelines and policies.*

2.3 Range

The Peace River area is one of North America's highest capability areas for cow/calf production. The ranching sector has grown considerably over the past few years. Like agriculture, ranching contributes to the stability of northeastern communities. It provides job opportunities and helps maintain a skilled and adaptable labour pool for other industries.

The LRMP Working Group recognizes that the Coordinated Resource Management Planning (CRMP) process is an important process for the early identification of operational issues and concerns in order to accommodate grazing and other interests into more detailed plans. The strategic direction from this LRMP is that these types of processes will be used to resolve potential conflicts between grazing and other resource values and interests.

The Fort St. John LRMP adopts the general management direction that *the ranching sector will have increased access to grazing opportunities through utilization of prescribed burning and range clearing in forested areas of low value for timber production. The Fort St. John LRMP endorses the establishment of funding (such as a grazing enhancement fund) for the Fort St. John planning area to meet the grazing objectives of the proposed land use plan.*

The Fort St. John LRMP adopts the general management direction *of controlling the spread of noxious weeds. This will be achieved through implementing noxious weed control plans and enforcing compliance with the Weed Act.*

2.4 Forest Management

Approximately 24% of the Plan area is suitable for timber harvesting, with the majority of the harvest coming from Crown regulated forest lands. Private holdings, primarily agriculture and mostly located in the vicinity of the Peace River are also sources of timber. The current allowable annual cut of 2,015,000 m^3/yr is divided more or less equally between coniferous (1,100,000 m^3/yr) and deciduous (915,000 m^3/yr) species.

Legislation to protect the commercial forest land base of British Columbia was proclaimed in July 1994. The Forest Land Reserve Act creates a Forest Land Reserve (FLR) similar to the Agriculture Land Reserve (ALR). Crown forest lands and suitable privately managed forest lands may be included in the reserve. Protected Areas, ALR and private lands not being managed as forest lands will not be included in the reserve. It is anticipated that following the Fort St. John Land and Resource Management Planning process, the Forest Land Reserve will be used to designate suitable forest lands.

Canadian Forest Products Ltd. (Canfor) and Fibreco Export Inc. (a division of Slocan Forest Products) are the two major forest licensees operating within the area. Canfor – Fort St. John Division produces about 165 million board feet of lumber and 85,000 metric tonnes of pulp chips each year. Another Canfor mill in Taylor produces about 65 million board feet of studs and speciality products and 52,400 tonnes of pulp chips.

Fibreco, the second major wood user, produces pulp at its Taylor mill. The company purchases chips from Canfor and other primary wood industries. Fibreco plans to upgrade the mill within the next two to three years to use hardwood as well as softwood chips. This will add flexibility in changing market conditions. The upgrade will double the mill capacity from 180,000 metric tonnes to 360,000 metric tonnes per year. When the expansion occurs, Fibreco will require its own woodlands operation to harvest mostly aspen timber. The Fibreco facility is one of three in BC using a chemithermomechanical process (which does not use chlorine in the bleaching process) and one of two that can utilize both hardwood and softwood chips.

The Fort St. John LRMP adopts the general management direction of *managing forests in the Fort St. John Forest District for a variety of forest values by encouraging forest harvesting patterns and block sizes which emulate the natural disturbance patterns found within the planning area. Flexible harvesting activities, including utilizing variable rotation ages in mature stands, will be utilized to accommodate other resource values and optimize sustained yield. Where ecologically and silviculturally appropriate, the evaluation of a range of silvicultural systems at the landscape level will be encouraged. In addition, forest harvesting activities and timing will be undertaken with sensitivity to ungulate wintering habitat.*

The Fort St. John LRMP adopts the general management direction *of conserving soil productivity. Forest soil productivity will be maintained through implementation of practices contained in the Forest Practices Code and the Agriculture Land Reserve Guidelines and policies.*

2.5 Energy

Northeastern British Columbia is the only area of the province that currently produces oil and gas. The Fort St. John area, has been a centre of energy exploration and development since the 1950's.

The northeast oil and gas fields lie within the Western Canada Sedimentary Basin. The recent discovery of large gas deposits in the south foothills area has stimulated more interest in the natural gas potential within the Fort St. John LRMP area. The outlook for the energy sector is encouraging, with slow and steady growth expected. Exploration remains very active and substantial reserves have been identified.

Energy is the dominant economic sector in the planning area and it will likely maintain that position for the foreseeable future. The energy sector provides 23 % of the jobs in the plan area.

The City of Fort St. John has a well developed infrastructure and is the main supplier of goods and services to the energy sector. Westcoast Energy operates a natural gas processing plant in the neighbouring village of Taylor.

The LRMP working group wishes to optimize opportunities for safe, efficient and environmentally-sound exploration and development of oil and gas resources for the economic benefit of the planning area and the province. To meet this challenge, the LRMP Working Group has adopted a general management direction that will apply to all RMZ's.

The Fort St. John LRMP adopts the general management direction *of maintaining opportunities and access for oil and gas exploration, development and transportation. Oil and gas exploration and development activities will be integrated with other resource user activities. Exploration and development of petroleum resources will be permitted within the appropriate regulatory framework for environmentally responsible development of surface and sub-surface resources.*

2.6 Recreation and Tourism

The Fort St. John planning area supports a wide range of public and commercial outdoor recreation and tourism opportunities. This sector depends on the land, water, fish and wildlife resources to provide outdoor recreation experiences for residents and non-resident visitors. Tourism provides 13% of the employment and 4% of the income within the planning area.

The historic Alaska Highway is the dominant travel route. Tourists enroute to or from Alaska enjoy the scenic areas along the main travel corridors. Improving these sites will encourage travellers to stop and explore the area and generate additional tourism revenues. Business travel is also another important tourism component because of Fort St. John's role as a regional economic centre.

Tourism in the region is growing in both revenues and employment. The industry will have a bright future, providing that the scenic quality of major travel corridors and natural settings is maintained.

Much of the tourism and recreational use focuses on outdoor activities. Popular activities such as hunting and snowmobiling rely on natural settings and the presence of wildlife and fish.

The Commercial Backcountry Recreation Policy administrated by the Ministry of Environment, Lands and Parks allows for commercial businesses to obtain a form of tenure in the backcountry. Backcountry enterprises such as guide outfitting are taking advantage of the new policy by applying for tenures to increase the viability of outdoor/nature based wilderness tourism opportunities which in turn will serve to increase the longevity of their businesses.

> ***The Fort St. John LRMP adopts the general management direction*** *of managing a wide spectrum of public and commercial recreation and tourism values, opportunities and activities. This will be achieved by managing, recognizing and identifying existing recreational use and by identifying future opportunities. In order to protect the outdoor experience, access will be carefully planned and recreational activities will be managed to minimize the effects on scenic and recreational values. The Ministry of Forests and the Ministry of Environment, Lands and Parks (BC Parks) will manage public recreational facilities, areas and trails (including trails noted within the plan), including important scenic areas. Commercial backcountry recreation opportunities and tenures will be established consistent with: RMZ objectives and strategies, existing inter-agency referral processes, in consultation with user groups, as identified within the Commercial Backcountry Recreation Policy. Wildlife populations will be managed to provide opportunities for non-commercial hunting. This will be achieved through strategies in lower level plans that complement the wildlife management policies and practices to sustain wildlife.*

2.7 Access

The Fort St. John LRMP aims to find a balance in order to maintain wilderness characteristics and fish and wildlife habitats over time, while permitting resource development, including resource road development.

Road access for industrial activity is an acceptable use of the land, and will be subject to regulations, objectives and strategies.

An example of enhanced access management (for RMZ's such as Besa-Halfway-Chowade, Graham North, Graham South and Lower Sikanni-Fontas Valley) is the following strategy adopted to address the conservation of other resource values when planning and developing access.

> *More detailed planning will be used to identify significant fish, wildlife and other resource values. Where there is significant risk that these resources may be impacted, access may be limited, restricted or in special circumstances, prohibited.*

The intent of these strategies is to encourage the identification of other resource values and to incorporate the conservation of these values into site specific access management planning and development. This strategy may result in management prescriptions such as limiting the use of roads and routing new access away from critical habitat areas.

Where new access proposals conflict with the conservation of other resource values and where these conflicts are determined by resource managers to be significant (high risk), access may in special circumstances may be limited, restricted, or in some circumstances, prohibited. Under these circumstances, proponents (and, as appropriate, resource management agencies) are guided by this LRMP to identify alternatives of lower risk to the resource values identified (for example, a critical habitat component) using the best information available. This information will be used by land and resource managers within established regulatory review processes.

In addition, the Fort St. John LRMP has directed that new access routes should be appropriately managed so that unnecessary access routes are deactivated. For the term of this general management direction, access routes means new roads, linear utility corridors (old and new) and seismic lines. The Fort St. John Working Group endorses requesting resource managers to establish a consultative process to address the 'non-routine' deactivation of routes that may be required for industrial or non-industrial purposes. The plan follows the spirit and intent of the Muskwa-Kechika Access Management Area (AMA) that was designated under the Wildlife Act (BC Reg. 218/94). The AMA restricts public off-road vehicular access to designated roads in order to protect wildlife and habitat. Industrial access is allowed subject to a permit being issued by MELP.

The intent is not to develop and implement additional consultation processes for all road deactivation such as road deactivation that is already required under statute or regulation. The intent is to ensure that major access routes proposed for deactivation are not later required for some other access purpose. Road deactivation planning will allow for notification of tenure holders and stakeholders.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining or enhancing access to Crown land by the residents of this province, subject to specific Resource Management Zone objectives and strategies.*

2.8 Fish and Wildlife

2.8.1 Fish

Fish populations can be divided into two categories: residents of the Peace River watershed and residents of the Liard River watershed.

The area supports twelve species of sport fish. The most abundant are mountain whitefish, Arctic grayling, rainbow trout, lake whitefish and walleye. There are also substantial populations of bull trout, northern pike, goldeye, yellow perch and burbot. Common non-sport species include the long nose sucker, largescale sucker, white sucker and the northern squawfish. Forage fish living in the streams and lakes of the area include: the spoonhead and slimy sculpins, spottail shiner and redside shiner.

Fish populations tend to have slow growth rates and late maturations. Exploitation rates have historically been low, resulting in populations of large, old fish. During the past decade, however, several species such as Arctic grayling and bull trout appear to be diminishing in presence and population size in many watersheds.

Bull trout and pearl dace are blue-listed (threatened) species. Pearl dace are found in the Beatton River drainage, specifically in Charlie Lake. Bull trout, one of the most prized sport fish, makes extensive migrations through the main stems of the Halfway, Peace and Beatton Rivers. Populations of bull trout in the Halfway River watershed may be suffering from over exploitation and habitat degradation, linked to resource development activities.

Williston and Dinosaur Lakes are reservoirs created by the W.A.C. Bennett and Peace Canyon dams. They have been stocked with kokanee salmon. Twenty-eight other lakes in the Peace and Liard River watersheds have also been stocked since 1975. Most of these lakes were stocked with rainbow or brook trout and some were stocked with cutthroat trout. Kokanee salmon, brook trout and cutthroat trout are all introduced species (not native) to the planning area.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining the opportunity for the sustainable harvest of fish and wildlife resources by maintaining sufficient habitat of appropriate capability to sustain populations. In addition, sustain resident opportunities to harvest fish and wildlife.*

2.8.2 Wildlife

The Fort St. John planning area boasts a great diversity and abundance of habitat types and wildlife species. Many of these have provincial or international importance.

Part of the western portion of the plan area encompasses the largely undeveloped Muskwa-Kechika area. The Muskwa-Kechika area is considered by many to be globally significant for wildlife due to substantial populations of large mammals including four species of large carnivores and eight species of ungulates. This area represents one of the best opportunities in BC to protect an intact, functional large mammal ecosystem.

Ungulate populations have special significance due to their natural abundance and history of use. This area supports thriving populations of mule and white-tailed deer, caribou, elk, moose, Stone's sheep, mountain goats and the only Plains bison population in the province. Transplant programs have allowed elk and bison to successfully occupy new ranges. Trends suggest that elk, bison and deer populations are increasing.

Carnivore species in the planning area include black bear, grizzly bear, coyotes, wolves, wolverine and cougars.

Furbearers such as squirrel, mink, weasel, marten, lynx, beaver and fisher are common. Many are commercially harvested.

Upland game birds include the Sharp-tailed, Ruffed and Blue grouse and several species of ptarmigan. Provincially significant wetlands provide habitat for the Canada and Snow goose, Trumpeter Swan and numerous duck species such as the Mallard, Blue-winged teal and Bufflehead ducks. These wetlands are important due to their size, stability and natural biodiversity. Avian predator species include the Gyrfalcon, Bald Eagle, Boreal Owl and Broad-winged Hawk. Songbirds found in the planning area include the American Robin, European Starling, Yellow-headed Blackbird and several species of waxwings.

This area is home to five provincially red-listed (endangered) bird species: the Bay-breasted Warbler, the Cape May Warbler, the Connecticut Warbler, the Sharp-tailed Sparrow and the Upland Sandpiper. Only one mammal species, a bat, has been designated as red-listed, the Northern Long-eared Myotis.

Several species within the planning area are provincially blue-listed (threatened). Nine of these are birds: the American Bittern, the Black-throated Green Warbler, the Canada Warbler, the Palm Warbler, the Philadelphia Vireo, the Sandhill Crane, the Short-eared Owl, the Surf Scoter, and the Trumpeter Swan. Seven blue listed species are mammals including: the black backed shrew, northern bog lemming, fisher, grizzly bear, wolverine, Stone's sheep and Plains bison.

Yellow-listed species that have a regional importance include: white-tail deer, elk, Northern flicker, Golden Eagle and the Great Horned Owl.

Wildlife species in the planning area require a variety of habitats to sustain their populations. Important wildlife habitats in the planning area include interior mature and old-growth forests, riparian areas along lakes, rivers and streams, subalpine and alpine areas, major wetlands and south facing river valleys. The value of each of these habitats varies for each species and within each zone. Each RMZ description highlights important habitat characteristics representative of that zone and then identifies objectives and strategies to sustain those habitats.

The Fort St. John LRMP adopts the general management direction *of ensuring that the habitat needs for red & blue-listed (rare & threatened), and yellow-listed (regionally significant) species are provided for. The habitat needs of these species will be addressed as a priority at the landscape and stand level. Rare habitats (aquatic and terrestrial) and plant communities will be identified and mapped and considered for establishment.*

2.9 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 can be described at the genetic, species and ecosystem levels.

Genetic diversity refers to the different forms (alleles) of genes present in a particular population of living things. Many forms of a gene are present in a genetically diverse population. Genetically diverse populations are able to adapt swiftly when local conditions change. A population which is not genetically diverse (e.g. an inbred or isolated population) has only a few forms of each gene. This makes it vulnerable to genetic diseases and less able to adapt to environmental changes.

Species diversity refers to the number of different species in a particular area. When species become extinct, species diversity diminishes. Each species has its own particular set of environmental conditions under which it can live and breed, and chooses its habitat accordingly. Species diversity depends on the number of different habitats present. British Columbia has the highest diversity of wildlife species in Canada, due to its habitat diversity.

Ecosystem diversity refers to the number of different habitats available within a particular ecosystem. Ecosystem diversity is directly reflected in species diversity. Human activities tend to split, isolate and eliminate certain types of habitat while maximizing others. Conserving ecosystem diversity means maintaining sufficient areas of all naturally occurring habitats to allow all the species that are associated with those habitats to survive.

Biodiversity is threatened by:

- loss of habitat due to fragmentation and alienation.
- habitat degradation.
- direct impacts on specific plant and animal species such as consumptive use by people.

Maintaining biodiversity depends on:

- the protection and connectivity of large areas as ecological benchmarks at the regional level.
- providing habitat variety and connectivity at the landscape (watershed) level.
- management practices at the stand (site) level.

The Fort St. John LRMP Table chose to establish strategic direction for biodiversity management to guide more detailed planning processes (landscape unit planning, forest development plans, etc.) in two ways:

- By establishing a general biodiversity emphasis for each of the Resource Management Zones (RMZ's). The biodiversity emphasis options, based on government guidelines, are consistent with the recommended intensity of forest management activities within the RMZ and other non-conflicting land and resource uses. The biodiversity emphasis listed for each RMZ will be used with other landscape level biodiversity guidelines to guide the selection of biodiversity emphasis options at the landscape unit level.
- Establishing priorities for landscape level planning. Four RMZ's were selected as high priorities: Trutch Creek, Graham South, Graham North and Lower Sikanni - Fontas Valley.

It is the Table's intent to provide some strategic direction to the designation of biodiversity options at the landscape level and to prioritize landscape level planning within the planning area.

> ***The Fort St. John LRMP adopts the general management direction*** *of conserving biodiversity, rare ecosystems, plant communities and habitat types. This will be achieved by identifying and mapping rare ecosystems, plant communities and habitat types and considering them for incorporation into more detailed plans with designations such as sensitive areas or wildlife habitat areas and managing them with ecologically appropriate silvicultural systems. The goal will be further achieved by maintaining larger patches of unfragmented mature and older seral stage forests, where appropriate, and ensuring connectivity between important habitat types by using naturally occurring corridors (e.g. riparian areas).*

2.10 Culture and Heritage

The Fort St. John planning area is the location of the oldest prehistoric site in BC (Charlie Lake Cave), the oldest historic site (original Fort St. John) and, along with Dawson Creek and Fort Nelson, the oldest paleontological sites in BC.

In the Fort St. John planning area, natural heritage resources consist of palaeontological sites, containing the fossilized remains of past life forms.

Archaeological sites in the area range from surface or thinly buried scatterings of stone tools and/or flakes indicating where these tools were manufactured or repaired to sites that may include features, such as the remains of cooking hearths and post molds where temporary shelters and food drying racks were erected.

Historical sites of interest date from the early fur trade and homestead period.

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 Fort St. John LRMP adopts the general management direction *of protecting culture and heritage resources. This will be achieved through the application of the Forest Practices Code, Heritage Conservation Act, Agreement of the Management of Cultural Heritage Resources and the Archaeological Impact Assessment Guidelines to identify and maintain culture and heritage resources.*

2.11 Minerals

Northeastern BC has significant mineral resource potential, but the area is currently under explored.

Mineral exploration, development[1] and mining[2] are temporary uses of the land. Mining proposals are subject to comprehensive review and approval processes. Only small areas of land are used for development but access to large areas is essential for exploration.

This plan confirms that mining and related road developments are acceptable uses of the land, outside of Protected Areas. These activities will be subject to the regulatory framework over the entire area. The existing review and approval processes will ensure that mining will avoid, minimize or mitigate impacts on identified resource values. These impacts will be consistent with the level of management prescribed for each resource management zone within this plan.

Advanced exploration and development activities clearly have impacts on small areas. This plan directs that the impacts of those activities will be accommodated wherever possible.

Further direction for access related to mineral exploration and development is provided in the general access management section of this plan and other general and specific objectives and strategies.

The Fort St. John LRMP adopts the general management direction *of maintaining opportunities and access for mineral exploration, development and transportation. Mineral exploration and development activities will be integrated with other resource user activities. Revisions to standards of practice and permitting processes will be implemented in order to address evolving management issues, to provide consistency with the Forest Practices Code (FPC) where required, and to ensure timely and efficient permitting. Localized impacts of advanced exploration and development activities within existing legislative framework will be accommodated wherever possible. Wherever possible, requirements of the Forest Act and the FPC permits and licences will minimize impacts on the land base. Visual quality for mineral exploration and development projects will be managed through the Mines Act. For proposed mine developments captured by the provincial Environmental Assessment Proccess, the assessment process will consider RMZ objectives. For small mines and quarry development, zone objectives will be addressed by the multi-agency regional mine development review process.*

[1] Development means final stages of advanced exploration, construction of production facilities and production of minerals.

[2] Mining means both mineral exploration and development

2.12 Water

Water resources are found in two main physiographic regions; the Western Cordillera and the Interior Plain. There are three distinct limnological (fresh water) regions, the Peace River Basin, Fort Nelson-Hay River Basin and the Rocky Mountains. The major drainage areas are the Peace River and Liard River watersheds. Major tributaries include the Sikanni Chief River, the Beatton River, the Halfway River, the Chowade River, the Graham River, the Ettithun River and the Fontas River. Major lakes include Charlie Lake (the current water supply for the City of Fort St. John) the mountain lakes – Redfern, Fairy and Trimble, and the Alberta plateau lakes – Chinchaga, Ekwan, Tommy, Etthithun and Strom lakes.

Natural springs resulting from perched water tables are common throughout the southern portion of the planning area. Several of these springs are used by rural residents as community water supplies. Groundwater reserves within the region are scarce and their use is limited for domestic water supplies.

Communities, oil and gas industries and a pulpmill are the largest water users. Water for rural domestic uses, irrigation, stock watering, conservation of waterfowl and dust control is generally diverted from small streams or overland runoff that has been collected in dugouts.

Community water supplies require special consideration to maintain a high quality of drinking water and community health. Water supplies for Hudson's Hope, Taylor and several downstream Alberta communities, are pumped from the Peace River. First Nations communities along the Halfway, Doig and Blueberry Rivers also draw water from these systems. Charlie Lake currently supplies water to the City of Fort St. John. However, growing demand for water has led the City of Fort St. John to begin construction of waterworks to draw groundwater from a site adjacent to the Peace River.

The Fort St. John LRMP Table has established RMZ-specific objectives and strategies for maintaining stream flows, water quality and water quantity. Resource Management Zones with high existing or potential levels of resource development and significant fisheries values have strategies that indicate priorities for watershed assessments (see Fish, 2.8). The following RMZ's are priorities for watershed assessment: Besa-Halfway-Chowade, Bluegrave-Horseshoe, Crying Girl, Graham South, Graham North, Grassy-Minaker, Kobes Creek, River Corridors, Lower Sikanni-Fontas Valley and Trutch Creek.

The Fort St. John LRMP recognizes the importance of the headwaters of major rivers in the Rocky Mountains as the initial source of clean water for current and future generations. It is recommended that operational activities not significantly alter the water quality, quantity or downstream flow regime.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining water supplies for licensed domestic water users and community waterworks licensees, and striving to maintain the natural stream flow regime (timing of flow, water quality and quantity) for watercourses, recognizing that natural hydrologic processes are beyond the control of resource managers. As well, land and resource developments within community water supply areas will be managed to maintain water quality and quantity. These goals will be achieved by: 1) establishing and maintaining instream flow requirements and hydrologic regimes; 2) determining the equivalent clear-cut area (ECA's) thresholds for specific watersheds on a priority basis; 3) identifying high priority watersheds and using the appropriate levels of watershed assessment to determine potential effects, prescriptions and rehabilitation measures; 4) identifying and establishing water quality monitoring sites (parameters to be monitored could include any or all the following: turbidity, stream flow, water temperature, conductivity, faecal and total coliform counts) and; 5) identifying smaller watersheds in settled areas with significant licensed water use and a high intensity of present or future forest resource development as having potential for community watershed designation under the Forest Practices Code of British Columbia Act.*

2.13 Air Quality

Air quality within the planning area is relatively good. Exceptions occur near isolated discharges of sulphur compounds. Sulphur dioxide (SO_2) and total reduced sulphur (TRS) compounds from oil and gas processing facilities and downwind of major industrial incinerators (beehive burners) associated with the wood processing industry. Smoke from forest fires, slash burning and habitat enhancement is also a routine concern of many residents.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining air quality. This will be achieved by complying with Provincial legislation.*

2.14 Trapping

The diverse landscapes within the planning area host a variety of commercially harvested furbearers including marten, lynx, beaver, coyote and fox. There are 71 registered traplines, or portions of traplines, covering the entire planning area. Although most furbearers are relatively abundant, low fur prices limit the current harvest.

Although not important from a regional employment perspective, trapping remains socially 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 (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 trappers personal information.

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

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining trapping opportunities. This will be achieved by honouring existing tenures and managing furbearer habitats and populations. Critical furbearer habitat for priority species (marten, fisher and lynx) will be identified and incorporated into more detailed plans. In order to reduce conflicts, trappers will be notified in a timely manner under the Trapper Notification Program of industrial land and resource development activity taking place within their tenure area. It will be a priority to maintain traditional modes of transport used by registered trapline holders to harvest fur on their traplines. Trapline tenure holders will retain the right to transfer traplines.*

2.15 Guide Outfitting

There are seven active guide outfitters in the planning area primarily in the western portion of the Forest District. Guided hunts and fishing experiences for non-residents are the primary source of income for the industry. In recent years some guides have expanded their operations and successfully marketed non-hunting activities such as guided hikes, trail rides and wildlife viewing. New hunting or non-hunting activities should be considered through the Commercial Backcountry Recreation (CBR) application process.

The Commercial Backcountry Recreation Policy (CBR Policy) administrated by the Ministry of Environment, Lands and Parks, allows commercial businesses to obtain a form of tenure in the backcountry. Backcountry enterprises, including guide outfitting are applying for tenures to increase the viability and scope of their outdoor, nature-based wilderness tourism businesses.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining guide outfitting opportunities. This will be achieved by recognizing and honouring the existing tenures, managing fish and wildlife habitat and populations, and providing opportunities for the expansion of non-hunting wilderness tourism activities through the CBR Policy.*

2.16 Visual Quality

Visual quality levels or objectives are the extent to which the visual or scenic value of a landscape is altered compared to the pre-existing or natural condition. While resource development drives the economy of the Fort St. John planning area, the community recognizes the importance of maintaining the aesthetic values of the forest landscape. Development in the energy and forestry sectors can occur while managing the visual quality associated with important recreational areas, rivers and streams and important natural features. Some important areas identified for visual quality management are the Peace River, Alaska Highway Corridor and major backcountry access routes into the Besa-Halfway-Chowade, Graham North and Graham South RMZ's.

> ***The Fort St. John LRMP adopts the general management direction*** *of managing visual quality in scenic areas identified as having a high capability for tourism or recreational use. Visual quality will be managed through existing legislation and regulation including the Visual Quality Objective management system of the Ministry of Forests. Where established, Visual Quality Objectives (VQO's) will apply to timber harvesting and should guide incidental timber harvesting associated with other resource user activities. Identified scenic areas will have their site specific Visual Quality Objectives met in accordance with the Forest Practices Code. It should also be noted that Visual Quality Objectives may change over time, due to new inventory information and changing public values.*

2.17 Communications, Transportation and Utilities

The planning area is traversed by a number of communication, transportation and utility corridors. Infrastructure is important in the development of resources within the planning area. Corridors, which provide a means for recreation and motorized access, can also create fragmentation of habitats. In recent years, there has been more cooperation between resource management agencies and industry in planning, developing and rehabilitating these corridors.

> ***The Fort St. John LRMP adopts the general management direction*** *of maintaining existing communication, transportation and utility corridors and sites. Where feasible, future development will be directed to established corridors and sites. Where new development of corridors and sites are required, these will be coordinated with other users. Corridor maintenance and upgrading activities must also take place with sensitivity to high capability wildlife habitat, visual and recreational values and visual quality objectives.*

3.0 RESOURCE MANAGEMENT ZONES

3.1 Introduction

One of the major aspects of the LRMP is the subdivision of the planning area into Resource Management Zones (RMZ's). The boundaries for each zone were determined by the Working Group based on a number of considerations including topography, existing land use and access, Agricultural Land Reserve (ALR) boundaries, environmental concerns and resource values. Each of the zones has a unique set of resource values, objectives to maintain or enhance those values and a number of strategies to be implemented to achieve the objectives. Along with the General Management Directions adopted by the LRMP Table, the Resource Management Zones provide geographically focused, strategic direction for all land and resource development in the planning area.

A central theme of this LRMP was to develop integrated strategies to maximize compatibility between objectives within RMZ's. All known values were considered in the development of the objectives and strategies for each zone.

The Fort St. John LRMP subdivides the planning area into 27 Resource Management Zones (RMZ's). Each RMZ is further classified into provincial land use categories which reflect the general management regime for each RMZ. The RMZ's and categories are listed below:

RMZ Name	**Provincial Land Use Category**
Agriculture/Settlement Area	Agriculture/Settlement
Aikman-Deadhorse	Enhanced Resource Development
Grazing Reserves	Enhanced Resource Development
Jedney	Enhanced Resource Development
Kobes Creek	Enhanced Resource Development
Upper Cameron	Enhanced Resource Development
Bluegrave-Horseshoe	General Resource Management
Chinchaga	General Resource Management
Conroy	General Resource Management
Crying Girl	General Resource Management/Special Resource Management[1]
Farrell Creek	General Resource Management
Grassy Minaker	General Resource Management
Osborn	General Resource Management
Trutch Creek	General Resource Management
Two Bit Creek	General Resource Management
Alaska Highway Corridor	Special Management -Tourism/Visual Quality
Besa-Halfway-Chowade	Special Management - Fish and Wildlife Habitat, Wilderness Values and Backcountry Recreation
Graham North	Special Management - Fish and Wildlife Habitat, Wilderness Values and Backcountry Recreation
Cecil Lake and Boundary Lake	Special Management - Fish and Wildlife Habitat

[1] *It was a decision of the Table that the western half of Crying Girl be classified as Special Resource Management and the eastern half as General Resource Management*

RMZ Name	Provincial Land Use Category
Lower Sikanni - Fontas Valley	Special Management - Major River Corridors
River Corridors	Special Management - Major River Corridors
Peace River Corridor	Special Management - Major River Corridors
Graham South	Special Management - Fish and Wildlife Habitat
Charlie Lake Water Supply Area	Special Management - Community Water Supply
Graham-Laurier	Protected Area (proposed Goal 1)
Milligan Hills	Protected Area (proposed Goal 1)
Redfern - Keily	Protected Area (proposed Goal 1)
Peace Boudreau	Protected Area (proposed Goal 1, shared with Dawson Creek LRMP)
Sikanni Chief Canyon	Protected Area (proposed Goal 2)
Sikanni Chief Falls	Protected Area (proposed Goal 2)
Pink Mountain	Protected Area (proposed Goal 2)
Sikanni Old-Growth	Protected Area (proposed Goal 2)
Ekwan Lake	Protected Area (proposed Goal 2)
Chinchaga Lake	Protected Area (proposed Goal 2)
Beatton-Doig Canyon	Protected Area (proposed Goal 2)
Peace River Sites	Protected Area (proposed Goal 2)

In summary, the planning area can be subdivided into broad Provincial Land Use Categories as follows (percentages approximate only):

Agriculture/Settlement	12%
Enhanced Resource Development	20%
General Resource Development	46%
Special Management	14%
Protected Areas	4%
Major River Corridors	4%

Broad Provincial Land Use Category Descriptions

The ***Agriculture/Settlement*** Provincial Land Use category includes land:

- currently used or proposed for settlement under an *Official Community Plan*
- primarily planned and managed by local government under the *Municipal Act*
- currently used for, or with future development potential, for agriculture and range
- used for agriculturally compatible activities such as mineral exploration, oil and gas exploration and development; transportation, utility and communication corridors; recreational developments and forest management
- the majority of the land is in the Agricultural Land Reserve

The ***Enhanced Resource Development*** Provincial Land Use category includes lands:

- with existing or with future potential suitability, for intensive resource development with due consideration to the management of other resource values
- where a high priority has been designated for a special or combined resource management emphasis (such as high intensity forest management regime or range management emphasis)
- where investments in resource development and enhancement are encouraged in full compliance with the existing regulatory regime

The ***General Resource Development*** Provincial Land Use category includes lands:

- to be managed for a wide range of resource values
- where strategies (including guidelines and subsequent management prescriptions) for achieving non-extractive resource objectives may modify resource development
- where conflicts between land uses are managed in an effort to integrate resource development with environmental and conservation values
- where investment in resource development and enhancement may be encouraged in areas with few land use conflicts

The ***Special Resource Management*** Provincial Land Use category is subdivided into specific land use categories based on the major resource values to be given a high priority in land and resource planning and development. It is recognized that these lands contain extractive resource value, the exploration and development of which may be of significant social and economic benefit to the province. Resource development is permitted but must consider and address all significant values identified. The intent is to assess risk to the identified values and to adequately manage any conflict. Resource values have been subdivided as follows:

- **Tourism and Visual Quality**: lands within this Provincial Land Use category are to be managed to established visual quality objectives, in support of significant tourism and scenic values, identified along a major transportation route.
- **Fish and Wildlife Habitat**: lands within this Provincial Land Use category have significant fish and/or wildlife values and habitats of regional and/or provincial significance.
- **Wilderness and Backcountry Recreation**: lands within this Provincial Land Use category have significant wilderness values which support a variety of commercial and non-commercial recreational opportunities.
- **Major River Corridors:** lands within this Provincial Land Use category are identified major river valleys that have significant fish and wildlife habitat, recreation, tourism and scenic/visual quality values.
- **Community Water Supply**: lands within this Provincial Land Use category have been identified as important watersheds where the management of land and resource development should not negatively affect water quality in major licensed waters sources.

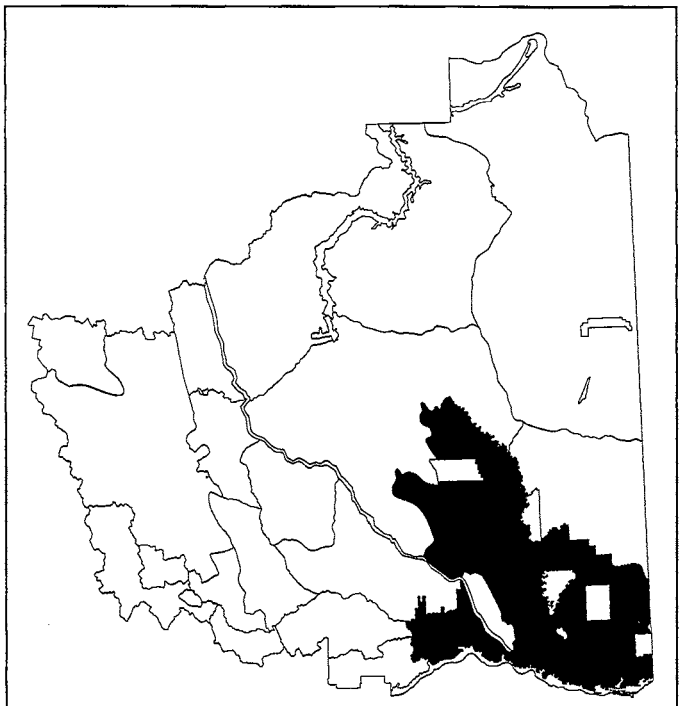
The ***Protected Area*** Provincial Land Use category includes all Goal 1 lands proposed for protection under the Protected Area Strategy. Lands within this category:

- are Protected Area Strategy (PAS) Goal 1 and 2 areas proposed for protection for their natural, culture and heritage, and/or recreational values
- incorporate a range of existing values and land uses, as defined by the LRMP Table, that are recommended for inclusion in any subsequent Protected Area (such as existing land and resource use activities: non-commercial hunting and fishing, guide outfitting, trapping, grazing in support of guide outfitting, camping and hiking)
- do not permit logging, mining, hydroelectric development, oil and gas exploration and development

3.2 Resource Management Zones

Agriculture Settlement Area Resource Management Zone

This Agriculture Settlement Area covers most of the southeast portion of the planning area and contains most of the settlements in the northern Peace River district. It is bordered on the south by the Peace River, on the southeast by Alberta and to the northeast by the Osborn Resource Management Zone (RMZ). The western boundary follows the Jedney RMZ boundary to the Alaska Highway then heads west to the confluence of the Cameron and Halfway Rivers. The southwestern boundary follows the Halfway River to the confluence of the Halfway and Peace Rivers.



Agriculture Settlement Area Resource Management Zone

Three ecosections are represented: the Halfway Plateau ecosection, the Clear Hills ecosection, and the Peace Lowlands ecosection. The total land area is 606, 309 hectares. Approximately two thirds of the land is privately owned.

Most of the RMZ falls within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. These forests are dominated by trembling aspen with some white spruce and lodgepole pine. There is good potential for deciduous timber harvesting, mainly on private land. Extensive conifer harvesting has already occurred throughout the area and many reforested sites now support thriving forest plantations.

Agriculture is the dominant land use. More than two-thirds of the land lies within the Agriculture Land Reserve. This is British Columbia's largest grain producing area. Wheat, barley and canola are the most important crops and there has been steady growth in beef and forage crop production. Recently some area ranchers have diversified into non-traditional activities such as bison and reindeer ranching. Agriculture accounts for about 13% of employment in the area.

The City of Fort St. John, nine smaller communities and the Blueberry River and Doig River First Nations communities are located in the RMZ. Rural springs are important water sources for rural residents.

Active oil and gas tenures exist throughout the RMZ and pipelines, dehydration and processing facilities have been constructed. Future prospects for new oil and gas discovery are medium to high.

There is potential for industrial minerals, including sand and gravel. There is an occurrence of barite (mineral) in a well borehole.

The south-facing slopes of most streams and rivers provide critical ungulate winter range. The area is an important central flyway for migrating waterfowl and contains important waterfowl staging areas.

Visually sensitive areas include: the Alaska Highway corridor and Highway 29 to Hudson's Hope.

Agriculture / Settlement Area

Values:

agriculture	First Nations	water	timber	culture and heritage
trapping	oil and gas	mineral (e.g.. sand, gravel)	fish	
settlement needs / local government		wildlife	recreation	range

Goal 2 Proposed Protected Area - Beatton - Doig Canyon

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
• ensure future infrastructure requirements are considered when exploring for oil and gas	• minimize impact of industry on local residents by continuing to work with industry to lower emissions and decrease visual impacts
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
• minimize losses to the timber harvesting land base	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest.
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber
	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land
	• promptly and aggressively reforest and manage cutovers and areas burned by wildfire, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans.

Agriculture / Settlement Area

Objectives	Strategies
RECREATION (CONT'D)	• maintain public access to Aitken Creek Falls, Prespatou Lake and other local recreation features
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown Land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use, within the appropriate regulatory framework
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
• provide opportunities for the growth of agriculture	• applications for new agriculture and range tenures will be reviewed on a site specific basis
• provide opportunities for the growth and expansion of the agriculture and food production industries	• support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of suitable land to agricultural use through existing processes
RANGE	
• maintain or enhance opportunities for livestock grazing	• encourage an increase in range production giving preference to integrated use
	• in forested areas of low value for timber production, encourage conversion to range through clearing and prescribed burning
• control the spread of noxious weeds	• implement noxious weed control plans and enforce the Weed Act
ACCESS	
• maintain existing access, coordinate industrial access development including linear development to minimize negative effects on other resource values	• maintain existing access including provisions for upgrading
	• encourage consistent road construction standards between industries
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape unit, on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)
	• maintain the integrity of riparian forests along all streams and rivers in the Resource Management Zone
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate, on a priority basis, into more detailed plans

Agriculture / Settlement Area

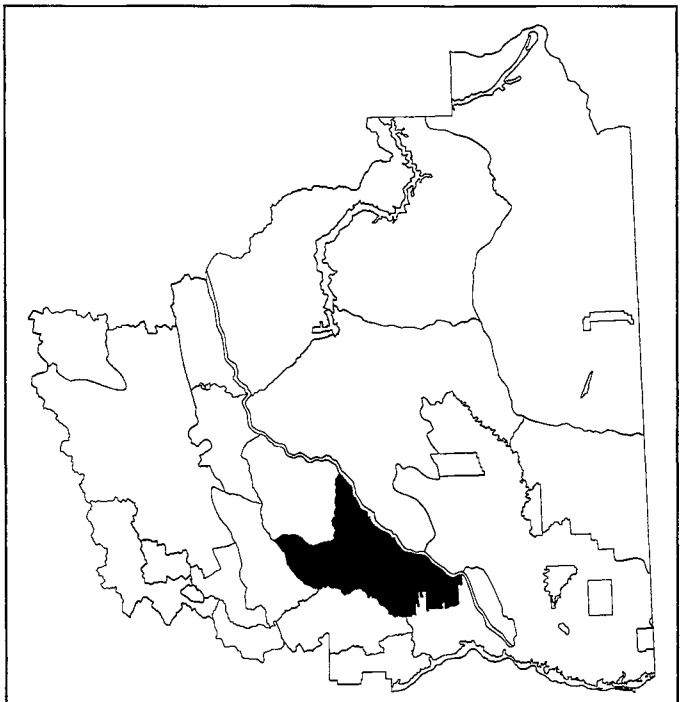
Objectives	Strategies
WILDLIFE (CONT'D)	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat information (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices

Agriculture / Settlement Area

Objectives	Strategies
WATER (CONT'D)	
	• identify and designate water bodies with significant licensed withdrawals of potable water as Forest Practices Code designated Community Watersheds (where appropriate)
	• ensure that land development activities within designated community watersheds comply with community watershed protection guidelines
• maintain groundwater quality and quantity	• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity
LOCAL GOVERNMENT	
• ensure that all land and resource management planning activities within the planning area (including where appropriate, more detailed plans), allow for consultation with, and incorporate the input of local municipal governments (rural and urban)	• recognize Official Community Plans established by local municipal governments

Aikman - Deadhorse Resource Management Zone

This RMZ is located in the south central portion of the planning area. It is bounded on the west by the Halfway River, on the north by the Upper Cameron RMZ, on the south by the Agriculture Settlement Area and Kobes Creek RMZ and on the east by the Alaska Highway. About 99% of the area lies in the Halfway Plateau ecosection, with a small portion in the Peace Lowlands ecosection to the south. The total area is 181, 289 hectares.



Aikman-Deadhorse Resource Management Zone

This region is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Timber values are high, particularly for hardwood species.

Many active oil and gas wells and a transportation infrastructure, including gas and oil pipelines, are found in the RMZ. Additional oil and gas discoveries are likely in the future.

There is potential for industrial minerals, including sand, gravel and coal. There is an occurrence of limonite (iron) along the Cameron River.

This area contains excellent moose habitat and important winter habitat for elk, deer, and furbearers (e.g. fisher, marten and lynx). Several important fish species are present in the Halfway River and its major tributaries.

Sensitive groundwater recharge areas are present and several springs are used as licensed water supplies.

Most Crown lands with agricultural potential have been developed. Range use is quite prevalent in the area.

Common outdoor recreational pursuits include: hunting, wildlife-viewing, camping, fishing and hiking.

Much of this RMZ lies within areas traditionally used by the Halfway River First Nation.

Aikman - Deadhorse

Values:

furbearer habitat	oil and gas infrastructure	wildlife	ranching/grazing	recreation
timber - hardwood/softwood		agriculture	minerals	
fish	water			

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
	• ensure that oil and gas exploration and development activities are undertaken with sensitivity to wildlife habitat and wildlife
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
• minimize losses to the timber harvesting land base	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with high intensity forest management regimes.
	• reforest (within appropriate time frames, as determined through more detailed planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements

Aikman - Deadhorse

Objectives	Strategies
TIMBER (CONT'D)	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber
	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land
	• promptly and aggressively reforest and manage cutovers and areas burned by wildfire, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify and provide opportunities for the use of suitable Crown land for commercial recreation development and use
	• low impact development, campgrounds and small group sites are compatible with the setting
	• provide for motorized recreation access corridors to similar destinations as currently allowed
AGRICULTURE	
• provide opportunities for the growth and expansion of the agriculture and food production industries	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use, within the appropriate regulatory framework
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to the Forest Practices Code
	• in forested areas of low value for timber production, encourage conversion to range through clearing and prescribed burning
	• minimize tree/grass/cattle conflicts through integrated management practices
• maintain livestock grazing opportunities on existing tenures	• allow for the transfer and renewal of existing tenures
	• encourage range management that promotes soil conservation
	• applications for new agriculture and range tenures will be reviewed on a site specific basis

Aikman - Deadhorse

Objectives	Strategies
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access • maintain existing access including provisions for upgrading • encourage consistent road construction standards between industries • where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose)	• identify and map high capability ungulate wintering areas at the landscape level • consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat • plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitats	• identify habitat areas at the landscape level to sustain site specific habitats • address wildlife/agriculture conflicts in operational plans • establish riparian reserves and management areas around critical wetland areas • maintain stable wetland water levels.
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
• restore and rehabilitate negatively impacted ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values • provide input to more detailed planning as required

Aikman - Deadhorse

Objectives	Strategies
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• incorporate the maintenance of fish and fish habitat into more detailed plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into more detailed plans
	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
• maintain groundwater quality and quantity	• identify sensitive groundwater recharge areas
	• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity

Alaska Highway Corridor Resource Management Zone

This zone includes the area that is visible from the Alaska Highway, from the community of Charlie Lake in the south to the Fort Nelson Forest District Boundary in the north. The zone is represented as a corridor for simplicity, however it varies in width depending on the topography.

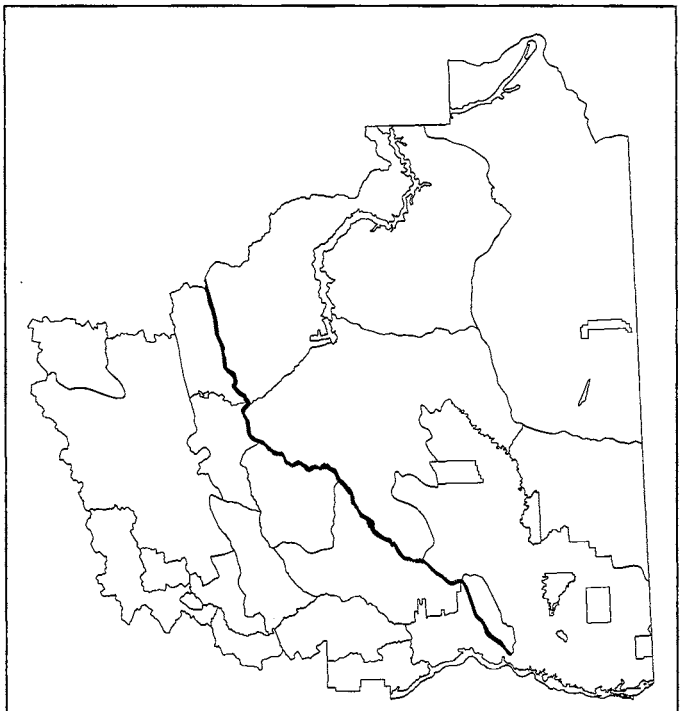
It includes three ecosections: the Muskwa Plateau, the Halfway Plateau and the Peace Lowlands. The total land area is approximately 28,461 hectares.

This zone is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone.

Communities along the Alaska Highway corridor include Charlie Lake, Wonowon and Pink Mountain.

The old Alaska Highway is of particular interest as a culture and heritage site. It was built in 1942 by the U.S. army as a land route to Alaska. Most tourism revenues and employment in the area flow from highway traffic and associated businesses. Visitors travelling the highway take part in hiking, fishing, camping, wildlife viewing and general sightseeing.

All oil and gas exploration and development and timber harvesting activities are managed to maintain the visual qualities of the area.



Alaska Highway Corridor Resource Management Zone

There is good potential for industrial minerals, particularly sand and gravel. There are occurrences of sand and gravel along the corridor.

Accidents involving cattle and large wildlife species straying onto the highway are an ongoing safety concern.

Alaska Highway Corridor

Values:

visual quality | economic/tourism | travel corridor | oil and gas | transportation
timber | minerals | fish

Goal 2 Proposed Protected Area - Pink Mountain

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework • ensure development activities and associated access are undertaken with sensitivity to visual and recreational values (e.g. exploration and development planning will recognize existing topography and ground conditions to reduce impact on visual and recreation values as much as practical)
TIMBER	
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes • ensure all forest management activities are undertaken with sensitivity to their effects in visually sensitive areas • minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber • encourage afforestation and sustainable forest management of reverted and low capability agricultural land • promptly and aggressively reforest and manage cutovers and areas burned by wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites • identify areas of high recreation use or significance and develop appropriate management strategies • maintain public access to major stream and river crossings

Alaska Highway Corridor

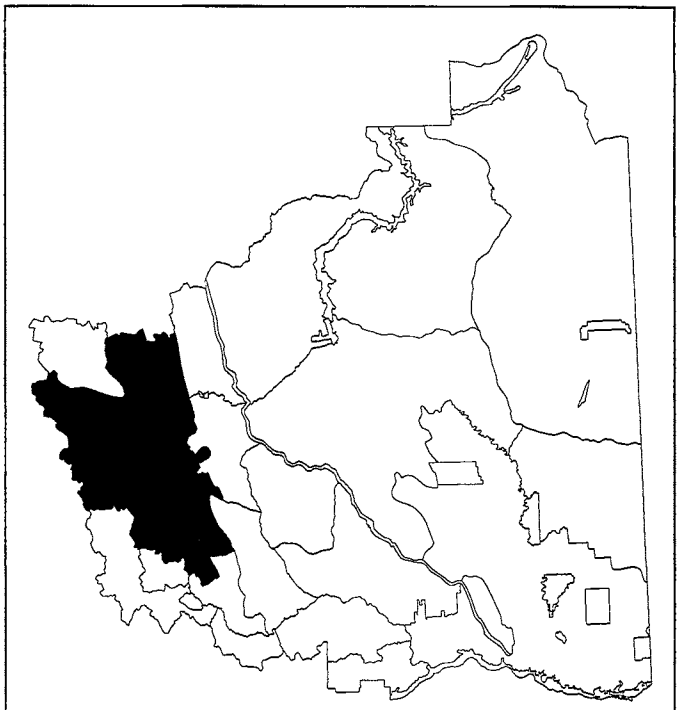
Objectives	Strategies
RANGE	
• maintain or enhance opportunities for livestock grazing	• minimize tree/grass/cattle conflicts through integrated management practices
	• encourage range use plans that will deal with the safety concerns associated with domestic stock within the highway corridor
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage deactivation and rehabilitation of unused roads, particularly within visible areas
WILDLIFE	
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
	• develop and implement a management plan to prevent or minimize large species wildlife-motorized vehicle conflicts and associated safety concerns
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
CULTURE AND HERITAGE	
• maintain historical significance of the Alaska Highway	• identify all known culture and heritage sites within the zone and develop appropriate management strategies
	• recommend an inventory of known resources (culture and heritage) and designation of significant localities within the zone
	• recognize and manage representative sections of the old Alaska Highway as a significant heritage or historical feature
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required

Alaska Highway Corridor

Objectives	Strategies
FISH	
• maintain fish habitat at highway stream crossings	• incorporate the protection of fish and fish habitat within landscape level plans
LOCAL GOVERNMENT	
• ensure that all land and resource management planning activities within the planning area, (including, where appropriate, more detailed plans), allow for consultation with, and incorporate the input of, local municipal governments (rural and urban)	• recognize Official Community Plans established by local municipal governments
VISUAL QUALITY	
• manage visually sensitive areas within the Alaska Highway area	• review existing openings and structures to rehabilitate to a less obtrusive impact e.g. modify openings, use of low visibility colours on structures or install tree breaks • encourage rehabilitative measures on visually sensitive areas

Besa - Halfway- Chowade Resource Management Zone

The Besa-Halfway-Chowade RMZ is the fourth largest of the zones and covers much of the western part of the planning area. It is defined on the east by the boundaries of the Grassy Minaker, Two Bit and Bluegrave Horseshoe RMZs, on the north by the Fort Nelson Forest District boundary and the Redfern-Keily proposed Protected Area, and on the south by the proposed Graham-Laurier Protected Area.



Besa-Halfway-Chowade Resource Management Zone

Five ecosections are represented: Muskwa Foothills, the Eastern Muskwa Ranges, the Peace Foothills, the Missinchinka Ranges and the Muskwa Plateau. The total land area is 435,425 hectares.

Alpine Tundra (AT), Spruce-Willow-Birch (SWB), Boreal White and Black Spruce (BWBS) and Engelmann Spruce-Subalpine Fir (ESSF) biogeoclimatic zones are all found in the zone. Wildfires are less frequent than in areas further east. Timber values are low in the western areas, increasing to moderate in other parts of the zone. Higher volumes are found in the larger valleys and foothills south of the Halfway River.

There are no proven oil and gas reserves within the RMZ and the area is relatively unexplored. However, there are numerous tenured properties and gas potential appears to be high. Exploration is expected to increase in the future.

The highest metallic and industrial mineral values lie in the western limits of the district. This zone has geological tracts with metallic potential classified 1, 2, 3, 4, and 9/10; with industrial mineral potential classified 1, 2, 3, 4, 5, 8 and 9/10; and, there are eleven documented mineral occurrences including the Robb Lake deposit where exploration has indicated a resource of up to 20 million tonnes at 5% combined lead and zinc. The Robb Lake deposit is tenured. There is also potential for coal in this zone.

The zone is an important area for wildlife. Extensive burning for wildlife and horse grazing has occurred, particularly in the Halfway and Sikanni drainages. The area is important for wildlife with wolf, grizzly bear and moose population` densities among the highest found in North America. This region incorporates critical winter habitat and calving areas for eight species of ungulates and four species of large predators. Furbearers are present, along with black bears, wolves, elk and Stone's sheep. A stable population of plains bison live near the Halfway and Sikanni Chief Rivers.

Several rivers and tributary streams contain critical habitat for bull trout, Arctic grayling and other priority species, and are very important for spawning and rearing Peace River bull trout populations.

Access management is an important issue in this area. Several major trails follow the Chowade and Halfway Rivers and Cypress Creek, as well as an old mining road to Robb Lake that is used by horseback riders and snowmobilers. All weather petroleum and forestry industry roads in the east, as well as seismic lines, provide access to the area.

The Besa-Halfway-Chowade RMZ is an important component of the overall area (shared with the Fort Nelson and Mackenzie Land and Resource Management Planning Areas) known as the Muskwa-Kechika. The Muskwa-Kechika area has high wilderness and outdoor recreation values and is widely used by residents of the planning area and others for a number of outdoor recreation experiences including hunting, fishing, camping, river boating, canoeing, ATVing and commercial backcountry recreation activities like guide outfitting.

The Mary Henry Trail and the Bedeaux historic trails pass through this zone. There are significant archaeological sites in the RMZ.

Management of visually sensitive areas is important along the main access roads and recreational trails, especially the Chowade and Halfway Rivers, Cypress Creek and the Robb Lake trail.

This RMZ lies within areas traditionally used by the Prophet River, Carrier-Sekani and Halfway River First Nations.

Besa - Halfway - Chowade

Values:

wildlife habitat (intact predator-prey systems)		recreation	timber	natural gas potential
mineral potential	guide outfitting	trapping	wilderness	range
water quality	fish	visual quality		

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
	• encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization
	• all new-cut seismic exploration in areas with potentially unstable slopes and/or high environmental values shall be heli-portable unless it can be conclusively demonstrated that conventional seismic exploration will not cause significant environmental impacts.
TIMBER	
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with low intensity forest management regimes
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest unless it can be conclusively demonstrated that the utilization of these stands or components will negatively impact long term viability and sustainablility of individual 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
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies

Besa - Halfway - Chowade

Objectives	Strategies
RECREATION (CONT'D)	
• maintain guide and outfitting opportunities	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and the associated grazing activities of guides and outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• more detailed plans will address the effects of recreational activity on ecological integrity (e.g. wildlife disruption, damage to plant communities and water quality)
• provide a full range of wilderness recreation opportunities (as identified in the Ministry of Forests Recreation Opportunity Spectrum (ROS)) classed as primitive, semi-primitive non-motorized and semi-primitive motorized	• provide more detailed planning to develop access management strategies that maintain a proportion (% of the RMZ area) classed as ROS "primitive" within this RMZ. The intent is to place a priority on maintaining ROS "primitive" land at 1996 levels over the long-term. This recognizes that there may be situations (after all practical options have been explored) where the proportion of the ROS "primitive" land may fluctuate from current (1996) levels for periods of time.
• maintain opportunities for commercial/non-commercial livestock grazing associated with recreation	• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife
	• identify and manage appropriate grazing management activities (e.g. burns)
• manage backcountry recreation and tourism opportunities in a natural or natural appearing condition	• more detailed planning processes will determine the areas that are suitable for backcountry and tourism expansion, while maintaining the objectives of the Resource Management Zone. Provide opportunities for development of backcountry facilities. Tourism facilities and development will be matched with intended recreation experiences (ROS)
	• provide for motorized recreation access corridors to similar destinations as currently allowed
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• where appropriate, require winter access unless a need for all-season access can be conclusively demonstrated through more detailed planning
	• minimize new access development

Besa - Halfway - Chowade

Objectives	Strategies
ACCESS (CONT'D)	
	• promote the development of multiple-use corridors for resource extraction activities
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species
	• a more detailed planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited
	• consider alternatives to road construction, including helicopter-based technologies
	• for new developments, manage new road access to ensure that pre-existing levels of public motorized access are maintained
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)

Besa - Halfway - Chowade

Objectives	Strategies
WILDLIFE (CONT'D)	• plan and develop access to avoid medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
	• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with potential to negatively affect medium and high capability grizzly bear habitat
	• minimize impacts on grizzly bear habitat by ensuring that critical habitat areas are linked by connectivity corridors or forest ecosystem networks (FEN's) (where biologically and ecologically appropriate)
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat
	• maintain connectivity (migration/travel) corridors between important seasonal habitats
• manage wildlife populations to provide opportunities for non-commercial hunting	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers to sustain wildlife

Besa - Halfway - Chowade

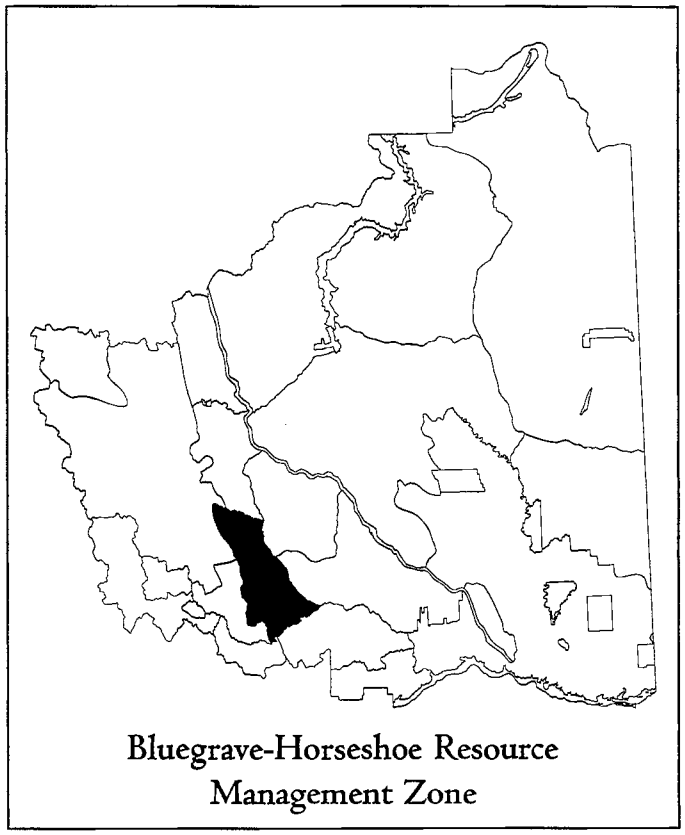
Objectives	Strategies
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
• minimize wildlife habitat fragmentation	• identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
	• road building into currently unroaded areas will be permitted when it can be demonstrated that road access is required and justified for further development, subject to review and approval through established procedures and applicable legislation
	• aircraft access and use will be sensitive to Resource Management Zone values and resource user activities
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the maintenance of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for Level I and II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
• maintain high quality fisheries in natural settings	• minimize permanent motorized access to remote lakes, streams and rivers with high quality fisheries

Besa - Halfway - Chowade

Objectives	Strategies
WATER	
• maintain the headwaters of major rivers and streams as a source of water for current and future generations	• operational activities will not significantly alter the water quality, quantity or downstream flow regime.
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
• maintain groundwater quality and quantity	• identify sensitive groundwater recharge areas
	• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity
VISUAL QUALITY	
• manage visually sensitive areas along existing access corridors/trails and adjacent to proposed Protected Areas	• manage visually sensitive areas adjacent to designated Proposed Protected Areas, maintaining the values identified in the Protected Areas Strategy

Bluegrave - Horseshoe Resource Management Zone

This Resource Management Zone is located in the south-central region of the planning area, west of the Halfway River Valley and north of the Graham River. It lies within the Halfway Plateau and the Peace Foothills ecosections. The total land area is 101,283 hectares.



Bluegrave-Horseshoe Resource Management Zone

Most of the zone is within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone, with some Engelmann Spruce-Subalpine Fir (ESSF) and small amounts of Alpine Tundra (AT) at high elevations. There has been extensive harvesting and reforestation in the RMZ.

Sensitive groundwater recharge areas are present and there are concerns about the effects of timber harvesting and livestock grazing on water quality.

Natural gas pipelines service the northern and southeastern portions of the RMZ and the area is covered with active tenures. Most of this zone has high natural gas potential.

This zone has potential for industrial minerals, including sand, gravel, and coal.

There is high capability winter habitat for caribou, elk, deer, moose and high and medium quality grizzly bear and furbearer habitat. The Upper Horseshoe Creek Watershed has significant wilderness values. There is critical fish habitat for bull trout, Arctic grayling and red and blue listed species within the Halfway and Graham River systems.

There is an all-weather road from Bluegrave Creek to the Graham River at Crying Girl Prairie, however, access is a concern due to the large amount of high capability wildlife habitats.

This zone has areas of high recreational use for such activities as hunting, fishing, ATVing, camping, snowmobiling and hiking. A guide outfitting base camp is located on Horseshoe Creek.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Bluegrave - Horseshoe

Values:

gas potential/tenures	range	wildlife habitat	guide outfitting	timber values
fish	trapping	mineral potential	water quality	agriculture

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
	• encourage efficient and rational subsurface resource development to minimize surface distribution and maximize subsurface resource utilization
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
• minimize losses to the timber harvesting land base	• establish general forest production targets for landscape units within the Resource Management Zone (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 NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• 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

Bluegrave - Horseshoe

Objectives	Strategies
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• maintain guide and outfitting opportunities	• new access will be planned to minimize negative effects on existing scenic commercial and non-commercial recreational values
	• develop strategies in lower plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and the associated grazing activities of guides and outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• more detailed plans will address the effects of recreational activity on ecological integrity (e.g. wildlife disruption, damage to plant communities and water quality)
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
AGRICULTURE	
• minimize or mitigate wildlife impact on agriculture enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
• provide opportunities for the growth of agriculture	• allow Crown lands with suitable agriculture potential to be designated for agricultural development and use, within the appropriate regulatory framework
RANGE	
• maintain livestock grazing opportunities on existing tenures	• develop range use plans according to the Forest Practices Code
• maintain or enhance opportunities for livestock grazing	• encourage an increase in range production giving preference to integrated use

Bluegrave - Horseshoe

Objectives	Strategies
RANGE (CONT'D)	
	• in forested areas of low value for timber production, encourage conversion to range through clearing and prescribed burning
	• minimize tree/grass/cattle conflicts through integrated management practices
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• coordinate access at the Coordinated Resource Management Plan (CRMP) level
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid, where possible, medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
	• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans

Bluegrave - Horseshoe

Objectives	Strategies
WILDLIFE (CONT'D)	• encourage the use of silvicultural systems that minimize negative impacts on medium and high quality grizzly bear habitat
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• encourage the use of silvicultural systems that minimize negative impacts on medium and high capability caribou habitat
	• limit line of sight on linear access, such as seismic line cutting, in medium and high capability caribou habitat areas to minimize predation
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat
	• maintain connectivity (migration/travel) corridors between important seasonal habitats
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
• minimize wildlife habitat fragmentation and maintain existing large mammalian predator - prey system	• identify and establish connectivity corridors at the landscape level
• restore and rehabilitate negatively affected ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation

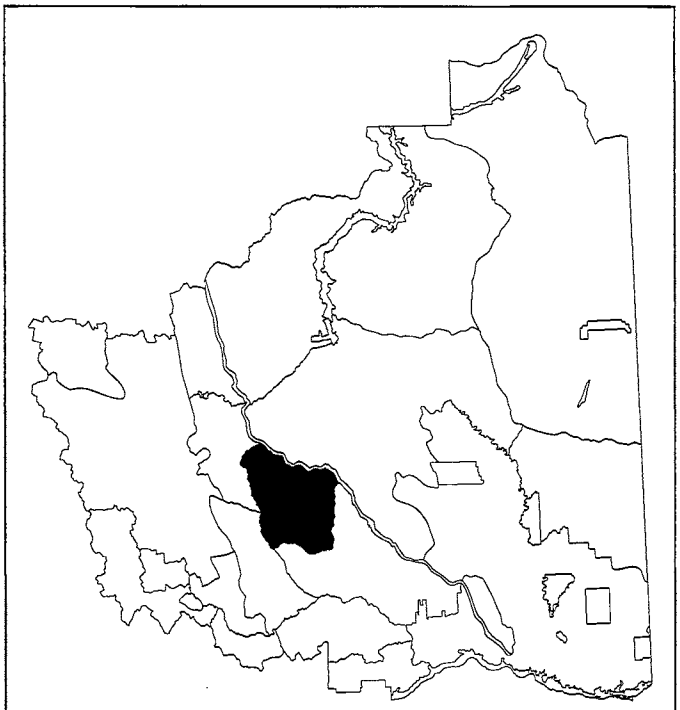
Bluegrave - Horseshoe

Objectives	Strategies
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat within landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for Level I and II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• determine equivalent clear cut area threshold levels for priority watersheds and incorporate into landscape level plans
	• minimize the negative effects of grazing on water quality by applying the Agriculture Code of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
• maintain groundwater quality and quantity	• identify sensitive groundwater recharge areas
	• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity

Upper Cameron Resource Management Zone

The Upper Cameron RMZ is located between the Alaska Highway and the Halfway River. The boundaries follow the Alaska Highway in the north and Halfway River in the west.

Nearly all of the land is within the Halfway Plateau ecosection with just one percent of the most northern areas within the Muskwa Plateau ecosection. The total land area is 119,948 hectares.



Upper Cameron Resource Management Zone

The entire area is within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Forest fires are frequent and help the forests maintain a variety of different age classes. Both softwood and hardwood timber resources are present and the area is managed with a high intensity forest management regime.

There is high gas potential and a great deal of natural gas and oil exploration and development are occurring. A number of gas wells currently operate on numerous tenured land parcels within the RMZ. A petroleum infrastructure including gas pipelines, dehydration and processing facilities is in place.

There is potential for industrial minerals, including sand, gravel and coal. There is an occurrence of limonite (iron) at the northern boundary near the Alaska Highway Corridor.

Wildlife resources include large areas of Class 1 and 2 capability moose, deer and elk habitat. All major furbearers are found within the zone.

Agricultural opportunities also exist, though most Crown lands with agricultural potential have been developed. Range use is common on scattered private farm holdings throughout the area.

The zone has good access with many summer and winter roads that spur off the Alaska Highway. Hunting, ATVing, wildlife-viewing, camping, fishing and hiking are common recreational pursuits.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Upper Cameron

Values:

wildlife, timber, grazing, oil and gas, fish, industrial minerals (sand and gravel), furbearers, recreation, agriculture, water

Objectives

Energy

- maintain opportunities and access for oil and gas exploration, development and transportation

Strategies

- allow exploration and development of resources within appropriate regulatory framework
- maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
- promote low impact seismic exploration
- encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization

Timber

- enhance timber harvesting and a sustainable long-term timber supply

- quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
- establish general forest production targets for landscape units within the Resource Management Zone (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 NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
- encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
- where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
- promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels

Upper Cameron

Objectives	Strategies
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework
RANGE	
• maintain or enhance opportunities for livestock grazing	• minimize tree/grass/cattle conflicts through integrated management practices
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into lower level plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes that avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low

Upper Cameron

Objectives	Strategies
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
	• inventory and map current and potential aggregate deposits
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat information (e.g. pools, migration patterns, spawning and rearing areas)
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Cecil Lake & Boundary Lake Resource Management Zone

This Resource Management Zone (RMZ) includes two separate wetland entities - the Cecil Lake wetlands and the Boundary Lake wetlands. They can be viewed as "islands" within the southeastern portion of the Agriculture Settlement RMZ. The Cecil Lake wetlands are located approximately 20 km east of Fort St. John. The Boundary Lake wetlands are found along the Alberta border, northeast of Goodlow, BC. Both areas are within the Clearhills ecosection and together cover 1,505 hectares.

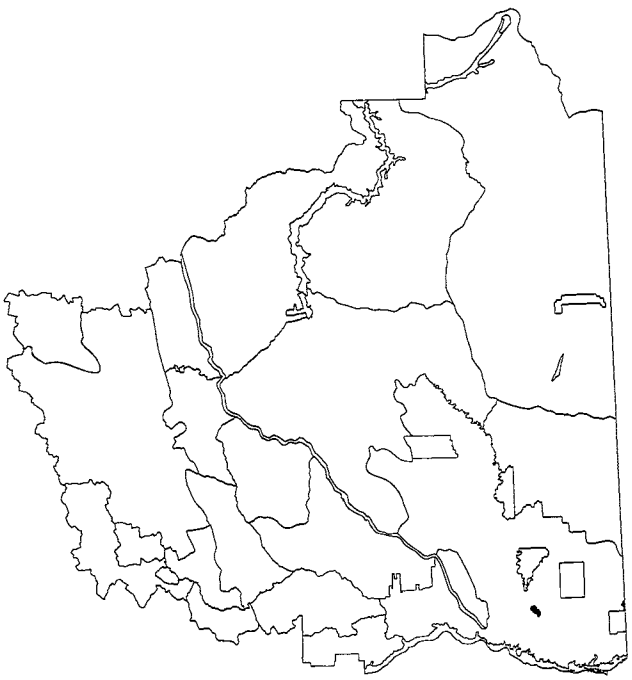
These wetlands are within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone.

Critical habitats for waterfowl and other wildlife are important wildlife resources in this RMZ. The intent is to protect these critical habitats from disturbances.

Farms, oil and gas wells and energy exploration activities surround the wetlands.

There is potential for industrial minerals, including sand and gravel.

This RMZ lies within areas traditionally used by the Doig River First Nation.



Cecil Lake & Boundary Lake Resource Management Zone

Cecil Lake and Boundary Lake Wetlands

Values:

wildlife habitat | oil & gas infrastructure | recreation | agriculture | water

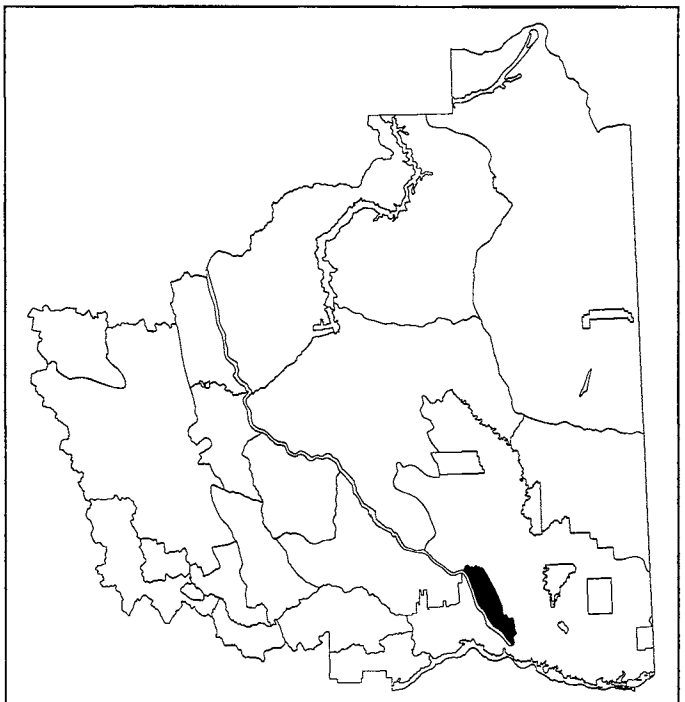
Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil & gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• ensure that oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
	• maintain public access to Cecil and Boundary Lakes
AGRICULTURE	
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
• control the spread of noxious weeds	• implement noxious weed control plans and enforce the Weed Act
ACCESS	
• coordinate access and linear development to minimize negative effects on other resources	• restrict the development of permanent motorized access adjacent to critical wildlife habitat
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape unit, on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)
• manage critical wetland habitats for waterfowl and other wildlife species	• address wildlife/agriculture conflicts in operational plans
	• establish riparian reserves and management areas around critical wetland areas
	• maintain stable wetland water levels.

Cecil Lake and Boundary Lake Wetlands

Objectives	Strategies
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize the negative effects on water quality

Charlie Lake Water Supply Area Resource Management Zone

This Resource Management Zone (RMZ) encompasses the watershed area surrounding Charlie Lake. It is located in the centre of the Agriculture Settlement Area and follows the eastern boundary of the Alaska Highway Corridor. It is almost entirely within the Halfway Plateau ecosection with a small portion to the south in the Peace Lowlands ecosection. The total land area of 25,968 hectares includes about 19,000 hectares of private property.



Charlie Lake Water Supply Area
Resource Management Zone

This zone is entirely within the Boreal White and Black Spruce (BWBS) ecosection.

Protection of the water quality and quantity within the watershed is the major land use planning issue. Charlie Lake supplies water to the City of Fort St. John and surrounding area. The water supply area is within the Charlie Lake Community Commission. The Peace River Regional District must be involved in any land use planning for the area as most of the land within the water supply area is privately owned.

Human activities are potential sources of contamination to the watershed. Agriculture and range use is found side by side with oil and gas, aggregate and mineral extraction activities within the watershed area. There is also considerable residential development along the shores of the lake. Timber harvesting has occurred since the 1940's and is expected to be limited in the future.

This zone has potential for industrial minerals, including sand and gravel.

The main water management issues are:

- control of nutrient loadings from agriculture and human residential development around the lake.
- preventing disturbance to riparian areas surrounding Stoddart Creek, the major input into Charlie lake.
- restricting access through the watershed to minimize water crossings and related impacts.

Walleye, pike and perch are the major fish species in Charlie Lake. The watershed provides habitat for waterfowl, furbearers and ungulates.

Public and commercial recreational opportunities within this zone include boating, fishing, swimming, sailing and other water sports. Two provincial parks are located on the shores of Charlie Lake. The Charlie Lake Cave, an archaeological site, is located on private property.

This RMZ lies within areas traditionally used by the Blueberry River First Nation.

Charlie Lake Water Supply Area

Values:

agriculture	forestry	wildlife	water quality	oil and gas
local government	recreation	fish	culture and heritage	minerals

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with low intensity forest management regimes.
	• reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
AGRICULTURE	
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
• provide opportunities for the growth and expansion of the agriculture and food production industries	• support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of high quality agricultural land through existing processes

Charlie Lake Water Supply Area

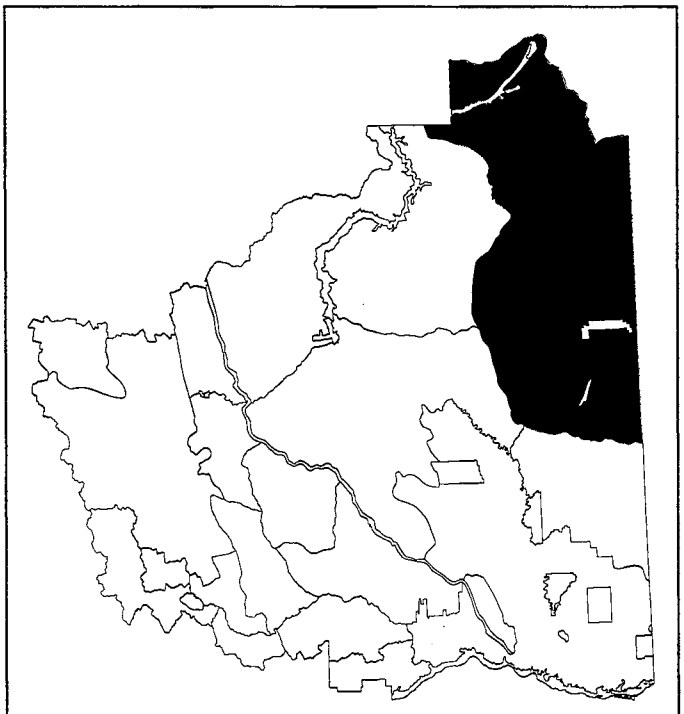
Objectives	Strategies
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to the Forest Practices Code
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• deactivate all new non-permanent access that is no longer required for resource management
	• restrict the development of permanent motorized access adjacent to critical wildlife habitat
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape unit on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• manage critical wetland habitats for waterfowl and other wildlife species	• establish riparian reserves and management areas around critical wetland areas
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
CULTURE AND HERITAGE	
• protect heritage sites and trails	• identify all known culture and heritage sites within the zone and develop appropriate management strategies
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (heritage sites and trails) and designation of significant localities within the zone

Charlie Lake Water Supply Area

Objectives	Strategies
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. walleye, perch and pike)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
• protect water quality and quantity	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
	• implement an appropriate level of watershed assessment to determine potential negative impacts to water quality
	• ensure that all land development activities within the watershed comply with watershed protection guidelines
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
LOCAL GOVERNMENT	
• ensure that all land and resource management planning activities within the planning area (including, where appropriate, more detailed plans), allow for consultation with, and incorporate the input of, local municipal governments (rural and urban)	• recognize Official Community Plans established by local municipal governments

Chinchaga Resource Management Zone

The Chinchaga RMZ covers much of the northeastern regions of the planning area. Its boundary follows Alberta on the east and the Fort Nelson Forest District to the north. It surrounds the Sikanni Chief - Fontas Valley in the north and the proposed Milligan Hills and Chinchaga Lakes Protected Areas in the south. The RMZ falls within the Fort Nelson Lowlands and the Clearhills ecosections. The total land area is 908,108 hectares.



Chinchaga Resource Management Zone

This zone is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Forest fires are frequent and keep the forest in a variety of age classes. Mature conifer volumes are relatively low, but there are large areas of immature boreal mixedwood forests which will support future harvests. This zone has important deciduous timber values.

There are many existing oil and gas tenures and a substantial natural gas infrastructure is in place. The potential for new energy discoveries is quite high.

There is potential for industrial minerals, including sand and gravel. There are occurrences of clay and sulphur in well boreholes.

Overall, the area has relatively low biodiversity. However, large river riparian ecosystems within the zone do have moderate to high biological diversity. Moose, caribou, black bear and furbearers are found here along with a large variety of bird species ranging from owls to waterfowl and song birds. This is an important central flyway for migrating waterfowl. Trumpeter Swan nesting habitat is found along some major rivers.

A semi-permanent work camp is located along the Fontas Road at Paddy. A First Nations community which is associated with the Fort Nelson First Nation, is located at Kahntah on the Fontas River. The entire RMZ lies within areas traditionally used by the Doig River First Nation.

The Fontas Road provides all weather access into this zone. Some summer access extends off the main Fontas Road. There is extensive winter access due to oil field activity.

Outdoor recreation focuses on hunting, snowmobiling and fishing. A small portion of a guide outfitting area exists west of Black Creek.

Chinchaga

Values:

minerals, gravel and sand		oil and gas	timber	fish
culture and heritage	wildlife	trapping	First Nations	agriculture

Goal 1 Proposed Protected Area - Milligan Hills

Goal 2 Proposed Protected Areas - Chinchaga and Ekwan Lakes

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands and the pulp components of stands slated for sawlog harvest
	• 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
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
AGRICULTURE	
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts

Chinchaga

Objectives	Strategies
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
	• where reasonable alternatives exist avoid building roads through riparian areas, south facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape unit, on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)
	• incorporate appropriate habitat protection criteria, for red and blue listed species, into landscape and stand level plans (as these criteria are developed)
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat at the landscape level on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, into landscape level plans

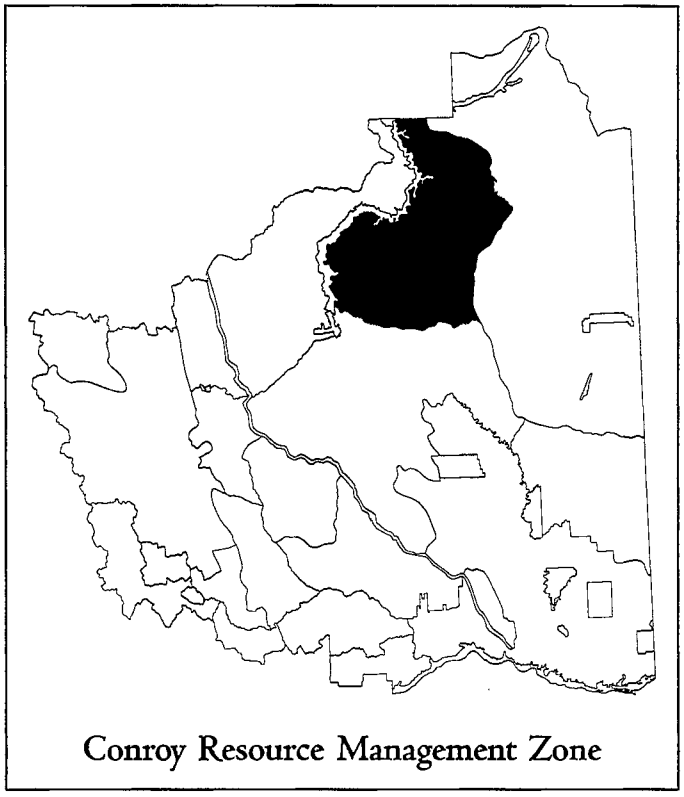
Chinchaga

Objectives	Strategies
WILDLIFE (CONT'D)	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• encourage the use of silvicultural systems that minimize negative impacts on medium and high capability caribou habitat
	• limit line of sight on linear access, such as seismic line cutting, in medium and high capability caribou habitat areas to minimize predation
	• maintain connectivity (migration/travel) corridors between important seasonal habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
CULTURE AND HERITAGE	
• protect heritage sites and trials	• avoid activities that will impact known archaeological sites
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (heritage sites and trails) and designation of significant localities within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas

Conroy Resource Management Zone

The Conroy RMZ is bounded on the west by the Sikanni Chief River, to the east by the Chinchaga RMZ, to the north by the Fort Nelson Forest District boundary, and to the south by the Jedney RMZ.

The Muskwa Plateau, Clearhills and Fort Nelson Lowlands ecosections are represented. The total land area is 391,293 hectares



Conroy Resource Management Zone

This zone is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Frequent forest fires keep the forest in a variety of age classes. Significant timber values are scattered throughout the area with the most productive found in river valleys with high site productivity. Timber harvesting has occurred along the Sikanni Chief River, Conroy Creek and Gutah Creek and more is proposed for the next five year period. The area is managed with a high intensity forest management regime.

There are numerous oil and gas tenures and a substantial infrastructure has been constructed.

There is potential for industrial minerals, including sand and gravel.

Large river riparian ecosystems contain moderate to high natural diversity. The main river valleys provide critical moose wintering habitat. High habitat capability for furbearers is supporting healthy populations of black bears and wolves. A large variety of birds ranging from raptors to waterfowl are found within the zone.

Winter seismic lines are the primary access routes, with limited all-weather access. The Sikanni Chief River provides some riverboat access and a BC Rail line passes through the zone.

While there are no permanent communities, there are several seasonal oil and gas and logging camps.

A former Hudson's Bay post was located on the Sikanni Chief River, north of the Tommy Lakes. The Fort Nelson trail cuts through this zone. The visual quality in areas adjacent to proposed Protected Areas, such as the Sikanni Canyon, are a future land management concern.

This RMZ lies within areas traditionally used by the Blueberry River and Prophet River First Nations.

Conroy

Values:

fish	timber	minerals (gravel)	trapping	wildlife
oil and gas	First Nations values	recreation	water	visual quality

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with high intensity forest management regimes
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• 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
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers and to sustain wildlife
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess the potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)

Conroy

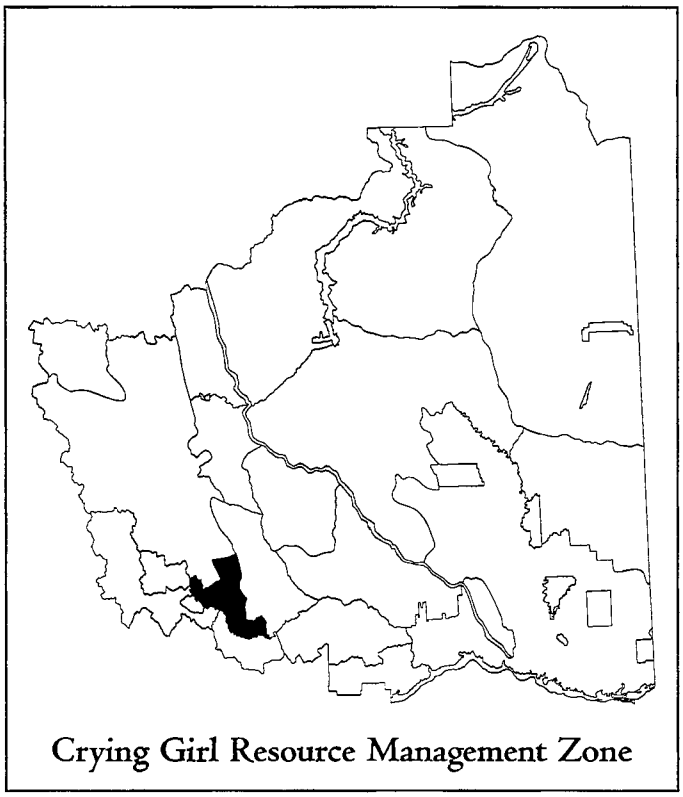
Objectives	Strategies
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• deactivate all new non-permanent access that is no longer required for resource management
	• promote the development of multiple-use corridors for resource extraction activities
	• encourage winter access (where appropriate) for resource development activities
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape, unit on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into lower level plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes that avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
	• maintain, where appropriate, visually screening buffers along major roads and transportation corridors
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low

Conroy

Objectives	Strategies
Culture and Heritage	
• protect heritage sites and trails	• recognize and manage the Fort Nelson trail as a significant heritage or historical feature
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (heritage sites and trails) and designation of significant localities within the zone
Minerals	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
Fish	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
Water	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
Visual Quality	
• manage visually sensitive areas within Tommy Lakes area	• manage visually sensitive areas adjacent to designated Proposed Protected Areas, maintaining the values identified in the Protected Areas Strategy

Crying Girl Resource Management Zone

The Crying Girl RMZ is located south of the Besa-Halfway-Chowade RMZ, north of the Graham South RMZ, east of the Graham North RMZ, and west of the Bluegrave-Horseshoe RMZ. It includes the area north of the Graham River between the eastern boundary of the Graham-Laurier proposed Protected Area and the Hackney Hills.



Crying Girl Resource Management Zone

The Crying Girl RMZ includes most of the Hackney Hills and falls within the Peace Foothills ecosection. Its area is approximately 48,321 hectares.

Most of the land is within the Engelmann Spruce-Subalpine Fir (ESSF) biogeoclimatic zone, with some Boreal White and Black Spruce (BWBS) biogeoclimatic areas and a small portion of Alpine Tundra (AT). The zone includes operable coniferous timber although limited logging has occurred to date.

Oil and gas exploration has occurred and there are a number of tenured parcels.

This zone has potential for industrial minerals (classification of 3, 5, 6/10), including sand, gravel and coal.

This zone contains habitat for furbearers including fisher, marten and lynx, for ungulates such as elk, caribou, moose and deer and for grizzly bear. Caribou migrate through the zone, from the Hackney Hills at the head of Horseshoe Creek, south through to Butler Ridge. These habitat linkages are vital to the species. Management of the adjacent areas must consider maintenance of these forest ecosystem networks (FENs).

This zone has high existing and potential recreation values. Guide outfitting is well established with a permanent camp located near Crying Girl Prairie. Two important recreation features are Christina Falls, a proposed Protected Area Goal 2 site, and the Graham River Valley.

One major all-weather road, the Crying Girl Forest Service road, traverses the southern portion of the RMZ.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Crying Girl

Values:

gas potential/tenures	backcountry/wilderness values		wildlife habitat	guide outfitting
timber values	fish	trapping	caribou	mineral potential
culture and heritage	water			

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
TIMBER	
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• 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
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
• maintain guide and outfitting opportunities	• identify and provide opportunities for the use of suitable Crown land for commercial recreation development and use
	• identify areas of high recreation use or significance and develop appropriate management strategies

Crying Girl

Objectives	Strategies
RECREATION (CONT'D)	• new access will be planned to minimize effects on existing scenic commercial and non-commercial recreational values
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and the associated grazing activities of guides and outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
• provide a full range of wilderness recreation opportunities (as identified in the Ministry of Forests Recreation Opportunity Spectrum (ROS) classed as semi-primitive non-motorized (SPNM)	• develop strategies in more detailed plans to maintain a component of the land-base classified as ROS 'SPNM' land (intent: maintain opportunities for a wilderness recreation experience) remains, recognizing that this component may change in location over time as roads are built and deactivated.
	• provide for motorized recreation access corridors to similar destinations as currently allowed
• maintain opportunities for commercial and non-commercial livestock grazing that is associated with recreation	• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage consistent road construction standards between industries
• manage access to protect significant fish and wildlife habitats, alpine areas and recreation values	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)

Crying Girl

Objectives	Strategies
ACCESS (CONT'D)	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.
	• a more detailed planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited.
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
	• where appropriate, incorporate landscape level forest ecosystem networks (FENs) to prevent priority species habitat fragmentation and maintain areas of interior forest habitat (e.g. > 600 metres wide)
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
	• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans

Crying Girl

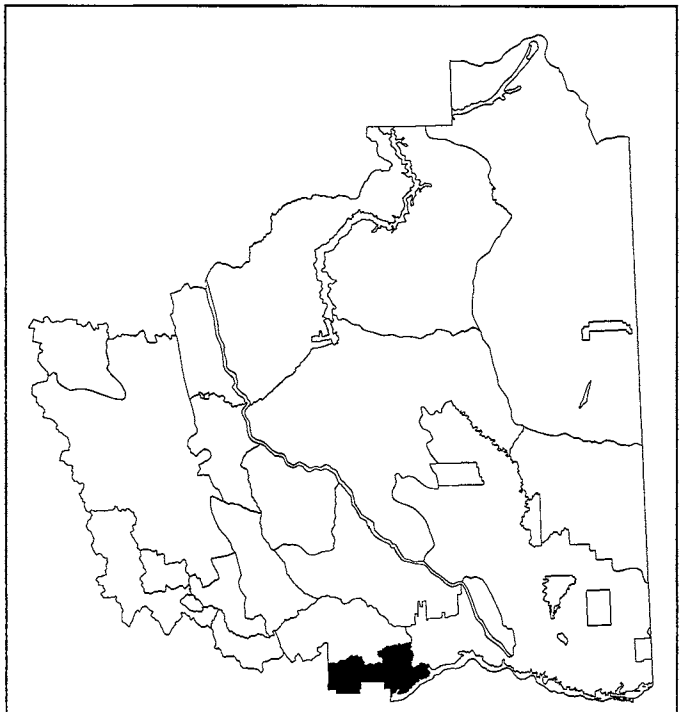
Objectives	Strategies
WILDLIFE (CONT'D)	
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks and Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat
	• maintain connectivity (migration/travel) corridors between important seasonal habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
• minimize wildlife habitat fragmentation and maintain existing large mammalian predator - prey system	• identify and establish connectivity corridors at landscape level
CULTURE AND HERITAGE	
• identify and provide for the protection of historical sites and trails	• identify and protect Crying Girl gravesites on Crown Land
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required

Crying Girl

Objectives	Strategies
MINERALS (CONT'D)	
	• road building into currently unroaded areas will be permitted when it can be demonstrated that road access is required and justified for further development and subject to review and approval through established procedures and applicable legislation
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for Level I and II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans.
WATER	
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Farrell Creek Resource Management Zone

This RMZ is located along the southern boundary of the planning area, just west of the Agriculture Settlement Area. The west and southern boundaries follow the Fort St. John Forest District border. The eastern edge borders the Peace River and the Agriculture Settlement Area RMZ. To the north is the Kobes RMZ and the northern arm of Farrell Creek.



Farrell Creek Resource Management Zone

This zone is divided almost equally between the Halfway Plateau ecosection in the north, and the Peace Lowlands ecosection in the south. The total land area is 54,646 hectares.

This zone is completely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone.

Natural gas, oil and mineral development opportunities exist here. There is moderate to high potential for future gas discovery within the area.

This zone has potential for industrial minerals, including sand, gravel and a good potential for coal. There is a coal prospect consisting of several seams of bituminous coal.

Notable wildlife species found in the RMZ, including mule and whitetail deer, moose and elk. As well, the Peace River supports populations of priority fish species such as bull trout, Arctic grayling and red and blue listed species.

A large portion of the zone is within the Agricultural Land Reserve. Crown land with agricultural potential continues to be developed through the Crown's Agriculture-Lease program. Range use is quite prevalent.

Consultation and input regarding planning activities is required from the District of Hudson's Hope since the municipality is adjacent to the RMZ.

Potential exists for commercial and public recreation development in the future; for the present, hunting is one of the major recreational uses.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Farrell Creek

Values:

agriculture	oil and gas	minerals (e.g. sand, gravel)	range
guide outfitting	wildlife	timber -hardwood/softwood	water

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• minimize losses from damaging agents through aggressive and prompt fire and pest management including the salvage of damaged or killed timber
	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land
	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies

Farrell Creek

Objectives	Strategies
RECREATION (CONT'D)	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
	• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown Land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework
	• ensure the integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations and the Crown Agricultural Lease Policy
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
• provide opportunities for the growth and expansion of the agriculture and food production industries	• support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of high quality agricultural land through existing processes
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to the Forest Practices Code
	• encourage an increase in range production, giving preference to integrated use
	• minimize tree/grass/cattle conflicts through integrated management practices
• control the spread of noxious weeds	• implement noxious weed control plans and enforce the Weed Act
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• deactivate all new non-permanent access that is no longer required for resource management
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans

Farrell Creek

Objectives	Strategies
WILDLIFE (CONT'D)	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• manage critical wetland habitats for waterfowl and other wildlife species	• establish riparian reserves and management areas around critical wetland areas
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• incorporate the protection of fish and fish habitat into landscape level plans
WATER	
• promote water stewardship to manage for other resources	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
LOCAL GOVERNMENT	
• ensure that all land and resource management planning activities within the planning area (including where appropriate, more detailed plans), allow for consultation with, and incorporate the input of, local municipal governments (rural and urban)	• recognize Official Community Plans established by local municipal governments

Graham South Resource Management Zone

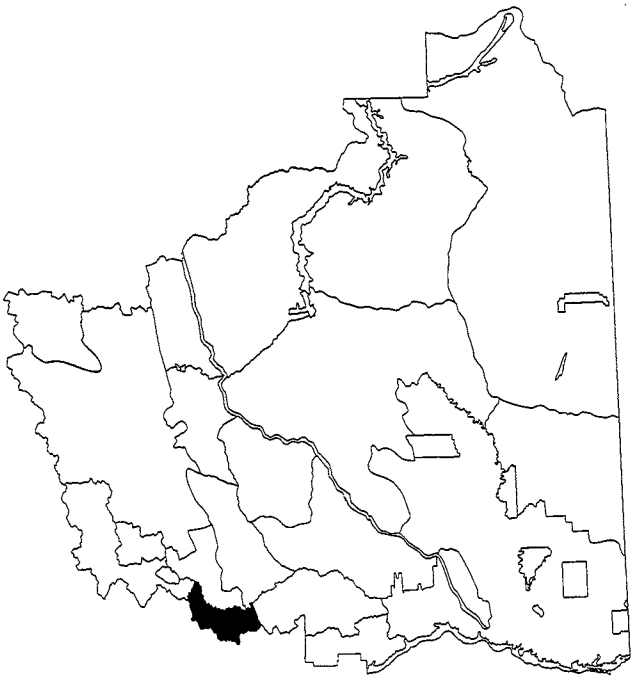
The Graham South RMZ is located along the southern boundary of the planning area. It includes the area south of the Graham River between the eastern boundary of the Graham-Laurier proposed Protected Area and the western boundary of the Kobes RMZ. The Crying Girl RMZ lies to the north.

This zone is within the Peace Foothills ecosection. The total land area is approximately 35,085 hectares; most of it vacant Crown land.

The Boreal White and Black Spruce (BWBS), and Engelmann Spruce-Subalpine Fir (ESSF) biogeoclimatic zones are represented. The BWBS zone is confined to the area beside the Graham River. This zone contains extensive tracts of operable coniferous timber. Deciduous values are generally low, other than scattered patches along river valleys.

Natural gas resource potential is high and there are a number of tenured parcels in the eastern and western portions of the zone.

This zone has tracts with metallic potential classified 1 and 3/10 (placer gold occurs just south of the district boundary); and industrial mineral potential classified 3,4, 5 and 6/10. There is also potential for coal in this area.



Graham South Resource Management Zone

Wildlife occurs in great diversity and abundance. There are critical wintering and calving areas for caribou and moose along with important summer caribou range. Important Class 1 and Class 2 grizzly bear habitat are located within the ESSF areas. Black bears, wolves, elk, deer, and sheep are present.

Recreation activities include canoeing, recreational hunting, fishing, snowmobiling, ATVing, rafting, camping and horseback riding. Successful long-term operations are headquartered on the north side of the Graham River at Crying Girl Prairie.

Several undeveloped trails currently provide the only access in this area. A traditional First Nations trail is located along the Graham River Valley.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Graham South

Values:

timber values	mineral potential	guide outfitting	high wildlife values	grizzly bear
gas potential/tenures	fish	water	visual quality	

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and subsurface resources
	• ensure development activities and associated access are undertaken with sensitivity to visual and recreational values (e.g. exploration development planning will recognize existing topography and ground conditions to reduce impact on visual and recreation values as much as practical)
	• promote low impact seismic exploration
	• encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization
	• ensure oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat
	• all new-cut seismic exploration in areas with potentially unstable slopes and/or high environmental values, shall be heli-portable unless it can be conclusively demonstrated that conventional seismic exploration will not cause significant environmental impacts
	• promote site specific assessments to minimize number of wells in riparian areas
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, wellsites and other developments
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes

Graham South

Objectives	Strategies
TIMBER (CONT'D)	
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• 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
• ensure that timber harvesting in the Graham River Watershed recognizes the watershed's other important resource values such as wilderness, guide outfitting, trapping, wildlife, fish, recreation, etc.	• develop a long term plan to manage access and forest management activities, incorporating a form of sequential development to accommodate and address the concerns of other tenure holders and resource users.
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
	• identify and provide opportunities for the use of suitable Crown land for commercial recreation development and use
	• identify areas of high recreation use or significance and develop appropriate management strategies
• maintain guide and outfitting opportunities	• new access will be planned to minimize effects on existing scenic commercial and non-commercial recreational values
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins

Graham South

Objectives	Strategies
RECREATION (CONT'D)	
	• manage existing tenures and manage the associated grazing activities of guide outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
• provide a full range of wilderness recreation opportunities (as identified in the Ministry of Forests Recreation Opportunity Spectrum (ROS)) classed as semi-primitive non-motorized (SPNM)	• develop strategies in more detailed plans to maintain a component of the land-base classified as ROS 'SPNM' land (intent: maintain opportunities for a wilderness recreation experience) remains, recognizing that this component may change in location over time as roads are built and deactivated
	• provide for motorized recreation access corridors to similar destinations as currently allowed
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
• manage access to protect significant wildlife and recreation values	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, re-contouring, bridge removal and where possible, native species
	• a more detailed planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited.

Graham South

Objectives	Strategies
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
	• where appropriate, incorporate landscape level forest ecosystem networks (FENs) to prevent priority species habitat fragmentation and maintain areas of interior forest habitat (e.g. > 600 metres wide)
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid where possible medium and high quality habitats and minimize human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
	• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat

Graham South

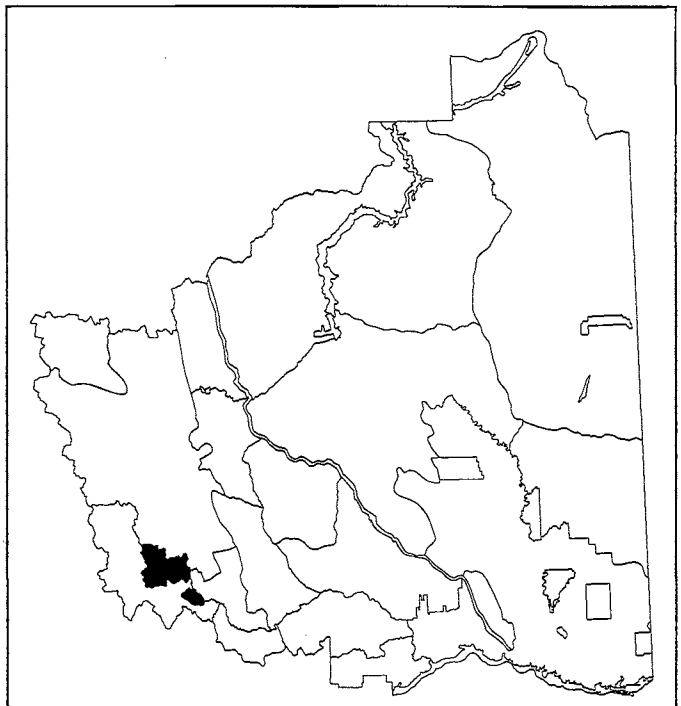
Objectives	Strategies
WILDLIFE (CONT'D)	
	• encourage the use of silvicultural systems that minimize negative impacts on medium and high quality grizzly bear habitat
	• minimize impacts on grizzly bear habitat by ensuring that critical habitat areas are linked by connectivity corridors or forest ecosystem networks (FENs) (where biologically and ecologically appropriate)
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
	• this Resource Management Zone is a high priority for the initiation of landscape level planning. Landscape level plans will identify and map a number of ecosystem attributes (e.g. rare ecosystems, habitats and plant communities, ecosection representation, biogeoclimatic zones and variants, wildlife habitat classes, critical habitats, environmentally sensitive and wildlife habitat areas for identified wildlife) and incorporate strategies to sustain these attributes.
• minimize wildlife habitat fragmentation	• identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level
• restore and rehabilitate negatively affected ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the maintenance of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas

Graham South

Objectives	Strategies
FISH (CONT'D)	• identify priority watersheds for Level I and/or II watershed assessments to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
VISUAL QUALITY	
• manage visually sensitive areas identified as scenic areas (including travel and recreation corridors as identified by the Ministry of Forests visual landscape inventory)	• manage visually sensitive areas adjacent to designated Protected Areas, maintaining the values identified in the Protected Areas Strategy

Graham North Resource Management Zone

The Graham North RMZ is in two non-adjacent parts. The major part of this RMZ incorporates the middle portion of the Graham River watershed above the confluence of Needham Creek to below the confluence of Poutang Creek, including the Justice Creek watershed. The smaller segment is on the south side of the Graham River approximately between the mouth of the Needham Creek and Crying Girl Prairie. Both parts are adjacent to the Graham-Laurier proposed Protected Area. The Crying Girl RMZ lies either to the north or east. The Besa-Halfway-Chowade RMZ lies to the north of the larger part.



Graham North Resource Management Zone

This zone lies mainly in the Peace Foothills ecosection. The total land area is approximately 30,183 hectares, nearly all undisturbed Crown Land. The major biogeoclimatic zone at lower elevations is the Engelmann Spruce-Subalpine Fir (ESSF) zone and at higher elevations is Alpine Tundra (AT).

This zone contains extensive volumes of coniferous timber in mature and older seral stage forests. Although not scheduled for harvest over the next five years, this portion of the Graham River watershed will be logged during the next few decades.

Natural gas potential is high although there are few tenured parcels in the zone. The zone has geological tracts with metallic potential classified 2 and 3/10; and industrial mineral potential classified 4 and 8/10 with phosphate as the primary industrial mineral commodity.

Moose and mountain caribou and a number of furbearers inhabit the forested portions of the Graham River valley. Medium capability grizzly bear habitat supports a small population of grizzly bears. As in other RMZ's, the Graham River and many tributary streams support a number of fish species including grayling, mountain whitefish, rainbow trout and bull trout.

This RMZ is primarily in a "natural" state and has high "wilderness" values. A long-term, successful guide outfitting operation and tenure overlaps this RMZ. Other recreation opportunities include recreational hunting, fishing, hiking, camping, canoeing, trail riding with horses, or ATV's and, in the winter season, snowmobiles.

Access into this area is limited to several primitive trails, some with a history of use by First Nations and early settlers. At present, road access does not exist although several seismic lines have been cut in the area.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Graham North

Values:

timber values
gas potential/tenures
wilderness
mineral potential
fish
guide outfitting
water
high wildlife values
visually sensitive areas
grizzly bear

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and subsurface resources
	• ensure development activities and associated access are undertaken with sensitivity to visual and recreational values (e.g. exploration development planning will recognize existing topography and ground conditions to reduce impact on visual and recreation values as much as practical)
	• promote low impact seismic exploration
	• encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization
	• ensure oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat
	• all new-cut seismic exploration in areas with potentially unstable slopes and/or high environmental values shall be heli-portable unless it can be conclusively demonstrated that conventional seismic exploration will not cause significant environmental impacts
	• promote site specific assessments to minimize number of wells in riparian areas
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, wellsites and other developments
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes

Graham North

Objectives	Strategies
TIMBER (CONT'D)	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• no forest industry timber harvesting or related development will occur south of the Graham River, in this RMZ, until after 2006
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• 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
• ensure that timber harvesting in the Graham River Watershed recognizes the watershed's other important resource values such as wilderness, guide outfitting, trapping, wildlife, fish, recreation, etc.	• develop a long term plan to manage access and forest management activities, incorporating a form of sequential development to accommodate and address the concerns of other tenure holders and resource users, in consultation with stakeholders.
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
	• identify and provide opportunities for the use of suitable Crown land for commercial recreation development and use
	• identify areas of high recreation use or significance and develop appropriate management strategies
• maintain guide and outfitting opportunities	• new access will be planned to minimize effects on existing scenic commercial and non-commercial recreational values
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and manage the associated grazing activities of guide outfitter to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)

Graham North

Objectives	Strategies
RECREATION (CONT'D)	
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
• provide a full range of wilderness recreation opportunities (as identified in the Ministry of Forests Recreation Opportunity Spectrum (ROS)) classed as semi-primitive non-motorized (SPNM)	• develop strategies in more detailed plans to maintain a component of the land-base classified as ROS 'SPNM' land (intent: maintain opportunities for a wilderness recreation experience) remains, recognizing that this component may change in location over time.
	• provide for motorized recreation access corridors to similar destinations as currently allowed
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
• manage access to protect significant wildlife and recreation values	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, re-contouring, bridge removal and where possible, native species
	• a more detailed planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited.
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. marten, lynx)	• identify critical furbearer habitat and incorporate into lower level plans

Graham North

Objectives	Strategies
WILDLIFE (CONT'D)	
	• where appropriate, incorporate landscape level forest ecosystem networks (FENs) to prevent priority species habitat fragmentation and maintain areas of interior forest habitat (e.g. > 600 metres wide)
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid medium and high quality habitats and/or human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
• maintain medium and high quality grizzly bear habitat	• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat
	• encourage the use of silvicultural systems that minimize negative impacts on medium and high quality grizzly bear habitat

Graham North

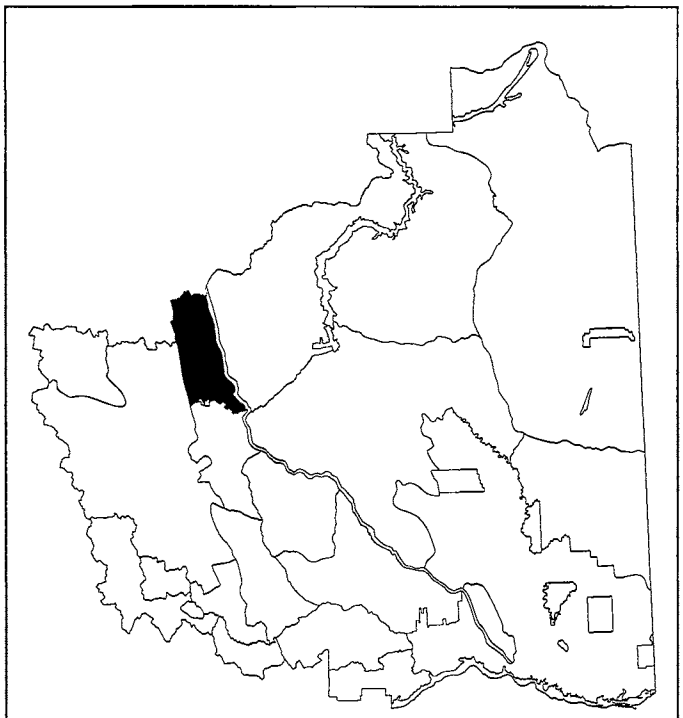
Objectives	Strategies
WILDLIFE (CONT'D)	• minimize impacts on grizzly bear habitat by ensuring that critical habitat areas are linked by connectivity corridors or forest ecosystem networks (FENs) (where biologically and ecologically appropriate)
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
	• this Resource Management Zone is a high priority for the initiation of landscape level planning. Landscape level plans will identify and map a number of ecosystem attributes (e.g. rare ecosystems, habitats and plant communities, ecosection representation, biogeoclimatic zones and variants, wildlife habitat classes, critical habitats, environmentally sensitive and wildlife habitat areas for identified wildlife) and incorporate strategies to sustain these attributes.
• minimize wildlife habitat fragmentation	• identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level
• restore and rehabilitate negatively affected ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for Level I and/or II watershed assessments to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)

Graham North

Objectives	Strategies
FISH (CONT'D)	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
VISUAL QUALITY	
• manage visually sensitive areas identified as scenic areas (including travel and recreation corridors as identified by the Ministry of Forests visual landscape inventory)	• manage visually sensitive areas adjacent to designated Protected Areas, maintaining the values identified in the Protected Areas Strategy

Grassy - Minaker Resource Management Zone

The Grassy - Minaker Resource Management Zone is located in the northern part of the planning area. The eastern boundary follows the Alaska Highway up to the boundary of the Fort Nelson Forest District. The Besa-Halfway-Chowade RMZ is to the southwest while the Sikanni Chief River forms the southern boundary.



Grassy-Minaker Resource Management Zone

The Muskwa Plateau and Muskwa Foothills ecosections are represented. The total area is 73,454 hectares; most of it is Crown land.

This zone is almost completely within the Boreal White and Black Spruce (BWBS) and Spruce-Willow-Birch (SWB) biogeoclimatic zones, with a small portion of Alpine Tundra (AT). There are significant merchantable coniferous timber stands within this zone. Though little forest harvesting has occurred to date, there are plans for future forest harvesting activities in the area.

Substantial oil and gas reserves have been developed and exploration continues. An infrastructure of pipelines, dehydration and processing facilities and semipermanent oil field camps have been constructed.

The zone has industrial mineral potential classified as only 3/10, however, a bentonite clay occurrence is located near the eastern boundary at Buckinghorse. There is also coal potential. Sand and gravel occur along the Sikanni Chief River.

Significant mammals include moose, caribou, mule deer, white-tail deer, elk, mountain goat, bison, wolf, grizzly and black bear . All major sport fish species occur within the major rivers and streams.

Important connectivity corridors within the zone are vital to such species as caribou, grizzly bears and migratory birds. Management of adjacent areas must be an important consideration in maintaining these habitat linkages.

Despite the diversity of wildlife, the wilderness values are low to moderate, due to extensive roading. Much of the zone contains all-weather roads and extensive seismic lines and there is an airstrip at Chicken Creek.

Primary recreation activities include snowmobiling, ATVing, hiking, horseback riding, camping, hunting and wildlife viewing. The entire zone is covered by guide outfitting tenures. Snowmobile trails and an ATV trail leading to the Nevis Creek watershed and Redfern Lake also pass through this zone.

This RMZ lies within areas traditionally used by the Prophet River and Halfway River First Nations.

Grassy - Minaker

Values:

natural gas potential and	tenure/infrastructure	timber	range	recreation
fish	minerals	recreation sites	culture and heritage	wildlife habitat
guide outfitting	trapping	water		

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
TIMBER	
• maintain timber harvesting and forest management opportunities	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• 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
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
	• identify areas of high recreation use or significance and develop appropriate management strategies
• maintain guide and outfitting opportunities	• development of new access will be planned to minimize negative effects on existing scenic commercial and non-commercial recreational values
	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities

Grassy - Minaker

Objectives	Strategies
RECREATION (CONT'D)	• identify and protect guide outfitting campsites and cabins
	• maintain opportunities for commercial and non-commercial livestock grazing that is associated with recreation
	• mange existing tenures and the associated grazing activities of guides and outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• more detailed plans will address the effects of recreational activity on ecological integrity (e.g. wildlife disruption, damage to plant communities and water quality)
	• provide for motorized recreation access corridors to similar destinations as presently allowed (maintain motorized access to Nevis Creek)
• maintain opportunities for commercial and non-commercial livestock grazing that is associated with recreation	• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife
	• identify and manage appropriate grazing management activities (e.g. burns)
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• promote the development of multiple-use corridors for resource extraction activities
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.

Grassy - Minaker

Objectives	Strategies
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate

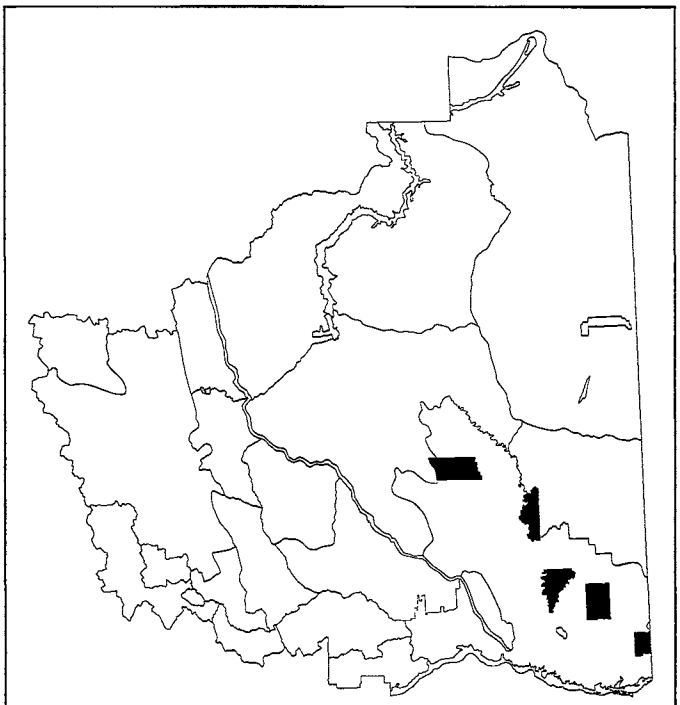
Grassy - Minaker

Objectives	Strategies
BIODIVERSITY (CONT'D)	
• minimize wildlife habitat fragmentation and maintain existing large mammalian predator - prey system	• identify and establish connectivity corridors at the landscape level.
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for level I and/or level II watershed assessment to determine potential negative impacts to fish habitat
WATER	
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
• maintain groundwater quality and quantity	• identify sensitive groundwater recharge areas
	• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity

Grazing Reserves Resource Management Zone

This Resource Management Zone (RMZ) incorporates the five Grazing Reserves that are located on Crown land, within the Agriculture Settlement Area.

The RMZ encompasses three ecosections: the Clearhills, Peace Lowlands and Halfway Plateau. The Cecil Lake and Milligan Grazing Reserves, as well as part of the Beatton-Doig Community Pasture, are found in the Clearhills ecosection. Most of the Beatton-Doig Community Pasture and the Boundary Grazing Reserve are in the Peace Lowlands, while the Umbach Community Pasture falls entirely within the Halfway Plateau. Altogether, the five Grazing Reserves total 61 399 ha.



Grazing Reserves Resource Management Zone

This zone is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. This zone is managed using moderately intensive forest management. Aspen forest cover within several of the Grazing Reserves is targeted for future harvest.

Agriculture and range are the main resource activities in the RMZ. Demand for grazing land has been steadily increasing with the growing cattle population. The availability of large areas of land for grazing and forage has been instrumental in the growth of the industry in the North Peace District. Grazing tenures on Crown land meet the grazing needs of approximately one half of the District's total cattle and calf population base. The gross annual production value from animals supported by Crown grazing land is approximately $8.9 million.

Natural gas and oil exploration, and extraction activities are active within all five of the Grazing Reserves.

There is potential for industrial minerals, including sand and gravel.

High capability winter habitat exists for deer and moose. There are also important wetland habitats for waterfowl within the reserves and for priority fish species, such as Arctic grayling and red and blue-listed forage fish species, adjacent to the Grazing Reserves. There is some concern about the effects from grazing and resource development on the water quality of nearby, sensitive water bodies.

Hunting is the main recreation activity.

The grazing reserves lie within areas traditionally used by the Blueberry River and Doig River First Nations.

Grazing Reserves

Values:

range	water	recreation	wildlife	oil and gas
fish	timber - hardwood/softwood		trapping	agriculture

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the permanent loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
RECREATION	
• integrate recreational activities with grazing and resource extraction	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• coordinate recreation through more detailed planning (e.g. Coordinated Resource Management Plans) .
AGRICULTURE	
• minimize or mitigate wildlife impact on agricultural enterprises	• develop a forage inventory for developing animal unit months (AUMs) targets
	• encourage management plans to reduce wildlife/agriculture conflicts
RANGE	
• maintain or enhance opportunities for livestock grazing	• encourage an increase in range production, giving preference to integrated use
• control the spread of noxious weeds	• implement noxious weed control plans and enforce the Weed Act

Grazing Reserves

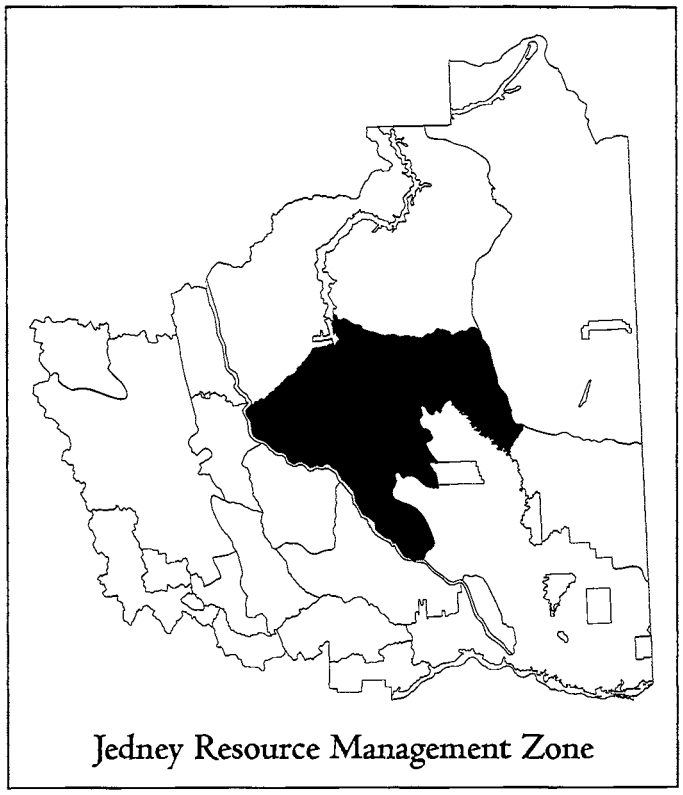
Objectives	Strategies
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• coordinate access at the Coordinated Resource Management Plan (CRMP) level
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• manage critical wetland habitats for waterfowl and other wildlife species	• establish riparian reserves and management areas around identified critical wetland areas
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat information (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve and riparian management areas
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans

Grazing Reserves

Objectives	Strategies
WATER (CONT'D)	
	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Jedney Resource Management Zone

The Jedney RMZ lies in the heart of the planning area, just east of the Alaska Highway. From the Highway, the RMZ follows the Sikanni Chief River and the Conroy RMZ to the northeast. Jedney shares its eastern boundary with the Chinchaga and Osborn RMZs. The Agriculture Settlement Area lies to the south.



Jedney Resource Management Zone

Three ecosections are represented: the Clearhills ecosection in the northeast, the Muskwa Plateau throughout the rest of the north and the Halfway Plateau in the south. The total land area is 540,399 hectares.

The RMZ falls predominantly within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Timber values are high for both coniferous and deciduous species. There has been extensive harvesting in the southern regions since the mid 1950's, and new forest plantations are well established on older cutblocks.

Numerous active gas tenures and a substantial gas infrastructure have been developed. Potential gas reserves are moderate to high.

There is potential for industrial minerals including sand, gravel, and coal along the western limits of the zone.

The northern portion contains extensive areas of high capability habitat for large mammals such as moose, caribou, grizzly bear and black bear. A variety of furbearers and birds are also present. The banks along the Beatton River contain important nesting sites that attract Trumpeter Swans each spring. Streams and rivers support most major sport fish including bull trout and Arctic grayling.

Several agricultural operations are scattered along the major river valleys and there is significant range activity in the southern portion.

All-weather roads and winter trails provide good access to most of the RMZ. The exception is the area to the east of Laprise Creek, which contains only seismic trails.

Heritage sites include the Nig Creek Hudson's Bay Post and meat drying camps, the Old Alaska Highway, and historic air strips.

This RMZ lies in areas traditionally used by the Blueberry River First Nation.

Jedney

Values:

timber	oil and gas	First Nations values	grazing	wildlife
fish	minerals	trapping	water	recreation
agriculture				

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (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 NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber
	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land

Jedney

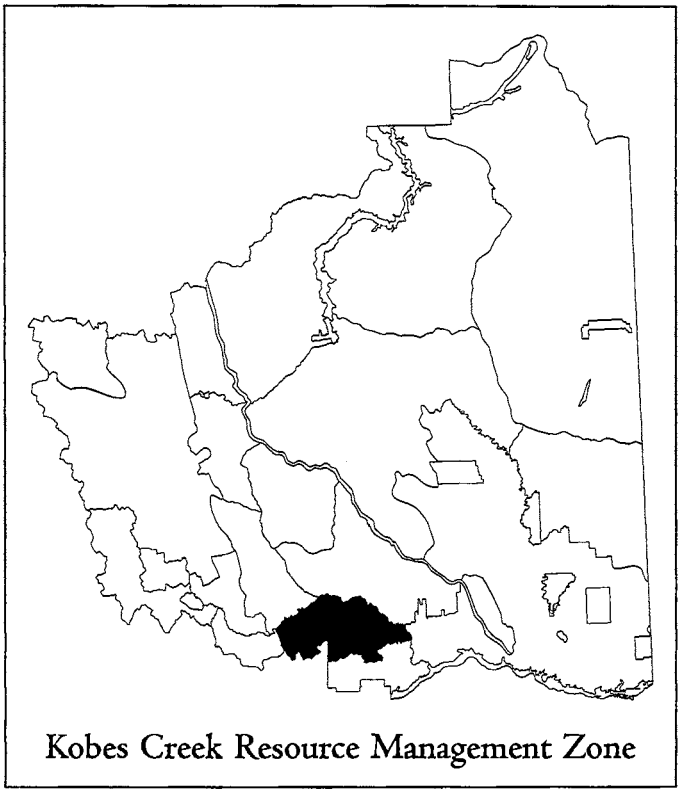
Objectives	Strategies
TIMBER (CONT'D)	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
AGRICULTURE	
• provide opportunities for the growth of agriculture	• ensure the integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations and the Crown Agricultural Lease Policy
	• allow Crown lands with suitable agriculture potential to be designated for agricultural development within the appropriate regulatory framework
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to Forest Practices Code
	• minimize tree/grass/cattle conflicts through integrated management practices
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage deactivation and rehabilitation of unused roads, particularly within visible areas
	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
	• promote the development of multiple-use corridors for resource extraction activities
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into lower level plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level

Jedney

Objectives	Strategies
WILDLIFE (CONT'D)	
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
CULTURE AND HERITAGE	
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (historical sites and trails) and designation of significant localities within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat information (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Kobes Creek Resource Management Zone

The Kobes Creek RMZ lies in the south-central part of the planning area. The southern and eastern boundaries follow Farrell Creek and the Fort St. John Forest District border. The northern boundary follows the Graham and Halfway Rivers and on the west it is bounded by the Graham South RMZ.



Kobes Creek Resource Management Zone

Most of the zone is in the Halfway Plateau ecosection, with a small portion in the Peace Lowlands and Peace Foothills ecosections. The total area is 101,709 hectares.

This zone is almost completely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Forest fires are frequent throughout the RMZ, leading to a variety of forest age classes. A very small part of the zone is within the Engelmann Spruce-Subalpine Fir (ESSF) and Alpine Tundra (AT) biogeoclimatic zones. Coniferous and deciduous timber values are high and extensive timber harvesting has occurred since the 1970's.

Abundant gas reserves have been located. There are numerous tenured parcels and a substantial petroleum infrastructure has been constructed. There is medium to high potential for future gas discovery.

There is good potential for coal in the zone and there are sand and gravel sources along the Halfway and Graham Rivers.

Habitats for priority furbearer species such as fisher, marten and lynx are found in the RMZ along with high capability winter habitat for elk, deer, moose, caribou and Stone's sheep. The area has some of the best moose habitat in BC, along with medium quality grizzly bear and caribou habitat. Bull trout, Arctic grayling, and other red and blue listed species are among the priority sport fish species in the Kobes Creek area.

A large portion of this zone is within the Agricultural Land Reserve, but only a limited agricultural industry exists, primarily on private land. A number of large ranches are found along the Halfway and Graham rivers.

The Graham and Halfway Rivers provide a wide variety of recreational opportunities including fishing, jet-boating, camping, canoeing and rafting. The most popular recreational pursuit is hunting.

The Halfway River First Nations community is located on the east side of the Halfway River Valley and there is a semipermanent logging camp west of Kobes Creek. The RMZ lies within areas traditionally used by the Halfway River First Nation.

Kobes Creek

Values:

timber-hardwood/softwood		oil and gas	trapping	range/grazing
wildlife	recreation	aggregate/industrial minerals		fish
water quality	agriculture	visually sensitive area - Butler Ridge		

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and subsurface resources
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
• minimize losses to the timber harvesting land base	• establish general forest production targets for landscape units within the Resource Management Zone (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 NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber

Kobes Creek

Objectives	Strategies
TIMBER (CONT'D)	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land
	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• maintain guide and outfitting opportunities	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
• provide a full range of recreation opportunities	• incorporate existing recreational activities and access potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown Land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework
	• ensure the integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations and the Crown Agricultural Lease Policy
• provide opportunities for the growth and expansion of the agriculture and food production industries	• support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of high quality agricultural land through existing processes
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• deactivate all new non-permanent access that is no longer required for resource management
• manage access to protect significant sensitive wildlife habitat areas adjacent to Butler Ridge	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)

Kobes Creek

Objectives	Strategies
ACCESS (CONT'D)	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into lower level plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat
	• minimize impacts on grizzly bear habitat by ensuring that critical habitat areas are linked by connectivity corridors or forest ecosystem networks (FEN's) (where biologically and ecologically appropriate)
• maintain caribou habitat	• identify and map medium and high capability caribou habitat

Kobes Creek

Objectives	Strategies
WILDLIFE (CONT'D)	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• encourage the use of silvicultural systems that minimize negative impacts on medium and high capability caribou habitat
	• limit line of sight on linear access, such as seismic line cutting, in medium and high capability caribou habitat areas to minimize predator corridor opportunities
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is low
• minimize wildlife habitat fragmentation and maintain existing large mammalian predator - prey system	• identify and establish connectivity corridors at the landscape level near or adjacent to Butler Ridge
• restore and rehabilitate negatively affected ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas

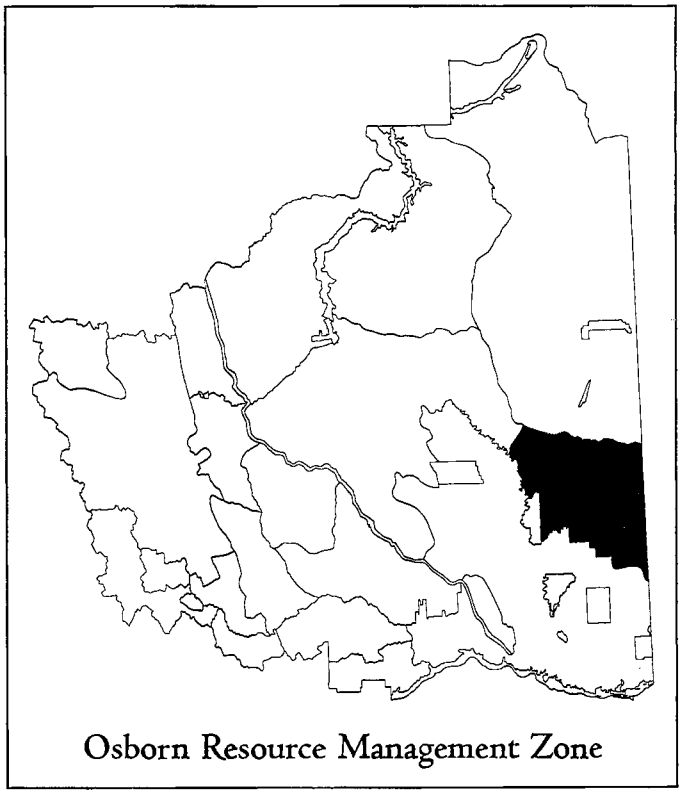
Kobes Creek

Objectives	Strategies
FISH (CONT'D)	• identify priority watersheds for Level I and II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Osborn Resource Management Zone

The Osborn RMZ is located on the eastern boundary of the planning area, just north of the Agriculture Settlement Area. The western boundary follows the Beatton River and Milligan Grazing Reserve, and to the north is the Chinchaga RMZ.

This zone is entirely within the Clearhills ecosection and has a total land area of 231,642 hectares. The RMZ falls within the Boreal White and Black Spruce (BWBS) bio-geoclimatic zone. Frequent forest fires have led to a variety of forest age classes. Mature coniferous timber values are low to moderate. Significant amounts of first pass logging have been completed and most remaining timber is second or third pass.



Osborn Resource Management Zone

Substantial oil and natural gas reserves have been located and the potential for future discoveries is moderately high. A large part of the zone has been tenured and a substantial infrastructure has been developed.

There is potential for industrial minerals, including sand and gravel.

Moderate moose and black bear populations can be found throughout the zone and caribou is found in the eastern areas. There is high capability habitat for lynx and other furbearers. This is an important central flyway area for migratory waterfowl. A variety of bird species including songbirds (some red or blue listed species), owls and waterfowl are found in the RMZ.

Agricultural activity is confined mainly to the border of the Agriculture Settlement Area RMZ.

All-weather access roads are scattered throughout the southern half of the zone. Remaining access is primarily through winter trails.

Recreational activities are mainly limited to hunting and winter snowmobiling.

This RMZ lies within areas traditionally used by the Doig River First Nation.

Osborn

Values:

timber	wildlife	fish	grazing	trapping
water	oil and gas	First Nations values	minerals	recreation
agriculture				

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• enhance timber harvesting and a sustainable long-term timber supply	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
	• reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• encourage the utilization of pulp quality stands and the pulp components of stands for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber
	• encourage afforestation and sustainable forest management of reverted and low capability agricultural land

Osborn

Objectives	Strategies
TIMBER (CONT'D)	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown Land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework
• minimize or mitigate wildlife impact on agricultural enterprises	• ensure the integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations and the Crown Agricultural Lease Policy
• provide opportunities for the growth and expansion of the agriculture and food production industries	• encourage management plans to reduce wildlife/agriculture conflicts • support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of high quality agricultural land through existing processes
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to Forest Practices Code
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access • encourage consistent road construction standards between industries • deactivate all new non-permanent access that is no longer required for resource management • where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape unit, on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)

Osborn

Objectives	Strategies
WILDLIFE (CONT'D)	• incorporate appropriate habitat protection criteria, for red and blue listed species, into landscape and stand level plans (as these criteria are developed)
	• maintain the integrity of riparian forests along all streams and rivers in the Resource Management Zone
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitats	• maintain, where appropriate, visually screening buffers along major roads and transportation corridors
	• address wildlife/agriculture conflicts in operational plans
• manage critical wetland habitats for waterfowl and other wildlife species	• establish riparian reserves and management areas around critical wetland areas
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
CULTURE AND HERITAGE	
• protect heritage sites and trails	• avoid activities that will impact known archaeological sites
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (historical sites and trails) and designation of significant localities within the zone

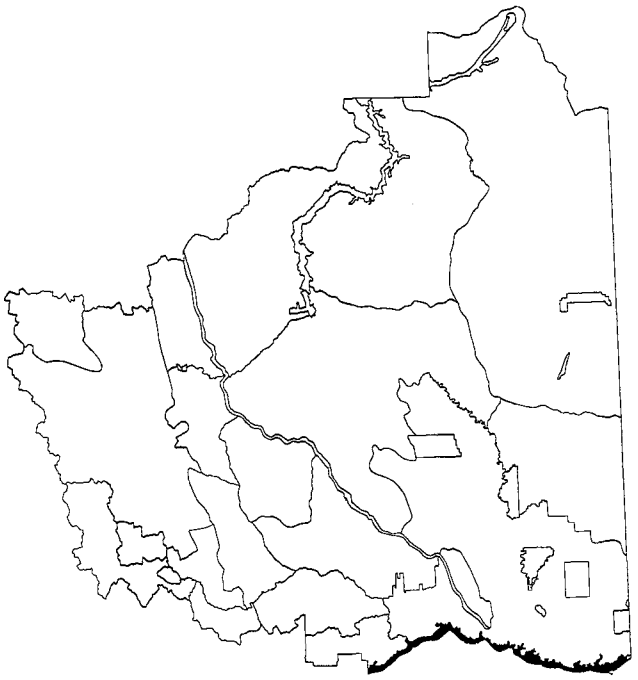
Osborn

Objectives	Strategies
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

Peace River Corridor Resource Management Zone

This Peace River Corridor RMZ forms the southern edge of the planning area. It follows the Peace River Valley along the southern boundary of the Fort St. John Forest District from Farrell Creek, east to the Alberta boundary.

This zone is entirely within the Peace Lowlands ecosection and has the mildest climate and the least amount of snowfall in the planning area. The Peace River Valley has the only prairie grassland habitat within the area and boasts several unique plant species. The total land area is 31,634 hectares.



Peace River Corridor Resource Management Zone

Most of the area is within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone and includes some mixedwood aspen, spruce and pine forests. Forest activity is limited to logging on private lands.

Water quality is a major concern in this area. Hudson's Hope, Taylor and several communities in Alberta take their water directly from the Peace River. Plans are now underway for the City of Fort St. John to use the Peace River as the City's water source. The City's water system will be connected to several wells that are adjacent to the river. The provincial Waste Management Act allows for waste water discharges into the Peace River from the Fibreco pulp mill in Fort St. John, the City of Fort St. John, the community of Charlie Lake, and Westcoast Energy.

Though they are outside of the planning area, the W.A.C. Bennett and Peace Canyon hydroelectric dams have had dramatic effects on the hydrology of the Peace River by reducing spring flooding and ice formation along the valley. The two dams use more water than any other industrial user in the region, to produce 31% of BC's hydroelectric power. A third dam, called Site C, has been proposed for the Peace River. The proposed location is just downstream of the Moberly River and Peace River confluence, about 7 km southeast of Fort St. John. Plans for the new mega-project are currently in abeyance.

Proven gas reserves are being exploited, and there is a high potential for future gas discoveries throughout the valley corridor. There are concerns about the environmental impact of oil and gas development on human water supplies and sensitive wildlife and fish habitats. The industry's environmental practices have improved in recent years. High standards of habitat protection are required for all new oil and gas developments, and a number of older sites have been improved. Habitat protection strategies must be incorporated into all future development plans for the Peace River valley.

There is potential for industrial minerals, including sedimentary rocks and sediments such as shale, clay, and sand and gravel. There is shale and clay occurrence near Rolla Ferry north landing and sand and gravel occurrences, including an operating pit at Taylor.

This RMZ contains a substantial number of archaeological sites as well as historic sites.

The Peace River corridor contains some of the best agricultural land in the planning area, much of it privately owned. Market gardens, cereal crops, forage crops and pastures for livestock are all found near Taylor.

Twelve species of sport fish are present in the mainstem Peace River, downstream of the Peace Canyon dam between Hudson's Hope and Fort St. John. The most abundant are mountain whitefish, Arctic grayling, rainbow trout, lake whitefish and walleye. Bull trout, kokanee and northern pike are present in lower numbers.

Marshes along the river provide excellent habitat for nesting and migratory waterfowl. Some of the songbirds that regularly migrate through the area, are considered rare in the rest of BC. Mule and white-tailed deer are quite common and there are extensive areas of critical ungulate wintering habitat along the south-facing breaks of the Peace River and its major tributaries.

Visual quality is a major management objective along the Peace River. The river is heavily used by local residents who for boating, swimming, rafting, and fishing. The islands in the Peace River, and a site near Golata Creek are being proposed as Protected Areas.

Peace River Corridor

Values:

water	agriculture	trapping	fish	range
recreation	wildlife	oil and gas	timber	culture and heritage
visually sensitive areas	minerals	Protected Areas		

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
TIMBER	
• manage for forest health	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• provide tourism opportunities	• maintain public access to Peace River
AGRICULTURE	
• recognize the high agricultural values within the Peace River corridor.	• ensure integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations and the Crown Agricultural Lease Policy. Ensure that proposals for new agricultural tenures are investigated with respect to impacts on: future public access routes to the river, recreation and conservation values
RANGE	
• maintain livestock grazing opportunities on existing tenures	• allow for the transfer and renewal of existing tenures
	• encourage range management that promotes soil conservation
	• applications for new agriculture and range tenures will be reviewed on a site specific basis, during more detailed planning
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage deactivation and rehabilitation of unused roads, particularly within visible areas
WILDLIFE	
• protect or enhance habitats for red and blue listed species	• identify habitat (by ecosection and landscape, unit on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)

Peace River Corridor

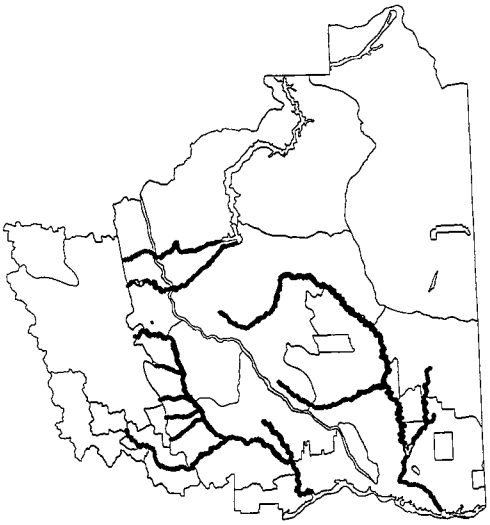
Objectives	Strategies
WILDLIFE (CONT'D)	
	• incorporate appropriate habitat protection criteria, for red and blue listed species, into landscape and stand level plans (as these criteria are developed)
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitat	• address wildlife/agriculture conflicts in operational plans
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
CULTURE AND HERITAGE	
• protect heritage sites and trails	• identify all known culture and heritage sites within zone and develop appropriate management strategies
	• inventory traditional trails, culture, heritage and archaeological sites within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
	• encourage rehabilitative measures on visually sensitive areas
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans

Peace River Corridor

Objectives	Strategies
WATER	
• maintain water quality in the Peace River	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
	• minimize the negative effects of grazing on water quality by applying the Agricultural Code of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize the negative effects on water quality
VISUAL QUALITY	
• manage visually sensitive areas within the Peace River Valley	• a visual landscape inventory will be carried out by Ministry of Forests to determine the visual sensitivity of the scenic areas. Visual Quality Objectives will be established in accordance with the Ministry of Forests visual landscape management system. Forest practices proposed in those scenic areas will be designed and carried out in the field consistent with achieving the Visual Quality Objectives.
	• manage visually sensitive areas from both river and highway viewpoints

Major River Corridors Resource Management Zone

This RMZ includes major river valleys within the planning area. They are the Sikanni Chief, the Buckinghorse, the Halfway, the Bluegrave, Horseshoe Creek, the Chowade, the Lower Graham, the Cypress, the Graham, the Beatton, the Doig, the Cameron and the Osborn Rivers.



Major River Corridors Resource Management Zone

The Beatton, Halfway, Chowade, Doig, Cameron, Buckinghorse and Osborn River Valleys and the Bluegrave, Horseshoe and Cypress Creek Valleys, are within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. The Sikanni Chief River flows through the Spruce Willow Balsam (SWB), Alpine Tundra (AT) and Boreal White and Black Spruce (BWBS) biogeoclimatic zones.

Oil and gas and mineral exploration and development activities occur within these valleys. There is also potential for industrial minerals, including sand and gravel.

Riparian habitat is usually highly productive for timber, making it attractive for forest harvesting operations.

These river valleys and riparian habitats are vitally important for many species, especially fish, moose, ungulates and many birds. The forests are generally dense and moist with understorys dominated by shrubs and forbs. This makes them excellent habitats for many riparian species such as migratory songbirds. Seasonal flooding or high water tables routinely influence and enhance this habitat. Coarse woody debris from large fallen trees and snags provides areas for furbearers and bats, stabilizes streambeds and provides protective cover for fish. Wildlife species may also use riparian corridors for migration and daily travel. Riparian habitats provide high capability winter habitat for elk, deer, moose, caribou, mountain sheep and mountain goat. The Beatton, southern Halfway and Blueberry Rivers have significant low elevation habitat for mule deer and bison. The best grizzly bear habitat in the planning area is found in the Graham and northwest portion of Halfway River and medium capability habitat is found in the upper reaches of the Sikanni Chief, Buckinghorse, Halfway, Bluegrave, Horseshoe, Chowade, Cypress and Graham River Valleys.

All these rivers are important spawning sites for Arctic grayling, mountain whitefish and bull trout. The Beatton River drainage and Charlie Lake are important for pearl dace, a blue listed species. The Sikanni Chief, Buckinghorse, Halfway, Bluegrave, Horseshoe, Chowade, Cypress and Graham river systems are especially important to bull trout.

The many ranches within the river valleys use the land primarily for livestock grazing. Grazing can cause erosion, streambank degradation and losses to water quality in the sensitive riparian habitat areas.

Access control is an important management objective. An emphasis has been placed on deactivating and rehabilitating unused roads and on avoiding road construction in critical wildlife habitats. Within the Sikanni Chief, Buckinghorse, Halfway, Bluegrave, Horseshoe, Chowade, Cypress, and Graham Valleys there has been a trend to return road and pipeline developments to a natural vegetative state after permanent deactivation.

Traditional trails, heritage and archaeological sites occur within the valleys.

Visual quality is very important to maintaining the recreational values for river boating, canoeing, hunting, fishing and swimming.

Water quality is important as many of these rivers are the licensed water sources for many communities, First Nations bands and rural residents. The only major permitted discharges are to the Beatton River by the City of Fort St. John.

The Halfway River First Nation, Blueberry River First Nation, and the Doig River First Nation make their homes along the banks of the rivers that share their names.

Major River Corridors

Values:

timber	agriculture	fish	First Nations	oil and gas
recreation	water	minerals (aggregate)	range	wildlife habitat
culture and heritage	trapping	guide outfitting	visual quality	

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
	• promote low impact seismic exploration
	• ensure that oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat
	• promote site specific assessments to minimize number of wells in riparian areas
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, wellsites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes
	• reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
• manage for forest health	• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber

Major River Corridors

Objectives	Strategies
TIMBER (CONT'D)	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
	• maintain public access to rivers
AGRICULTURE	
• provide opportunities for the growth and expansion of the agriculture and food production industries	• support the purpose and the intent of the Agricultural Land Reserve (ALR) and the conversion of suitable land to agricultural use through existing processes
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to Forest Practices Code
	• minimize tree/grass/cattle conflicts through integrated management practices
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage shared access
	• encourage deactivation and rehabilitation of unused roads, particularly within visible areas
• manage access to protect significant riparian habitats, fish, wildlife and visual quality	• coordinate access at the Coordinated Resource Management Plan (CRMP) level
	• maintain existing access including provisions for upgrading
	• deactivate all temporary linear developments
	• minimize new access development
	• deactivate all new non-permanent access that is no longer required for resource management (intent: minimize effects of roads on wildlife and wildlife habitat)

Major River Corridors

Objectives	Strategies
ACCESS (CONT'D)	• promote the development of multiple-use corridors for resource extraction activities
	• where reasonable alternatives exist, avoid building roads through riparian areas, south-facing aspects and meadows (intent: avoid high value habitats)
	Sikanni, Buckinghorse, Halfway, Bluegrave, Horseshoe, Chowade, Cypress, Lower Graham Valleys also include:
	• upon cessation of tenure holder's activities, return linear industrial developments (roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using techniques such as reclamation, rehabilitation, recontouring, bridge removal, and where possible the use of native species
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat).	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitats	• maintain, where appropriate, visually screening buffers along major roads and transportation corridors
Sikanni, Buckinghorse, Halfway, Bluegrave, Horseshoe, Chowade, Cypress and Graham also include:	
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)

Major River Corridors

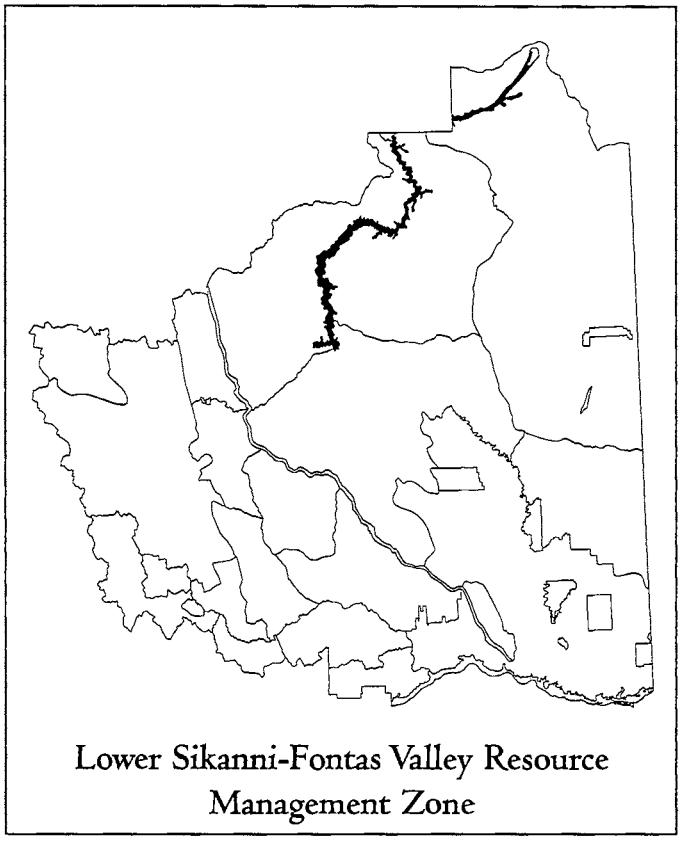
Objectives	Strategies
WILDLIFE (CONT'D)	• plan and develop access to avoid, where possible, medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
CULTURE AND HERITAGE	
• identify and provide for the protection of historical sites and trails	• inventory traditional trails, culture, heritage and archaeological sites within the zone
	• recommend an inventory of known resources (traditional trails, and historical sites) and designation of significant localities within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances with riparian reserve zones and management areas
	• identify priority watersheds for Level I and Level II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities

Major River Corridors

Objectives	Strategies
FISH (CONT'D)	**Sikanni, Buckinghorse, Halfway, Bluegrave, Chowade, Cypress, Lower Graham also include:**
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
	• determine equivalent clear-cut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans
WATER	
• sustain natural stream flow regime (water quality, quantity and timing of flow)	• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands
	• incorporate licensed water use data and instream flow/lake level needs for fish and aquatic organisms into landscape level plans
	• minimize the negative effects of grazing on water quality by applying the Agricultural Codes of Practice for Waste Management and the associated Best Management Practices
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
LOCAL GOVERNMENT	
• ensure that all land and resource management planning activities within the planning area (including, where appropriate, more detailed plans), allow for consultation with, and incorporate the input of, local municipal governments (rural and urban)	• recognize Official Community Plans established by local municipal governments
VISUAL QUALITY	
• manage visually sensitive areas as scenic areas (including travel and recreation corridors as identified by the Ministry of Forests visual landscape inventory)	• manage visually sensitive areas from both river and highway view points

Lower Sikanni - Fontas Valley Resource Management Zone

The Lower Sikanni - Fontas Valley Resource Management Zone consists of two river corridors: the Sikanni Chief River Valley from the proposed Sikanni Canyon Protected Area to the proposed Sikanni Old Growth Protected Area in the north-central area; and the Fontas River Valley from the Fort St. John Forest District boundary to the Ekwan Lake proposed Protected Area in the northeast.



Lower Sikanni-Fontas Valley Resource Management Zone

The northern part of this zone falls within the Fort Nelson Lowland ecosection while the southern part is within the Muskwa Plateau ecosection. The cumulative land area is 42,384 hectares.

The RMZ is entirely within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Infrequent forest fires have created forests of older age classes. Forest stands in the valleys tend to be older than those on the plateau since fires are less common in the valley bottoms. Timber values are high in merchantable timber species such as aspen, spruce and pine.

Natural gas exploration and development are active and the area has moderately high levels of potential gas reserves.

There is potential for industrial minerals, including sand and gravel.

The unique large river riparian ecosystems have moderate to high biological diversity. They are very productive for large mammals and furbearing species. Moderate populations of moose, black bear and wolves are found within the valleys.

The BC Rail line that intersects the zone is used for the transportation of timber and other freight. While there is no summer road access, logging and oil roads provide some winter access. Seasonal airstrips exist at both Kahntah and Niteal Creek.

This zone has three Goal 2 Proposed Protected Areas within its boundaries. They include the Ekwan Lake proposed Protected Area in the northeast, the Sikanni Old Growth proposed Protected Area in the northwest and the Sikanni Canyon proposed Protected Area in the south. Visual quality within these areas is very important.

Part of the zone is used by a guide outfitter but current recreation use is low because of poor access.

A small, permanent First Nations community, part of the Fort Nelson First Nation, is located at the junction of the Fontas and Kahntah Rivers.

Lower Sikanni - Fontas Valley

Values:

wildlife	oil and gas	First Nations	timber	minerals (aggregate)
recreation	fish	water		

Goal 2 Proposed Protected Areas - Sikanni Old Growth, Sikanni Canyon, Ekwan Lake

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
	• promote low impact seismic exploration
	• ensure oil and gas exploration activities are undertaken with sensitivity to wildlife and wildlife habitat
	• promote site specific assessments to minimize number of wells in riparian areas
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with low intensity forest management regimes
	• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management
	• 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

Lower Sikanni - Fontas Valley

Objectives	Strategies
RECREATION	
• provide quality public and commercial recreational opportunities and values	• identify areas of high recreation use or significance and develop appropriate management strategies
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
	• maintain public access to rivers
ACCESS	
• coordinate access and /linear development to minimize negative effects on other resource values	• encourage deactivation and rehabilitation of unused roads, particularly within visible areas
	• where appropriate, require winter access unless a need for all season access can be conclusively demonstrated through more detailed planning
• manage access to protect significant wildlife and riparian areas	• deactivate all new non-permanent access that is no longer required for resource management (intent: minimize effects of roads on wildlife and wildlife habitat)
	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.
	• a more detailed planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited.
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep, and mountain goat).	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans

Lower Sikanni - Fontas Valley

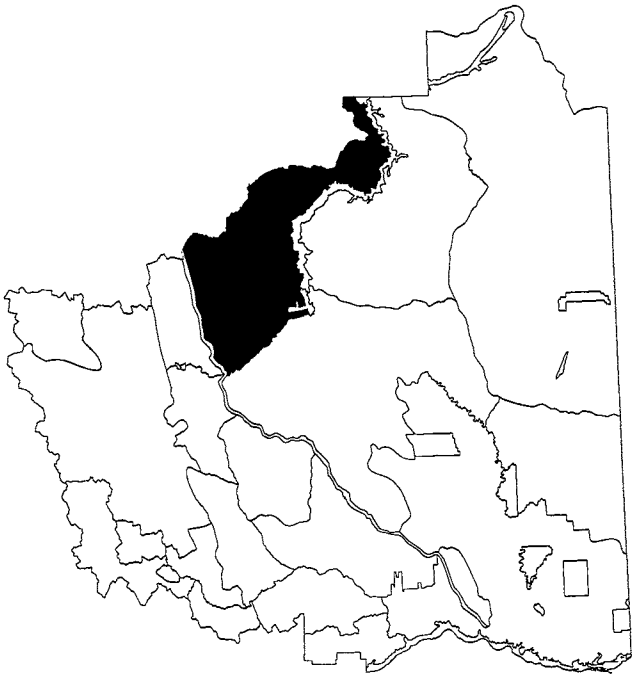
Objectives	Strategies
WILDLIFE (CONT'D)	
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
	• this Resource Management Zone is a high priority for the initiation of landscape level planning. Landscape level plans will identify and map a number of ecosystem attributes (e.g. rare ecosystems, habits and plant communities, ecosection representation, biogeoclimatic zones and variants, wildlife habitat classes, critical habitats, environmentally sensitive and wildlife habitat areas for identified wildlife) and incorporate strategies to sustain these attributes
CULTURE AND HERITAGE	
• identify and provide for the protection of historical sites and trails	• inventory traditional trails, culture, heritage and archaeological sites within the zone
	• recommend an inventory of known resources (historical and palaeontological sites) and designation of significant localities within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates/ industrial minerals) and allow for access	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat i (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas

Lower Sikanni - Fontas Valley

Objectives	Strategies
FISH (CONT'D)	• identify priority watersheds for Level I and Level II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
• maintain high quality fisheries in natural settings	• minimize permanent access to remote lakes, streams and rivers with high quality fisheries

Trutch Creek Resource Management Zone

The Trutch Creek Resource Management Zone is located along the northern edge of the planning area, between the Alaska Highway Corridor on the west and the Sikanni Chief River on the south and east. This zone also includes the area known as the Sikanni Buckinghorse triangle.



Trutch Creek Resource Management Zone

Most of the land is within the Muskwa Plateau ecosection but a small area to the north falls into the Fort Nelson Lowlands ecosection. The total land area is 337,497 hectares.

The RMZ is classified within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Forest fires are frequent and have kept the forest stands distributed in a variety of age classes. Moderate timber values are confined to river and creek valleys and well drained areas. Timber harvesting activities in the zone have been minimal.

Most of the land is owned by the Crown; there is some scattered private land and a settlement along the Alaska Highway. There is no agricultural activity.

Substantial gas reserves are being exploited and an infrastructure has developed. The potential for future gas discoveries is high.

There is potential for industrial minerals, including sand, gravel, and coal along the western limits of the zone. Important gravel reserves also exist.

Some very productive areas for large mammalian species, such as mountain goat, grizzly bear, Stone's sheep, moose and caribou habitat are found throughout the zone. The streams and rivers support most major sport fish including bull trout and Arctic grayling.

Access is limited, however there is a major all-weather road at Mason Creek as well as extensive seismic lines.

Recreational pursuits include snowmobiling, ATVing, fishing, and recreational hunting. During the fall months, camping is common throughout the zone. The entire zone has been licensed to a guide outfitter.

Archaeological sites within the zone include First Nations grave sites. This RMZ lies within areas traditionally used by the Prophet River First Nations.

Trutch Creek

Values:

timber, oil and gas, fish, recreation, wildlife
water, trapping, grazing, visual quality, culture and heritage
minerals (aggregate, industrial)

Objectives	Strategies
ENERGY	
• maintain opportunities and access for oil and gas exploration, development and transportation	• allow exploration and development of resources within appropriate regulatory framework
	• ensure that oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat
TIMBER	
• maintain timber harvesting and forest management opportunities	• quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
	• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes
	• encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
	• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code and accepted silvicultural practices) to increase timber availability and reduce roading requirements
• minimize losses to the timber harvesting land base	• promptly and aggressively reforest and manage cutovers and wildfires, within the timber harvesting land base, to maintain sustainable timber harvest levels
RECREATION	
• maintain guide and outfitting opportunities	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• manage existing tenures and manage the associated grazing activities of guide outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)

Trutch Creek

Objectives	Strategies
RECREATION (CONT'D)	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• more detailed plans will address the effects of recreational activity on ecological integrity (e.g. wildlife disruption, damage to plant communities and water quality)
• maintain opportunities for commercial and non-commercial livestock grazing associated with recreation	• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife
	• identify and manage appropriate grazing management activities (e.g. burns)
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to the Forest Practices Code
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• encourage consistent road construction standards between industries
	• deactivate all new non-permanent access that is no longer required for resource management
	• where reasonable alternatives exist, avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipelines and utility corridors - not seismic lines) to a vegetative state which, over time, approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal, and where possible, native species
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into more detailed plans
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans

Trutch Creek

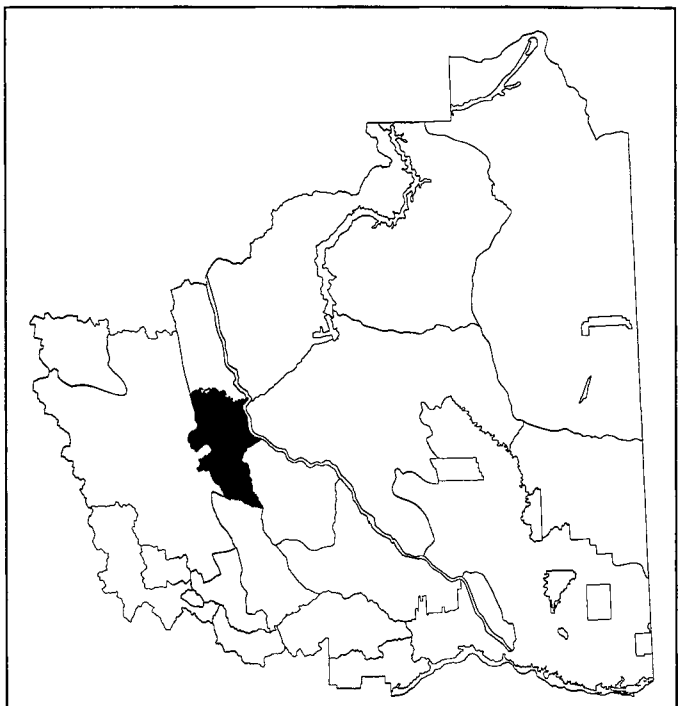
Objectives	Strategies
WILDLIFE (CONT'D)	
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
	• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively affect medium and high capability grizzly bear habitat
• maintain site specific habitats	• develop and implement strategies at the landscape level to maintain site specific habitats
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity is intermediate
	• this Resource Management Zone is a high priority for the initiation of landscape level planning. Landscape level plans will identify and map a number of ecosystem attributes (e.g. rare ecosystems, habitats and plant communities, ecosection representation, biogeoclimatic zones and variants, wildlife habitat classes, critical habitats, environmentally sensitive and wildlife habitat areas for identified wildlife) and incorporate strategies to sustain these attributes
• minimize wildlife habitat fragmentation	• identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level

Trutch Creek

Objectives	Strategies
CULTURE AND HERITAGE	
• protect heritage sites and trails	• avoid activities that will impact known archaeological sites
• identify and provide for the protection of historical sites and trails	• recommend an inventory of known resources (historical sites and trails) and designation of significant localities within the zone
MINERALS	
• maintain opportunities for mineral exploration and development (particularly aggregates and industrial minerals) and allow for access.	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
	• identify priority watersheds for Level I and II watershed assessment to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities
	• incorporate habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed)
WATER	
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality
VISUAL QUALITY	
• manage visually sensitive areas identified as scenic areas (including travel and recreation corridors as identified by the Ministry of Forests visual landscape inventory)	• manage visually sensitive areas adjacent to designated Proposed Protected Areas, maintaining the values identified in the Protected Areas Strategy

Two Bit Creek Resource Management Zone

The Two Bit Creek Resource Management Zone is located in the west-central portion of the planning area. It is bounded on the east by the Alaska Highway and the west by the Besa-Halfway-Chowade RMZ. The north boundary is the Sikanni Chief River while the southern boundaries are the Upper Cameron RMZ and the Bluegrave-Horseshoe RMZ.



Two Bit Creek Resource Management Zone

The Muskwa Plateau, Muskwa Foothills and Halfway Plateau ecosections are represented. The total land area is 85,394 hectares.

The Spruce-Willow-Birch (SWB) and Alpine Tundra (AT) biogeoclimatic zones make up the northern areas. The south is mainly within the Boreal White and Black Spruce (BWBS) biogeoclimatic zone. Coniferous timber values are high and deciduous values are moderate.

The community of Pink Mountain and several large ranches such as the Boring Ranch and the Brady Ranch are located here.

Proven gas reserves are high and there are excellent prospects for future development. A substantial infrastructure of pipelines and processing facilities has been built.

The zone has industrial mineral potential classified as 3, 5 and 6/10. There is good coal potential and one coal prospect at Pink Mountain has numerous seams up to 3.7 metres thick.

There is high capability habitat for moose, caribou and grizzly bear. The area supports a diversity of large mammal species in high densities, including moose, caribou, white-tail deer, mule deer and elk along with wolves, black bear, wolverines, coyote, cougar and furbearers. Most major sport species of fish occur in the Sikanni Chief River system.

Much of this zone is roaded. There is special concern regarding road construction in high value habitat areas, such as the Sikanni Chief River and in sub-alpine and alpine areas. The Alaska Highway and Upper Halfway Road are important travel corridors through the zone, and both are visually sensitive.

Camping, hunting and fishing are the primary recreation activities within this zone.

This RMZ lies within areas traditionally used by the Halfway River First Nation.

Two Bit Creek

Values:

gas potential	guide outfitting	backcountry recreation	wilderness values	trapping
wildlife habitat	timber values	mineral potential	range	First Nations
fish	water quality	agriculture		

Objectives

Strategies

ENERGY

- maintain opportunities and access for oil and gas exploration, development and transportation

- allow exploration and development of resources within appropriate regulatory framework
- maintain and enhance opportunities for environmentally responsible development of surface and sub-surface resources
- encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization

TIMBER

- maintain timber harvesting and forest management opportunities

- quantify the timber harvesting land base and develop policies to reduce the loss of the timber harvesting land base to roads, landings, seismic lines, well sites and other developments
- establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with moderate intensity forest management regimes.
- reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.
- encourage the utilization of pulp quality stands, and the pulp components of stands slated for sawlog harvest
- 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

Two Bit Creek

Objectives	Strategies
RECREATION	
• provide quality public and commercial recreational opportunities and values	• manage visually sensitive areas associated with trail systems, campsites and special features, in recreation sites
	• identify areas of high recreation use or significance and develop appropriate management strategies
	• new access will be planned to minimize negative effects on existing scenic commercial and non-commercial recreational values
• provide a full range of recreation opportunities	• develop strategies in more detailed plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue
	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in more detailed plans (additional motorized recreational pursuits, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• more detailed plans will address the effects of recreational activity on ecological integrity (e.g. wildlife disruption, damage to plant communities and water quality)
AGRICULTURE	
• maintain or increase land supply for agriculture including access to Crown Land	• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework
• minimize or mitigate wildlife impact on agricultural enterprises	• encourage management plans to reduce wildlife/agriculture conflicts
RANGE	
• maintain or enhance opportunities for livestock grazing	• develop range use plans according to the Forest Practices Code
• maintain livestock grazing opportunities on existing tenures	• encourage an increase in range production, giving preference to integrated use

Two Bit Creek

Objectives	Strategies
ACCESS	
• coordinate access and linear development to minimize negative effects on other resource values	• promote the development of multiple-use corridors for resource extraction activities
• manage access to protect alpine areas	• where reasonable alternatives exist avoid building roads through riparian areas, south-facing aspects, and meadows (intent: avoid high value habitat)
	• maintain existing access management regulations with provisions for future restrictions on Little Pink and Little Butler mountains
	• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, recontouring, bridge removal and where possible, native species.
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, caribou, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas at the landscape level
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into landscape level plans
	• consider establishing wildlife habitat areas (WHA's) at the landscape level, on a priority basis, to protect critical wintering habitat
	• plan and develop new access routes to avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitats
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)
	• plan and develop access to avoid, where possible, medium and high quality habitats and human/bear interactions (possibly including, but not limited to: winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads)

Two Bit Creek

Objectives	Strategies
WILDLIFE (CONT'D)	
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, into landscape level plans
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's)
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is intermediate
• minimize wildlife habitat fragmentation	• identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level
MINERALS	
• maintain opportunities for mineral exploration and development and allow for access	• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values
	• provide input to more detailed planning as required
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat into landscape level plans
	• plan and develop access to minimize disturbances within riparian reserve zones and management areas
WATER	
• promote water stewardship to manage for other resources	• manage resource development adjacent to sensitive water bodies, lakes, wetlands, rivers and streams to minimize negative effects on water quality

4.0 PROTECTED AREAS

4.1 Background

In 1993, the Province formalized the Protected Areas Strategy for British Columbia. The strategy was designed to expand the system of Protected Areas from 6% to 12% of the province's land base by the year 2000.

There are two distinct types of Protected Areas.

- Goal 1 Protected Areas are established for representativeness. They may protect viable, representative examples of the natural diversity of the province such as major terrestrial, marine and freshwater ecosystems, characteristic habitats, hydrology and landforms, and/or characteristic backcountry recreational and culture and heritage values of each ecosection.
- Goal 2 Protected Areas represent special features. They are set aside to protect the special natural, culture and heritage and recreational sites, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological and palaeontological features, outstanding or fragile culture and heritage features, and outstanding outdoor recreational features such as trails.

In June 1995, the Land Use Coordination Office (LUCO) directed the seven established LRMP's and the Mackenzie Planning Table in the Prince George Forest Region to recommend an aggregate of 9% of the region for Protected Area Status. The Fort St. John LRMP Table was later directed to provide 4% of its planning area toward the regional goal of 9%. Prior to completion of the Fort St. John LRMP, only 0.09% of the planning area land base was in Protected Areas.

Potential Protected Areas were identified through the Regional Protected Area Team (RPAT), a group of representatives from local government agencies. RPAT identified a set of Areas of Interest (AOI's) which met the Goal I and Goal II requirements. The LRMP Table then used this information to finalize proposed Protected Area boundaries and prioritize areas for protection.

Future planning processes are expected to provide further operational detail to the stated LRMP objectives and strategies for each proposed Protected Area.

The Fort St. John LRMP recognizes that trapping, hunting, fishing and guide outfitting are acceptable uses within proposed Protected Areas. Where tenured activity is permitted, it is assumed to include the provision for transfer in accordance with existing policies.

The Fort St. John LRMP Table is proposing 11 areas for Protection Status, which total 4.3 percent of the land base or 202,258 hectares. The Table believes these areas are worthy of protection and that they meet the objectives of the Protected Area Strategy.

4.2 Proposed Protected Areas Within the Fort St. John LRMP

Eleven Goal 1 and Goal 2 areas have been proposed for protection. They vary in size from 102 hectares to 100,692 hectares. They represent a diverse sample of the local landscape and are meant to capture a sample of the ecological, recreational and cultural values found within the planning area. The Chinchaga, Redfern-Keily and Ekwan Lake AOI's were recommended for protection by First Nations.

4.2.1 Peace River - Boudreau Proposed Protected Area

The Peace River - Boudreau proposed Protected Area is located southwest of the City of Fort St. John. It incorporates a major portion of the southerly bank of the Peace River Valley, Boudreau Lake, the lower Moberly River Valley and the islands at the confluences of Maurice Creek and the Moberly Rivers with the Peace River.

This proposed Goal 1 Protected Area is shared between the Fort St. John and Dawson Creek LRMPs. The islands located within the Peace River are within the Fort St. John Forest District while the balance of the lands within the proposal are within the Dawson Creek Forest District.

The key features of the area include:

- representation of the Peace Lowland Ecosection
- representation of the moist warm variant of the Boreal White and Black Spruce (BWBSmw1) biogeoclimatic zone
- an important historic site - the location of the first European settlement in mainland British Columbia known as Rocky Mountain Fort
- several archaeological sites of significance
- a portion of a historical travel corridor, the Peace River
- a significant portion of mixed species forest typical of this biogeoclimatic zone and the Peace River Valley
- alluvial cottonwood - spruce ecosystems
- critical swan nesting sites near pothole lakes
- a large proportion of the area is high capability ungulate winter range
- the proposed area has regionally important recreation values (boating, canoeing, hunting, fishing, bird watching, etc.)

The proposal captures significant petroleum resources and potential resource development. It also captures a portion of the area currently under the BC Hydro and Power Authority's flood reserve for the Site 'C' hydro-electric development. Several oil and gas tenures, gravel reserves, transmission and utility corridors exist within the boundary of the proposed Protected Area.

The Fort St. John LRMP Table is recommending that the BC Government protect the Peace River islands from development using appropriate legislation (islands currently within the proposed Goal 1 Protected Area and BC Hydro and Power Authority's flood reserve) until BC Hydro confirms their plans for further hydro-electric developments on the Peace River. In addition, the Fort St. John Table recommends that the BC Government consider advising BC Hydro to re-evaluate their hydro-electric development proposals on the Peace River prior to the onset of a future LRMP process within an eight year time frame.

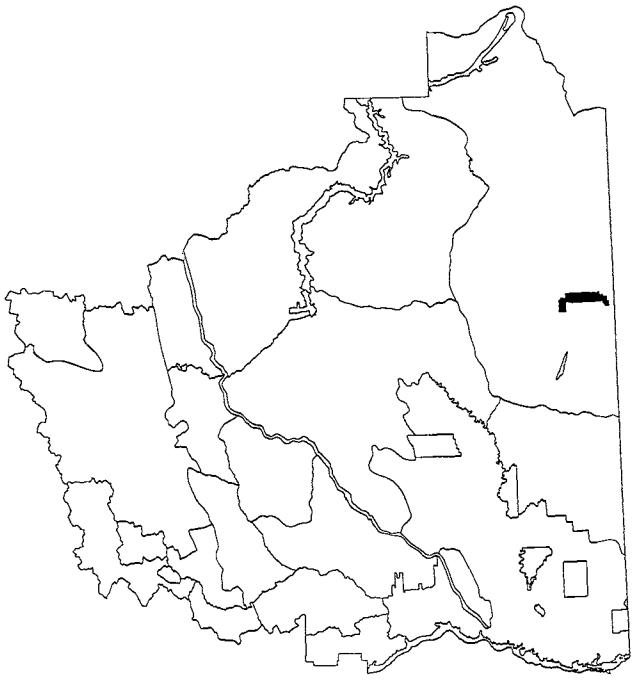
Further, the Fort St. John Table recommends that the Fort St. John LRMP portion of the Peace-Boudreau Goal 1 proposal be considered as part of a Protected Area recommendation from the Dawson Creek LRMP. The Fort St. John proportion is a small part of the overall proposal and greatly influenced by the much larger area within the Dawson Creek planning area. It is more efficient to consider the entire proposal as one proposed Goal 1 Protected Area. If adopted by the BC Government, management direction and implementation would also be an outcome of the Dawson Creek LRMP process.

4.2.2 Goal I Proposed Protected Areas

Milligan Hills Proposed Protected Area

The Milligan Hills proposed Protected Area is located near the British Columbia - Alberta boundary and includes the headwaters of the Chinchaga drainage in the eastern section of the Milligan Hills. The total area is 7,931 hectares.

The key features of this area include: representation of wet cool Boreal White and Black Spruce (BWBSwk2) in the planning area; woodland caribou habitat for endangered Alberta populations; representation of the Clear Hills Ecosection.



Milligan Hills Proposed Protected Area

Milligan Hills

Values:

recreation wildlife fish access biodiversity

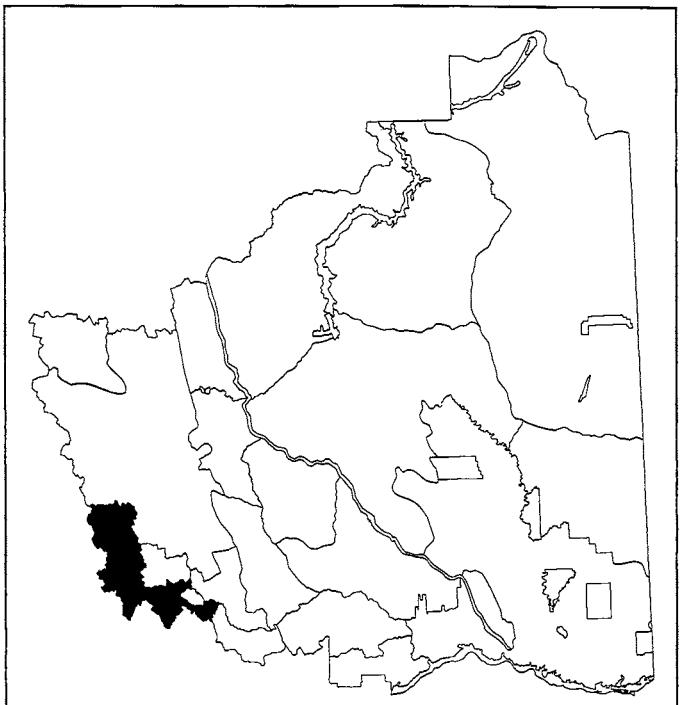
Objectives	Strategies
RECREATION	
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in a Protected Area Management Plan (additional motorized recreational pursuits, etc.)
• maintain and enhance ecological integrity in areas subject to resource impacts from recreational use	• address the effects of recreational activity on ecological integrity in a Protected Area Management Plan (e.g. wildlife disruption, damage to plant communities and water quality)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate into a Protected Area Management Plan
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas in a Protected Area Management Plan
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) into a Protected Area Management Plan
• maintain medium and high quality grizzly bear habitat	• incorporate habitat protection criteria for grizzly bears in a Protected Area Management Plan (as these criteria are developed)
	• identify and map medium and high quality grizzly bear habitat, in a Protected Area Management Plan on a priority basis
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
• restore and rehabilitate negatively affected ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation

Milligan Hills

Objectives	Strategies
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas) • incorporate the protection of fish and fish habitat in a Protected Area Management Plan
PROPOSED PROTECTED AREA	
• to protect, over the long-term for ecological representation and natural, culture, heritage, and recreation values	• designate the area under appropriate legislation, consistent with "Protected Areas" definition (PAS Document, 1993) so that logging, mining, oil and gas development and exploration, and hydro dams are not allowed uses • ensure that the Protected Area Management Plan respects the natural, cultural, heritage and recreation values identified by the LRMP Table. The values include: public recreation, hunting and fishing, culture - identified First Nations values; wilderness, wildlife, trapping, ecological representation and fisheries

Graham-Laurier Proposed Protected Area

The Graham-Laurier proposed Protected Area is an RMZ approximately 100,000 ha in size and encompassing most of the undeveloped upper reaches of the Graham River watershed. This area lies to the north of the Peace Arm of Williston Lake. Its western boundary is the Continental Divide.



Graham-Laurier Proposed Protected Area

The Protected Area will incorporate Christina Falls and that portion of the Graham River watershed above the confluence of Poutang and Needham Creeks. The eastern portion also includes that portion of the Emmerslund Creek watershed within the planning area.

The Graham-Laurier RMZ is bordered to the north by the Besa-Halfway-Chowade and Graham North RMZ's (both are part of the area generally known as the Muskwa-Kechika Access Management Area) and in the east by the Graham South RMZ. This RMZ captures the vast majority of lands within the Graham watershed that are classified as "primitive" under the MOF Recreational Opportunity Spectrum (ROS).

The distinguishing Protected Area strategy (PAS), conservation, recreation and cultural values of this proposed Protected Area include:

- high natural biodiversity (mix of forest cover types and age classes, moist riparian corridors, natural connectivity corridors between valley lowlands and alpine)
- significant medium and high capability habitat for caribou, grizzly bear, moose and furbearers
- high fisheries values in the Graham River, tributary streams and Lady Laurier Lake
- PAS biogeoclimatic zone representation of the Engelmann Spruce-Subalpine Fir moist and very cold variant (ESSFmv4) and Boreal White and Black Spruce wet and cool variant (BWBSwk2)
- Christina Falls special feature, including access to this significant tourist destination
- high existing and potential commercial (guide outfitting, trapping and commercial backcountry recreation) recreation values
- high existing and potential non-commercial recreational opportunities (fishing, canoeing, hiking, hunting, snowmobiling, ATVing and horseback riding)
- First Nations traditional use values (Halfway River First Nation, Carrier-Sekani First Nation)
- captures several undeveloped watersheds (Poutang Creek, Guilbault Creek, Lapierre Creek, Horn Creek and Needham Creek, all tributary to the upper reaches of the Graham River)

This RMZ captures significant identified timber resources, mining and petroleum resources and potential for resource development. Several oil and gas exploration and grazing tenures exist within the proposed boundary of this RMZ. No active mining claims are present although considerable resource potential was identified along the Continental Divide.

Graham-Laurier

Values:

recreation	wildlife	fish	access	biodiversity
water	wilderness	grazing	trapping	First Nations
guide outfitting				

Objectives	Strategies
RECREATION	
• maintain guide and outfitting opportunities	• develop strategies in a Protected Area Management Plan to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and the associated grazing activities of guide outfitters to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. Recreation use should be addressed within the Protected Area Management Plan
• provide a full range of recreation opportunities	• manage the area consistent with the intent of ROS recognizing existing historical recreation activities.
• provide a full range of wilderness recreation opportunities	• develop strategies to maintain a range of wilderness recreation opportunities across the Resource Management Zone in a Protected Area Management Plan
• maintain opportunities for commercial and non-commercial livestock grazing associated with recreation	• address issues of forage allocation among tenured users, residents and wildlife, within the Protected Area Management Plan
	• identify and manage appropriate grazing management activities (e.g. burns)
• manage backcountry recreation and tourism opportunities in a natural or natural-appearing condition	• the Protected Area Management Plan process will determine the areas that are suitable for backcountry and tourism expansion, while maintaining the objectives of the Resource Management Zone. Provide opportunities for development of backcountry facilities. Plan access in conjunction with tourism and recreation groups in the area. Tourism facilities and development will be matched with intended recreation experiences

Graham-Laurier

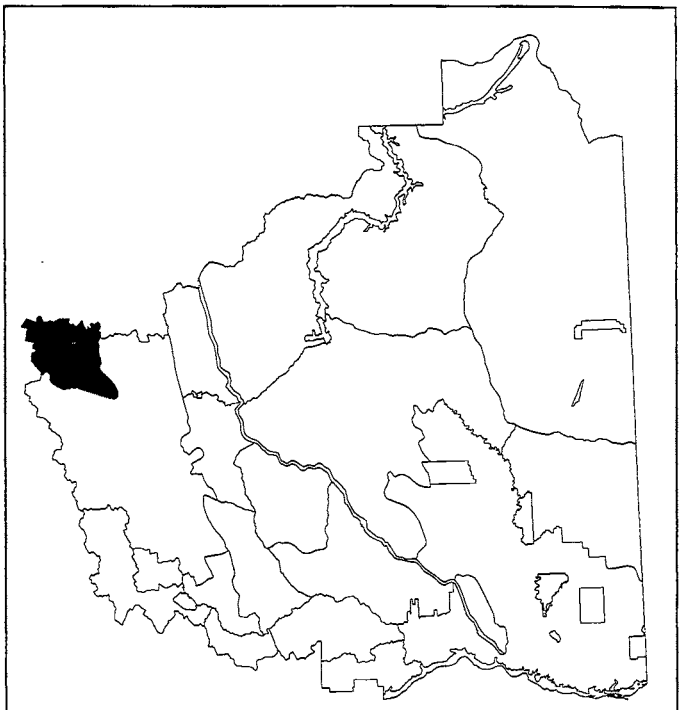
Objectives	Strategies
ACCESS	
• manage access to protect Protected Areas Strategy values, guide outfitting, recreation values and fish and wildlife and their habitats	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
WILDLIFE	
• maintain furbearer habitat for priority species (e.g. fisher, marten, lynx)	• identify critical furbearer habitat and incorporate in a Protected Area Management Plan
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas in a Protected Area Management Plan
	• consider establishing wildlife habitat areas (WHA's) in a Protected Area Management Plan, on a priority basis, to protect critical wintering habitat
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, in a Protected Area Management Plan, on a priority basis
	• consider identifying and designating critical grizzly bear habitat areas, on a priority basis, as wildlife habitat areas (WHA's) in a Protected Area Management Plan
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's) in a Protected Area Management Plan
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
• restore and rehabilitate negatively impacted ecosystems	• identify and prioritize negatively affected ecosystems for potential restoration and rehabilitation
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
	• incorporate the protection of fish and fish habitat in a Protected Area Management Plan
• maintain high quality fisheries in natural settings	• incorporate habitat protection criteria for bull trout in a Protected Area Management Plan (as these criteria are developed)
	• minimize permanent access to remote lakes, streams and rivers with high quality fisheries

Graham-Laurier

Objectives	Strategies
WATER	
• maintain the headwaters of major rivers and streams in a pristine, undisturbed condition	• consider identifying and designating the highest order headwater tributaries of specific streams and rivers (in the Resource Management Zone) with a designation such as a sensitive area
PROPOSED PROTECTED AREA	
• to protect, over the long-term for ecological representation and natural, cultural, heritage, and recreation values	• designate the area under appropriate legislation, consistent with "Protected Areas" definition (PAS Document, 1993) so that logging, mining, oil and gas development and exploration, and hydro dams are not allowed uses
	• ensure that the Protected Area Management Plan respects the natural, cultural, heritage and recreation values identified by the LRMP Table. The values include: public, commercial and backcountry recreation, hunting and fishing, culture - identified First Nations values; wilderness, wildlife, guide outfitting, trapping, ecological representation, fisheries, heritage - historic trails and existing trail networks etc.

Redfern - Keily Proposed Protected Area

The Redfern-Keily proposed Protected Area is located approximately 40 km west of the Alaska Highway. This area includes the glacial waters of the Redfern, Fairy and Trimble Lakes, alpine basins and the icefields of the Besa River and Keily Creek watersheds (above the confluence of Keily Creek with the Besa River) of the Rocky Mountains and Foothills. Most of the area is within the Muskwa Foothills ecosection. The most northwestern portion is within the Eastern Muskwa Range ecosection. The total land area is 80,779 hectares.



Redfern-Keily Proposed Protected Area

Key features include: significant populations of Stone's sheep, mountain goat, caribou, moose and elk. Extensive watersheds provide good moose habitat and areas of Class 1 capability habitat for caribou, Stone's sheep and Rocky Mountain elk. The area contains important old-growth furbearer habitat and contains terrain and mixed spruce and pine forests representative of the high mountain valleys of the eastern flank of the Rocky Mountains. This is a typical glaciated landscape.

Generally the zone is non-roaded with some ATV access along corridors in the zone.

The RMZ contains significant First Nations values. Trails leading to Redfern Lake allow for a full range of outdoor recreation and backcountry recreation opportunities. A successful guide outfitting operation offers a variety of guided outdoor experiences. Visual quality associated with the trails leading to Redfern Lake is a concern in this zone.

Redfern - Keily

Values:

recreation	wildlife	fish	access	biodiversity
water	visual quality	wilderness		

Objectives	Strategies
RECREATION	
• maintain guide and outfitting opportunities	• develop strategies in a Protected Area Management Plan to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide outfitting opportunities
	• identify and protect guide outfitting campsites and cabins
	• manage existing tenures and the associated grazing activities of guide outfitters to limit impacts and reduce risk to other resource values
	• seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. Recreation use should be addressed within the Protected Area Management Plan.
• provide a full range of recreation opportunities	• incorporate existing recreational activities and assess potential for the development of new recreational opportunities in a Protected Area Management Plan
• provide a full range of wilderness recreation opportunities	• develop strategies to maintain a range of wilderness recreation opportunities across the Resource Management Zone in a Protected Area Management Plan
	• manage Keily Creek watershed to maintain a 'primitive' wilderness experience
	• provide for motorized recreation access corridors/trails to similar destinations as currently allowed
• maintain opportunities for commercial and non-commercial livestock grazing associated with recreation	• address issues of forage allocation among tenured users, residents and wildlife within a Protected Area Management Plan
	• identify and manage appropriate grazing management activities (e.g. burns)

Redfern - Keily

Objectives	Strategies
RECREATION (CONT'D)	
• provide backcountry recreation and tourism opportunities in a way that maintains a natural or natural-appearing condition	• the Protected Area Management Plan process will determine the areas that are suitable for backcountry and tourism expansion, while maintaining the objectives of the Resource Management Zone. Provide opportunities for development of backcountry facilities. Plan access in conjunction with tourism and recreation groups in the area. Tourism facilities and development will be matched with intended recreation experiences
ACCESS	
• manage access to protect Protected Areas Strategy values, recreation values and fish and wildlife and their habitats	• maintain existing access, including provisions for upgrading
	• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)
WILDLIFE	
• maintain high capability ungulate winter habitat (e.g. elk, deer, moose, mountain sheep and mountain goat)	• identify and map high capability ungulate wintering areas in a Protected Area Management Plan
	• incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, sustainability of forage and browse) in a Protected Area Management Plan
	• consider establishing wildlife habitat areas (WHA's) in a Protected Area Management Plan, on a priority basis, to protect critical wintering habitat
• maintain medium and high quality grizzly bear habitat	• identify and map medium and high quality grizzly bear habitat, in a Protected Area Management Plan, on a priority basis
	• incorporate habitat protection criteria for grizzly bears, in a Protected Area Management Plan (as these criteria are developed)
	• incorporate medium and high quality grizzly bear habitats and connectivity corridors, in a Protected Area Management Plan
	• identify and designate critical grizzly bear habitat areas as wildlife habitat areas (WHA's) in a Protected Area Management Plan
• maintain caribou habitat	• identify and map medium and high capability caribou habitat
	• incorporate the maintenance of medium and high capability caribou habitat and connectivity corridors, in a Protected Area Management Plan

Redfern - Keily

Objectives	Strategies
WILDLIFE (CONT'D)	
	• consider identifying and designating critical caribou habitat areas, on a priority basis, as wildlife habitat areas (WHA's), in a Protected Area Management Plan
BIODIVERSITY	
• maintain functioning and healthy ecosystems in the Resource Management Zone	• the general biodiversity emphasis is high
FISH	
• maintain fish habitat and water quality for priority fish species (e.g. bull trout, grayling and red and blue listed species)	• identify and map critical fish habitat (e.g. pools, migration patterns, spawning and rearing areas)
• maintain high quality fisheries in natural settings	• incorporate the protection of fish and fish habitat in a Protected Area Management Plan
	• minimize permanent access to remote lakes, streams and rivers with high quality fisheries
WATER	
• maintain the headwaters of major rivers and streams in a pristine, undisturbed condition	• consider identifying and designating the highest order headwater tributaries of specific streams and rivers (in the Resource Management Zone) with a designation such as a sensitive area
PROPOSED PROTECTED AREA	
• to protect, over the long-term for ecological representation and natural, culture, heritage, and recreation values	• designate the area under appropriate legislation, consistent with "Protected Areas" definition (PAS Document, 1993) so that logging, mining, oil and gas development and exploration, and hydro dams are not allowed uses
	• ensure that the Protected Area Management Plan respects the natural, culture, heritage and recreation values identified by the LRMP Table. The values include: public, commercial and backcountry recreation, hunting and fishing, culture - identified First Nations values; wilderness, wildlife, guide outfitting, trapping, ecological representation, fisheries, heritage - historic trails and existing trail networks etc.
VISUAL QUALITY	
• manage visually sensitive areas identified as scenic areas (including travel and recreation corridors as identified by the Ministry of Forests visual landscape inventory)	• manage existing recreation sites by maintaining Visual Quality Objectives for trail systems, campsites and special features. Establish acceptable limits of use (may include timing) e.g., migration pattern, reproductive cycles

4.2.2 Goal 2 Proposed Protected Areas

The Sikanni Chief Canyon is 4,266 hectares in size and captures portions of the Sikanni Chief Canyon and Buckinghorse River Canyons. A key feature within this proposed Protected Area is the population of mountain goats that reside year round on the steep precipices above the Sikanni Chief and Buckinghorse Rivers. This is one of the few places in BC where mountain goats are found along larger rivers. Alluvial stands of white spruce along the Sikanni Chief River are another key feature.

The Sikanni Chief Falls is a recreational feature of local importance. A forest service recreation site within the proposed Protected Area is popular with visitors attracted by the spectacular falls. As a bonus, this Protected Area will capture known palaeontological sites upstream from the falls. This Protected Area encompasses 729 hectares.

Pink Mountain is the smallest of the proposed Protected Areas at 100 hectares. This Protected Area will capture a significant palaeontological site.

On the northern boundary of the planning area, the proposed **Sikanni-Old Growth** Proposed Protected Area is 1,410 hectares. This proposal captures alluvial old-growth white spruce along the Sikanni Chief River. These large diameter spruce provide high quality wildlife habitat.

In the extreme north eastern portion of the planning area is the **Ekwan Lake** proposed Protected Area of 1,892 hectares. This area was identified as having important First Nation values. In addition there are stands of spruce that provide wildlife habitat, including waterfowl habitat. Fish values in Ekwan Lake are high.

Several **sites along the Peace River corridor** have been proposed for protection. These sites are located from the mouth of the Beatton River to the British Columbia/Alberta boundary. These sites collectively total 557 hectares. They offer locally important recreational opportunities as well as protecting rare grassland ecosystems and mule deer winter range.

The **Beatton-Doig Canyon** proposed site is found at the junction of the Beatton and Doig Rivers. This site is 867 hectares in size and protects an excellent example of local steep cutbanks.

In the eastern portion of the planning area, a proposed Protected Area is found around **Chinchaga Lakes**. This area was identified as having high First Nation values. This area is 1,389 hectares in size.

5.0 Socioeconomic & Environmental Assessment Summary

5.1 Introduction & Overview

This document summarizes the key conclusions reached by an independent assessment of the Land Use Plan. The socioeconomic work was undertaken by the Policy Branch of the Ministry of Employment and Investment (MEI), with assistance from Robinson Consulting & Associates and J. Paul & Associates; the environmental analysis was by Eliot Terry (R.P. Bio.) of Keystone Wildlife Research. The assessment also relied on input from the government's Inter-Agency Planning Team and Geographic Information Systems (GIS) area statistics provided by the Ministry of Forests (MoF) for the LRMP.

The starting point for the assessment is to define the "Base Case," i.e. the current/future socioeconomic and environmental trends associated with the "default land use regime" that would prevail in the absence of a Land Use Plan. Key initiatives that are assumed to occur in the Base Case are the current forest management regime as per MoF's Timber Supply Review (TSR) for the Fort St. John TSA (September 1995), the Forest Practices Code (FPC), various "special management" initiatives of government (e.g. provincial interest in the Muskwa-Kechika area), and the provincial Regional Protected Areas Team (RPAT) recommended Protected Areas of 4.27%, which closely meets government's Protected Areas target of 4% (+ or - 0.25%) for the planning area. (The planning area is defined as the Fort St. John Forest District.) 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.

A general indication of the implications of the Base Case and Land Use Plan is provided by the area roll-up of the GIS analysis:

	Protected Areas	Special RMZ	General RMZ	Enhanced Resource Development Zones
Base Case	4.3%	10%	34%*	52%**
Land Use Plan	4.3%	18%*	46%	32%**

** Includes 4% from "Major River Corridors" RMZ (note that the total planning area is 4,677,115 hectares)*

*** Includes 12% from "Agriculture/Settlement" RMZ*

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 and forest industries 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.

5.2 Key Socioeconomic Implications

Petroleum Sector

The Petroleum Geology Branch of MEI estimates a "Status Quo" inventory of about 16.2 million cubic metres (m^3) of proven oil, 4.4 Trillion cubic feet (Tcf) of proven gas, and 20.1 Tcf of potential gas reserves in the planning area. Most of the proven reserves and current industry activity lies in the Fort St. John catchment area, east of the Alaska Highway. Status Quo proven plus potential reserves could likely sustain current production rates for another 50-100 years, without accounting for improved technology, exploitation of coal-bed methane, etc. There are no significant implications of the Base Case land management regime for proven reserves, but the FPC (due to cost increases) and Protected Areas (since oil/gas activities are not allowed in parks) are expected to preclude gas potential by 0.5 Tcf and 1.0 Tcf respectively - this implies a Base Case availability of 18.6 Tcf vs. the 20.1 Tcf in the Status Quo.

By 1991, the oil/gas sector accounted for about 22% of the planning area economy, or about 2000-2500 jobs, of which about 700 are in natural gas exploration/extraction and held by area residents. It is this portion of "upstream employment" that is the most sensitive to changes in Crown land use, since gas production is likely to continue to grow over at least the next 20 years, according to the Oil & Gas Section of MEI. Assuming these exploration/extraction jobs are proportionately linked to production volumes, this growth would likely result in 20-year average employment of about 900 in the absence of the FPC and PAS and over 800 with these initiatives taken into account in the Base Case.

In the Land Use Plan, again the only significant implications are to future potential rather than to proven reserves[1] or existing infrastructure/tenures. Most of the lost potential occurs in the promising northern foothills area west of the Alaska Highway, primarily in and around the Graham Protected Area and Besa Halfway Chowade RMZ. These impacts arise mainly because about 10% of the Highest Potential gas lands (with an estimated >100,000 m^3/ha, covering 40% of the area) would be precluded by Protected Areas and 30% would be located in Special Resource Management Zones (SRMZs).

The Oil & Gas Section of MEI estimates that the Plan's management strategies in these and other Resource Management Zones (RMZs) will further reduce the availability of potential gas reserves from 18.6 to 16.5 Tcf (11%), since access is restricted and costs are increased. However, given the forecasted growth in the U.S. and Canada's future energy markets,[2] as noted above, the area's gas production is expected to increase over the next 20 years. The implication of the Base Case and Land Use Plan, then, is that given reduced and more costly options, the industry will have to move to higher cost reserves (sometimes outside of BC) sooner than it otherwise would, the implications of which should begin to occur within 5-10 years. Production will continue grow over this time, but at a slower pace than under a Status Quo regime.

It was also noted that in the Base Case an average of over 800 resident jobs in gas exploration/extraction is expected the next 20 years. Pro-rating the 11% in potential gas reserve reductions to this Base Case 20-year average employment level, it still appears that resident employment will exceed the latest estimate of 700 well into the future.

1 The only exception is that about 50% of the 8300 ha. of "Proven Oil Reserves > 500 m3/ha." is located in SMRZs, primarily in the Charlie Lake Water Supply Area RMZ. However, an objective in this RMZ is to "maintain opportunities for oil/gas exploration, development, and transportation."

2 The forecast of North America's natural gas supply and demand prepared by the Canadian Energy Research Institute (CERI) was used to also forecast production from the planning area.

The 20-year total net present value of those BC 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 $1.51 billion in the Status Quo, $1.40 billion in the Base Case, and $1.23 billion with the Land Use Plan. Therefore the approximate "opportunity cost" of FPC, PAS, and the Land Use Plan on these revenues is a net present value of $280 million or $23 million annually ($9 million for Base Case and $14 million for the Land Use Plan) for 20 years; this represents about $17 annually in foregone direct natural gas tax revenues per BC household (based on 1.373 million households in 1994).[3] To further place these estimates in context, in 1993 and 1994 total oil and gas revenues from the planning area were some $205 million and $286 million respectively. The Table below summarizes all the related production, employment, and revenue impacts.

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 five small "Goal 2" Protected Areas: Sikanni Canyon, Sikanni Falls, Beatton Doig Canyon, Ekwan Lake, and Chinchaga Lakes, with the latter two being subject to First Nations review.

Estimated 20-year Average Impact of Base Case & Land Use Plan on Gas Potential, Direct Resident Employment, and BC Government Revenues for the Fort St. John Planning Area

	Status Quo Regime	Base Case		Land Use Plan	Cumulative Result
		PAS	FPC		
Total Estimated Potential Gas Volume (Trillion cubic feet)	20.1	19.1 (-5%)	18.6 (-3%)	16.5 (-10%)	16.5 (-18%)
Average Total Direct Resident Exploration/Extraction Jobs over 20 years (1991 Jobs = ~700*)	909	863 (- 5%)	836 (-3%)	746 (-10%)	746 (-18%)
Average Annual BC Government Revenue Cost in $ millions (1994 Revenues = $286 million)	0	$9 mill.		$14 mill.	$23 mill.
Annual Revenue Cost per Household	0	$6.55		$10.20	$16.75

* Estimated as 30% of 2300 total upstream jobs in the area, using MEI data that 30% of industry exploration expenditures are by BC firms. Also consistent with Ministry of Finance job estimates.

Sources: MEI, CERI, & Fort St. John LRMP Base Case Report (ARA Consulting, March 1996)

3 Note that these estimated revenue "reductions" do not imply that revenues will decline vs. today's levels. Rather, since production is still expected to increase over the next 20 years even with the Plan, they are only an estimated reduction from what they otherwise may be under the Status Quo management regime.

Hydro-Electricity

There is minimal employment related to the generation of hydro-electricity, and the "Site C" dam/reservoir proposal does not appear to be on BC Hydro's current planning horizon, notwithstanding that the flood reserve continues to exist. In the Base Case, RPAT's recommended Protected Areas would likely preclude the development. In the Plan, however, the LRMP has recommended that the Environment and Land Use Act be used to designate the Protected Areas within the flood reserve so as to not preclude the project - the decision to proceed is therefore left with BC Hydro. However, the Plan recommends that Hydro review its intentions regarding this project within 10 years.

Forest Sector

This industry drives about 8% of the local economy, accounting for in the order of 600-700 direct jobs in harvesting, hauling, and processing as of 1991. As of December 31 1996, the Allowable Annual Cut was set at 1.1 million m^3/yr (up 0.2 million m^3/yr from the previous level) for coniferous supplies and remained at 0.9 million m^3/yr for deciduous. According to analysis undertaken by MoF staff for the 1995 Timber Supply Review (TSR), the sustainable coniferous Long Term Harvest Level (LTHL) is about 1.8 million m^3/yr, without accounting for the FPC, PAS, or the LRMP. However, for deciduous, the sustainable LTHL is likely to decline to 0.6 million m^3/yr gradually over the 50 years.

In both the Base Case and the Land Use Plan, very small amounts of both the coniferous and deciduous Timber Harvesting Land Base (THLB) are overlain by new Protected Areas and SRMZs - in the Plan, only 0.3% of deciduous and 2% of coniferous THLB is precluded by new parks, and 4% of deciduous and 12% of coniferous THLB is affected by SRMZs. As a result, according to MoF's timber analysis for the LRMP, the combination of the FPC and Protected Areas would reduce the coniferous LTHL to 1.5 million m^3/yr and the Plan's management strategies cause a further decline to 1.3 million m^3/yr. Both these amounts are above the current AAC, so while some potential opportunities are foregone, there are no impacts on existing jobs. For the deciduous harvest, there is virtually no difference between the 1995 TSR harvest flow and the projected harvests which account for the effects of the FPC, PAS, and the Plan - in all cases, the current harvest of 0.9 million m^3/yr can be held for about 10 years, but by the fifth decade, the LTHL of just over 0.6 million m^3/yr would be reached. It is noteworthy that very little of the deciduous supply is now being harvested, implying that the decline to LTHL should occur without noticeable adverse socioeconomic implications.

Mining

There are no existing mines and few exploration jobs in the planning area, with about 2% of the local economy (100-150 local jobs) dependent on mining/mineral processing as of 1991. There is also additional seasonal activity undertaken by exploration geologists from outside of the region. The Geological Survey Branch of MEI estimates that about 2% of the planning area consists of High Potential metallic mineral lands and there are 39 identified mineral occurrences, of which the most promising is the Robb Lake lead-zinc deposit (potential for 150 jobs over 20 years, but timing/probability of development is uncertain) located just north of the proposed Graham Protected Area.

In the Plan, 65% of the identified High Potential (Classes 8-10) metallic mineral areas and 37% of the occurrences are located in Protected Areas, which is not significantly different from the Base Case. Approximately one-third of both High potential lands and occurrences are located in SRMZs, including the Robb Lake deposit in the Besa-Halfway-Chowade SRMZ. New Protected Areas and management strategies in the SRMZs (and certain other RMZs) will reduce access and increase costs for mineral exploration, but mineral exploration and mining remain allowable uses outside of Protected Areas. Also, much of the area is not well-explored, implying that significant activity may continue to occur or simply be diverted to less encumbered RMZs. While no existing resident mining jobs appear to be threatened, some potential opportunities may be foregone, however their nature, probability, and timing is not possible to assess.

Agriculture

The key activities are grain production and cattle ranching, and the sector accounted for about 7% of planning area incomes and 13% of the jobs. Grain production will not be affected since it occurs almost exclusively on private land. Cattle ranching has the potential to be impacted by Crown land use planning initiatives such as the FPC, PAS, and/or the LRMP, given that significant amounts of grazing occurs on public land. In the Base Case, it is possible that some agriculture costs could increase due to the FPC.

The only mapped indicator available for the assessment is the 736,000 ha of land within the Agricultural Land Reserve, of which only 0.06% is located in Protected Areas and 6% is in SRMZs. Moreover, Ministry of Agriculture, Fisheries and Food (MAFF) staff estimate that only about 225,000 ha is currently being cultivated. While most of the rest is of lower capability or less accessible, any need for expansion caused by improving world markets would also likely render this 500,000+ ha of "agriculturally underutilized" more economically viable (not to mention arable lands outside of the ALR), implying that the implications of the Plan for the sector are not significant. In addition, grazing on Crown range is an allowable use outside of Protected Areas, and even if some tenures are located in Protected Areas, provincial policy has been to "grandfather" these activities.

However, MAFF staff are of the view that some additional cost increases will occur due to certain LRMP management strategies, primarily in the Cecil Lake Wetlands, Peace Corridor, Agriculture Settlement, Charlie Lake Water Supply Area, Major River Corridors, Aikman-Deadhorse, Cameron, Farrell Creek, and Kobes Creek RMZs. No existing jobs are expected to be impacted, however.

Tourism, Guide-Outfitting, and Trapping

Tourism accounted for about 4% of planning area income and 10% of the jobs as of 1991, with much of the "front-country" activity being generated by business travellers in the energy and forestry sectors. Of the approximately 900 tourism jobs in the planning area, it is estimated that about 40-50 depend on relatively pristine "back-country wilderness values" for their livelihoods, most of whom are guide outfitters operating in one of the eight tenures which lie wholly or partly within the planning area. Even with the FPC and 4.27% of the area protected, it is likely that key wilderness values would continue to erode in the Base Case, placing these businesses a greater risk over the long term without official management strategies in place to accommodate their interests.

Of the 500,000 to 600,000 ha in the planning area with little or no current access (as identified by the MoF Recreation Opportunities Spectrum and Undeveloped Watershed inventories), approximately one-quarter to one-third will be permanently protected from development with virtually all of the remainder in SRMZs. The Plan also offers specific strategies to control access into wilderness areas, protect fisheries/wildlife habitat, promote higher levels of visual quality in key travel corridors, and manage for backcountry recreation opportunities over and above the Base Case regime. While these designations and strategies will assist the backcountry tourism sector for at least the next few decades, given that 96% of the planning area will continue to the open to roads, seismic activity, etc., it is likely that wilderness values will continue to erode and place some of these businesses at risk in the long run, but at a slower rate than in the Base Case.

There are over 70 traplines in the area, and trapping is primarily a seasonal pursuit. Both the FPC and the Plan's management strategies to protect high quality furbearer habitat (primarily for lynx, marten, and fisher) will result in improved trends for this sector.

Communities and First Nations

There is no evidence to suggest that there will be job losses in any community within the planning area as a result of either Base Case initiatives or the Land Use Plan. While there may be some short term fluctuations in oil and gas exploration and related spin-off activities as investors become accustomed to the Forest Practices Code, new Protected Areas, and the Plan, it is likely that such changes are more related to volatile world prices/markets, rather than incremental changes in Crown land management regimes. In fact, the increase in certainty that should arise due to having a Plan with management objectives/strategies documented on a zone-by-zone basis could even have a positive effect on petroleum sector investor confidence.

If, however, there is some short-term economic volatility, the majority of the implications would occur in Fort St. John, as the 1991 Census/Ministry of Finance analysis indicates that 26% of its economy is driven by this sector, vs. less than 20% in Taylor and the remainder of the planning area, the latter relying more on forestry and agriculture.

In the longer term, as noted previously, any direct effects are likely to be manifested as somewhat lower economic and population growth than would otherwise occur, rather than declines in current economic activities. In addition, the new Protected Areas, Special Resource Management Zones, and Visual Quality provisions should enhance the viability of tourism (primarily backcountry tourism, near the area's smaller communities) in the foreseeable future.

Since there was not direct participation by First Nations in the LRMP process, and their interests are not mapped, it is difficult to assess the implications of the Base Case and Land Use Plan on the area's aboriginal peoples. However, the beneficial environmental effects of PAS, the FPC, and the Plan's management strategies should protect the natural and spiritual values that are important to First Nations to a greater extent than would otherwise be the case.

5.3 Key Environmental Implications

Biodiversity & Ecosystem Representation

The environmental implications of implementing the Land Use Plan are generally positive. This is largely due to the reduced intensity of development in the eastern portions of the plan area vs. the Base Case and the allocation of significant amounts of land west of the Alaska Highway as SRMZs and Protected Areas.

East of the Highway, the Charlie Lake Water Supply Area, Peace River Corridor and Lower Sikanni-Fontas Valley zones are allocated to SRMZ status whereas the Trutch zone will be managed as a General Resource Management Zone. A lower intensity of development in these areas should provide for more natural levels of biodiversity and moderately improves the outlook for species and habitats that occur within these zones. Overall, the allocation of land use zones, however, suggests the risks to biodiversity increases from west to east reflecting the greater intensity of resource development east of the Highway.

Some key management zones situated west of the Highway also receive lower intensity development designations under the Plan vs. the Base Case, i.e. Crying Girl, Graham South, Farrell Creek, and Bluegrave-Horseshoe. Those zones situated west of the Highway that will be managed as SRMZs (i.e., low intensity development) reflect the significant wildlife and wilderness values that occur in these watersheds. Managing the largest zone (i.e., Besa-Halfway-Chowade: 415 477 ha) west of the Highway to meet a High Biodiversity Emphasis, as well as the proposed Protected Areas in the Redfern-Keily and Graham-Laurier, reduces the impact to fish and wildlife populations and poses relatively low to moderate risks for these values.

Thirteen proposed Protected Areas (about 4.3% of planning area) would achieve representation in 7 of 9 ecosections and 8 of 9 subzone variants under the proposed Plan. Both the Base Case and proposed Plan lack representation of the Halfway Plateau ecosection. Although the RPAT Protected Areas in the Base Case would achieve similar ecosystem representation, the proposed Plan reduces ecosystem representation of the *Graham very moist cold Engelmann Spruce-Subalpine Fir* biogeoclimatic subzone/variant (ESSFmv4) by about 8300 ha (such that 24% is protected vs. 29% in the Base Case) due to the reduction in size of the Graham-Laurier proposed Protected Area. Shifting this portion of the Graham from Protected Area to Special Management increases the risks to vulnerable species such as caribou and grizzly bears, however, access management strategies may partly mitigate the potential adverse effects.

Overall, the general management direction outlined in the Plan to incorporate ecosystem attributes into landscape-level plans, maintain connectivity, and minimize fragmentation indicate a reduced risk to biodiversity. These objectives and strategies will have the greatest benefit west of the Highway where many significant wildlife values occur.

Riparian Habitats

The Base Case trends for riparian communities is generally positive due to the implementation of the FPC *Riparian Management Areas*. Although *Riparian Reserve Zones* will protect habitats and ecological processes immediately adjacent to water bodies, the full benefit of maintaining forest cover in riparian areas will only be achieved if management practices recommended in the *Riparian Management Zones* are carried out. The Land Use Plan recognizes the high conservation values of riparian communities by allocating major riparian systems occurring in the River Corridors RMZ as Special Resource Management. In addition, by designating the Peace River Corridor and Lower Sikanni-Fontas Valley zones as SRMZs, the risks to riparian communities in these areas become relatively low. Although these changes are generally positive, proposed development in the Graham North and Graham South zones pose moderate risks to riparian connectivity. A more detailed planning process, however, may lessen the potential impact to these riparian communities by designing management practices that will partly mitigate the potential negative effects of timber harvesting and road development.

Red and Blue Listed Species

Although many smaller mammal and bird species listed as endangered or vulnerable will benefit from the FPC (e.g. *Riparian Management Areas, Wildlife Tree Patches*), other species such as caribou, grizzly bear and Northern goshawk need relatively large specially managed and/or Protected Areas from higher level plans to address their habitat requirements. In general, the Land Use Plan provides increased certainty that species listed as endangered (red-listed) or vulnerable (blue-listed) will receive adequate consideration during lower level planning processes compared to the Base Case. This is largely due to the clear direction provided by the management objectives and strategies in the Plan which provide direction for identification/mapping of critical wildlife habitats and designate *Wildlife Habitat Areas* (where required) to meet the needs of sensitive species during the development of landscape-level plans and stand-level prescriptions.

Grizzly Bear

The Land Use Plan allocates over 70% (vs. about 60% in the Base Case) of grizzly bear habitat as SRMZs (i.e., low intensity development) and about 21% to Protected Areas (vs. 22% in the Base Case), with no grizzly habitat falling within Enhanced Resource Development Management (high intensity) Zones. While there are some increased risks to bears from increased access (i.e., more bear-human conflict, poaching) into the Graham North and Graham South zones (given that somewhat less habitat is in Protected Areas vs. the Base Case), the RMZ strategies may partly mitigate the adverse effects.

Woodland Caribou

The four caribou management zones (Milligan Hills, Hackney Hills, Kobes Creek and Graham) identified in the 1995 TSR together with the RPAT Protected Areas suggest minimal impacts to caribou populations in the Base Case. While the Base Case would likely maintain most key caribou habitat over the long term, declines are more likely in those caribou zones surrounded by General and Enhanced Resource Development Zones (i.e., Bluegrave-Horseshoe and Kobes Creek RMZs). Overall, the proposed Plan improves the outlook for woodland caribou over most of the planning area by providing specific management direction to maintain connectivity between seasonal ranges. However, moderate risks still remain in the approximately 20 % of caribou habitat managed in General Resource Management Zones.

Ungulate Winter Range

The planning area supports provincially significant populations of white-tailed deer, mule deer, caribou (both mountain and northern ecotypes), elk, Plains bison and Stone's sheep. Management strategies outlined by the Plan to identify critical *Wildlife Habitat Areas* provides for greater certainty that ungulate winter ranges will be adequately considered during landscape-level planning and the development of stand-level prescriptions.

Fisheries and Water Resources

The planning area supports 12 species of sport fish including whitefish, Arctic grayling, rainbow trout, lake whitefish and walleye. Other species of management concern include bull trout (blue-listed) which is believed to be declining in many watersheds. The Base Case implication for fisheries values, however, is generally positive due to the implementation of the FPC *Riparian Management Zones* and *Watershed Assessments*. Specific management objectives related to fishery and water resources documented in the Land Use Plan, add further certainty that these environmental values will receive adequate protection.

Access Management

Many of the undeveloped watersheds situated in the western portion of the planning area, will be developed in the future. Increased access into undeveloped watersheds significantly increases the risks to fish and wildlife populations and can reduce wilderness values. However, as part of the Muskwa-Kechika area, management strategies (e.g. co-ordinated access management plans) outlined for the Besa-Halfway-Chowade and Graham North zones will partly mitigate the potential adverse effects of increased road development on fish and wildlife populations in these areas.

6.0 IMPLEMENTATION

6.1 Declaration of the Fort St. John Land and Resource Management Plan as a Higher Level Plan

All or part of the Fort St. John LRMP that relate to operational forestry, may be declared a higher level plan under the Forest Practices Code of British Columbia Act (FPC). By law, operational plans must conform to those parts of an LRMP designated as higher level plans under the FPC. Operational plans provide a description of lands and resources. They also describe the location of, timing and type of management practices and prescriptions that will be used to manage, use and conserve described lands and resources. Examples of forest management operational plans include Forest Development Plans, Range Use Plans and Access Management Plans.

In addition to the management of forest resources and those requirements stipulated under the FPC, the Fort St. John LRMP will guide other land and resource developments on Crown lands for a period of ten years. Developments affected by the plan, include water use and storage, land developments, recreation, guide outfitting, trapping, agriculture, fish, wildlife and surface and sub-surface mineral resources. Many existing and new planning mechanisms (such as existing statutes and regulations, approval and referral processes and new policies like the 2005 Initiative) used by resource management agencies will be guided by the strategic direction included within the plan.

The plan also provides a set of acceptable uses for proposed Protected Areas. Management direction suggested by the Table as appropriate for areas designated under the Protected Areas Strategy will provide a framework for managing new Protected Areas.

6.I.I Formal Designation - Muskwa-Kechika

The Fort St. John Planning Table recommends that a portion of the planning area, specifically the Besa-Halfway-Chowade, Graham-North, Graham-Laurier and Redfern-Keily resource management zones, be formally designated such that the following criteria are met.

1. Formal designation captures the intent of the objectives and strategies for the respective resource management zones.
2. 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.
3. Dispute resolution mechanisms for pre- and post-tenures will be in accordance with administrative protocols in place, under development and/or to be developed. Examples include: pre-tenure 2005, Forest Practices Code and similar post-tenure mechanisms for mining.
4. Designation should not result in longer permitting time frames
5. Ensure adequate government resources (inventory data, government staffing) are provided to allow for timely development of plans.
6. Formal designation is to facilitate management that will manage this area as a larger unit and not to make this area a 'Park' in waiting for a declaration.
7. Authority for operational planning and approvals remain within the jurisdiction of line agencies.
8. The intent is to ensure that wilderness characteristics and wildlife habitat are maintained (over time) while allowing resource development, including roaded resource development and timber harvesting.
9. Pre-development plans will be required for all new road construction.

10. The Environment Assessment Process should apply to all reviewable projects.
11. The Graham-Laurier and Redfern-Keily proposed Protected Areas will be formally designated (e.g. Park Act, Environment and Land Use Act) but will be incorporated within the broader formal designation to ensure management consistency.
12. The Graham-Laurier and Redfern-Keily proposed Protected Areas will be managed corporately by the government agencies including BC Parks, BC Environment, Ministry of Forests, and BC Lands.
13. An Advisory Body (based on the membership of sectors at the Fort St. John LRMP Table) will be created to solely advise on interpretation and intent of the Fort St. John LRMP with respect to management issues within those RMZ's (Besa-Halfway-Chowade, Graham North, Graham-Laurier and Redfern-Keily) that form part of the area known as the Muskwa-Kechika.

6.1.2 Protected Area Designation Process

Concurrent with the approval of the Fort St. John LRMP by Cabinet, legal descriptions for proposed Protected Areas will be prepared jointly by BC Parks and BC Lands and subsequently signed off by the chair of the Omineca-Peace Inter-agency Management Committee. A complete land and tenure status report and clear documentation about the intent of special considerations of each Protected Area will be forwarded to the Land-Use Coordination Office.

6.2 Recommended Policy Directions

The Fort St. John working group identified several issues that indirectly or directly affect land-use within the Fort St. John Planning Area that were related to existing government policy. The following policy changes are recommended as part of this land use recommendation to government.

6.2.1 Commercial Backcountry Recreation

The management of public and commercial recreation within the western portion of the planning area was discussed at length by the Table. The Fort St. John LRMP Table recommends the development and use of more detailed recreational use plans, to direct and manage commercial backcountry recreation (CBR) activities. The intent of this direction 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 the local community, region and province
    - equitable forage allocation between commercial and non-commercial use
    - equitable allocation of suitable campsites

6.2.2 Management of Proposed Protected Areas

The Redfern-Keily and Graham-Laurier proposed Protected Areas cover a large portion of the Protected Areas within the Fort St. John planning area. There are significant wildlife and recreational values found within these two areas and the Table has concerns regarding the future management of these areas. The Table recommends that these large Protected Areas be managed differently than most other 'parks', given historical usage, and recommends the following considerations be incorporated in detailed recreation management plans for these two areas:

- That, for personal protection, the carrying and use of firearms be permitted outside of lawful hunting season.
- That permits not be required for non-commercial use of horses, until such time as they are required to protect other values within the areas.
- That horse use not be restricted to existing trails, unless required to protect other important values or to manage erosion or other issues.
- That there be no duplication or unnecessary increase in permits for commercial operations in and adjacent to these Protected Areas, resulting from a change in land status associated with the Protected Area.
- That the Ministry of Environment, Lands and Parks and the Ministry of Forests undertake joint management of these Protected Areas; that a joint management strategy be established prior to designation of the Protected Areas and that the Park Act not supersede the management plan developed locally for these Protected Areas.
- That the majority of the proposed Protected Areas be managed as much for their inherent wilderness and wildlife values as for human use, and that human use be restricted as required to protect and manage these inherent values.
- That there be a commitment of sufficient resources to ensure proper management of the Protected Areas proposed in this Plan.

6.2.3 Recommendations for Directional Drilling under Proposed Protected Areas

The Fort St. John LRMP Table 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 through these Protected Areas. This policy would allow for some economic recovery of these sub-surface resources and would possibly mitigate possible compensation issues. It is the Tables' 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 St. John, Dawson Creek and Fort Nelson planning areas. The group reviewed the proposed Goal 1 and 2 proposals 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 Table. A list of their recommendations and criteria used to develop them are found in Appendix B.

6.2.4 Crown Land Agriculture Policy

The Table endorses any initiative taken at the provincial level to review the Crown Land Agriculture Policy to ensure that it is meeting the needs of both the agriculture sector and government.

6.2.5 Revision of Agricultural Land Reserve (ALR) Boundaries

The current Agricultural Land Reserve boundaries were created in 1974 at a scale of 1:50,000. The Table supports the intent of the Agriculture Land Reserve but has concerns that these reserve boundaries may not truly reflect the agricultural potential of land within the planning area. It is anticipated that the "working forests" will be incorporated into a Forest Land Reserve that will have these boundaries. Therefore, it is the Table's recommendation that the current ALR boundaries be refined at a more detailed scale to more accurately capture the lands agricultural capability.

6.2.6 Forest Land Reserve

The Forest Land Reserve (FLR) is an essential element of BC's Provincial land use strategy. The FLR is designed to retain forest land for timber production and related public values, and to discourage its conversion to urban uses. The Table recommends that Crown land outside of the revised ALR boundaries be included in the FLR.

6.2.7 Grazing Enhancement Fund

The Fort St. John LRMP endorses the establishment of funding for the Fort St. John planning area to meet the grazing objectives of the proposed land use plan.

The Fort St. John LRMP has developed strategies that are designed to minimize conflicts between livestock grazing and other resource users, but recognize that some mitigative strategies are required to deal with impacts of the Forest Practices Code (biodiversity and riparian management concerns) and wildlife guidelines established in the Plan area.

6.2.8 Site "C"

Since 1979, BC Hydro has held a flood reserve on a portion of the Fort St. John Planning area adjacent to the Peace River at an area known as the Site "C' flood reserve, an area previously identified as a potential dam site and reservoir. Above this dam site are several islands in the Peace that the Fort St. John Table would like to recommend for protection status. Current government policy regarding acceptable uses in Protected Areas clearly states that flooding would not be an acceptable use. Thus, full protection status would preclude future hydroelectric development opportunities. To this end the Table recommends the following:

- Any portion of these islands that are outside of the flood reserve be designated as Protected Areas.
- Areas within the flood reserve be designated under the Environment and Land Use Act such that resource development activities or tenures are precluded until such time as a decision is made on the Site "C" proposal.
- If the Site "C" flood reserve is cancelled, the areas designated under the Environment and Land Use Act, be upgraded to full protection status.

The current Site "C" flood reserve causes significant uncertainty in land -use planning within the Fort St. John area planning area. The Table therefore recommends that BC Hydro review its plans for Site "C" prior to any subsequent land use planning exercise, no later than 10 years from the approval date of this Plan.

6.2.9 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 Table 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.

6.2.10 Transition

To ensure continuity of operational planning activity, the Fort St. John LRMP will include phase-in provisions. These provisions will be developed at a later date.

6.2.11 ROS 'Primitive Management'

Detailed planning will be required to develop access management strategies than maintain, over time, the current (1996) proportion/percentage of ROS "Primitive" land within the Besa-Halfway-Chowade Resource Management Zone.

6.2.12 Charlie Lake Licensed Water Supply Area

The Charlie Lake watershed has been identified as a significant source of water for the use of residents of the planning area. There is a broad general concern that this waterhsed has been negatively affected by settlement and resource development. Although this has not been proven satisfactorily to date, some water users believe that water quality and quantity have been negatively affected.

The Charlie Lake watershed does not meet the intent of official community watershed designation under the Forest Practices Code. These guidelines were developed to protect water quality and quantity in smaller, heavily licensed watersheds (<500 km2) from less than adequate forest and/or range practices. The prescriptions as listed and described in the Community Watershed Guidelines would not significantly protect water quality and quantity as currently written. Designation of this watershed as a 'community watershed', although possible under a higher level plan such as an LRMP, would cause residents and industry unnecessary bureaucracy with little substantive protection for this important water source.

6.3 Roles and Responsibilities

6.3.1 Interagency Management Committee

The responsibilities of the Omineca-Peace Interagency Management Committee (IAMC) are to:

- co-ordinate and ensure plan implementation by the various resource agencies;
- review and provide recommendations on proposed amendments;
- reconvene the Table for plan interpretation or the implementation report;

6.3.2 Government Agencies

All applicable resource management agencies are responsible for:

- preparing an annual monitoring report on plan implementation;
- preparing an implementation matrix and action plan to ensure that strategies and objectives are implemented;
- reviewing more detailed plans and resource management plans to ensure consistency with the LRMP; and,
- distributing a copy of the approved plan to major licensed resource users, resource agency staff, stakeholders and interested public

6.3.3 First Nations

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

6.3.4 Public

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

6.4 Direction for More Detailed Planning

More detailed plans include a wide range of planning processes including, but not limited to landscape unit plans, pre-tenure plans, resource plans, co-ordinated access management plans and Protected Area Management Plans. Where there is no detailed planning process for a defined area, plans will 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.

6.5 Criteria that Apply to More Detailed 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, and
- ensure all subsequent plans are consistent with the LRMP

7.0 Monitoring and Amendment

7.1 Plan Term & Review Schedule

The term of the LRMP will be 10 years with a formal review in 2002 (year 5). The scheduled amendment and review process to renew the LRMP will begin 2005 (year 8).

7.2 Monitoring Committee & Annual Reporting

The Fort St. John LRMP Table recommends that the LRMP Working Group be used as the plan's monitoring committee and assist the interagency management committee (IAMC) with reviewing an annual 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, more detailed planning processes and resource development plans or permits.

By 1998 and annually thereafter the resource agencies will prepare an LRMP monitoring report for the LRMP Working Group to review. It will include:

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

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 release of the Monitoring Report, the LRMP Working Group will hold an annual 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.

7.3 Draft Monitoring Indicators

Monitoring indicators were developed by the Table for the majority of the strategies in the General Management Direction and within each RMZ. The indicators are considered to be a draft and may be refined by the resource management agencies responsible for implementing the plan. They have not been updated with the current management objectives and strategies.

7.4 Plan Amendment

Local or operational planning processes may, through more detailed mapping, research or public involvement, recommend changes to the Land and Resource Management Plan. The outcome of LRMP Monitoring Committee meetings may also be recommended amendments to the plan. These would be communicated by the LRMP Chairperson (or IAMC designate) to the Omineca-Peace Inter-agency Management Committee for their consideration.

7.4.1 Plan Updates (Minor Amendments)

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

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

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

7.4.2 Unscheduled (Major) Amendments

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 objectives and/or strategies set out in the plan

The LRMP Table, public or agencies may identify issues that require an unscheduled amendment. These will be identified in the Annual Report or at an annual 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, regulations, and policies.

The public will be involved in the plan amendment process.

Further direction will be provided by the Land Use Co-ordination Office (LUCO) on what constitutes a major amendment to the plan.

7.4.3 Scheduled Amendments

A scheduled amendment will involve the review of 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 and review process, consistent with existing legislation, regulations and policies. The public will be involved in the amendment process.

7.4.4 Audit Process

An audit process should be developed so that the success of implementing the LRMP can be measured. One method that can be used is for the LRMP Chair and the IPT to contract with an independent auditor. Through interviews, field work or other methods, the auditor determine the success of implementation. The audits, which should require about one to two weeks work, could be carried out every two years, beginning in 1999, and ending with the 8 year review of the plan. Results of audits can be presented at the annual meeting.

8.0 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.

8.1 Interpretation of Land Use Objectives 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 Omenica-Peace Inter-agency Management Committee for resolution.

8.2 Appeal of Resource Management Practices

Where the public or agencies raise concerns with specific resource management practices that are occurring in the LRMP planning area, 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.

8.3 Reconvening the LRMP Table

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

APPENDICES

Appendix A Fort St. John LRMPTable Members[1]

Sector	Representative
Environmental Conservation	Wayne Sawchuk
Guide-Outfitting	Ray Jackson
Hardwood Forest Industry	John Dymond
Hardwood Forest Industry	Lyle Mortenson
Heritage	Pat Westergaard
Labour	Allana MacAulay
Labour	Ron Wagner
Local Urban Government	Rob Fraser
Local Rural Government	Karen Goodings
Local Rural Government	Jean Leahy
Ministry of Agriculture, Fisheries and Food	Allan Blair
Ministry of Employment and Investment (Minerals)	Jamie Pardy
Ministry of Employment and Investment (Energy)	Tom Ouellette
Ministry of Environment, Lands and Parks (Environment)	Mike Lambert
Ministry of Environment, Lands and Parks (Lands)	Alex Ostapiuk
Ministry of Environment, Lands and Parks (Parks)	Don Roberts
Ministry of Forests	Andy Johnson
Non-Commercial Hunters and Anglers	Barry Holland
Petroleum and Natural Gas	Van Greig
Petroleum and Natural Gas	Rob Jefferies
Ranching	Larry Beale
Recreation	Ray Van Skiver
Small Business	Judy Thomas
Softwood Forest Industry	Dave Menzies
Tourism	Ella Fraser
Trapping	Arnold Churchill
Utilities, Transmission Lines and Transportation	Eric Mohun

[1] *Table members as of July 2, 1996, when consensus was achieved.*

Appendix B Recommendations of Environmental Conservation and Oil and Gas Sector Sub-Committee on Directional Drilling under proposed Protected Areas

Criteria NOT supporting Directional Drilling beneath Protected Areas

1. designation objective relates to subsurface issues (e.g. hot springs)
2. size/shape of area too large to get seismic data (not technically feasible)
3. ecological values compromised by adjacent directional drilling activity
4. spiritual and/or cultural values
5. adjacent topography
6. drilling tech feasibility unsuitable
7. highest pristine areas
8. visual impact
9. too small, intent agreed is that the boundary of either a large or small area should not preclude that area outside of the park from being developed - allow tenure sales of that portion of a DSU (drilling supply unit) that falls outside a designated Class A Park, allow production from DSUs even where a portion of that DSU is taken up by a Protected Area.
10. not geologically prospective near term (indicated by geological trends and activity)

Criteria supporting Directional Drilling beneath Protected Areas

a. designation of PA for recreational cultural purposes (non-ecological values)
b. existing tenure in or adjacent to the Protected Area
c. size/shape technically suitable for directional drilling
d. existing access/infrastructure in or adjacent to Protected Area
e. high term geological potential indicated by geological trends and activity
f. where high pooling operations exist
g. corridor/linear sites
h. topography adjacent seems amenable
i. technical directional feasability

Implementation Recommendations

i. Protected Areas where directional drilling is appropriate should be designated such that directional drilling be allowed otherwise they should be administered as a Class A Park.
ii. List of Protected Areas and their suitability for directional drilling should be reviewed every 10 years. ELU Act sites would move into a Class A park designation where the directional drilling criteria no longer applies, where warranted - long term intent would be to get all ELU Act sites into Class A designation.
iii. Long-term goal - to have all ELU Act sites moved to Class A park designation (Note: This may not be the intent at each of the three LRMP Tables)
iv. No surface disturbance (including seismic)
v. ELU Act sites areas allow for subsurface oil and gas tenures - would allow for new subsurface tenures.
vi. Allow tenure sales on the portion of the DSU which falls outside a designated Class A Park.
vii. Allow production from DSUs even where a portion of the royalties and bonus points to Park management from the revenues from Protected Areas where directional drilling occurs.
viii. where tenure already exists in a Protected Area it will be grandfathered under existing normal rules regarding access, voluntarily surrendered, expropriated by government or resolved under other yet to be determined mechanisms.

Fort St. John LRMP Recommendations

Rationale (Criteria numbered 1 through 10 for NOT supporting directional drilling or criteria numbered a through i in support of directional drilling) are included after each proposed Protected Area.

Appropriate
Sikanni Canyon (b, d, e)

Sikanni Falls (d, e)

Ekwan Lakes (c, d and e subject to First Nations review)

Beatton-Doig Canyon (b, e)

Appropriate
Chinchaga Lakes (b, d and e subject to First Nations Cultural review)

Not Appropriate
Pink Mountain (9)

Sikanni Old Growth (5)

Peace River Corridor Sites (9 including Golata Creek)

Milligan Hills (2, 3, 5)

Not Appropriate
Graham-Laurier (2)

Redfern-Keily Creek (2, 3, 5)

Appendix C Glossary Of Terms

ACCESS MANAGEMENT
the overall mandate for the administration of the planning, construction, maintenance, use and deactivation of present and proposed Forest Service Roads, operation roads and non-status roads on Crown Lands within or outside Provincial Forests (including Tree Farm licences (TFL)), in conjunction with Timber Supply Analysis (TSA) and TFL plans, resource development plans and in addition to emergency pest and fire contingency plans.
(From: C.A.M.P, Coordinated Access Management Planning, A Guide to Planning, Control and Deactivation of Resource Roads on BC Crown Lands, MELP/MOF, November 1994)

AGE CLASS
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.

AGRICULTURAL CODE OF PRACTICE FOR WASTE MANAGEMENT
purpose of this Code is to describe practices for using, storing and managing agricultural waste that will result in agricultural waste being handled in an environmentally sound manner.

AGRICULTURAL LAND RESERVE - ALR
established under the Land Commission Act in April, 1973. Principal objective is the preservation of Agricultural Land for farm use and encouragement for establishment and maintenance of family farms.

ALIENATE
to convey or transfer land from crown status to fee simple.

ALLUVIUM
sand, clay and other earth materials gradually deposited along river beds and floodplains.

AQUIFER
a water bearing stratum of permeable rock, sand or gravel.

ARCHEOLOGICAL SITES
locations that contain physical evidence of past human activity for which the application of scientific methods of inquiry (i.e. survey, excavation, data analysis) 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.
(from: Douglas Glaum communication, April 1996)

ASSEMBLAGES
collection or aggregate, a number of persons or things assembled.

AVIAN
of, or pertaining to birds.

BEST MANAGEMENT PRACTICES
accepted methods for controlling non-point sources pollution, may include one or more conservation practices.

BIODIVERSITY

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.

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.

Applying biodiversity emphasis options to landscape units across a planning area is a key biodiversity management strategy. LRMP tables can indirectly assign biodiversity options to landscape units consistent with broad scale land use zonation using lower biodiversity emphasis.

When landscape level biodiversity management options have been established, the requirement for maintaining biodiversity in individual strands can be determined from Biodiversity Field Guide.

(from: Biodiversity Guidebook, September 1995)

BIODIVERSITY - LOWER LEVEL

lower biodiversity emphasis, first in a range of three landscape level options to maintain biodiversity. Where the primary management objectives are primarily socio-economic demands such as timber supply, the lower biodiversity emphasis option may be appropriate. Habitat is provided for a wide range of species, however, the pattern of biodiversity will be significantly altered. Accordingly, there is a relatively high risk that some native species will be unable to survive in a specific area.

(from: Biodiversity Guidebook, September 1995)

BIODIVERSITY - INTERMEDIATE LEVEL

intermediate biodiversity emphasis, second option, essentially a trade-off between biodiversity conservation and timber production. The risk to eliminating certain species from an area is reduced.

(from: Biodiversity Guidebook, September 1995)

BIODIVERSITY - HIGHER LEVEL

higher biodiversity emphasis, an option recommended for those areas where biodiversity conservation is a high management priority. It gives a higher priority to biodiversity conservation and has the greatest impact on timber supply.

(from: Biodiversity Guidebook, September 1995)

BIODIVERSITY - STAND LEVEL

Stand level - *stand management to maintain biodiversity*, 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.

(from: Biodiversity Guidebook, September 1995)

BIOGEOCLIMATIC ZONES

are geographic areas having similar patterns of energy flow, vegetation and soils as a result of broadly homogeneous climate.

(from: Biodiversity Guidebook, September 1995)

Blue Listed Species

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.

Broad Ecosystem Units

a permanent area of the landscape, meaningful to animal use, that supports a distinct kind of dominant vegetative cover, or distinct non-vegetated cover. These units are defined as including potential (climax) vegetation and any associated successional stages (for forests and grasslands).

Buffer Zone

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 *leave strips* - an undisturbed strip of vegetation around a sensitive resource area.
(from: Environmental Guidelines for Seismic and Drilling Operations in Northeast British Columbia (Interim), MELP, November 1994.)

Capability Mapping

a habitat interpretation for a species which describes the greatest potential of a habitat to support that species. Habitat potential may not be reflected by the present habitat condition or successional stage.

Caribou Management Zone

areas where operable timber supply has been reduced to meet the requirements of caribou habitats.

Capability Ratings (habitat) for Ungulates (Classes 1 through 6)

Capability ratings are established on the ability of the land to meet the total needs of the ungulate species over the long term. In terms of food and cover needs, the ratings are based on the optimum vegetational stage (successional stage) that can be maintained assuming good management practices that do not degrade the environment or the land base.

- Class1 Lands in this class have no significant limitations to the production of ungulates.
- Class 2 Lands in this class have very slight limitations to the production of ungulates.
- Class 3 Lands in this class have slight limitations to the production of ungulates.
- Class 4 Lands in this class have moderate limitations to the production of ungulates.
- Class 5 Lands in this class have severe limitations to the production of ungulates.
- Class 6 Lands in this class have limitations so severe that there is no ungulate production.

(Inter-agency Planning Team definition - primarily from the map legend from Northeast Coal Habitat Inventory Studies, Resource Inventory branch, Victoria, 1977-79)

Clearcutting Silvicultural System

the process of removing all trees in a stand in one cutting operation. The previous stand is replaced with an even aged crop of new trees through planting and or natural regeneration.

Coarse Woody Debris

sound and rotting logs and stumps that provide habitat for plants, animals and insects and, are a source of nutrients for soil development.
(from: Biodiversity Guidebook, September 1995)

COLIFORMS

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: Draft Community Watershed Guidebook, March 1996)

COMMERCIAL ACCESS

roading or the use of roads in support of commercial non-industrial activities (tourism, guide outfitting, angling, etc.).

COMMUNITY WATERSHED (AS DESIGNATED BY THE FOREST PRACTICES CODE)

a watershed with a drainage area of not more than 500 km^2 that

- is licensed under the *Water Act* for community water use, or
- is licensed under the *Water Act* for domestic water use and the holder of the license, the district manager, the designated environmental official and Minister of Health, all agree that the area should be regarded as a community watershed.

COMMUNITY WATERSHED PROTECTION GUIDELINES

recognize water quality, quantity and timing of flow as the principles in the community watersheds, and provide for their protection and enhancement by guiding and regulating resource management activities.

CONFLUENCE

place where streams meet.

CONIFEROUS

cone bearing evergreen trees or shrubs, usually with needle-shaped or scale-like leaves. The wood of coniferous trees is known as softwood (e.g. pine, fir and spruce).

CONNECTIVITY

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:

- upland to upland
- upland to stream
- upland to wetland
- cross-elevational

(from: Biodiversity Guidebook, September 1995)

CONSERVATION DATA CENTRE

a division of BC Environment that tracks species and plant communities that are considered threatened or endangered at the provincial, national or global level.

CRITICAL HABITAT

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.
(from: Draft Wildlife Habitat Areas Field Guide, October 1994)

CUTOVER
land cleared of trees

DECIDUOUS
trees or shrubs, commonly broad leafed, that shed their leaves annually. The wood of deciduous trees is known as hardwood (e.g. aspen).

DFO
Department of Federal Fisheries and Oceans.

DIAMETER AT BREAST HEIGHT (DBH)
the diameter of a tree, measured at 1.3 m above the ground. A measurement taken at approximately breast height and used as the standard for describing the diameter of a tree.

DISCOURAGE
to hinder by disfavouring: deter;
to attempt to dissuade .

ECOSECTION
large, defined geographic units based primarily on landform and climate that are used to divide the province into large physiographic units.

ECOSECTION REPRESENTATION
the degree to which the area represents the biophysical features of the ecosection, especially its ability to capture the full range of biogeoclimatic units.

ECOSYSTEM
a community of animals, plants and bacteria and its interrelated physical and chemical environment.

ENCOURAGE
to spur on : stimulate;
to give help or patronage to : foster

ENDANGERED
a species facing imminent extirpation or extinction, COSEWIC.

ENHANCE
to add or contribute to as: improve; increase.

ENSURE
to make sure, certain, or safe : guarantee
making certain or inevitable of an outcome, but INSURE sometimes stresses the taking of necessary measures beforehand.

EQUIVALENT CLEAR CUT AREA (ECA) THRESHOLD LEVELS

term used to describe a second growth back in relation to its hydrological equivalence to a recent clear cut. As second growth develops, the hydrological impact on the site is reduced. The rate of reduction is expressed in proportion to the height of the second growth. On average, a stand must be at least 9 metres in height before a stand can be considered hydrologically recovered.

FACILITATE

to make easier.

FLYWAY

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 MANAGEMENT REGIME (LOW, MODERATE OR HIGH INTENSITY)

A forest management regime (low, moderate or high intensity) is a general forest resource management statement incorporated into the majority of the resource management zones within the planning area. It is intended to describe the intensity of forest resource management activity (timber harvesting, road construction, silviculture, etc.) in a specific RMZ.

• ***High intensity*** areas are extensively logged and roaded with numerous tree plantations at various stages. Forest resource development is a major resource value within the zone. Timber licensees have made substantial investments (such as road construction) within the RMZ. A high level of industrial forestry activity is anticipated over the long term.

• ***Moderate intensity*** areas are currently logged or forecast for timber harvesting and subsequent forest management activities at a substantially lower level of intensity than in high intensity areas. Industrial forest activity is one of several resource values. Forest licensees have made some substantial investments into forest resource infrastructure within the zone. Forest resource development may not be the most prominent industrial activity in the RMZ.

• ***Low intensity*** areas have, to date, experienced minimal industrial forest management activity. Previous timber harvesting may not have occurred or have been completed and cutblocks may be in various stages of forest regeneration. In general, low intensity areas have higher biodiversity, conservation, recreation and wildlife values. Future timber harvesting and related forest management activity is anticipated but at a level less than in RMZ's with a moderate forest management regime. *(Source; IPT)*

FOREST PRACTICE

timber harvesting, road construction, road maintenance, road use, road deactivation, silviculture treatments, botanical forest product collecting, grazing, hay cutting, fire use, control, suppression and any other activity that is

• carried out on land that is

i) Crown Forest Land

ii) range land, or

iii) private land that is subject to tree farm license or a woodlot license, and

•carried out by

i) 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

ii) 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 BC. 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

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 reforest. Fragmentation due to forest harvesting should be viewed and managed to mimic fragmentation resulting from natural disturbances.

Fragmentation can lead to declines in biodiversity in three ways:

- 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.

(from: Biodiversity Guidebook, September 1995)

GREEN-UP

a cutblock that supports a stand of trees that

- has attained the green-up height specified in the higher level plan for the area,
- in the absence of a higher level plan for the area, has attained a height that is 3 metres or greater.

(from: Green-Up Guidebook, December 1995)

GROUNDWATER

subsurface water found in the zone of saturation.

GROUNDWATER RECHARGE

the inflow to an aquifer.

HABITAT

an area in which a plant or animal naturally lives; part of a broader unit, the ecosystem.

HEADWATERS

the source and upper reaches of a stream, also the upper reaches of a reservoir.

HIGHER LEVEL PLAN (HLP)

In the broader context, higher level plans refer to plans, agreements or objectives as defined in the Forest Practices Code. They provide the strategic context for operational plans that determine the mix of forest resources to be managed in a given area. There are two main categories:

HIGHER LEVEL PLANS, CON'T

1 Plans that are directly enabled through Part 2 of the *Forest Practices Code of British Columbia Act*, including objectives for resource management zones, landscape units, sensitive areas and interpretive forest sites and recreation sites and trails.

2 Plans that are developed under non-Forest Practices Code legislation and policy. These include plans that are authorized by Cabinet, plans pursuant to Section 4(c) of the *Ministry of Forests Act* that have been authorized by a District Manager with direction from the chief forester and management plans, which may be designated as higher level plans by the chief forester for tree farm licenses, and by the regional manger for other agreements under the *Forest Act*.

The following is a hierarchy of higher level plans:

- plans approved by Cabinet or three Ministers (such as CORE land-use plans)
- resource management zone objectives (such as those developed for an LRMP)
- landscape unit objectives
- sensitive area objectives
- 4(c) plan under the Ministry of Forests Act.
- interpretive forest site, recreation site or trail objectives
- management plan

Note: By legislation, landscape unit and sensitive area objectives must be consistent with resource management zone objectives.

HYDROLOGY

the science of the waters of the earth, water properties, circulation, principles and distribution.

IDENTIFIED WILDLIFE

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

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.

INDIGENOUS

existing, growing or produced naturally in a region.

INDUSTRIAL ACCESS

roading and other infrastructure requirements related to the oil and gas, timber, mineral and trapping industries.

INSTREAM FLOW REQUIREMENT

the minimum amount of water required in a stream to maintain the existing aquatic resources and associated wildlife and riparian habitat.

INTEGRITY

an unimpaired condition; soundness,
the quality or state of being complete or undivided; completeness.

LAKE CLASS
a designation, made by the district manager, for lakes with a riparian class of L1 that indicates the width of a lakeshore management zone and practices that are appropriate within that zone.

LAKESHORE GUIDELINES
designates which management practices are acceptable within reserve and management zones.
(from: Lake Classification and Lakeshore Management Guidebook: Prince George Forest Region, November 1995)

LAKESHORE MANAGEMENT AREA
an area established adjacent to a lake with a riparian class of L1, consisting of a riparian reserve zone determined in accordance with the Forest Practices Code of BC, a lakeshore management area, and a lakeshore management zone.

LAKESHORE MANAGEMENT ZONE
portion of the lakeshore management area established by the district manager around a lake with a riparian class of L1, consisting of a riparian reserve zone or if there is no riparian reserve zone, that are located adjacent to the lake.

LANDSCAPE
a watershed or series of similar and interacting watersheds, usually between 10,000 and 100,000 ha in size.

LANDSCAPE UNIT
a planning area, generally up to 100,000 ha, delineated according to topographic or geographic features such as a watershed or series of watersheds and, as designated by a district forest manager.
(from: Biodiversity Guidebook, September 1995)

LARGE WOODY DEBRIS
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 metres or greater.

LAND AND RESOURCE MANAGEMENT PLANNING
The sub-regional integrated resource planning process for British Columbia. LRMP considers all resource values and requires public participation, interagency coordination and consensus building in land and resource management decisions.

LIMNOLOGY
the branch of hydrology pertaining to the study of freshwater, especially ponds and lakes.

LINEAR DEVELOPMENT
straight line industrial development that is typical of powerlines, highways, gas lines and seismic activities.

LOCAL RESOURCE USE PLAN (LRUP)
district or landscape level plans providing objectives and guidelines for use and protection of valued resources. Examples include integrated watershed management plans, coordinated access management plans and wilderness/ recreation plans.

MAINTAIN
to keep in an existing state (as of repair, efficiency, or validity); preserve from failure or decline. The intent of the Table is that "maintain" is not used in a strict, narrow, sense, to such an extent that no use or change in use is tolerated. It is recognized that natural processes do not preserve the natural environment in an unaltered state. Rather, changes occur over time and space, while they appear to be the same.

MANAGE
to handle or direct with a degree of skill or address,
to treat with care; to exercise executive, administrative, and supervisory direction.

MATURE GROWTH
or *mature seral-stage*, 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.
(from: Biodiversity Guidebook, September 1995)

MAXIMIZE
to increase to a maximum;
to make the most of.

MEI
Ministry of Employment and Investment.

MELP
Ministry of Environment, Lands and Parks.

MOF
Ministry of Forests.

MINIMIZE
to reduce to a minimum.

NATURAL DISTURBANCE TYPES (NDTs)
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:

- 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 eco systems.

(from: Biodiversity Guidebook, September 1995)

NATURAL STREAM FLOW
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.

NON-POINT SOURCE POLLUTION
pollution discharged over a wide land area, not from one specific location.

NOT SATISFACTORILY RESTOCKED (NSR)

productive forest land that has been denuded and has failed, partially or completely, to regenerate either naturally or artificially.

OLD GROWTH MANAGEMENT AREA (OGMA)

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.
(from: Biodiversity Guidebook, September 1995)

OLD-GROWTH

or *old-seral stage* 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 biogeo-climatic zone to another.
(from: Biodiversity Guidebook, September 1995)

OPERATIONAL PLAN

details 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 Five Year Silvicultural Plan.
(from: Higher Level Plans: Policies and Procedures, May 1996)

PARTIAL RETENTION

Partial retention is a practice designed to meet MOF Visual Quality Objectives (VQO). The partial retention VQO requires that alterations remain visually subordinate to the characteristic landscape. Repetition of the line form, colour and texture is important to ensure a blending with the dominant elements. In the managed forest, partial retention may apply to areas where landscapes are of aesthetic importance and where management activities generally can match the landscape character and do not cause obvious intrusion (e.g. where landscapes can absorb change).
(Source; MOF VQO policy)

PATCH

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.
(from: Biodiversity Guidebook, September 1995)

PLANT COMMUNITY

an abstract unit based on sample plots of climax vegetation that possesses similar vegetation structure and native species composition and occurs repeatedly in similar habitats.

POLLUTION

any alteration in character of quality of the environment which renders it unfit or less suited for certain uses.

POTABLE
water fit for human consumption without further treatment.

PRESCRIPTION
a set of detailed directions for managing habitat for identified wildlife.
(from: Draft Managing Identified Wildlife Guidebook, February 1996)

PRESERVE
to keep safe from injury, harm, or destruction : protect,
to keep up and reserve for personal or special use.

PRIORITY FISH SPECIES
freshwater game fish species such as kokanee salmon, rainbow trout, bull trout, walleye and burbot.
(from: Fish-Stream Identification Guidebook, July 1995)

PROMOTE
to contribute to the growth or prosperity of : further.

PROTECTED AREA
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
to cover or shield from exposure, injury, or destruction : guard.

PROVIDE
to make a proviso or stipulation,
to make preparation to meet a need; to supply something for sustenance or support.

QUANTIFY
to make explicit the logical quantity of; to determine, express, or measure the quantity of.

RARE ECOSYSTEM
an ecosystem (either *site series* - sites capable of producing the same late seral or climax plant communities within a biogeoclimatic zone or variant, or *surrogate* - to elect as substitute) that makes up less than 2% of a landscape unit and is not common in adjacent landscape units.
(from: Biodiversity Guidebook, September 1995)

RED-LISTED SPECIES
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 BC is endangered. Threatened taxa are those indigenous species or subspecies that are likely to become endangered in BC if factors are not reversed.

REGIONALLY IMPORTANT SPECIES
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
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
re-establish to condition of good health.

RESERVE
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.
(from: Biodiversity Guidebook, September 1995)

RESOURCE MANAGEMENT OBJECTIVES
These statements apply to specific resource management zones and are derived by the LRMP working group to sustain or enhance identified resource values. They provide direction to future land use resource management activities within a resource management zone (RMZ).
(Source; IPT)

RESOURCE MANAGEMENT STRATEGIES
These are generally strategic-level resource management prescriptions that apply to specific resource management zones. These strategies or actions are derived by the LRMP working group to achieve resource management objectives.
(Source; IPT)

RESOURCE MANAGEMENT ZONE (RMZ)
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.
(Source: *IPT*)

RESTORATION
ecological restoration is the process of repairing damage caused by humans to the diversity and dynamics of indigenous ecosystems.

RIPARIAN LAKE CLASSES
determined by lake size and the biogeoclimatic zone within which it occurs. Depending on these characteristics, the lake is given a designation of either L1, L2, L3 or L4.
(from: Riparian Management Area Guidebook, December 1995)

RIPARIAN HABITAT

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.
(from: Draft 2 - Riparian Management Area Guidebook, March 1995)

RIPARIAN MANAGEMENT AREA

an area determined in accordance with the Forest Practices Code Riparian Management Areas, that
- 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.

(from: Draft 2 - Riparian Management Area Guidebook, March 1995)

RIPARIAN MANAGEMENT ZONE

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.
(from: Draft 2 - Riparian Management Area Guidebook, March 1995)

RIPARIAN RESERVE ZONES

an area adjacent to a stream, wetland, or lake, within the Resource Management Zone, where no forest practices may occur.
(from: Draft 2 - Riparian Management Area Guidebook, March 1995)

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 ACTIVITY
Primitive	≥ 8 km from a 4-wheel drive road ≥ 5000 hectares	• 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	≥ 1 km from a 4-wheel drive road ≥ 1000 hectares	• 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	≥ 1 km from a 2-wheel drive road ≥ 1000 hectares	• 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 gravel or dirt surface with a gravel or dirt surface	• 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 pre ferred

SCENIC AREA

any visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager.

SELECTION SILVICULTURE SYSTEM

this process has the following characteristics:

- harvesting timber at specified repeated intervals,
- harvesting single scattered individuals or small groups of individual trees,
- encouraging relatively frequent establishment of regeneration in canopy gaps,
- encouraging and maintaining an uneven canopy and an uneven-aged stand structure of at least three well-represented age classes,
- including intermediate cuttings in immature age classes, concurrent with the harvest of mature timber or otherwise, during the cutting cycle, to meet specified stand management goals.

SENSITIVE AREAS

Sensitive areas are sites on Crown land that, due to special circumstances, require special management or measures, different from adjacent lands, to conserve forest resources.

Sensitive areas are generally less than 1000 ha in size and are established under the Forest Practices Code under the authority of a District Manager in consultation with the designated environment official.

(Inter-agency Planning Team definition - primarily from the 'Higher Level Plans: Policy and Procedures', Forest Practices Code of British Columbia, Queens Printer, Victoria, June 1996.)

SENSITIVE SPECIES

those plant or animal species susceptible or vulnerable to activity impacts or habitat alterations.

SEQUENTIAL DEVELOPMENT

a method by which industrial forestry development proceeds across the landscape so as to minimize the negative effects of development and related access on other non-industrial resources such as wildlife habitat or recreational values. Development and rehabilitation is completed in one area before new areas are developed.

SERAL STAGES

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.

SILVICULTURAL SYSTEMS

a planned cycle of activities by which a forest stand, or group of trees, is harvested, regenerated and tended over time. Silvicultural systems use such practices as clearcutting and selection.

SPECIAL MANAGEMENT AREA

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
(a) any wildlife 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
a community of trees with common characteristics; one stand can be distinguished from another by age, species, site type and other characteristics.

STAND ATTRIBUTES
components of a forest stand that are to be retained to maintain biodiversity. These components include: dead wood, standing dead trees, coarse woody debris, large living trees, tree species diversity, structural diversity and forest soils.
(from: Biodiversity Guidebook, September 1995)

STAND LEVEL
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
to excite to activity or growth or to greater activity.

STRUCTURAL ATTRIBUTES
components of a forest stand (including living and dead standing trees, canopy architecture and fallen trees) which together determine stand structure.
(from: Biodiversity Guidebook, September 1995)

SUITABILITY MAPPING
a habitat interpretation that describes the current potential of a habitat to support a species. Habitat potential is reflected by the present habitat condition or successional stage.

THREATENED OR ENDANGERED SPECIES
indigenous species that are either threatened or endangered, and identified as 'red-listed' by the Ministry of Environment, Lands and Parks.
(from: Biodiversity Guidebook, September 1995)

TOPOGRAPHY
the general configuration of the land surface, including relief and position of natural and man-made features.

TRADITIONAL USE SITES
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 of past event of cultural significance.
(from: Douglas Glaum communication, April 1996)

TRIBUTARY
a stream that contributes its water to another stream or body of water

TURBIDITY
describes the cloudy or hazy characteristics of water which is usually due to the presence of suspended particles of silt and clay.
(from: Draft Community Watershed Guidebook, March 1996)

UNGULATE
a hoofed mammal.

VIABLE POPULATION
a population that can withstand the normal cycle of environmental factors without going to extinction.
(from: Biodiversity Guidebook, September, 1995)

VISUAL QUALITY OBJECTIVE
a resource management objective established by the district manager or contained in a higher level plan that reflect the desired level of visual quality based on the physical characteristics and social concerns for the area.

VULNERABLE SPECIES
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.
(from: Draft Wildlife Habitat Areas Field Guide, October 1994)

WATER LEVEL STREAM FLOW
measure of the water flowing in the stream at any point in time.
(from: Draft Community Watershed Guidebook, March 1996)

WATER QUALITY PARAMETERS
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.
(from: Draft Community Watershed Guidebook, March 1996)

WATERSHED
an area drained by a particular stream or river. A large watershed may contain several smaller watersheds.

WATERSHED ASSESSMENT
an evaluation of the cumulative impact that proposed activities and developments would have on stream flows, suspended sediment, landslide and stream channel stability within the watershed. The assessment has three levels:

- Level I: reconnaissance level analysis; identifies watersheds at risk and cumulative effects and identifies specific hazards that need to be addressed, such as peak flows, 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

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 vegetation and soil development.

WILDERNESS

This word has a different meaning for different people and is therefore difficult to define. One definition is:

• an area of land generally greater than 1000 ha that predominantly retains its natural character and on which human impact is transitory, minor and in the long-run substantially unnoticeable.

(from 'Managing Wilderness in Provincial Forests' - A Summary of the Policy Framework, December 1989. Province of British Columbia, Ministry of Forests)

WILDLIFE

(a) a vertebrate that is a mammal, bird, reptile or amphibian prescribed as wildlife under the *Wildlife Act,* 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 or in 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 CAPABILITY

adaptability is the potential of a habitat unit to produce an animal species under specified technological controls, irrespective of the numbers of that species that are currently being produced on that unit (Demarchi *et al. 1990).*

WILDLIFE HABITAT AREA

a unit of land necessary to meet the habitat requirements of one or more species of identified wildlife
(from: Biodiversity Guidebook, September 1995)

WILDLIFE MANAGEMENT AREA

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

a standing live or dead tree with special characteristics that provide wildlife habitat for the conservation or enhancement of wildlife. Characteristics include large diameter and height for the site, current use by wildlife, declining or dead condition, value as a species, valuable location and relative scarcity.
(from: Biodiversity Guidebook, September 1995)

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)

WOODLOT

a license issued to an individual to manage a specific area of Crown Timber, plus any private woodlands the individual owns. Requires the holder to file a management plan and to harvest at a pre-determined date.

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)

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Energy • allow exploration and development of resources within appropriate regulatory framework • maintain and enhance opportunities for environmentally responsible development of surface and subsurface resources • ensure development activities and associated access are undertaken with sensitivity to visual and recreational values (e.g. exploration development planning will recognize existing topography and ground conditions to reduce impact on visual and recreation values as much as practical) • promote low impact seismic exploration • encourage efficient and rational subsurface resource development to minimize surface disturbances and maximize subsurface resource utilization	• # of tenures 1996 vs 2001 • # of proven reserves 1996 vs 2001 • money from tenure sales • km of shot seismic • # of WA's issued • # of wells drilled	• ongoing monitoring	• MEI
• minimize impact of industry on local residents by continuing to work with industry to lower emissions and decrease visual impacts	• Air Quality complaints received 1996 vs 2001 • # of consultation group meetings per year	• quantify and establish trends in public's perception of air quality	• BCE • PRRD
• ensure oil and gas exploration and development activities are undertaken with sensitivity to wildlife and wildlife habitat	• # of pre-tenure plans completed	• preplanning is better for wildlife and their habitat	• MEI • BCE
• all new-cut seismic exploration in environmentally sensitive areas shall be heli-portable unless it can be conclusively demonstrated that conventional seismic exploration will not cause significant environmental impacts	• amount of conventional seismic in high biodiversity RMZ's 1996 vs 2001	• quantify use of heli-portable seismic	• MEI
• promote site specific assessments to minimize number of wells in riparian areas	• number of wells in riparian management areas 1996 vs 2001	• decreasing or increasing number of wells in riparian areas	• BCE referral

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Timber			
• quantify the timber harvesting land base and develop policies to reduce the permanent loss of net forest land to roads, landings, seismic lines, wellsites and other developments	• net timber harvesting land base 1996 vs 2001 • amount of roads, landings, seismic lines, wellsites removed from timber harvesting land base	• quantify trends in timber harvesting land base	• Road Access and Density Information • GIS Data • MOF Forest Inventory
• establish general forest production targets for landscape units within the Resource Management Zone (RMZ) consistent with (choose one): (i) low intensity, or (ii) moderate, or (iii) high intensity forest management regimes.	• silviculture activities and/or expenditures • Landscape Units and biodiversity options	• increased silviculture activities are associated with higher timber management	• Forest Cover Maps • GIS Data • MOF ISIS • Licensee MLSIS
• reforest (within appropriate time frames, as determined through landscape planning) all potentially productive brush, non commercial deciduous, and NSR (not sufficiently restocked) areas with ecologically and commercially suitable species while providing for critical wildlife habitat. Time frames recommended are 10 years for high priority areas and 20 years for moderate priority areas.	• ha of NSR reforested/ restocked • amount of backlog NSR in 1996 vs 2001	• NSR land base being converted back to forest land base	• Forest Cover Maps • MOF ISIS
• establish and maintain a permanent road infrastructure to facilitate long term integrated resource management	• length and number of permanent road infrastructures for multiple resource users 1996 vs 2001	• quantify trends in permanent road systems	• GIS • Forest Cover Inventory
• where appropriate, vary cut-block adjacency requirements (in accordance with Forest Practices Code, the Green-up and Biodiversity Guidebooks) to increase timber availability and reduce roading requirements	• # of occasions adjacency requirement have been reduced • timber developed in relation to km of roads	• quantify extent and nature of various adjacency requirements for cut-blocks area in relation to roading requirements	• MOF Timber Staff • 5 Year Plans

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Timber (Con't)			
• minimize losses from damaging agents through aggressive and prompt fire and pest management, including the salvage of damaged or killed timber	• unsalvaged losses to pest and fire in 1996 vs 2001	• quantify losses or trends to damaging agents	• MOF staff • Forest Insect and Disease surveys
• encourage afforestation and sustainable forest management of reverted and low capability agricultural land	• ha of abandoned agricultural land reforested 1996 vs 2001	• quantify any additions to timber harvesting land base	• BC Lands • MOF staff • ISIS
• promptly and aggressively reforest and manage cutovers and wildfires, within the operable timber harvesting land base, to maintain sustainable timber harvest levels	• % of wildfires within the timber harvesting land base reforested • ha (%) of land base reforested after wildfires	• amount of land reforested -licensee -MOF	• MOF • ISIS
• ensure all forest management activities are undertaken with sensitivity to their effects on visual quality ALASKA HIGHWAY	• % of visual quality corridor in non-Greened-Up stage	• quantify impacts to VQO's along the Alaska Hwy	• MOF
• develop a long term plan to manage access and forest management activities incorporating a form of sequential development to accommodate and address the concerns of other tenure holders and resource users GRAHAM SOUTH, GRAHAM NORTH	• completion and multi-agency approval of Graham Total Resource Plan address multiple values. Plan to include operational access management strategies	• areas sensitive to resource development approval subject to a total resource plan	• MOF • BCE • MEI
Recreation			
• manage recreation sites by maintaining visual quality for trail systems, campsites and special features	• ha in visual sensitive areas where VQO is Retention or Partial Retention 1996 vs 2001 • public perception of visual quality along trail systems, campsites and special features	• public perception of visual quality is estimated by the % of the population that would perceive an area to be visually preferred or liked. • public includes residents and visitors	• MOF recreation staff • Perception Rating System (developed by Kamloops LRMP, 1994) based on studies relating public preference to levels of visual impact • GIS data • public perception can be gained from open houses, questionnaires, etc.

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Recreation, Cont'd			
• identify and provide opportunities for the use of suitable Crown land for commercial recreation development and use	• ha of Crown land developed for resort and wilderness tourism • # of commercial backcountry recreation proposals approved • level of compliance with the CBR Policy	• quantify extent and nature of developed opportunities	• BC Lands
• identify areas of high recreation use or significance, for development at lower level planning stages	• % of plan area mapped 1996 vs 2001	• this indicator needs to utilize MOF Recreation Opportunity Spectrum mapping/inventory and recreation features inventory • relies heavily on professional judgement and communication with various recreation groups	• Tourism Capability mapping • ROS - MOF • Recreation Features Inventory - MOF
• develop strategies in lower level plans (e.g. landscape unit plans) to complement the wildlife management policies and management practices of wildlife managers, to sustain wildlife and guide-outfitting opportunities • identify and protect guide-outfitting campsites and cabins • seasonal access (e.g. snowmobile) may be limited to address wildlife habitat needs. A Recreation Use Plan is recommended to address this issue	• wildlife harvest data • hunter days • # of landscape level plans completed 1996 vs 2001	• manage wildlife through strategies developed in Lower Level plans	• BCE
• manage existing tenures and manage the associated grazing activities of guide-outfitter to limit impacts and reduce risk to other resource values (keep grazing out of sensitive habitats, etc.)	• range use (horse use) plans completed that address sensitive habitats 1996 vs 2001	• quantify conflicts • monitoring of range tenures associated with guide-outfitting activities	• BCE • MOF Range Staff

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Recreation, Cont'd			
• develop strategies in lower level plans to maintain a component of the land base classified as ROS 'primitive' land (intent: maintain opportunities for a wilderness recreation experience) remains, recognizing that this component may change in location over time as roads are built and deactivated	• % of planning area in primitive and semi-primitive non- motorized (SPNM) and semi-primitive motorized (SPM)	• relative diversity of recreation opportunities is estimated by predicting the % change of the area in the following ROS classes: primitive, SPNM and SPM	• Recreation Opportunity Spectrum (ROS) Classification System • professional judgement
• incorporate existing recreational activities and access potential for the development of new recreational opportunities in lower level plans (additional motorized recreational pursuits, etc.) • maintain public access to XXX	• user satisfaction, number of recreation users, number of new sites • # of landscape level plans and/or Parks Master plans or Recreation Use plans completed 1996 vs 2001 that incorporate recreation concerns	• recreational opportunities to be incorporated into landscape plans	• Tourism Data • MOF
• provide for motorized recreation access to similar destinations as currently allowed	• km of motorized recreation access corridors 1996 vs 2001	• quantify motorized recreational use	• MOF • BCE
• develop a grazing plan to address issues of forage allocation among tenured users, residents and wildlife	• # of forage allocation plans completed 1996 vs 2001	• quantify grazing plans to address forage allocation issues	• MOF
• identify and manage appropriate grazing management activities (e.g. burns)	• # (ha) of wildlife and range burns 1996 vs 2001	• quantify wildlife and range burns - establish trends	• MOF • BCE
• coordinate existing recreation through lower level planning (e.g. Coordinated Resource Management Plans)	• # of active CRMPs 1996 vs 2001	• CRMPs are used to address local resource conflicts	• MOF • BCE • MEI

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Recreation, Cont'd			
• integrate recreational activities with grazing and resource extraction GRAZING RESERVES	• # of reported conflicts between visitors, ranchers and industry (Problem wildlife committee)	• quantify conflicts	• BC Environment Wildlife Branch
Agriculture & Range			
• develop range use plans according to the Forest Practices Code	• # of Range Use Plans completed 1996 vs 2001	• range use plans tool to address conflicts	• MOF
• encourage an increase in range production, giving preference to integrated use	• AUM's 1996 vs 2001	• quantify range use	• MOF Range staff
• minimize tree/grass/cattle conflicts through integrated management practices	• # of active CRMPs 1996 vs 2001	• CRMPs are used to address local resource conflicts	• BCE • MOF • MEI
• encourage range use plans that will deal with the safety concerns associated with domestic stock within the highway corridor	• # of reported accidents and near-accidents involving vehicle/livestock conflicts 1996 vs 2001	• quantify wildlife and vehicle accidents	• ICBC • MOF
• allow Crown lands with suitable agricultural potential to be designated for agricultural development and use within the appropriate regulatory framework	• # of Ag leases approved	• quantify trends in agricultural land use of Crown land	• MAFF • BC Lands
• ensure the integrity of the Agricultural Land Reserve through the Agricultural Land Commission Act and Regulations • support the purpose and the intent of the Agriculture Land Reserve (ALR) and the conversion of high quality agricultural land through existing processes	• ha in ALR • amount of land in ALR 1996 vs 2001	• quantify trends in ALR change applications	•ALC • MAFF • PRRD
• encourage management plans to reduce wildlife/agriculture conflicts	• number of reported conflicts/year 1996 vs 2001 (to Problem Wildlife Committee) • # of management plans completed • % success in range use plans meeting AUM targets	• quantify conflicts	• BCE • MAFF • MOF

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Agriculture & Range, Con't			
• in forested areas of low value for timber production, encourage conversion to range through clearing and prescribed burning	• ha of low value forested areas converted to range land 1996 vs 2001	• quantify gains to grazing land base	• MOF Burn Plans
• allow for the transfer and renewal of existing tenures	• # of tenures 1996 vs 2001 • # of tenures transferred	• confirm tenure transfer and quantify	• MOF • BC Lands
• applications for new agriculture and range tenures will be reviewed on a site specific basis	• # of applications for new agriculture and range tenures 1996 vs 2001 • # of lower level plans completed (Range use plans, etc.)	• quantify trends in the # of agriculture and range proposals	• MOF • BC Lands • MAFF
Access			
• encourage shared access • encourage deactivation and rehabilitation of unused roads, particularly within visible areas • require winter access unless need for all-season access can be conclusively demonstrated through lower level planning • coordinate access at the Coordinated Resource Management Plan (CRMP) level • maintain existing access including provisions for upgrading • deactivate all temporary linear development • minimize new access development • encourage consistent road construction standards between industries • deactivate all new non-permanent access that is no longer required for resource management	• km of unused roads not deactivated 1996 vs 2001 • # and area of temporary roads deactivated/year (area, ha)	• quantify trends in use and deactivation of roads	• MOF • BCE • MEI
• restrict the development of permanent motorized access adjacent to critical wildlife habitat	• # of pre-tenure plans/landscape plans completed 1996 vs 2001	• prevent occurrence	• MEI • MOF • BCE

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Access, Cont'd			
• in consultation with users, restrict the use of existing motorized access except along designated roads and trails to non-motorized and approved industrial uses to sustain other resource values (e.g. fish and wildlife populations and habitats, rare ecosystems)	• # of km's of access corridors with access restrictions 1996 vs 2001	• quantify and describe access restriction	• BCE • MOF
• upon cessation of tenure holder's activities, return linear development (e.g. roads, pipeline and utility corridors - not seismic lines) to a vegetative state which over time approximates natural conditions using reclamation, rehabilitation, re-contouring, bridge removal and where possible, native species	• ha (%) of linear developments rehabilitated upon completion of activities 1996 vs 2001	• quantify nature and extent of utility, pipeline and road corridor deactivation	• BC Lands • MEI • MOF
• a lower level planning process will identify significant fish and wildlife and other resource values. Where there is a significant risk that these resources may be impacted, access may be limited, restricted or, in special circumstances, prohibited.	• # of landscape level/ pre-tenure plans completed 1996 vs 2001	• # a lower level plan should address any conflicts	• MOF • MEI • BCE
Wildlife			
• identify habitat (by ecosection and landscape unit, on a priority basis) for red and blue listed species (as identified by the Conservation Data Centre)	• # and distribution of species of red and blue listed in planning area 1996 vs 2001	• quantify and describe species present	• BCE • Conservation Data Centre
• incorporate 'Managing Identified Wildlife Guidebook' or appropriate habitat protection criteria, for red and blue listed species, into landscape and stand level plans (as these criteria are developed) • incorporate 'Managing Identified Wildlife Guidebook,' or other habitat protection criteria for grizzly bears, into landscape and stand level plans (as these criteria are developed)	• # of red and/or blue listed species known habitat locations within the RMZ 1996 vs 2001 • abundance and distribution of red and blue listed species • % of plan area mapped at 1: 20 000 scale for red and blue listed species	• applied to areas where blue and red listed species are known to occur within the identified habitat or location • red and blue listed species are defined by the Conservation Data Centre • assumes that RMZ guidelines will be needed, over and above the Forest Practices Code, in certain situations	• Conservation Data Centre Information • Species Inventory Information • MELP Habitat Capability mapping for Critical Areas

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Wildlife, Con't		• preserving habitat will protect populations. Rare and critical habitats will require special management practices. Existing guidelines may not address cumulative impacts	
• identify critical furbearer habitat and incorporate into landscape level plans	• ha (%) of planning area with critical furbearer habitat or capability 1996 vs. 2001	• identify habitat capability/suitability from forest cover, vegetation typing, age distribution and vegetation composition mapping	• wildlife habitat suitability/capability mapping
• where appropriate, incorporate landscape level forest ecosystem networks (FENs) to prevent priority species habitat fragmentation and maintain areas of interior forest habitat (e.g. > 600 metres wide)	• # of lower level (landscape unit/pre-tenure) plans completed • # of forest ecosystem networks (FEN's) 1996 vs. 2001	• assumes connected areas (> 600m wide corridors) are better than isolated areas	• MOF • MEI • BCE
• identify and map high capability ungulate wintering areas at the landscape level 1996 vs 2001 • incorporate the maintenance of high capability ungulate wintering habitat (e.g. thermal and escape cover, suitability of forage and browse) into landscape level plans • establish wildlife habitat areas (WHA's) at the landscape level, to protect critical wintering habitat • plan and develop new access routes that avoid direct disturbance within, or in close proximity to, high capability ungulate wintering habitat	• amount of high capability ungulate habitat mapped in the planning area 1996 vs 2001 • # of WHA's identified in 5 Year Plans	• quantify and describe species present	• BCE

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Wildlife, Con't			
• identify and map medium and high quality grizzly bear habitat, at the landscape level, on a priority basis • plan and develop access to avoid medium and high quality habitats and/or human/bear interactions (e.g. winter access with summer deactivation, exploration and development activities supported by helicopters rather than roads) • identify and designate critical grizzly bear habitat areas as wildlife habitat areas (WHA's)	• % of medium and high capability grizzly bear habitat mapped in the planning area 1996 vs 2001	• quantify and describe habitat present	• BCE
• incorporate medium and high quality grizzly bear habitats and connectivity corridors into landscape level plans • minimize impacts on grizzly bear habitat by ensuring that critical habitat areas are linked by connectivity corridors or forest ecosystem networks (FENs) (where biologically and ecologically appropriate)	• # of FENS 1996 vs 2001 • # of pre-tenure and/or landscape unit plans completed 1996 vs 2001	• lower level plans to address conflicts	• BCE
• develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource development activities with the potential to negatively effect medium and high capability grizzly bear habitat • develop inter-agency development plans (Ministry of Environment, Lands and Parks, Ministry of Forests and Ministry of Employment and Investment) for all resource developments that may negatively affect critical medium and high capability caribou habitat	• # of multi-agency signed off developments or landscape (pre-tenure) plans	• joint developed plans assumes all agencies support the development	• MEI • MOF • BCE
• encourage the use of silvicultural systems that minimize negative impacts on medium and high quality grizzly bear habitat	• % of ESSF in planning area with medium and high suitability grizzly bear habitat present after timber harvesting 1996 vs 2001 • use (ha) of alternate silviculture systems in medium/high capability grizzly bear habitat areas	• quantify use of alternate silviculture systems and negative impacts to grizzly bear habitat	• MOF • BCE

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Wildlife, Cont'd			
• identify and map medium and high capability caribou habitat • identify and designate critical caribou habitat areas as wildlife habitat areas (WHA's) • maintain connectivity (migration/travel) corridors between important seasonal habitats	• amount (ha) in planning area (1 : 20 000 scale) of high and medium capability caribou habitat 1996 vs 2001	• quantify and describe habitat	• BCE
• encourage the use of silvicultural systems that minimize negative impacts on medium and high capability caribou habitat	• ha (%) of medium and high capability caribou habitat present after timber harvesting 1996 vs 2001 • use (ha) of alternate silvicultural systems in medium and high capability caribou habitat areas	• quantify use of alternate silvicultural systems	• MOF • BCE
• maintain stable wetland water levels.	• wetland water levels/year	• wetland water levels are monitored by BCE and Ducks Unlimited	• Ducks Unlimited • BCE - Water Management
Biodiversity			
• the general biodiversity emphasis is: (i) low, or (ii) intermediate, or (iii) high • this Resource Management Zone is a high priority for the initiation of landscape level planning. Landscape level plans will identify and map a number of ecosystem attributes (e.g. rare ecosystems, habitats and plant communities, ecosection representation, biogeoclimatic zones and variants, wildlife habitat classes, critical habitats, environmentally sensitive and wildlife habitat areas for identified wildlife) and incorporate strategies to sustain these attributes. • identify and maintain existing predator-prey systems through the identification and establishment of connectivity corridors at the landscape level	• # of landscape units with approved biodiversity emphasis 1996 vs 2001 • # of landscape/ pre-tenure plans completed 1996 vs 2001		• BCE • MEI • MOF • BC Lands

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Biodiversity, Con't			
• identify and prioritize negatively effected ecosystems for potential restoration and rehabilitation	• # of FRBC watershed restoration proposals/ completions 1996 vs 2001	• Watershed Restoration projects to restore ecosystems	• MOF • BCE
Culture and Heritage			
• recommend an inventory of known resources (cultural and heritage / heritage sites and trails) and designation of significant localities within the zone.	• % of planning area mapped at 1 : 20 000 scale 1996 vs 2001		• MOF • MEI • First Nations • Ministry of Tourism
Minerals			
• ensure mineral exploration activities are undertaken with sensitivity to visual and recreation values	• application of permit conditions as required	• field inspections as required	• MEI
• provide input to lower level planning as required	• # of inputs into lower level planning		• MEI
• inventory and map current aggregate deposits and develop potential maps	• # of reports of aggregate resource sites • # of potential maps produced		• MEI • MELP
• encourage rehabilitative measures on un-reclaimed sites located in visually sensitive areas	• # of sites identified • # of reclamation projects completed		• MEI • MOF • MELP
• road building into currently unroaded areas will be permitted when it can be demonstrated that road access is required and subject of review and approval through established procedures and applicable legislation.	• # of new roads built into currently unroaded areas		• MEI
Fish			
• identify and map critical fish habitat information (e.g. pools, migration patterns, spawning and rearing areas)	• # of stream and rivers with mapped habitat information 1996 vs 2001	• quantify mapped fish inventory information	• BCE

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Fish, Con't			
• incorporate the protection of fish and fish habitat into landscape level plans • incorporate 'Managing Identified Wildlife Guidebook' habitat protection criteria for bull trout into landscape and stand level plans (as these criteria are developed) • determine equivalent clearcut area (ECA) threshold levels for streams with bull trout and incorporate into landscape level plans	• # of landscape level or pre-tenure plans completed in the planning area 1996 vs 2001		• BCE
• identify priority watersheds for Level I and/or II watershed assessments to determine potential negative impacts to fish habitat, riparian areas and water quality from land development activities	• # of Level I or Level II watershed assessments completed 1996 vs 2001	• quantify and describe the # of/and aerial location of Level I and II assessments	• BCE
• minimize permanent access to remote lakes, streams and rivers with high quality fisheries	• number or % of streams and lakes classified as wilderness, walk-in, and road inaccessible 1996 vs 2001	• quantify trends in the improvement or restriction of access to remote lakes	• BCE
Water			
• establish instream flow requirements, lake volumes and stage, wetland levels and determine water quality baseline information for high priority streams, rivers, lakes and wetlands • incorporate licensed water use data and instream flow/ lake level needs for fish and aquatic organisms into landscape level plans	• # of lower level plans (landscape and pre-tenure plans) completed 1996 vs 2001	• a lower level plans should address any conflicts	• BCE - Water Management
• implement an appropriate level of watershed assessment to determine potential negative impacts to water quality	• # of watershed assessments completed	• # of watershed assessments are used to identify problem areas	• BCE
• identify and designate water bodies with significant licensed withdrawals of potable water as Forest Practices Code designated Community Watersheds (where appropriate)	• # of Forest Practices Code designated Community Watersheds 1996 vs 2001	• the application of FPC Community Watershed protection criteria will protect water supply	• BCE

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Water, Con't			
• identify sensitive groundwater recharge areas	• # of sensitive groundwater recharge areas identified and mapped 1996 vs 2001	• quantify and locate groundwater sensitive (FPC designation) areas	• BCE
• manage resource development within sensitive groundwater recharge areas to minimize negative effects on groundwater quality and quantity	• # of landscape level/ pre-tenure plans completed in the planning area 1996 vs 2001	• quantify trends in managing development around and in areas designated as sensitive groundwater recharge areas	• BCE
Protected Areas			
• ensure that (future) management plans for the Protected Area respect the natural, cultural, heritage and recreation values identified by the LRMP Table. The values include...(insert relevant values identified by the Table)	• # of high value Goal 2 local biological, geological, hydrological and cultural features with Protected Areas 1996 vs 2001 • # of Park Master plans completed for PA's in the planning area 1996 vs 2001	• the Table identifies high value features for their area • meant to cover features not covered in other indicators such as high valued fish and wildlife habitat features and high valued recreation and cultural features	• BC Parks • BCE • all agencies
Visual Quality			
• follow Ministry of Forests and other agencies processes' for visual landscape inventories, and setting Visual Quality Objectives in identified scenic areas • identified scenic areas will have their site specific Visual Quality Objectives reviewed and approved in lower level plans in accordance with the Forest Practices Code • a visual landscape inventory will be carried out by Ministry of Forests to determine the visual sensitivity of the scenic areas. Visual Quality Objectives will be established in accordance with the Ministry of Forests visual landscape management system. Forest practices proposed in those scenic areas will be designed and carried out in the field consistent with achieving the Visual Quality Objectives	• # of, area (ha), and description of VQO's in planning area • # of landscape level plans that incorporate visual quality concerns 1996 vs 2001	• visual quality assessments help identify and protect VQOs	• MOF • MEI

Appendix D Draft Monitoring Indicators by Interest

Strategy	Indicator	Methods & Assumptions	Data Sources
Visual Quality, Con't • review existing openings and structures to rehabilitate to a less obtrusive impact e.g. modify openings, use of low visibility colours on structures or install tree breaks • manage visual quality from both river and highway viewpoints • manage visual quality in areas adjacent to designated Protected Areas, maintaining the values identified in the Protected Areas Strategy or significance, to be managed for lower level planning stages			