Robson Valley Land and Resource Management Plan

Summary - April 30, 1999

Robson Valley Land And Resource Management Plan - Introduction

The approved Robson Valley Land and Resource Management Plan (LRMP) provides broad direction for the sustainable use of Crown land and resources in the Robson Valley area. The plan, developed through a local planning process and in consultation with various sectors, balances economic, ecological, spiritual, recreational and cultural interests. It will help to provide greater land use certainty, preserve natural areas for future generations, maintain resource-sector jobs for local workers and increase opportunities for tourism and recreation.

Now that it has been approved by government, the Robson Valley LRMP will be implemented by government agencies, including the provincial ministries of Forests; Environment, Lands and Parks; Energy and Mines; and Employment and Investment. The approved plan will guide a variety of resource management programs and activities, such as forest development planning under the Forest Practices Code.

The Planning Area

All aspects of land and resource management were considered for this area in east central British Columbia. The plan area includes the 1.2 million hectare (ha) Robson Valley timber supply area and the adjacent 223,000 ha Mount Robson and Mount Terry Fox provincial parks. About 4,000 people live in the area, which includes the major communities of McBride and Valemount.

The Planning Process

The Robson Valley LRMP recommendations and options were developed over a three year period by people representing more than 30 interest sectors. Every aspect of the plan was negotiated at the Robson Valley Round Table and the planning team was able to agree to the majority of the recommendations they developed. However, in some cases, the table members could not agree and the conservation and resource sectors submitted options for government's consideration. Provincial government staff then conducted consultations with environmental groups, forest industry and labour representatives and local government to ensure that all concerns were considered. The approved plan builds on the agreements that were reached at the planning table and incorporates these consensus recommendations and government's decisions on specific issues where the table members did not reach consensus.

Decisions Reached

In the few areas where consensus could not be reached, the provincial government's decisions strike a balance between conservation and resource development values. In some cases, the government has created subzones within resource management areas

that will be managed in ways that take into account specific environmental concerns within those areas. For example, the Upper Goat area has been designated a subzone within a general resource management zone. Within this subzone, there will be harvesting of at least 445,000 m3 of timber during the first pass (6-10 years), and joint sign-off by the Ministry of Forests and the Ministry of Environment, Lands and Parks for the 1999-2000 harvest and future forest development plans. This will ensure the management of non-timber resource values, such as wildlife and recreation, in the Upper Goat area.

The provincial government also reviewed all of the proposed protected areas to ensure their boundaries reflected appropriate placement. In some cases, for example in the West Twin, the recommended boundaries included some private lands, agricultural land reserve and other tenures that would conflict with managing the new protected areas. The government therefore altered some proposed boundaries to better follow the natural landscape and improve the protected areas.

Who Was Involved?

The Robson Valley LRMP was developed by community groups, industry representatives, environmental representatives, government agencies and interested individuals. Participants represented a range of values, including water, fisheries, heritage, culture, recreation, tourism, timber, agriculture and environmental interests. All round table meetings were also open to the public.

First Nations

Two First Nation groups, the Shuswap Nation Tribal Council and the Lheidli T'enneh, were kept apprised of the LRMP progress through personal contacts, formal communications and meeting minutes which were distributed to all participants. The Shuswap Nation Tribal Council also attended and made presentations at several round table meetings. Three other bands, the Williams Lake Band, the Canim Lake Band and the Red Bluff Band expressed interest over the plan area towards the end of the process.

Participants

The Robson Valley Round Table involved more than 30 public sectors and government agencies, including:

Civic Advisory Group Commercial Heliskiing/Helihiking Sector Crescent Spur - Loos Community Association Dunster Community Association Environment Subcommittee Farmers Institute Forest Industry Subcommittee Forest Workers for Sustainable Forests Headwaters Unfragmented Biodiversity Ecosystem Coalition IWA Canada 1-417 Interagency Management Committee Jasper National Park Lheidli T'enneh Nation **Outdoor Recreation Subcommittee** Range/Habitat Subcommittee Resource Advisory Group Robson Valley Category 2 Small Business Forest **Enterprise Program Holders** Robson Valley Independent Harvesting Group Robson Valley Mill Workers Shuswap Nation Tribal Council Snowmobile Association Tete Jaune Community Club **Tourism Subcommittee** Village of McBride Village of Valemount Youth Subcommittee BC Parks BC Assets and Lands Department of Fisheries and Oceans Ministry of Agriculture Ministry of Employment and Investment, Energy and Mines Division Ministry of Environment, Lands and Parks Ministry of Forests Ministry of Small Business, Tourism and Culture

Plan Highlights

The LRMP divides the plan area into 23 resource management zones (RMZs), each of which falls into one of five different categories. Some of these RMZs are further classified into subzones.

Resource Development Emphasis

(31.4 % of plan area)

These RMZs are identified for intensive development of resources, such as timber and minerals, while managing for other values.

General Resource Management

(19.3 % of plan area)

In these RMZs, one use is not emphasized over another. Areas will be managed for a wide array of resource values, such as wildlife, recreation and timber.

Special Management

(24.0 % of plan area)

These are areas for which the conservation of one or more values such as water quality, habitat, recreation and scenery are a priority. The community watersheds for McBride and Valemount are included in this category. Resource development activities in Special Management RMZs are subject to more comprehensive resource conservation strategies.

Settlement / Agriculture

(4.9 % of plan area)

This RMZ is essentially the main valley floor of the Rocky Mountain Trench. It includes agricultural and settlement areas and is consistent with the Crown Land Plan for the Robson Valley.

Protected Areas

(20.4 % of plan area)

Ten areas have been designated as new protected areas (4.9 % of the plan area), in addition to the existing Mount Robson and Terry Fox provincial parks (15.5 %). This increases the amount of protected area by about 69,000 ha, for a total of approximately 292,000 ha of protected areas in the Robson Valley plan area.

New Protected Areas

(all areas are approximate)

Betty Wendle (14,415 ha) is comprised of the Betty Wendle Creek watershed system upstream of the eastern boundary of Bowron Lake Provincial Park. The area has important visual, wildlife, fishery and water quality values and provides a link to the adjacent park.

Cariboo River (6,060 ha) lies adjacent to the easternmost boundary of Bowron Lake Provincial Park and includes areas considered visually sensitive when viewed from the park.

Foster Arm (952 ha) is situated along the north side of the Foster Creek Inlet on the west side of Kinbasket Lake. This area was a strong candidate for protection due to the diverse tree species and superior growing conditions present on the site. The presence of healthy western white pine throughout this area was an important factor in the decision, as well as the opportunity to protect an area that represents the Kinbasket Lake ecosystems.

Holliday Creek Arch (397 ha) is a magnificent natural sedimentary rock arch in the Rocky Mountains. The protected area will preserve more of the surrounding terrain that is critical to the integrity of this special feature.

Jackman Flats (615 ha) has long been recognized for its provincially significant ecosystem representation. It is an unusual area with sand dunes and unique plants which has intrigued local residents since the early part of the century.

Lower Raush (1,259 ha) is situated in the lower stretch of the Raush River between four and eight kilometres upstream from the confluence with the Fraser River. The area is on the west side of the Raush River and runs up steep slopes through three different biogeoclimatic zones before ending in alpine tundra and rock cliffs.

Small River Caves (1,849 ha) is located near the headwaters of Small River; it contains a cave complex with multiple openings.

Swiftcurrent River (6,038 ha) is an addition to Mount Robson Provincial Park along its west boundary. The river provides additional representation of interior cedar-hemlock and has high recreational values.

Upper (Middle) Raush (5,408 ha) is located about half way up the Raush River drainage; it has significant interior cedar-hemlock representation and wildlife values.

West Twin (32,494 ha) was chosen for its rich wildlife, wide biogeoclimatic representation and because it is the only protected corridor across the Robson Valley trench. The area runs from the Cariboo Mountains in the south, through the main Robson Valley trench, and up the front ranges of the Rocky Mountains. Boulder Mountain and Ozalenka Creek are popular recreation sites within this area.

Forestry Considerations

This land and resource management plan clarifies which areas of Crown Land are available for timber harvesting in the Robson Valley area. Many of the constraints on the timber supply in the region were identified in the 1996 timber supply review, before the completion of the LRMP. The LRMP decision will be considered in the next timber supply review, which will take place during 1999. The timber supply analysis is one of several factors considered by the Chief Forester in determining the allowable annual cut. No forestry jobs are expected to be lost as a result of the LRMP, however, a small number of jobs could be lost over the next few decades due to timber supply limitations. These jobs would be impacted whether or not there was an LRMP.

Operational forestry and range use activities that take place within the land use plan will be regulated by the Forest Practices Code. Government agencies will work together to determine which components of the LRMP should be declared higher level plans under the code.

Environmental Considerations

The approved LRMP addresses many environmental considerations and encourages a sustainable environment for the Robson Valley. The plan provides increased protection for wildlife habitat through zones, objectives and strategies. For example, protected areas and special management zones have been created in such a way as to maintain viable grizzly bear populations. Mountain goats and woodland caribou will also receive greater conservation. The plan also improves protection for old growth forests, domestic water quality and biodiversity.





1.0 INTRODUCTION

This report comprises the Land and Resource Management Plan (LRMP) for the Robson Valley. As part of British Columbia's Land Use Strategy, the Robson Valley LRMP provides direction for the management of all Crown land in the plan area for the next ten years.

The plan was developed through a local planning process consistent with provincial government policy on Land and Resource Management Planning, as described in the *Provincial Land Use Charter* (1992) and *A Statement of Principles and Process* (1993).

The Robson Valley planning group, known as the Robson Valley Round Table (RVRT), included representatives from interest groups, public, aboriginal peoples and government agencies. The RVRT reached partial agreement and published a report in December 1996, the *Recommended Land and Resource Management Plan and Recommended Options Report*. Government reviewed the RVRT report and recommended a single land and resource management plan which incorporated much of the RVRT agreement and interests, published in the *Recommended Robson Valley Land and Resource Management Plan*, June 1997.

These recommendations were accepted by government on April 30, 1999 with one significant change, namely, that the Upper Goat area be designated a subzone of the Goat River general resource management zone.

All land use, resource development and resource management activities within the Robson Valley LRMP area are subject to legislation, policies and regulations for Crown

land and resource management. The *Forest Practices Code of BC Act* provides standards for sustainable forest management practices and requires integrated planning through the establishment of a number of more detailed level plans. As a cabinet-approved plan, the LRMP provides direction for more detailed level plans developed and implemented under the Forest Practices Code and other government agency programs and policy.

Early in the process, the Table agreed to promote a diverse, balanced and sustainable use of land and resources, which meets human needs and supports healthy, viable and stable communities and ecosystems in the Robson Valley. The direction of the Robson Valley LRMP will further enhance land and resource uses by integrating resource values to promote long term sustainability.

1.1 Physical and Environmental Description

The Robson Valley LRMP covers approximately 1.4 million hectares and lies within the boundaries of the Robson Valley Forest District. The LRMP area is bounded to the west by three contiguous provincial parks including Bowron Lake, Wells Gray and the new Mitchell Lake-Niagara protected area that link them. East of the Fraser River situated on part of the northern boundary is Kakwa Recreation Area. Along the eastern edge of the plan area lies the Willmore Wilderness Area, Mount Robson Provincial Park, Mount Terry Fox Provincial Park and Jasper National Park. Although not technically in the Timber Supply Area (TSA), Mount Terry Fox and Mount Robson provincial parks are considered existing protected areas within the LRMP planning area.

The Robson Valley is characterized by the Fraser River that runs through the main valley and the surrounding steep, mountainous terrain. The plan area is represented by three dominant ecosections:

- The Upper Fraser Trench (UFT) ecosection extends the length of the valley floor from Crescent Spur to Valemount. The UFT has undergone extensive agricultural and forest development and was altered by the creation of the Kinbasket reservoir. The remaining forests are dominated by hemlock and cedar in the northern portion of the planning area and lodgepole pine in the south. Highway 16 and the CN Railway traverse the northern half of the UFT.
- The North Cariboo Mountains (CAM) lie west of the Fraser River. This is an area of rugged high relief characterized by large areas of alpine tundra, rock and ice, Engelmann spruce-subalpine fir forests on steep slopes and cedarhemlock forests on lower slopes. Because of high snow falls and short cool summers, large glaciers occur throughout these ecosections above 2,200 metres.
- The Northern Park Ranges (NPK) ecosection lies east of the Fraser River and is characterized by moderately rugged terrain and wide valleys including the Morkill and Holmes River. There are extensive areas of alpine tundra,

Engelmann spruce-subalpine fir and interior cedarhemlock forests on lower slopes. Although the area receives extensive snowfall, it is relatively drier and supports fewer glaciers than the CAM ecosection.

In addition, the plan area contains four minor ecosections including the Columbia Park Ranges (CPK), the Northern Kootenay Mountains (NKM), the Big Bend Trench (BBT) situated in the extreme south and the Hart Ranges (HAR) in the north.

Within the seven ecosections, fourteen biogeoclimatic subzones/variants are recognized. These are described on the following pages.

Biogeoclimatic Zone Descriptions

Alpine Tundra (AT)

The rugged terrain of the Robson Valley is reflected in the large amount (45% of plan area) of alpine tundra present in the plan area. Exposed to severe weather conditions, the alpine tundra zone is characterized by strongly weathered and eroded bedrock, glaciers and snowfields. Many unique plants and animals are found in the alpine tundra zone and are considered sensitive to disturbance.

Engelmann Spruce-Subalpine Fir (ESSF)

This biogeoclimatic unit is the uppermost forested zone and occurs on mid and upper slope positions. The ESSF is dominated by colluvial material, a reflection of the steep slopes found in many V-shaped valleys. Due to cooler temperatures, most precipitation falls as snow. The ESSF occurs extensively throughout the Valley and comprises the second most abundant zone (37%) of the plan area. Forests of the ESSF are dominated by subalpine fir and Engelmann spruce. At the upper elevations, where the climate is cooler and receives more snow, the forests become more clumpy and form a mosaic of open and stunted subalpine fir trees known as parkland. Four subzones occur within the plan area including the ESSF mm2 (Robson Moist Mild) variant which is unique to the Robson Valley and occurs only in Mount Robson Provincial Park. The ESSF mm1 (Raush Moist Mild) is the predominant subzone and occurs at middle to upper elevations in the Rocky Mountain Trench and the majority of adjacent side tributaries and to the south in Howard, Foster, Dawson and Harvey creeks. A small amount of the ESSF wk2/wc3 occurs at mid to upper elevations on the west side of the lower Morkill River.

Interior Cedar-Hemlock (ICH)

The ICH zone comprises about 12% of the plan area and occurs on lower slopes and valley bottom positions where, historically, mature stands were usually uneven-aged or multi-storied even-aged. On mid to lower slope positions morainal blankets derived from glacial processes are common. In the lower slope and valley bottom positions, finer textured glaciolacustrine and glaciofluvial sediments are commonly found and susceptible to erosion. The ICH mm (Moist Mild) subzone represents the majority of the ICH biogeoclimatic zone and occurs along the lower slopes of the trench between Lamming Mills and the Kinbasket Reservoir. This subzone also extends along the valley

bottoms in the Castle, Raush, Lower Holmes and Canoe Rivers. The ICH mm is relatively dry, receiving less precipitation than other ICH subzones partly because of the rainshadow effect of the Premier Range. The dominant climax tree species in this subzone are western redcedar and western hemlock. Douglas-fir, lodgepole pine and trembling aspen occur in seral stands. At present, seral stands are relatively common in this subzone due to the drier climate and susceptibility to wildfires as well as past land uses practices (i.e., burning) during the railroad construction period about 90 years ago. The ICH wk3 (Goat Wet Cool) variant is found in the northern portion of the planning area where it occurs on the lower slopes and the valley floor in a relatively wide band between Ptarmigan Creek and Clyde Creek. The ICH wk1 (Wells Gray Wet Cool) variant occurs on lower slopes near the southern end of the Canoe Reach. On the west side of the lake it enters Howard and Foster Creeks and on the east side it enters Dawson and Harvey Creeks. This subzone is considerably moister than other ICH subzones within the plan area. The dominant tree species found are western redcedar and western hemlock. Cottonwood is commonly found on fluvial flood plains and Western yew sporadically occurs in a variety of sites. Small amounts of the ICH wk2 (Missinchinka Wet Cool) are found in the valley bottoms of the Cariboo River and Betty Wendle Creek.

Sub-Boreal Spruce (SBS)

The SBS is divided into three subzones that make up about 6% of the plan area. It occurs in the valley bottoms where finer textured glaciolacustrine and glaciofluvial sediments are commonly found and susceptible to erosion. The SBS dh (Dry Hot) variant represents the predominant SBS subzone in the LRMP plan area. It occurs along the valley bottom in the Rocky Mountain Trench between Dunster and Valemount and east along Highway 16 to Jasper. Because of the extensive fire history of this subzone, a mosaic of even-aged regenerating stands, ranging in size from hundreds to thousands of hectares with remnant mature forest patches, occur. The dominant tree species are lodgepole pine and Douglas-fir. The SBS vk (Very Wet Cool) variant is found in the northern portion of the plan area where it occurs in narrow bands along the Fraser River and confluences of the Morkill and Fraser Rivers. It is the wettest of the SBS subzones and forests are predominantly a mix of white spruce and subalpine fir. A small amount of the SBS wk1 (Willow Wet Cool) variant occurs along the valley bottom of Betty Wendle Creek.

Other Environmental Values

The rugged peaks and spectacular scenery of the Robson Valley offers numerous commercial recreation opportunities including heliskiing, helihiking, backcountry skiing and snowmobiling.

Although not considered part of the Timber Supply Area, Mount Robson Provincial Park exists within the plan area. Mount Robson Provincial Park was established in 1913 to protect Mount Robson, which is the highest peak (3,954 m) in the Canadian Rockies. In 1990 the park was added to the Canadian Rocky Mountain Parks World Heritage Site (UNESCO) and was chosen for its outstanding mountain scenery and diversity of wildlife habitats. Together with six other mountain parks (Banff, Jasper, Yoho, Kootenay National Parks and Mount Assiniboine and Hamber provincial parks), Mount Robson Provincial Park contributes to this contiguous chain of parks which form one of the largest protected areas in the world.

The Robson Valley contains over 200 of British Columbia's 430 bird species including one red-listed species (western grebe) and nine blue-listed bird species. Over 50 mammal species occupy the plan area including four blue-listed species (woodland caribou, grizzly bear, wolverine and fisher).

Regionally significant populations of mountain goats occur in high elevation habitats in the Horsey Creek area adjacent to Mount Robson. Other ungulates such as moose, deer and elk can be found in the valley bottoms primarily in the main valley and floodplain habitats of the Morkill and Raush rivers. Many factors limit the distribution of ungulates in the Robson Valley including steep-sided valleys, high snowfalls and the loss of summer and key winter range from agricultural land development and the flooding of the Kinbasket Reservoir. Because of these limitations, the plan area supports moderate populations of moose, mule deer and white-tailed deer. Elk have increased recently in the plan area and can be found in the valley bottoms of the Holmes River as well as agricultural areas near McBride and Tete Jaune Cache.

Small populations of woodland caribou (**mountain ecotype**) can be found in the West Twin Creek and East Twin Creek areas. These caribou live primarily in high elevation subalpine habitats where they feed on arboreal lichens (tree lichens) during the winter. Other caribou can also be found east of the Fraser River in the Rocky Mountains during summer. These caribou migrate from Alberta (Willmore Wilderness Area) to the Robson Valley during calving and rutting seasons. Areas that receive the highest use include the upper subalpine and alpine elevations around the Morkill, Forgetmenot and Cushing creeks. Relatively high densities of grizzly bears occur throughout many of the drainages in the plan area, most notably in the Morkill River, Cushing Creek, Goat River and Hugh Allan Creek.

Although no large lakes exist in the Robson Valley, small lakes such as La Salle, Shere, Cedarside and Little Lost Lake provide recreational trout fishing opportunities. In addition, many alpine and subalpine lakes including Loren Lake are unique special features that contribute to the high wilderness and recreational opportunities in the valley.

Several sites within the plan area are known class A fish habitat including the Fraser River and all its tributaries. Blue listed Bull Trout habitat exists on Hugh Allan Creek. Significant Chinook salmon spawning areas include the flood plain reaches of the Morkill, Goat, East Twin, West Twin, McKale, Holmes, Nevin, Holliday, Horsey, McLennan and Swift drainages. Public viewing opportunities of spawning salmon exist in the Fraser River below Rearguard Falls in the Tete Jaune area, in Swift Creek at Valemount and along the Holmes River near McBride.

1.2 Social and Economic Description

The Robson Valley LRMP planning area, comprised of the Robson Valley Timber Supply Area (TSA), covers approximately 1.2 million hectares. Mount Robson and Mount Terry Fox provincial parks, adjacent to the TSA, total approximately 223,000 hectares. The

population of the Robson Valley is currently about 4,000. Roughly half live in Valemount and McBride, the two largest and only incorporated communities, with the other half living in other smaller communities (Dunster, Tete Jaune, Crescent Spur and Loos, in rough order of size) and more rural area. Yellowhead Highway 16, connecting Prince George with Jasper National Park, and Highway 5, connecting Tete Jaune with Kamloops, are the main transportation routes through the Valley. The CN Railway runs parallel to both highway routes.

Valemount, with a population of about 1,200 and located near the junction of the two highways, is the region's primary growth centre. McBride, with a population of about 719, is located 80 km northwest of Valemount on Highway 16. There are no First Nations communities in the planning area, although the Lheidli T'enneh and the North Thompson Band claim traditional territories in much of the valley. The Canim Lake Band and Williams Lake Band, both part of the Cariboo Tribal Council, and the Red Bluff Band have similar territorial interests in the plan area.

Total population in the Robson Valley declined about 14% over the 1981-91 period, likely due to declines in forestry employment. Based on more recent estimates for Valemount and McBride, population appears to have grown slowly since 1991, due to immigration of retirees and "urban refugees". These trends will likely continue in the future.

Forestry has been the single most important sector in the Valley's economy, directly and indirectly accounting for about one third of income and employment. Many farmers are loggers and truckers. However, over the 1981-1991 period, employment in forestry due to technological change in sawmilling has declined. There are two sawmills, one plywood veneer plant and several smaller facilities. The region currently imports about one third of its timber requirements, primarily private supplies from Alberta and other parts of BC. Harvest reductions in the TSA are likely to occur over time because of the decline in timber supply as indicated in the 1994 Timber Supply Review. However, the employment impacts of these trends could be mitigated by timber imports, higher utilization of waste and problem forest types, the Forest Renewal Program and growth in value added activities. Forestry will remain a dominant economic sector, but will continue to decline in relative importance.

Tourism, which accounts for about 6% of income and 16% of employment in the Valley, is the strongest growth factor in the regional economy. This potential is based on a diversity of recreation opportunities, spectacular scenery and proximity to Mount Robson and Jasper parks. These parks help to draw about one million visitors annually through the Valley. Data provided on park use and by commercial operators also indicate strong historical growth in recreation demand. Tourism-related growth is expected to be particularly important to the Valemount economy.

Agriculture, which accounts for about 6% of employment and 13% of income, is an important source of livelihood in more rural areas of the Valley. Little growth is expected in dairy and beef agriculture due to the highly competitive nature of the industry. There is some potential in more intensive, higher value agriculture activities such as greenhouse/market gardening operations. Agriculture and tourism are more important as sources of employment than income because of lower average annual incomes in these sectors.

Local, provincial and federal government employment, and government transfer payments directly and indirectly account for about 27% of the Valley's income, second in importance only to forestry. These sources of income have been an important stabilizing factor in the region's economy. Pension and investment income accounts for about 11% of total income in the Valley. Miscellaneous construction, transportation and manufacturing (unrelated to other "basic" sectors such as forestry) together comprise about 17% of regional income.

Historically, mining and energy have not been significant components of the Valley's economy. There are a variety of mineral occurrences throughout the plan area including some precious metals and a variety of industrial minerals. There are past producing areas of silica and mica in the Valemount area as well as potential for gypsum in the upper Forgetmenot Creek. No major developments are expected in the Valley in the short term, but there are some promising longer term possibilities in industrial minerals and small scale hydro.

There has been a gradual historical trend from goods-producing to service industries in the Valley. This has been caused by declines in forestry employment, tourism growth, aging population, in-migration of "urban refugees" and retirees, and displacement of some imported goods and services by local entrepreneurs. Although these trends will likely continue, average per capita income has declined as the lower wage service sector has grown. These changes are generally consistent with province-wide trends. Unemployment rates for the Valley appear to be higher than average for BC, not uncommon for areas more dependent on cyclical and seasonal industries.

A socio-economic base case (1993) prepared for the Robson Valley Round Table, and a socio-economic analysis for the Timber Supply Review (1994) provide more detailed descriptions of the region's current and anticipated social and economic characteristics.

1.3 PROCESS

An Overview of the Process

Land and Resource Management Planning (LRMP) is a sub-regional strategic resource planning process which applies the Provincial Land Use Strategy principles and policies to develop more specific objectives and guidelines for land use. LRMP considers all resource values and interests and requires public participation, interagency coordination and consensus based decision-making to develop recommendations on land and resource management for Cabinet and/or designated Cabinet Ministers' consideration. Once approved, and in accordance to **Higher Level Plans: Policy and Procedures**, the Land and Resource Management Plan will give strategic direction to planning activities and operations at a lower level.

In the spring of 1993, a study was conducted to determine the feasibility of a Land and Resource Management Planning process for the Robson Valley. After meetings, interviews and research with stakeholders of the Valley, it was concluded a plan would proceed and a negotiating table, the Robson Valley Round Table (RVRT), was formed.

The Robson Valley Land and Resource Management Plan covers all Crown land in the Robson Valley Timber Supply Area. The purpose of the plan is to set directions for land use and specify resource management objectives and strategies. Throughout the process, the Table used a consensus building process for its deliberations and applied a shared decision making model to public participation activities. The Protected Area Strategy was also addressed by the RVRT.

The Round Table was comprised of thirty sectors, including citizen groups, industry and various government agencies, each holding a seat at the Table to represent their various interests. Sectoral representatives were spokespersons for their interest group and were the consistent communication link between the Table and their group. The Table met most months from April 1993 to July 1996. When needed, Round Table sectors formed sub-committees which met more frequently to tackle more challenging issues like biodiversity and visual management. Sub-committees reported back to the Round Table where final discussions took place. The Interagency Planning Team (IPT), composed of local and regional provincial and federal resource managers, provided project management and technical support.

Planning Participation at the Round Table

The Robson Valley Round Table involved thirty sectors, including:

- BC Environment
- BC Lands
- 🏓 BC Parks
- Civic Advisory Group
- Crescent Spur Loos Community Association
- Department of Fisheries and Oceans
- Dunster Community Association
- Environment Subcommittee
- Farmer's Institute
- Forest Industry Subcommittee
- Forest Workers for Sustainable Forests
- Headwaters Unfragmented Biodiversity Ecosystem Coalition
- 📑 Heliski / Helihiking
- ➡ IWA Canada 1-417
- 🕩 Lheidli T'enneh
- Ministry of Employment and Investment, Energy and Minerals Division
- Ministry of Forests
- Ministry of Small Business, Tourism and Culture
- Outdoor Recreation Subcommittee

- Range / Habitat Subcommittee
- Resource Advisory Group
- Robson Valley Category 2 SBFEP Holders
- Robson Valley Independent Harvesting Group
- Robson Valley Mill Workers
- Shuswap Nation Tribal Council
- Snowmobile Association
- Tete Jaune Community Club
- Tourism Subcommittee
- Village of McBride
- Village of Valemount
- Youth Subcommittee

***Note:**Public or industry mining sector was not present at the Table, likely because of the low level of present mining activity in the plan area.

Planning Sequences

The Commission on Resources and the Environment (CORE) and the Prince George Interagency Management Committee (IAMC) agreed to proceed with the Robson Valley LRMP as a pilot project of the Commission in March 1993. The general planning sequence followed eight steps:

1. March - July 1993 Preliminary Organization

- public participation assessment conducted
- Robson Valley Round Table formed; interagency planning team formed

2. August – Nov. 1993 Terms of Reference

Terms of Reference document developed

3. Dec. 1993 - Nov. 1994 Information Assembly and RMZ Information

- issues and overall goals defined
- resource and land use issues identified and qualitative or quantitative resource mapping information gathered
- Iand base divided into resource management zones

4. July 1994 - June 1995 Scenario Development

alternative land and resource management plans with area specific management objectives and strategies for each resource developed

5. July - Dec. 1995 Scenario Evaluation

resource and multiple accounts analysis of land use and management scenarios and effects on social, economic and environmental conditions undertaken

6. Jan. - July 1996 Building Agreement

consensus on a land use plan and/or agreement on options

7. Oct. 1996 Preparation of Recommendation Plan and Options Report

agreement recommendations and options for approval submitted to government

8. May 1997 Preparation of Recommendation Report

single recommended land and resource management plan submitted to senior government for approval

Vision

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

- result in an overall land use strategy for Crown lands which embraces the principle of sustainability, meeting the needs of the present without compromising the ability of future generations to meet their own needs;
- be the result of comprehensive integrated Land and Resource Management Planning, identifying and considering all resource values, along with social, economic and environmental needs; and
- provide a forum for shared decision-making by interest groups, public, aboriginal peoples and government agencies that is based on consensus.

Objectives

To achieve this vision, the following objectives directed this planning process:

1. To provide interest groups, the public, aboriginal peoples and government agencies with opportunities for

participation throughout the planning process. A cooperative team approach in which participants are viewed as equal partners was used in the planning process.

- To seek consensus among participants when developing recommendations on management and use of resources. Where consensus could not be reached, the areas of disagreement would be documented and handled through the dispute resolution process.
- 3. To assemble and use the most relevant biological, physical and socio-economic information in the development of the plan. If the Table decided that the information lacking is critical to the decision, the Table would then decide how to proceed.
- 4. To use integrated planning principles to identify interest, needs and goals, select and evaluate scenarios and recommend strategies for sustainability.
- 5. To develop a planning process with enough flexibility to allow for incorporation of new directions in integrated resource planning.
- 6. To provide a mechanism for ensuring that the final plan would be implemented, monitored, evaluated and updated as required.
- 7. To make every reasonable effort to develop the Land and Resource Management Plan in a timely fashion.

Interests of Some Sectors at the Table

One of the first tasks of the sectors at the Table, defining interests concerning resources and Crown land in the Robson Valley, was a key part of the interest-based negotiation process. The lists permitted each sector to evaluate and compare proposed land uses with their own interests. Some interests shared by a number of different sectors at the table were:

- planning for beneficial and sustainable land uses
- maintaining biodiversity
- maintaining natural water quality, chemistry, flows and temperature
- maintaining and promoting the economic and social health of our communities
- maintaining or enhancing visual quality and clean air
- providing more jobs by exploring opportunities for value added products
- ➡ reducing conflicts between backcountry users

- integrating all local industries to promote jobs and high quality natural environment for future generations
- security of forest tenure and consistent allowable annual cut over time
- maintaining and increasing fish and wildlife populations for consumptive and non-consumptive uses

Communications

The key element of the Robson Valley Round Table process was public participation. In order to ensure an informed public and to encourage discussion of the land use issues, the Round Table made use of various communication methods including:

- initial open house and organizational public meeting
- ➡ all meetings were open to the public
- open seat at Round Table for general public presentation/discussion
- prior to each monthly meeting, minutes from the previous meeting and background information would be forwarded to each sector representative
- meeting summaries and notice of upcoming meetings were published in the Valley Sentinel, the local newspaper, after each meeting
- development of a newsletter (distributed throughout the valley) to inform the public about the process
- LRMP display booth at the 1995 Robson Valley Trade Show in Valemount

1.4 FIRST NATIONS

Involvement

Aboriginal rights exist in law and are recognized and affirmed under the *Constitution Act 1982*. The 1993 Court of Appeal decision in **Delgamuukw** clarified that blanket extinguishment of aboriginal rights did not occur prior to 1871 and, therefore, these rights continue to exist in British Columbia today. As such, they cannot be unjustifiably infringed by activities of the Crown.

The provincial government is working toward settlement of land claims with First Nations in British Columbia. In developing the Robson Valley LRMP, the government reaffirms that all decisions are without prejudice to aboriginal rights. Land use decisions contained within the Robson Valley LRMP form the basis of the provincial government's position during treaty negotiations.

When the planning process first began, the Shuswap Nation Tribal Council (SNTC) and the Lheidli T'enneh, both whose traditional territories cover almost the entire plan area, were invited to participate. The Shuswap First Nation, Secwepemc, has participated

when possible throughout the process. The Lheidli T'enneh also expressed interest in participating and meeting to discuss the Plan.

In April 1996, the Robson Valley Round Table was informed of an updated Cariboo Tribal Council Territorial Map. The Canim Lake Band traditional territory overlaps with the Raush Valley and McBride-Dunster area. The Williams Lake Band traditional territory overlaps with a small area at the headwaters of Castle Creek.

Secwepemc (Shuswap) Participation

The Secwepemc attended several meetings throughout the process to ensure that their interests are represented. A map showing Secwepemc traditional territory and a statement of Secwepemc interests in the LRMP area that overlaps their traditional territory follows.



Figure 1. The Secwepemc (Shuswap) Traditional Territory

Secwepemc Interests in Land Uses and Resource Management

Secwepemc people respect and support the efforts of non-aboriginal people to plan for sustainable, integrated resource management but are concerned that their own rights be respected. The general Secwepemc position regarding land use and resource management is based on the following principles:

- Inherent Secwepemc aboriginal rights and title, and the right of Secwepemc communities to exercise jurisdiction over their traditional lands and resources, must be recognized by non-aboriginal government agencies and interest groups. This is essential to land and resource management planning in Secwepemc traditional territory.
- The Secwepemc Nation and its agencies constitute a distinct order of government, not an "interest group". Current non-aboriginal land use and resource management planning processes are designed to be forums for interest groups and various agencies involved in land use planning. Interest groups and non-aboriginal government agencies do not have aboriginal rights, whereas the Shuswap Nation does.

- Provincially-mandated land use/resource management processes are not appropriate for negotiating aboriginal right and title. Secwepemc aboriginal title and rights will be negotiated on a government-to-government basis between Secwepemc government representatives and representatives of British Columbia and Canada, respectively.
- Land use proponents, planners and policy makers should be aware that their decisions regarding land use zones, allocation of resource tenures and resource management strategies will be impacted by future treaty negotiations. Secwepemc communities will negotiate a treaty with British Columbia and Canada to resolve the issues of aboriginal rights and title, and Secwepemc selfgovernment. They do not want future treaty negotiations to be limited, prejudiced or compromised by current provincial land use/resource management processes.
- Secwepemc government agencies must be equipped with the same technical resources for Land and Resource Management Planning, resource management and treaty research as non-aboriginal governments and interest groups. This is a pre-condition for resolving the issue of unextinguished aboriginal rights and title.

Submissions to the Robson Valley Round Table

In January 1994, Chief Nathan Matthew presented and provided written information to the Table which outlined the Secwepemc interests in the Robson Valley Round Table process. These interests can be summarized as follows:

- meaningful consultation before decisions are made
- continuation of traditional uses
- economic developments
- 🏓 joint planning
- revenue sharing from resource extraction
- tenure opportunities
- public education about Shuswap interests
- involvement in land use decisions

In February 1996, Councilor Ron Matthew presented and provided a memo to the Round Table that identified statements to be incorporated into the Plan, including the following statements of:

recognition of Secwepemc traditional territory, including a map

- rights to their traditional territory and the natural resources within the territory
- recognition of unresolved Secwepemc land rights within the Robson Valley LRMP area
- rights to have access to hunt, fish, pick berries and roots, use medicines and carry on various traditional activities within their territory which is protected by law
- interests in maintaining occupation sites at Tete Jaune Cache
- interests in the salmon runs in the Fraser River and its tributaries
- support the maintenance of diverse populations of all plant and animal species in the area
- ➡ maintenance of water quality in all watersheds

1.5 ROBSON VALLEY LRMP PRODUCT

The principal products of the process include:

plan document and Resource Management Zone map

proposed protected areas

overall goal statements

objectives and strategies for the whole plan area

objectives and strategies for area specific Resource Management Zones

social, economic and environmental assessment

implementation, monitoring and amendment

economic strategy

policy and administrative recommendations

compendium of all resource value maps used by the RVRT to develop the LRMP

1.6 SCENARIOS CONSIDERED

The Four Plan Scenarios

Midway through the negotiation process, four Plan Scenarios were developed by the Round Table. The purpose of the scenarios was to create a range of land use proposals, analyze and compare them to each other and then utilize the information to negotiate one land use plan. These scenarios showed different combinations of RMZs and related objectives and strategies. An important issue incorporated within these scenarios was the negotiation of setting biodiversity objectives. A social, economic and environmental analysis of resource impacts was then completed. The Plan Scenarios were compared to current management practices (the status quo or Base Case). A summary of the Plan Scenarios and their analyses are shown in Appendix II of this report.

2.0 MANAGEMENT DIRECTION

Numerous legislative and policy initiatives affect management in the LRMP planning area. Examples of some recent initiatives are the Protected Areas Strategy, Forest Practices Code, Community Watershed Guidelines and Commercial Backcountry Recreation Policy. More detailed levels of planning will take strategic direction from this plan. These will need to be consistent with the LRMP and will continue to be evaluated through the normal referral processes.

The recommendations outlined in the **Recommended Robson Valley Land and Resource Management Plan** (June 1997) on which this document is based were accepted by government on April 30, 1999 with one significant change, namely, that the Upper Goat area be designated a subzone of the Goat River general resource management zone. Specific decisions made at that time are as follows:

Resource Management Zones and Subzones

The 23 resource management zones and their associated objectives were approved, as were the five recommended subzones and their associated objectives. The subzone for the Upper Goat area was also approved. Within the Upper Goat subzone there will be harvesting of at least 445,000 m3 of timber during the first pass (6-10 years). There will be joint sign-off by the Ministry of Forests and Ministry of Environment, Lands and Parks for the 1999-2000 harvest and future forest development plans.

Protected Areas

The recommended new protected areas were approved.

Economic Development

The economic development component of the LRMP that was presented to government was approved, recognizing that both ministry and FRBC funds have become increasingly restricted.

Fraser River Riparian Zone

A 50 metre riparian reserve plus a 50 metre riparian management zone above the high water mark in provincial forests for fish and wildlife habitat and recreational purposes was approved. Partial cutting systems will be used in the riparian management zone.

Biodiversity

Review and consider the RVRT information (see Appendix I) and concerns when final biodiversity emphasis choices are established for each landscape unit. Future biodiversity objectives will be set in accordance to the Forest Practices Code Biodiversity guidelines and government objectives. Due to the importance of this issue, social, economic, and environmental implications of biodiversity emphasis choices should be assessed before government approval and implementation.

Domestic Water Use

Joint approval of forest development plans in areas of domestic water use is not required, however, there will be mandatory referral of forest development plans to the Ministry of Environment, Lands and Parks water manager for review and comment.

Access Management

Specific strategies guiding recreation access outside of protected areas, which is consistent with the plan, will not be used to determine or defer industrial road access approval or permitting.

Herbicide Use Along Highways

There is no formal requirement for the Ministry of Transportation and Highways to post signs along the highway right-of-way when using herbicides, other than those required under any herbicide application permit. However, the ministry is encouraged to undertake a more vigorous and active consultation and public notice program in the Robson Valley.

Visuals

Existing visual quality objectives (VQOs), which have been established under the Forest Practices Code (FPC), should guide commercial timber harvesting while recognizing the need for further public input at more detailed levels of planning.

No staking reserves

No staking reserves (NSRs) should now be lifted where they are no longer needed for proposed protected areas. There should continue to be NSRs in place for all of the new protected areas.

Forest Land Reserve

The LRMP table did not provide specific recommendations on Crown land areas of the plan that should be designated as Forest Land Reserve (FLR). Provincial policy on designating FLR is still underway at the headquarters level. Once provincial direction is available, the Interagency Planning Team (IPT) will develop a FLR proposal that is consistent with the economic strategy and guided by government policy direction on Crown FLRs.

Higher Level Plan Declaration

The LRMP table did not discuss or provide recommendations on a higher level plan declaration. Consistent with the provincial direction, a higher level plan (HLP) will likely be declared for those provisions which pertain to forest resources, are required to provide direction for Code operational plans and are outside of normal Code management. In addition to the Fraser River riparian measures and the joint sign-off

for the Upper Goat Subzone, a review for the LRMP provisions will be undertaken by the IPT to determine if there are other provisions that meet these criteria and should be declared a HLP.

Deferral of Commercial Timber Harvesting in High Value Caribou Habitat

The current practice of deferring commercial timber harvesting in areas identified as having high habitat value for mountain caribou is approved. This deferral will continue for 10 years from the date of approval (April 30, 1999). Forest harvesting in high value caribou habitats would then be allowed after 10 years unless research indicates unacceptable impacts on caribou. This deferral does not extend to incidental timber harvesting for the purpose of mineral, natural gas and petroleum exploration and development.

How To Use This Plan

In order to keep the length of this report manageable, information that is common to more than one RMZ has been presented only once. It is therefore critical that, in reviewing a particular RMZ, the reader review **all** sections that obtain, including:

- 1. RMZ Specific Objectives and Strategies
- 2. Common Objectives and Strategies
- 3. Overall Goals, Values, Objectives and Strategies

2.1 BIODIVERSITY EMPHASIS

Biological diversity, or biodiversity, is the diversity of plants, animals and other living organisms and the processes that link them. It is a key indicator of the health of an ecosystem. As natural ecosystems become modified by human activities, biodiversity is altered and the risk of losing native species increases.

In order to maintain biodiversity within managed forests, the Forest Practices Code (FPC) Biodiversity Guidebook has been developed. It outlines an ecosystem management approach for conserving biodiversity and is based on the rationale that the more a managed forest resembles a natural forest, the more biodiversity will be maintained. This objective is achieved by using natural disturbance patterns, or natural disturbance types such as wildfires, windstorms, pests and landslides, as a model for management practices.

In order to determine the management practices for the LRMP area, proposed landscape units within the plan area were delineated and identified. Each landscape unit was then evaluated and rated as to the biodiversity emphasis that it would have. Three choices, Lower, Intermediate and Higher, permitted a different level of natural biodiversity and a different risk of losing elements of natural biodiversity, as described in the following table:

U	LOWER	INTERMEDIATE	HIGHER	Ρ
R	BIODIVERSITY	BIODIVERSITY	BIODIVERSITY	R

В	EMPHASIS	EMPHASIS	EMPHASIS	0				
A N A R E A	Appropriate where other social and economic demands, such as timber supply, are the primary management	A trade-off between biodiversity conservation and timber production.	A higher priority for biodiversity conservation but has the greatest impact on timber harvest.	T E C T E D				
S	 management objectives. Provides habitat for a wide range of native species, but the pattern of natural biodiversity will be significantly altered, and the risk of some native species being unable to survive will be high. Approximately 45% should be recommended within the LRMP area. Ranging from (30-55%) 	 Provides more natural levels of biodiversity and a reduced risk of eliminating native species from the area, when compared to Lower Biodiversity Emphasis Option. Approximately 45% should be recommended within the LRMP area. Ranging from (35-60%) 	 This choice is recommended for those areas where biodiversity conservation is a high management priority. Approximately 10% should be recommended within the LRMP area. No range. 	AREAS				
	Increasing risk to natural biodiversity							
	Increasing level of natural biodiversity							

The Biodiversity Guidebook provides a range of management recommendations, depending on the biodiversity emphasis chosen for a landscape and the natural disturbance types of the forest within the landscape unit. There are five natural disturbance types (NDTs) occurring in British Columbia, three of which occur in the Robson Valley LRMP area. These include:

NDT1: Ecosystems with rare stand-initiating events

This NDT includes wetter ESSF and ICH subzones (ESSF wk2, ESSF wc3 and ICH wk1) in the District. The natural frequency of stand-destroying fires was very low in these subzones. When fires did occur they were relatively small and usually contained

unburned remnants of mature forest. Within the old forest, regeneration occurred within gaps created by the death of individual trees or small groups of trees, resulting in uneven-aged stands. This disturbance pattern produced a landscape dominated by contiguous, uneven-aged, old forest, surrounding small to medium sized stands or younger even-aged forest.

NDT2: Ecosystems with infrequent stand-initiating events

This NDT includes the ICH mm, ICH wk3, ESSF mm1, ESSF mm2 and SBS vk subzones in the Robson Valley. These forests experienced stand destroying events (fires, hemlock looper etc.) on average about every 200 years. That disturbance pattern resulted in a landscape dominated by old and mature even-aged stands, although there was a greater proportion of younger stands than in NDT1. Some of the older stands were beginning to develop uneven-aged characteristics, and all stands contained either patches or individual veteran trees that survived the stand initiating event.

NDT3: Ecosystems with frequent stand-initiating events

This NDT includes the SBS dh1 subzone which occurs in some of the valley bottoms of the Robson Valley. These forests experienced wildfires on average every 100-150 years. Many of these fires were very large in size, but most fires left unburned patches of mature forest. Consequently, the landscape consisted of a mosaic or large regenerating even-aged stands, with mature forest patches contained within the younger matrix.

Once the biodiversity emphasis is established for a landscape unit, the Biodiversity Guidebook provides recommended objectives for:

- ➡ old forest retention and ecosystem representation
- ➡ patch size distribution (size of cutblocks and leave areas)
- mature forest connectivity
- stand structure, and
- seral stage distribution
- species composition

Robson Valley LRMP Resource Management Zones (with Subzones)



2.2 OVERALL GOALS, VALUES, OBJECTIVES AND STRATEGIES

Land and resource management strategic planning establishes direction for land use and specifies broad resource management objectives and strategies. Early in the process, the RVRT Planning Team agreed to overall goals for the plan. The Overall and Resource Management Zone objectives and strategies define how to meet the overall goals of the process. Many of the resource management objectives and strategies put forward by the Planning Team apply throughout the planning area. These are categorized as Overall Goals, Values, Objectives and Strategies and are designed to provide integrated sustainable management of land, water, ecosystems and resources. Management for any one of the resources described under Overall Goals, Values, Objectives and Strategies must take into consideration the needs and interests of all users and values. Area specific objectives and strategies are found under the Resource Management Zone (RMZ) section of this report.

The objectives and strategies outlined in this section apply to all agencies, resources and activities on Crown lands and are the fundamental building blocks of the plan. They are enhanced and supported by a large array of complementary legislation, policies, processes and operational guidelines. These include:

- existing legislation such as the Forest Practices Code (FPC) of BC Act, Federal Fisheries Act, Waste Management Act, Agricultural Land Reserve Act, Mineral Tenure Act, Mines Act, Soil Conservation Act, Park Act, Wildlife Act and Land Act.
- Iower level detailed plans, including Local Resource Use Plans (LRUPs), Integrated Watershed Management Plans (IWMPs), Official Community Plans (OCPs) and Crown Land Plans; and
- existing regulations, standards and guidelines for the resource agencies.

OVERALL PROCESS GOAL

To promote a planning process based on the best available information, identifies all resource values, strives to integrate those values and culminates in the preparation of a Land and Resource Management Plan which minimizes the conflicts between resource users, respects First Nations' rights and provides clear guidance to resource managers while still providing options to manage on a site-specific basis.

- To recognize the importance of security of tenure for existing, licensed users of land and resources.
- To encourage enforcement of existing laws, regulations and guidelines, and personal, professional and governmental accountability for land and resource management.
- To apply integrated management of land and resources and minimize conflicts between incompatible land uses, and negative impacts of resource development / uses on adjacent areas.
- To increase community influence over land and resource management.

OBJECTIVE

Increase community influence over resource management and information availability to the public STRATEGY tion of a LRM

- Ensure formation of a LRMP implementation committee to monitor the implementation and recommend amendments or adjustments to it as necessary
- Implementation committee should continue consensus and team approach to resolving issues and preparing recommendations
- During the public review process, proposed silvicultural prescriptions as part of development plans should be available for public viewing at the McBride Ministry of Forests and Valemount Government Agent offices as well as at originating Licensees offices
- Community Associations will be notified where Forest Development plans affect their areas.
- Specific silvicultural prescriptions in known areas of special interest, as determined by the District Manager, will be advertised for public comment
- Increase the understanding and acceptance of different interests

Promote harmonious co-existence among

communities and interest groups in this planning area

- Promote public education, understanding and acceptance of resource industries
- Ensure opportunities for development of strategies to address future needs of people in the region
- Transition strategies for the land and resource management plan should be implemented in a manner sensitive to social, economic and environmental conditions in the Robson Valley
- Continue ongoing information sharing

OVERALL ACCESS MANAGEMENT GOAL

To manage access in a manner to allow a balanced, environmentally sound, sustainable use of land and resources.

OBJECTIVE

Manage road access in a manner that minimizes disturbance to wildlife values, allows recreation opportunities and protects fragile alpine environments

STRATEGY

- Reduce predator access into critical wildlife habitat by minimizing or eliminating snow plowed roads and managing packed trails in cooperation with snowmobilers and other users
- Manage road access to reduce wildlife disturbance, displacement, habitat loss and increased mortality rates due to poaching and other human activities
- Access will be allowed and maintained when and where needed for timber harvesting operations, silvicultural or research operations, range and in order to address fire, insect, disease or blowdown situations
- Wherever feasible, design road access so that motorized recreational use minimizes encroachment into traditional hiking destination areas and alpine environments.
- Early stage mineral exploration in alpine areas should use helicopter access only. Proposed road access in

alpine areas will be referred to the appropriate agencies with opportunity for local public input

- Start a public information program about the importance of all aspects of access management
- Where gates are used, have a sign posted to explain the importance of value(s) being managed
- Where gates are used, motorized access beyond the gate will be allowed to government authorized (licences, permits, etc.) users for land and resource use and management purposes
- Provide opportunities for local public input and utilize a full range of access management tools
- Berms, excavations, gates and other access control structures must be strategically located to prevent detours from being developed
- If gates prove ineffective, more effective methods will be considered
- Adjacent park managers may assist in access management planning
- Lower level interagency planning team should identify local public input issues around motorized and non-motorized uses on Crown land, priorize areas of greatest concern and propose solutions through a management plan
- Post signs at designated trailheads stating motorized use is inappropriate

OVERALL BIODIVERSITY GOAL

To ensure the abundance and natural diversity of native species and their natural habitats throughout the Robson Valley.

Minimize conflicts between motorized and non-motorized recreational uses

- To identify, protect and recover native, endangered, threatened and vulnerable species and ecosystems.
- To ensure that environmentally sensitive areas are managed or left intact to respect their sensitivity and maintain their inherent value.

VALUE OBJECTIVE

STRATEGY

GENERAL Maintain or enhance **BIODIVERSITY** species, structural characteristics and species compositions in managed forests that are present in natural forests

> Identify and protect small, unique areas of unusual and rare species

Where possible maintain linkages to enable the flow of species, their genetic attributes, diversity and nutrients between undeveloped areas

- Mimic type, degree and frequency of natural disturbances when logging. Make use of selection and group selection systems and clear cut only in appropriate timber types and situations
- Where possible, retain natural levels of snags, residual dominant trees, coarse woody debris etc.
- Develop special management prescriptions for special habitats such as glacier lilies, bat caves and flying squirrel habitat
- Manage red listed communities and/or species of plants and animals by protecting habitat from disturbance and loss
- Manage blue listed species of plants and animals and their habitat to minimize loss of habitat and disturbance
- Identify and protect representative areas of macrolichen forest (e.g., establish sensitive areas) with local public input
- Forest harvesting patterns should be designed to maintain the connectivity of mature forests across and along all watersheds. Special emphasis should be given to maintaining

mature forest connectivity across managed landscapes that connect protected areas

STRATEGY

- Where appropriate, Forest Ecosystem Networks (FENs) will be established during landscape unit planning. FEN designs should maintain continuity/linkages between; critical wildlife habitat, protected areas, travel corridors, various landscapes (alpine, early seral, mature forests, old growth etc.) and where possible incorporate inoperable and/or unmerchantable forested areas
- Conduct standing stock (anadromous) and habitat inventories in those areas where accurate fisheries information is unavailable.
- Identify fish stocks or fish habitat that show a high potential return for enhancement or restoration work and initiate projects when feasible. Assess rehabilitation or enhancement work by monitoring changes to fish populations in these areas.
- Identify unique, rare and/or endangered stocks for special consideration, examples include white sturgeon, bull trout and lake trout
- Assess the current level of protection in resource development plans and develop a detailed riparian

FISHERIES Conserve, restore or enhance the abundance and genetic diversity of naturally occurring fish stocks

> Protect or restore the structural, functional and biological diversity of stream and riparian habitat

Restore degraded fish habitat to achieve a net gain of the productive capacity of fish habitat

VALUE **GENERAL**

OBJECTIVE Maintain or where

(cont'd)

BIODIVERSITY necessary restore the natural diversity, abundance and habitat of native plant and animal species

VALUE

OBJECTIVE

FISHERIES Maintain or enhance the benefits of aboriginal, sport and commercial fisheries

> Ensure adequate instream flows and high water quality standards for the sustenance of fish populations

OLD GROWTH Manage for the maintenance of representative old growth stands and their attributes management plan for sensitive areas that may require additional protection

- Encourage restoration of previously degraded stream/riparian habitat through municipal Acts, and local by-laws and other programs
- Establish adequate windfirm riparian management areas along major water courses to promote channel stability, maintain natural water temperature regimes and sustain natural rates of large and small organic input

STRATEGY

- Monitor development activities in the Robson Valley to assess the impact of development on anadromous fish species and their habitat
- Promote non-consumptive uses of fish such as fish viewing areas and catch/release fisheries

See Environment section for water quality and water quantity strategies

- Maintain well distributed representative areas of old growth within and across landscape units through consideration of the Biodiversity guidebook (FPC), Protected Areas and the work of the Robson Valley Old Growth Strategy document
- Promote harvesting techniques that limit site disturbance in old growth managed areas

WILDLIFE Maintain and where necessary, enhance wildlife and habitat to promote healthy populations, genetic variability and distribution

VALUE OBJECTIVE

- WILDLIFE Maintain or increase numbers, enhance(cont'd) populations and habitat
- **Caribou** Protect critical high elevation winter range habitat

Improve understanding of the behavior and biology of caribou populations and the effect of resource development on caribou habitat

- Maintain old growth attributes through the use of a range of silvicultural systems in OGAs (old growth areas) while minimizing site disturbance.
- Carry out an inventory of native species, their distribution and key habitats
- Conduct a population inventory/survey for key species of special concern with inadequate inventory information.
- Reduce predator access into critical wildlife habitat by minimizing or eliminating snowplowed roads and managing packed trails in cooperation with snowmobilers and other users
- Undertake public consultation before export/import of wildlife

STRATEGY

- Consider reintroduction of caribou where historical herds have been depleted or decreased, priority given to areas that have been disrupted by human activities
- Incorporate sensitive timber extraction in areas designated as Caribou Medium and upon further research and local public input consider incorporation of such practices in Caribou High areas
- Encourage unfragmented spatial separation between caribou and other ungulates to reduce predation by wolves

VALUE	OBJECTIVE	STRATEGY
Ducks and other waterfowl	Maintain or enhance populations, diversity of species and habitat	 g) review attributes required in movement corridors Assess existing protection of wetland habitat and provide additional protection where necessary
		 f) identify habitats used by caribou and characterize key attributes of those habitats
		e) evaluate the impact of current guidelines for timber harvesting in caribou habitat
		Undertake a research project that would:
		Encourage cooperation between adjacent jurisdictions in research and management of caribou populations
		Document historical and current distribution of caribou populations within the plan area to determine cause of local population variations
		Undertake research or study of caribou populations and their use of habitat in the plan area
		Promote public education and awareness of the need to avoid interaction with caribou

WILDLIFE

numbers, genetic

variability and

distribution

(cont'd)

Grizzly

- ➡ Identify, conserve and manage Maintain or enhance habitat and/or increase critical habitat in medium and historically high density bear zones
 - Encourage land use practices that promote the long term viability of important forage species (e.g., Vaccinium, Ribes
etc.)

- Manage road access into grizzly high habitat to reduce disturbance, displacement, habitat loss and mortality rates due to poaching and other human activities.
- Consider establishing grizzly bear management areas and other land use designations that benefit grizzly bear populations
- Ensure the continued existence of adequate seasonal foraging sites with adjacent cover
- Minimize bear displacement from preferred habitat by preventing habitat fragmentation
- Where feasible locate roads to avoid avalanche paths, especially on south facing slopes. Road locations close to avalanche paths should avoid allowing a clear line of sight between road and path
- Where important avalanche paths are identified, a total reserve of 100 metres should be left on each side of the path. Selective harvesting will be considered pending further research
- Be aware of concentrated seasonal bear use in an area and whenever possible, time human activities (cruising, planting, mining exploration, recreation/tourism) to avoid conflicts
- Promote vegetation management strategies that maintain the quality and

Moose, elk Maintain or enhance and deer populations and habitat winter

range			quantity of browse species (e.g., willow and red osier dogwood, Saskatoon berries, hazel nuts) during stand management activities
		•	Maintain critical habitat attributes by establishing guidelines for areas where winter range is identified.
VALUE	OBJECTIVE		STRATEGY
WILDLIFE	Maintain or enhance populations and habitat	•	Identify and conserve travel corridors between alpine areas
(cont'd)			and low elevation habitat.
Mountain goats		•	Develop a management plan that includes inventories of goat populations and habitat,

OVERALL ECONOMY GOAL

- To promote the diverse, balanced and sustainable use of land and resources, which meets human needs, and supports healthy, viable and stable communities and ecosystems in the Robson Valley.
- To seek full employment through "value-added" enterprises that enhance other economic benefits to local communities.
- To establish a secure resource land base that can provide and sustain an abundance of raw materials and other economic resources by identifying and maintaining areas that are particularly suitable for agriculture/range/food production; forestry; fisheries; trapping, hunting and gathering; tourism and recreation; and energy, minerals, aggregate and petroleum resources.
- To maintain lands and resources in a manner that increases economic, environmental and social benefits.

VALUE OBJECTIVE

STRATEGY

addresses access issues and develops strategies to maintain

winter range habitat.

Consider re-introduction to historical use areas

GENERAL ECONOMY

Promote the economic and social health of communities in the Robson Valley

Maximize economic return to the community and the province for resources harvested

Diversify the local economy

Maintain the potential and encourage the development of environmentally sensitive small hydroelectric development

Promote local employment through value added and economic activities and to maximize economic returns to local communities

Recognize other potential economic activities (e.g., botanical products, potable water,

- Honour existing resource tenures
- Provide opportunities for contracts and licences to local residents and promote local processing of timber harvested in the Plan Area
- Minimize waste levels in the planning, harvesting and processing of timber
- Increase and encourage tourism activities
- Encourage small business development, such as cottage industries
- Promote Crown land development for a variety of land uses by adoption and implementation of the Robson Valley Crown Land Plan
- Use proactive planning processes to promote the maximum number and diversity of jobs
- Ensure opportunity for local public consultation before hydro-electric development occurs.
- Encourage local hiring by contractors, licensees, government and crown corporations where permitted by policy
- Encourage viable labor intensive methods of harvesting, processing, silvicultural activities, tourism related activities, (e.g., horse and selective logging, nonchemical brushing and

medicinal plants) consistent with other resource objectives weeding)

- Encourage stand tending to favor future *quality* of the stand over *quantity* of fibre by, for example, management activities such as pruning to promote clear saw logs and determining rotation ages on the basis of desired quality of final product.
- Promote and encourage value added wood processing to maximize the end value of all wood harvested. Encourage viable industries and management activities which have a high labor to volume ratio
- Increase number and encourage operation of small sawmills by:

f) allowing on site milling for very small systems

g) increasing the number of small timber sales at reduced volumes

h) supporting the creation of a log yard to sell small quantities of sorted timber and distribute timber to the best end user to give the highest social and economic return

 i) encourage flow of wood through value added processes before chipping

When a new economic activity is identified, the responsible agency or proponent will identify the area of interest; the scope of the project; the

AGRICULTURE OBJECTIVE

VALUE

Maintain or enhance opportunities for use of Crown Land, vegetation, and water resources for agriculture, fisheries and food production

- ENERGY Maintain opportunities and access for exploration, development and transport of energy resources
 FOREST Identify areas that are
- particularly suitable

MANAGEMENT for forestry and

impact to other resource values; and create a management plan to address issues

Other agencies and users will work to incorporate other economic activities to enhance overall economic activity

STRATEGY

- Support the purpose and intent of the Agricultural Land Reserve (ALR)
- Preserve and maintain the quality of soil within the ALR through appropriate legislation
- Support the Robson Valley Crown Land Plan and its designated Agricultural Development Areas
- Allow Crown lands with suitable agricultural potential to be alienated for agricultural uses via the Crown Agricultural Lease policy
- Improve mechanisms for identifying Crown land areas adjacent to private agricultural operations that are of interest for future alienation for agricultural uses
- Allow exploration, development and transportation of energy resources within the appropriate regulatory framework
- Assess opportunities for expanding the timber

timber production to maintain a sustainable forest sector

Maintain or enhance opportunities for timber harvesting which will contribute to sustainable levels within the TSA

Maintain or enhance forest productivity on the timber harvesting land base

Maintain an ongoing supply of old growth wood for harvest harvesting land base.

- Improve forest inventory information
- Establish the Forest Land Reserve (FLR) outside the Agricultural Land Reserve (ALR) and non-provincial forest designations in the Robson Valley Crown Land Plan
- Explore opportunities for increasing utilization standards provided other values are not compromised
- Investigate timber supply alternatives that may offset possible AAC decline identified in the Timber Supply Review, September 1994
- Identify opportunities to apply a wide range of stand tending and improvement treatments to enhance timber values emphasizing non-chemical means
- Identify opportunities for intensive forest management
- If larger planting stock (e.g., 415B) will outgrow its competition then this stock should be used. Use sound natural regeneration practices or plant ecologically suited species to maintain natural diversity
- Monitor and manage epidemic levels of disease and insects
- Encourage more woodlots in areas with a suitable age class structure to support ongoing management.

- Manage for natural levels of soil structure, nutrient levels, hydrological patterns, climate regimes, soil communities and ecosystem functioning to maximize soil and general ecosystem health.
- Reforest all accessible backlog not sufficiently restocked sites by 2005
- Allow the control of competing brush to optimize growth, through effective vegetation management techniques
- Conduct annual aerial reconnaissance and follow-up field assessments where appropriate to determine severity of insect and/or disease attack and design appropriate salvage efforts
- Use appropriate silvicultural systems and harvesting equipment suited to terrain, soils and forest cover
- Extend rotation period of some stands
- Assess and manage epidemic or potentially epidemic outbreaks of disease and pests
- Harvesting design should consider visual quality and windfirmness and experiment with contouring and feathered edges to minimize windthrow potential.
- Assess the current level of protection in resource development plans and develop a detailed riparian management plan for sensitive

Identify important values other than timber and wherever possible, conduct forest management in a manner that is compatible with those values

areas that may require additional protection

- Establish adequate windfirm riparian management areas along major water courses to promote channel stability, maintain natural water temperature regimes and sustain natural rates of large and small organic input
- Cutblock design and harvest methods should incorporate, where appropriate, single tree and patch retention adjacent to and within the cutover area. For example: patches can be concentrated around snags, wetter areas, wildlife habitat, younger forest or nonproductive portions of the block. Blocks should be shaped to maintain wildlife habitat, biodiversity, viewscape quality (FPC)
- Timber harvesting plans must consider identified trail opportunities depending on scenic values and anticipated levels of use.
- Timber harvesting and management strategies will be designed to manage losses to fire, wind, insects and disease.
- Assess and manage epidemic or potentially epidemic outbreaks of disease and pests
- If any trees and healthy advanced regeneration do not pose a problem to seedling survival, then leave as many stems as possible on site for wildlife habitat after

Maintain watershed integrity and stability

MINING Maintain or enhance opportunity for environmentally sensitive exploration and development of mineral resources, particularly industrial minerals

> Ensure subsurface resource potential and the hidden nature of the resource are considered in Land and Resource Management Planning

Respect resource

harvesting. For example: large cottonwood, cedar and other wildlife trees should be left as long as they pose no danger to forest workers or other users.

- During the public review process, silvicultural prescriptions as part of development plans should be available for public viewing at the McBride Forestry office, and the Valemount Government Agent's office as well as at the originating licensee's office
- Where necessary, or under direction of resource agencies, identify and map terrain hazard areas within the Robson Valley TSA to provide longterm direction for road design and forest harvesting plans
- Encourage watershed restoration
- Integrate mineral exploration and development activities with other resource activities
- Promote and encourage mineral exploration through a timely and efficient permitting process
- Implement revisions to standards of practice and the permitting process to provide consistency with the Forest Practices Code and other relevant legislation
- Ensure opportunity for local public participation in review of small mine development in areas where concerns are

tenure rights

expressed

- RMZ objectives will be addressed through the appropriate mine development/environmental assessment review processes
- Ensure that management plans for all zones other than Protection RMZs clearly convey that responsible mineral exploration and mining are acceptable activities
- Maintain a current mineral resource database
- Monitor and review, as per government policy, lands closed to mineral and placer exploration (e.g., no staking reserves) and recommend lifting NSRs where review determines they are no longer needed
- Provide for security of tenure in designations open to exploration and mining
- Minimize site disturbance during the exploration stage. Extensive logging may occur only after mine development and/or production plans are approved. Falling of timber on exploration or development sites shall be consistent with the stage of property development
- New access will be coordinated with access requirements of other resource users as much as possible
- The appropriate location of exploration access will be

Maintain environmentally acceptable access by the mining sector to mineral lands

Encourage educational and recreational geologic activities

RANGE

Ensure that all watersheds are protected from adverse impacts of domestic animals

Maintain or enhance opportunities for grazing use designed to minimize impacts on sensitive wildlife habitat

- Road building to access mineral properties in currently unroaded areas will be allowed only when sufficient exploration demonstrates that road access is required for further development
- Proposed mine development, access and visual quality concerns will be addressed in the appropriate mine development/environmental assessment review processes
- Early stage mineral exploration in alpine areas should use helicopter access only. Proposed road access in alpine areas will be referred to the appropriate agencies with opportunity for local public input.
- Identify areas for potential geologic recreational activities
- All permits and leases will require Range Use Plans that identify goals for the area, inventories of plant communities, prescribe level of use and set a grazing schedule.
- Where terrain and soils are suitable, allow grazing on all blocks while managing in consideration of all users including: recreation, silviculture, forest protection, fish and wildlife needs.
- Cattle and sheep grazing activity should avoid alpine environments. Maintain long

TOURISM

Maintain a balance between commercial recreation, public recreation and other users through the protection and maintenance of backcountry areas Promote environmentally sustainable tourism

Provide opportunities

term forage access by shifting tenures from maturing cutblocks to new suitable cutover areas, roads and landings

- All range users will require a grazing management plan
- Support manual control (cultural, mechanical and biological) of noxious weeds. Chemical measures will be used only when other methods are not viable due to terrain, herbaceous type, density and cost.
- When reclamation seeding, use indigenous grass blends subject to availability and cost.
- Allow for new range opportunities without significantly compromising other resource values.
- Range use will be managed to minimize the effects on riparian areas
- Based on capability and sustainability, develop target AUM levels for the plan area
- Commercial backcountry recreation proposals will be assessed for environmental impacts and will include public consultation.
- All commercial backcountry operations should be licenced
- Identify and promote tourism opportunities within the plan area
- In more detailed levels of planning, identify acceptable

for growth within the tourism industry

Provide for a diverse range of tourism opportunities practices and potential conflicts associated with sustainable tourism

- Commercial recreation will minimize conflicts with fish and wildlife, particularly in high elevation areas with caribou values.
- Allocate/permit and manage tourism opportunities through the Commercial Backcountry Recreation Policy.
- Ensure local public participation in the review of tourism opportunities and allocation of permits

c) ensure balance with public recreation opportunities

d) ensure public accessibility to backcountry areas where access does not compromise other values

e) ensure local opportunities and interests in commercial tourism

- Conduct an inventory of existing and potential tourism opportunities.
- Identify suitable tourism areas and maintain future tourism opportunities
- Prepare a tourism development strategy for the plan area
- Promote the plan area as a year-round destination
- When reviewing commercial backcountry proposals, recognize those that provide the greatest benefit to the local

community

Develop access management plans in conjunction with tourism and recreation groups in the valley

OVERALL ENVIRONMENT GOAL

- To reduce and work to eliminate pollution of land, water and air.
- To protect soil and soil fertility by minimizing activities that cause soil erosion and degradation.
- To protect the quality and quantity of ground and surface water and to reduce and work to eliminate water pollution and sedimentation caused by human activities. To improve water quality where it has been degraded. To manage natural stream flow levels to safe guard fisheries, wildlife, recreational values, domestic agricultural and ecosystem functioning.
- To minimize practices that cause changes to local climate, wind patterns and precipitation regimes.

VALUEOBJECTIVEGENERALMinimize use ofENVIRONMENTherbicides and
pesticides

Reduce the need for herbicides and pesticides by using appropriate management strategies

STRATEGY

- Public health concerns to be the highest priority when considering herbicide or pesticide use
- Maintain a shade component to reduce brush on a site specific basis
- Encourage the use of techniques that will cause less forest floor disturbance and will not expose the soil on brush prone sites (e.g., cable yarding, more winter emphasis, reduce large scale scarification and burning)
- Plant trees as soon as possible after harvest to get a head start on brush on a site specific basis

- Herbicides should only be used on a site specific basis and only as a last resort when there are no viable alternatives, determined on the basis of terrain, herbaceous type and density, and cost
- Work to eliminate herbicides for brush control, minimize use for noxious weeds and encourage manual/biological controls
- Raise public awareness of and participation in noxious weed control through signage and public information
- There is no formal requirement for the Ministry of Transportation and Highways to post signs along the highway right-of-way when using herbicides, other than those required under any herbicide application permit. However, the ministry is encouraged to undertake a more vigorous and active consultation and public notice program in the Robson Valley
- Identify and designate some no spray zones (e.g., recreation sites, berry picking sites etc.)
- Protect soil fertility, structure and avoid unnatural erosion
- Burning should be assessed on a site specific basis and utilized only when other methods are not viable
- Promote harvesting practices

Conserve soil quality

Minimize the use of slash burning to protect air quality

WATER QUALITY Protect or enhance surface water quality

Protect ground water quality

that reduce slash

- Where possible, leave nonmerchantable timber standing
- Encourage mulching instead of burning
- Notify local communities of burning plans
- Establish windfirm Riparian Management Areas along water courses (will promote channel stability, maintain natural water temperature regimes and sustain large and small organic debris)
- Ensure, through erosion control, and maintenance of natural runoff and drainage patterns, that prevention of stream contamination from pesticides and fertilizers is implemented for all streams
- Identify high terrain hazard areas and manage development in these areas to minimize erosion and slope failures
- Assess and monitor road development and deactivation plans to minimize the potential for road failures by ensuring the maintenance of natural drainage patterns.
- Limit the use of pesticides, herbicides, fertilizers and petroleum products adjacent to water bodies and prevent entry of contaminants into the water cycle
- Design policy and direction for management of ground water

		 quality ➡ Under the Watershed Restoration Program, restore sites where water quality has been degraded
	Protect the full range of values for alpine lakes	Alpine lakes greater than five hectares in size will be assessed and classified accordingly. These lakes will be managed as a minimum of class C lake until formally classified, as per the Prince George Region Lakeshore Management Guidebook (PGRLMG)
		Should resource development occur, more detailed planning must identify and include provisions to address or maintain recreation values associated with lakes
WATER QUANTITY	Protect or restore water quantity and natural hydrologic regime of each	Priorize and conduct watershed cumulative effects analysis in fish bearing and community watersheds.
	watershed Prevent loss of life and property due to flooding and erosion	Where necessary, limit further development according to a rate of cut for each watershed to prevent further changes to natural rates of direct runoff, groundwater runoff, evapo- transpiration and stream flow
		Assess the present condition of each watershed in the planning area
		Apply zoning and bylaw conditions to new Crown land, subdivisions and other

Prevent encroachment on the floodplain through appropriate

developments

development setbacks and covenants

OVERALL FIRST NATIONS GOAL

To recognize aboriginal interests in the planning area and to encourage awareness of aboriginal rights the Robson Valley

OBJECTIVE

Identify, acknowledge and respect aboriginal interests

STRATEGY

- Provide opportunities for meaningful consultations with First Nations groups before decisions are made
- Avoid infringement of traditional uses: fishing, hunting, gathering, travel, camping, occupation, special cultural and sacred areas and benefits from the environmentally responsible extraction of resources
- Support First Nations economic development: jobs, training, joint ventures
- Support public education about First Nations interests
- Provide an equal opportunity for First Nations involvement in public input land use processes: protected areas, special management areas, integrated management, settlement planning

OVERALL PRESERVATION/CULTURAL HERITAGE GOAL

To preserve wilderness which is representative of the natural diversity of ecosystems, as well as the special, natural, cultural heritage and recreational features in the Robson Valley, in their natural state, for the sake of maintaining their intrinsic, scientific, holistic and spiritual values, and for the enjoyment and education of present and future generations.

OBJECTIVE

Maintain large, natural, and undisturbed places. Recognize the intrinsic value of nature

Preserve the natural, cultural and recreational values within the plan area and especially within existing provincial parks, recreation areas and ecological reserves

Manage impacts to cultural heritage resources including archaeological sites and traditional use sites

STRATEGY

- Protected Areas Strategy
- Consider sensitive area designation where special scientific, wilderness, cultural, holistic and spiritual values are identified
- Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered
- Ensure that local public input is solicited and incorporated into land management plans and Provincial Park Master Plans
- Manage impacts to archeological sites through application of relevant legislation and policy (e.g., Forest Practices Code, Heritage Conservation Act, Protocol
 Agreement on the Management of Cultural Heritage Resources and the British Columbia Archaeological Impact Assessment Guidelines)
- First Nations will be consulted to determine the location and significance of traditional use sites
- Archaeological impact assessments may be undertaken if required during more detailed levels of planning

OVERALL RECREATION GOAL

To maintain the recreational values in the Robson Valley and to enhance recreational opportunities, particularly to enjoy wildlife and scenic surroundings.

OBJECTIVE

Protect, maintain or enhance opportunities for public recreation

STRATEGY

- Where compatible with other values, maintain access to fishing, hunting and gathering opportunities (i.e., berries, mushrooms)
- Update the existing recreation trail inventory and protect existing public recreation trails
- Designate traditional horseback trails and develop improvements to enhance the resource and manage impacts on the alpine resource.
- Set visual landscape management objectives to ensure resource extraction activities are compatible with public recreational use (See visual quality strategies)
- Inventory, assess and map special features within the Robson Valley plan area. Establish a map notation or other designation to identify those values.
- Support and promote traditional snowmobile use areas
- Where a point of interest exists resource development will consider potential recreation trails
- Whenever possible, future trail locations should be in nonoperable timbered areas
- Create more forest recreation sites and hiking trails
- Signs on logging roads should indicate level of current industrial use (i.e., active,

Promote environmentally sustainable public recreation

none, some)

- Manage some high value backcountry areas for nonmotorized public recreation
- Promote public recreation stewardship and safety responsibilities
- Wherever feasible, design road access so that motorized recreational use minimizes encroachment into traditional hiking destination areas and alpine environments
- Protect sensitive areas from motorized use
- Minimize damage from off-road vehicles

OVERALL SUSTAINABILITY GOAL

To achieve sustainable levels of use including harvesting of resources, through land use decisions that promote and encourage such use, for the benefit of present and future generations

OBJECTIVE

Limit harvest of all natural renewable resources to sustainable levels (including old growth timber)

STRATEGY

Undertake land and resource management planning that balances social, economic and environmental values

OVERALL VISUAL QUALITY GOAL

To maintain and/or enhance the scenic beauty and visual quality of the planning area with particular attention to the Robson Valley Settlement Corridor.

OBJECTIVE

Identify and manage some areas to maintain extremely high

STRATEGY

Conduct an inventory of areas and/or features of unique scenic beauty and pay particular attention to current and future opportunities for commercial and public backcountry recreation, scenic values

Address visual quality concerns in resource extraction and development areas. guide-outfitting, snowmobiling, hiking and ski touring

Forest development plans will address visual quality through choice of silvicultural system, block design and layout of patch retention where possible

Exploration, mine development and other land uses that affect visual quality will utilize existing topography and ground conditions to reduce impact on visual values

Development activities must have a plan for visual management which is available for local public input. For example hydro lines, railroads, pipelines, highways and gravel pits

Maintain a visual landscape inventory

At more detailed levels of planning and in concert with other visual management strategies in this plan, the Ministry of Forests recommended and currently approved VQOs which will guide commercial timber harvesting, recognizing that the public has access to further input

2.3 RESOURCE MANAGEMENT ZONES

Resource Management Zones (RMZs), part of the designation system used in this strategic plan, are large contiguous geographic areas within the planning area with a common label. RMZ labels indicate which resource uses or objectives are to be given priority or emphasized over others within the zone. Resource management zone labels reflect the average level or type of management within the zone. Within any given RMZ designation, there will likely be small areas managed to a different standard than the overall average, because at this scale of planning RMZs cover large tracts of land on which there is considerable natural variability of resource values, qualities and opportunities. For example, within the Resource Development Emphasis RMZ there may be smaller areas managed like areas designated special management and vice versa.

Resource Management Zones, along with objectives and management strategies for each zone are the basis of the Land and Resource Management Plan. The labels given to the zones, and the associated objectives and strategies, represent the planning team's priorities for use and management of the planning area. It should be noted that many of the RMZ strategies were developed by addressing where resource values were in conflict (constrained). These strategies give direction for resource development and are listed under the resource value that would be impacted. There are also six subzones within the plan area. Subzones are smaller geographic areas within a RMZ. There are usually one or two unique values identified within the subzone that require specific management direction.

Unless otherwise noted, the overall objectives and strategies in this report, provincial legislation, policies and guidelines for land and resource management are to be followed in each zone.

The Resource Management Zones (RMZs) have been categorized into five classifications and are broadly defined in the following table:

CATEGORY OF RMZ RESOURCE DEVELOPMENT EMPHASIS

DESCRIPTION

- those areas identified, on the basis of suitability, for intensive development of resources such as timber and minerals
- resource development activities are subject to all provincial regulations and policy (e.g., the Forest Practices Code of British Columbia Act)
- guidelines for managing other resource values will be applied in a way that recognizes the resource development priority of the zone
- investments in resource development and enhancement are encouraged

CATEGORY OF RMZ	DESCRIPTION
GENERAL	these areas are to be managed for a wide array of resource values and permissible uses
	guidelines for non-extractive resource values may modify resource development activities
	investments in resource development and enhancement are encouraged where these do not conflict with other management objectives
SPECIAL	these areas for which the conservation of one or more resource

	values, such as habitat, recreation, scenery and community watersheds, are a priority
	resource development activities may be subject not only to provincial regulations and guidelines, but also to more comprehensive resource conservation strategies
	these areas are frequently a high priority for the completion of more detailed local plans
SETTLEMENT/ AGRICULTURE	currently used or proposed for settlement use by an Official Community Plan, Robson Valley Crown Land Plan or LRMP
	primarily private land planned and managed by local government under the Municipal Act
	resource development is encouraged and permitted while being consistent with zone objectives
	may include lands currently used for agriculture, water supply, mining, forestry and other settlement purposes (residential, commercial, transportation, industrial, institutional)
	Iands in the Agricultural Land Reserve and other lands, including foreshore and water source and storage areas, currently used or proposed by this LRMP for use in food production activities
PROTECTION	areas protected for their natural, cultural and/or recreational values as defined by the Protected Areas Strategy
	logging, mining, hydro-electric dams and oil and gas developments are prohibited

The plan area has been divided into 23 resource management zones (RMZs), some of which are further classified into subzones. The resource management zones in the Robson Valley are:

Resource Development Emphasis RMZs:

•	Holmes/McKale RMZ E
•	East Kinbasket RMZ G
•	West Kinbasket RMZ H
⇒	Castle RMZ M
General RMZs:	
÷	Morkill RMZ D
÷	Upper Canoe/Premier RMZ I
•	Cariboo RMZ K
÷	Goat RMZ L
Special RMZs:	
•	Community Watersheds RMZ C
•	Rocky Mountain Trench RMZ B
•	Boundary/Horsey RMZ F
•	Upper Raush RMZ J
Settlement/Agriculture RMZ:	
	Sattlement/Agriculture PM7 A
	Settement/Agriculture KWZ A
Protected Areas:	
•	Betty Wendle Protected Area
•	Cariboo River Protected Area
•	Foster Arm Protected Area
•	Holliday Creek Arch Protected Area
	Jackman Flats Protected Area
	Lower Raush Protected Area
•	Small River Caves Protected Area
•	Swiftcurrent Protected Area
•	Upper (Middle) Raush Protected Area
•	West Twin Protected Area

The six subzones are:

- Cushing Creek (Morkill RMZ D)
- Holliday/Baker Creek (partly in Rocky Mountain Trench RMZ B, partly in Boundary/Horsey Creek RMZ F)
- Lower Raush (Castle RMZ M)
- Selwyn Range (East Kinbasket RMZ G)
- Tete Creek (partly in Rocky Mountain Trench RMZ B, partly in Upper Canoe/Premier Range RMZ I)
- Upper Goat (Goat River RMZ L)

2.3.1 RESOURCE DEVELOPMENT EMPHASIS RMZS

Management objectives and strategies (common and specific) for:

- ➡ Holmes/McKale RMZ E
- 🏓 East Kinbasket RMZ G
- 🏓 West Kinbasket RMZ H
- Castle RMZ M

2.3.1.1 COMMON OBJECTIVES AND STRATEGIES FOR RESOURCE DEVELOPMENT EMPHASIS RMZS

COMMON OBJECTIVES AND STRATEGIES

VALUE OBJECTIVE

MINING Maintain opportunities for exploration and development of mineral resources and allow for appropriate access

STRATEGY

- Allow efficient and rational mineral resource exploration and development while minimizing surface disturbance and maximizing mineral potential
- Ensure compliance with regulations that govern reclamation of all exploration and mining disturbances
- Monitor and review lands closed to mineral and placer staking and recommend amendments

TIMBER Maintain or increase the timber resource growth on the forest land base and implement silviculture strategies to produce a broad spectrum of timber products

> Ensure a steady and predictable flow of timber with intensive harvesting at a sustainable level

Use cost-effective intensive silvicultural treatments, including spacing, commercial thinning, fertilization and pruning

Allow the control of competing brush to optimize growth, through effective vegetation management techniques

Consider increasing utilization in existing stands

Provide opportunities to increase site productivity, timber quality and utilization on all forested Crown Land

Strive for reduced regeneration delays

Develop timber harvesting plans in cooperation with resource users

Provide opportunity to alter stocking standards to optimize timber production

Harvest within the Forest Practices Code guidelines

Plan for subsequent harvesting through Total Resource Planning

2.3.2 GENERAL RMZS

Management objectives and strategies (common and specific) for:

- Morkill RMZ D
- Upper Canoe/Premier Range RMZ I
- 🏓 Cariboo RMZ K
- 🕩 Goat River RMZ L

2.3.2.1 COMMON OBJECTIVES AND STRATEGIES FOR GENERAL RMZS

COMMON OBJECTIVES AND STRATEGIES

VALUE OBJECTI COMMERCIAL Ensure timber RECREATION harvesting is s

OBJECTIVE Ensure timber harvesting is sensitive to commercial recreation values STRATEGY

- Timber harvesting plans should consider heliskiing use
- Heliski operations will address their interests through the forest development plan review process (i.e., cutblock shape, size, stump height and silviculture requirements)
- Timber licensees and heliski operators will consult each other where timber harvesting and ski runs overlap
- Participate in lower planning to maintain access to mineral lands and to maximize compatibility with surface users
- New road access will be coordinated with the access requirements of other users and will address special issues related to wildlife management, such as seasonal use
- The appropriate location of exploration access and timing of exploration activities will be designed to minimize impacts on wildlife

Ensure that trails are identified and mapped

Timber harvesting plans must address existing and proposed hiking and horse trails by considering existing trail condition, location, scenic values and level of use

Should logging occur near or

MINING Maintain opportunities for exploration and development of mineral resources and allow for appropriate access

PUBLIC RECREATION

Ensure resource development is sensitive to public recreation values **TIMBER** Optimize timber growth consistent with resource value objectives over identified hiking trails, the trail condition and quality of access must be maintained or relocate the trail if necessary

Management activities will consider the type and use of trails (i.e., access or visual)

Consider where necessary, total resource planning to integrate other values

Determine sites where water and wildlife will not be affected significantly by intensive silvicultural practices

Strive for reduced regeneration delays

Enhance the productive capacity of forest stands by using appropriate silviculture systems

Utilize cost effective intensive silvicultural treatments, including spacing, commercial thinning, fertilization and pruning, on a site specific basis

Utilize improved seedlings where appropriate, while maintaining genetic diversity

2.3.3 SPECIAL RMZS

Management objectives and strategies (common and specific) for:

- Community Watersheds RMZ C
- Rocky Mountain Trench RMZ B
- Boundary/Horsey RMZ F
- Upper Raush RMZ J

2.3.3.1 COMMON OBJECTIVES AND STRATEGIES FOR SPECIAL RMZS

COMMON OBJECTIVES AND STRATEGIES		
VALUE	OBJECTIVE	STRATEGY
COMMERCIAL RECREATION	Ensure timber harvesting is sensitive to commercial recreation values	Timber harvesting plans should consider heliskiing use
		Heliski operations will address their interests through the forest development plan review process (i.e. cutblock shape, size, stump height and silviculture requirements)
		Timber licensees and heliski operators will consult each other where timber harvesting and ski runs overlap
MINING	Ensure flexible resource management will accommodate the localized impacts of site access, advanced exploration and mining activity Incorporate natural, visual and recreational values in exploration planning through the permitting process of the appropriate resource agency	 Mitigate potential land use conflicts with visual and natural values by ensuring compliance with mineral exploration guidelines and zone management objectives Ensure that exploration and site access is undertaken with sensitivity to the primary values for which these zones are identified; minimize disturbance in sensitive wildlife areas and ensure appropriate reclamation is conducted
PUBLIC RECREATION	Ensure resource development is sensitive to public recreation values	Timber harvesting plans must address existing and proposed hiking and horse trails by considering existing trail conditions, locations, scenic value and level of use

Management activities will consider the type and use of

- **TIMBER** Allow timber harvesting with silviculture systems that are compatible with designated priority emphasis resource values
- **TOURISM** Maintain the natural character of the area and provide opportunities for tourism in a backcountry/ wilderness setting

trail (i.e. access or visual)

- Manage logging and silviculture to resemble natural age class distribution over the landscape and in accordance with biodiversity objectives
- Determine sites where water, wildlife and other resource values will not be affected significantly by intensive silvicultural practices
- Manage the type and intensity of tourism activities to minimize impacts on backcountry/wilderness values
- Develop coordinated access management agreement between stakeholders
- Ensure balance with public recreation opportunities
- Forest development plans will address visual quality through choice of silvicultural system, block design, layout of patch retention where possible
- VISUAL Address visual QUALITY Address visual quality concerns in resource extraction and development areas

Explore opportunities to incorporate larger retention patches into cutblocks

2.3.4 SETTLEMENT / AGRICULTURE RMZ A

Total area: 69,587 hectares



Total area: 69,587 hectares

General Description

The Settlement/Agriculture RMZ extends from the Crescent Spur/Loos area in the west to Albreda in the southeast. It is essentially the valley floor and includes agricultural and settlement areas and the Crown Land Plan, enveloping the communities of Crescent Spur, McBride, Dunster, Croydon, Tete Jaune Cache, Valemount and Albreda, as well as the major highway, railway and utility corridors. It accounts for 69,587 ha, or 4.9%, of the plan area.

The topography of this RMZ is generally gentle valley bottom with Camp Creek, McLennan River and the Fraser River meandering through it. From Tete Jaune upstream to the border of Mt. Robson Provincial Park, the gradient increases on the Fraser River with canyons as evidenced by the special features at Rearguard Falls. All of the side creeks and rivers north and east of Valemount flow into the Fraser River watershed. All to the west of Valemount flow into the Canoe/Columbia watershed. Visual concerns are of the utmost importance within this heavily traveled corridor. Climate is variable with higher snow/rain levels in the northwest and drier conditions toward Valemount.

Biogeoclimatic Zones and Forest Cover

The Robson Valley is part of three ecosections: the Northern Columbia Mountains on the southwest; the Upper Fraser Trench in the middle section; and the Northern Park Ranges in the north. The Settlement/Agriculture RMZ has interior cedar-hemlock with ICH wk3 in the north trench and ICH mm in the area southeast of the McKale River. The same dividing line separates the sub-boreal spruce SBS vk in the north trench from the drier SBS dh along the valley floor from McBride through to Albreda.

The forest cover is diverse throughout this resource management zone. In the north around Crescent Spur, the low incidence of natural disturbance has created an

abundance of old growth cedar and hemlock type stands. Mostly located in the northern part of the Fraser River Corridor, some old-growth areas have been identified near the Canoe River. In the south near Valemount, where the climate is far drier, there is frequent fire disturbance and the lodgepole pine and Douglas-fir stands are considerably younger. Much of the land development in the early part of the century involved burning and extensive areas along the valley corridor have regenerated to deciduous species (aspen, birch, cottonwood). Some of the best growing conditions available within the greater LRMP area are found in the Settlement/Agriculture RMZ.

Wildlife and Fishery Values

Wildlife diversity and values are very significant within this RMZ. Many of the midslopes have been dropped from high to moderate density and the valley floor was dropped two rating classes to low due to logging activity, agricultural clearing and related access. A significant caribou travel corridor runs from the West Twin/Legrand area across the valley floor and up East Twin/Fleet creeks. This zone provides key winter range for moose, elk, mule deer and white-tailed deer in the plan area, and is also important as summer range for bears, ungulates and many other species. Due to the relatively mild conditions, low snow pack and diverse forest cover, many wildlife species only occur in the Settlement/Agriculture and Rocky Mountain Trench zones.

Fisheries values are very significant within the Agriculture/Settlement zone. Sensitive aquatic habitat is noted along the Fraser and McLennan Rivers, Swift Creek, Camp Creek, Lost Lake and Cranberry Marsh. Several of the larger tributaries of the Fraser are noted for aquatic habitat. The McLennan River, Swift Creek, Canoe River and Camp Creek are known class A fish habitat, as is the Fraser River and all its major tributaries.

This RMZ has the highest concentration of salmon in the entire Robson Valley Forest District. There is known chinook spawning in the Fraser River main stream and the flood plain reaches of the Morkill, Catfish, Snowshoe, Goat, East Twin, West Twin, McKale, Holmes, Nevin, Holliday, Horsey, McLennan and Swift Creek. There is a major spawning ground in the Fraser River around Tete Jaune Cache. Sockeye salmon have been noted spawning in the Holmes River, albeit infrequently; plus, Kokanee spawn regularly in Camp Creek. There are resident fisheries values throughout this RMZ, including bull trout, a blue listed species. There are possible sturgeon and burbot populations in the Fraser River. Important lake fisheries are noted in Shere, Cedarside and Little Lost Lake with ongoing stocking programs. Kinbasket Lake provides suitable fish habitat when lake levels are high enough.

Resource Development

Logging has been important in this area since the railroad was built in 1912-14, when logs were needed for bridge timbers, decking and railroad ties. Many areas were selectively logged for specific products such as telephone poles. In recent years, Slocan licensees have actively logged in these zones, although most of the area remains to be allocated.

Most of the zone has primitive road access from logging or agricultural development. Highways 16 and 5, which meet at Tete Jaune, provide access in and out of the valley. There is high visual sensitivity throughout this corridor. Forest health concerns are moderate to high. There is hemlock looper, mistletoe and bark beetle attack in mature timber stands. Plantation pests such as leader weevil, root-collar weevil and armillaria root rot exist throughout the valley.

Mineral potential has been indicated for industrial minerals throughout most of the RMZ. The potential for base or precious metals has been indicated in the Snowshoe Lakes area, in a high elevation band between La Salle Creek and East Twin Creek and in a wide band from Fleet Creek through McBride to Holliday Creek. There is active exploration at Crescent Spur. There are showings of gold in the Ptarmigan Creek area; thorium near McBride; mica, kyanite and beryllium on Mica Mountain; and mica/kyanite along Camp Creek. There is a past producer of silica close to Valemount and past producers of mica between Albreda and Valemount at the Canoe North and Canoe South mine sites.

The valley bottom contains a variety of dairy, beef and mixed agricultural operations. Streams and springs in both the Settlement/Agriculture and Rocky Mountain Trench zones are important water sources for hundreds of households and farms.

The range tenure program is very active in the Settlement/Agriculture RMZ and the neighbouring Rocky Mountain Trench RMZ. There are 15 grazing permits issued (9 completely within zone boundaries and portions of 6 more) plus 21 grazing permits issued (14 completely within zone boundaries and portions of 7 more). Tenures tend to be predominantly for cattle, but have been issued for sheep and horses. One community pasture is established northwest of McBride near the McKale River. The Ministry of Forests has an ongoing program to control noxious weeds within the provincial forest. There are many active trapping tenures within the Robson Valley, as well as several actively used guide/outfitting tenures.

Recreation

Recreation is of great significance within these highly visible Settlement/Agriculture and Rocky Mountain Trench RMZs. BC Forest Service recreation sites are established at McBride Peak; Holmes River; Shere Lake; Tete Jaune Spawning Grounds and Little Lost Lake. An interpretive trail system and picnic site is established at Spittal Creek. Two public use cabins, managed by YORA and the Forest Service, are located on the West Ridge and at McKirdy Meadows. An Ecological Reserve is established at Sunbeam Creek (McBride Peak) and another one is being considered for Jackman Flats. Rearguard Falls and Terry Fox Viewpoints are developed by BC Parks. Locations popular for salmon viewing include: Rearguard Falls; Tete Jaune Spawning Grounds; Swift Creek; Holmes River; plus Camp Creek for Kokanee runs.

Hiking and horse trails, generally accessing alpine areas, are very popular. Established trails include: Beaver Falls; Paradise; McBride Peak/ridge; Clyde Creek; Bell Mountain; Lucille Mountain; Baker Ridge; Natural Arch; Groeneveld; Dunster; Shere Lookout; Tete Creek; Mica Mountain; Little Lost Lake; Terry Fox; McKirdy Meadows/Swift Alpine; and lower sections of Dave Henry Creek. Cross country ski trails include Bell Mountain, Dore River, Jackman Flats and Camp Creek. Snowmobile trails and areas are Bell Mountain; Lucille Mountain and the West Ridge above Valemount. Jet boating, both private and commercial, occurs primarily on the Fraser River but also on the Morkill, Goat, Holmes

and Raush Rivers, if high enough water conditions exist. Canoe and kayak routes include Swift Creek, Fraser, McLennan, Upper Canoe, Canoe, Morkill, Raush, and Holmes Rivers. Berry picking and mushroom picking/wild-crafting are also popular in these zones.

This zone is an important staging area for a wide variety of front and backcountry tourism activities such as heliskiing, helihiking, horse packing and snowmobiling. Commercial heliski tenures have been issued in several areas which overlap primarily into the high elevations. Crescent Spur Helicopter Holidays operates their lodge in Crescent Spur utilizing areas north of Goat River and East Twin Creek (Rider Mountain). Canadian Mountain Holidays, Valemount division, is tenured from Tete Creek south to Albreda. Robson Helimagic has tenure east of Small River to the Robson Corridor and on the Selwyn slopes north of Valemount (a portion of their area is deferred due to goat studies). These companies also offer helihiking opportunities. Potential sites for commercial backcountry tourism have been identified on Big Bell Mountain, the top of Eddy Creek/Lucille, Gold Creek, Westridge and a portion of Mt. Milton/Camp Creek. Hang gliding has provided an attraction for enthusiasts since the 1970's due to road access on McBride Peak.

Special features abound within the Settlement/ Agriculture zone. Features of note include: pioneer cemetery on Old Tete Jaune Road; Oxbow Lakes off mainstream Fraser; Japanese tea house at Tete Jaune; Starratt Wildlife Sanctuary; Fraser Wetlands; Shere and Cedarside Lakes; Lower Snowshoe and Catfish Falls; and Tete Jaune Spawning Grounds.

Culture

Aboriginal sites have been indicated along the salmon spawning grounds of Tete Jaune Cache and a gravesite is evident nearby. The Secwepemc nation has traditionally traveled from the Clearwater Forest District through Valemount to the Fraser River. The seasonal migrations may have been as far west as the Raush River. An archaeological overview assessment conducted in 1995 has shown that the valley bottom has a high potential for having undiscovered aboriginal sites, whereas, the mountain sides have a moderate-to-low potential for aboriginal sites.

SETTLEMENT/AGRICULTURE RMZ A

RMZ CATEGORY: Settlement/Agriculture

MANAGEMENT INTENT: To manage as a Settlement/Agriculture RMZ and recognize sensitive wildlife and fisheries values

For more information, see Section 2.2 Overall Goals, Values, Objectives and Strategies, p. 17.

VALUE OBJECTIVE STRATEGY

AGRICULTURE Maintain or enhance Improve mechanisms to identify

opportunities for use of Crown land, vegetation, and water resources for agriculture, fisheries and food production

Minimize other resource impacts on agricultural enterprises and associated Crown resources and allow exchange of arable and non-arable land between the Forest Land Reserve (FLR) and Agricultural Land Reserve (ALR)

- Encourage the use of domestic livestock for silvicultural vegetation control
- Allow the development of nontraditional agricultural uses of Crown resources (e.g., agroforestry)
- Control noxious weeds where necessary by implementing Noxious Weed Control Plans and enforcing the proper legislation
- Develop mechanisms to minimize impacts between domestic livestock and wildlife uses of grazing resources (land, water, vegetation, access)
- Improve local public participation role in wildlife enhancement and recreational plans in livestock grazing and agricultural areas
- Maintain or enhance the access and use of Crown land and water resources by livestock within the context of the FPC and PAS
- Improve mechanisms to identify and allow exchange of arable non-arable land between the FLR and ALR
- Minimize conflicts between wildlife and recreation enhancement uses with private agricultural operations and Crown grazing
- Minimize conflict with other land use activities which may negatively impact the
Promote agricultural land and water stewardship programs to manage for other resource values

CROWN LAND Ensure the Crown **PLAN** Land Plan remains current to manage for a variety of land use and conservation purposes productivity and sustainability of agricultural uses of Crown resources

- Develop a participatory role for agricultural producers in the development of wildlife and recreational enhancement plans
- Apply the Code of Agricultural Practices for Waste Management, as per Waste Management Act.
- Refer agricultural pollution problems via Agricultural Protection Council through the BC Cattleman's Association or the BC Federation of Agriculture
- Review and update the Robson Valley Crown Land Plan every five years and ensure consistency with the approved direction of the LRMP
- Provide the public with ongoing opportunities to review the Crown Land Plan
- Ensure important high value wildlife habitat and recreation areas on Crown Land are protected from further development
- Promote Crown land development and allocation for a variety of land uses
- Investigate rural subdivision potential on Crown Land outside the ALR
- Ensure critical habitat is maintained for travel corridors through the Crown Land Plan
- Through the Crown Land Plan, protect riparian areas and high

DOMESTIC WATER USE

Maintain or restore water quality and quantity for domestic users value wildlife habitat areas

- Re-assess Crown Land Plan designations along Fraser River to ensure critical wildlife habitat areas are managed for wildlife values
- Complete a wildlife corridor along the Holmes River to the confluence at the Fraser River and across to Castle Creek where possible
- No commercial timber harvesting or new grazing tenures in Wildlife Habitat Management Area (WHMA), Recreation and Conservation Management Area (RCMA) and Natural Environment Area (NEA)
- A volunteer domestic water liaison committee will be established at more detailed levels of planning stage to work with government agencies on developments in watersheds which have domestic water intakes
- All water intakes and related infrastructures of licenced and known water users should be designated as "resource features" as per the FPC and these should apply for Mines, Transportation and Highways and other developments. Springs and seeps should be recognized as Resource Features. The DEO and the DM may also consider Sensitive Area Designation for some of these areas
- There will be mandatory referral of forest development plans to the Ministry of Environment,

Lands and Parks water manager for review and comment

- Establish a minimum 20 metre reserve zone and 30 metre machine free management zone on the main creek upstream of known domestic water intakes. Side tributaries will be assessed during operational planning and in consultation with the volunteer domestic water liaison committee. Reserve and machine free buffer zones will be applied where required
- Before any kind of planned disturbance or development, all licensed and known water users potentially affected by local plans and operations will be notified, in addition to public advertisement. In addition, those users directly affected by upstream operations will be given particular attention by the proponent throughout the process
- MOF and MELP will jointly develop a set of forest management practices for domestic watersheds. These practices will be similar to, or taken directly from, the Forest Practices Code requirements for Community Watersheds (Regs and Guidebook)
- Consideration will be given to designing a FEN where reserve and management zones are required
- Encourage training for contractors and crews to successfully work in watersheds

FISHERIES

Protect or restore the structural, functional and biological diversity of stream and riparian habitat

IMPORTANT Manage riparian RIVERS Manage riparian areas adjacent to the Fraser River to ensure fish and wildlife habitat and recreation values are maintained

- Increase harvest monitoring in domestic watershed areas
- Permit light grazing over a broad area but precautions such as fencing, piping water to troughs and keeping corrals and salt out of riparian zones will be encouraged. Sheep and cattle grazing tenure holders will ensure that livestock do not contaminate water
- Where possible, use experienced contractors and crews
- Ensure herbicides, fertilizers and other substances and residues do not contaminate domestic water
- Identify domestic water supply areas and where appropriate consider designating as community watersheds
- Any mining or exploration activities should consider fishery objectives as outlined by DFO and MELP
- Where necessary, retain reserve of undisturbed vegetative cover along streams on Crown land
- Resource development and other land use activities must recognize the very high anadromous fisheries values in this RMZ
- A 50 metre riparian reserve from the top of the river bank (to exclude non-arable river bank) will be in effect for areas designated for development in the Crown land plan. Side tributaries will be assessed during operational planning and

Manage riparian areas adjacent to the McLennan River to ensure fish and wildlife habitat and recreation values are

Manage the Canoe River for fish and wildlife habitat and recreation values

maintained

reserve and machine free buffer zones will be applied where required

- Areas along the Fraser River in the Provincial Forest (mostly north of McBride and up river of Tete Jaune) will have a 50 metre riparian reserve plus a 50 metre riparian management zone above the high water mark. Partial cutting harvesting systems will be used in the riparian management zone
- These are minimum reserve and management zones and may need to be extended based on operational planning
- Channel bank erosion problems in the mainstream Fraser above the Tete Jaune chinook spawning area will be assessed and may require rehabilitation through revegetation, bank stabilization and other improvement practices
- Establish a 60 metre riparian reserve and 20 metre riparian management zone above the high water mark
- Road development must be a minimum of 100 metres from the McLennan River, and preferably where feasible, 300 metres away
- Under special circumstances, where no alternatives are available, the District Manager of Forests (DM) and the Designated Environment Official (DEO) may approve the road location closer to the river
- These are minimum reserve and

MINING

Encourage new mining opportunities which provide local employment, especially development of quarry and aggregate (sand, gravel) resources Allow exploration and development of mineral resources, particularly aggregates and industrial minerals, within appropriate regulatory framework

OLD GROWTH Manage for the maintenance of old growth stands and their attributes

Minimize access

management zones and may need to be extended based on operational planning

- Locate roads outside wetlands (upper Canoe) wherever feasible
- Establish a 50 metre riparian reserve plus 20 metre riparian management zone outside wetlands as minimum reserve and management zones. These may need to be extended based on operational planning when more detailed planning occurs
- Under special circumstances, where no alternatives are available, the DM and DEO may approve the road location closer to the river

Provide input into appropriate agricultural and local municipal government planning (e.g., Official Community Plans) as required

Ensure that mineral exploration and mining activities within settlement/agricultural area and designated community watersheds comply with mining legislation and community watershed protection guidelines

Resource development must consider conservation values and the sensitive nature of the old growth areas in the Northern Trench through more detailed

	roads in old growth	levels of planning
	areas	The distribution and levels of old growth forests will be established through biodiversity emphasis choices for each landscape unit. Direction from this land use plan will be considered when final biodiversity emphasis choices are established by government
		In the Northern Trench old growth area, around the West Twin Protected Area, coordinate road access and other linear uses to minimize road/linear development
PUBLIC RECREATION	Ensure resource development is sensitive to public recreation values	Ensure that trails are identified
		Timber harvesting plans must address existing and proposed hiking and horse trails by considering existing trail condition, location, scenic values and level of use
		Should logging occur near or over identified hiking trails, the trail condition and quality of access must be maintained or relocate the trail if necessary
		Management activities will consider the type and use of trail (i.e., access or visual)
	Reduce conflicts between motorized and non-motorized recreation activities	Through education and improved signage, clearly indicate which trails are motorized and non- motorized in the Camp Creek recreation area
RANGE	Authorize and manage for sustainable levels of	Where terrain and soils are suitable, maintain access to all harvested areas for range use

	livestock grazing	and manage in consideration of all users including: recreation; silviculture; forest protection; fish and wildlife needs
		Maintain long term access to forage by shifting tenures from maturing cutblocks to new suitable cutover areas including all roads and landings
		Protect riparian areas from detrimental effects of range use
SPECIAL FEATURES	Manage and maintain unique areas	Consideration should be given to creating a plan area guide/map to identify recreation opportunities and special features
		Identify and conserve representative areas of macro- lichen forest (e.g., establish sensitive areas)
		Identify and establish map notations or other designations surrounding these sites:
		d) Shere Lake:
		Classification A, as per PGRLMG
		Endorse UREP Reserve on west side of lake and 50 metre buffer on north side
		e) Pioneer cemetery on Old Tete Jaune road near Tete Jaune
		f) Oxbow lakes off the mainstream Fraser
		g) Japanese tea house across scales at Tete Jaune
		h) Starratt Wildlife Sanctuary

- i) Fraser Wetlands
- j) Cedarside Lake
- aa) #7 Lower Snowshoe Falls
- bb) #6 Catfish Falls

TIMBER	Optimize timber growth consistent with resource value objectives	cc) #14 Tete Jaune spawning grounds Consider the use of total resource (longterm) planning to integrate other values Determine sites where water and wildlife will not be affected significantly by intensive silvicultural practices
		Strive for reduced regeneration delays
		Enhance the productive capacity of forest stands by using appropriate silviculture systems
		Utilize cost effective intensive silvicultural treatments, including spacing, commercial thinning, fertilization and pruning, on a site specific basis
		Utilize improved seedlings where appropriate, while maintaining genetic diversity
WILDCRAFT	Maintain mushroom harvesting opportunities	Identify, map and manage to maintain existing pine mushroom habitat
		Allow non-commercial harvesting of mushrooms on Crown land outside ecological reserves and PAs
WILDLIFE	Maintain and where necessary, enhance wildlife and habitat to ensure healthy populations, genetic	Ensure mineral exploration and/or small mine development minimizes disturbance and is

variability and distribution

sensitive to caribou and ungulate habitat

For proposed large mine developments, caribou and ungulate habitat will be addressed by the Environmental Assessment process

Caribou High Habitat areas will see limited (if any) commercial logging in future (p. 14). Sensitive timber extraction in the future may be considered pending further research and review of management strategies in Caribou Medium Habitat with local public input

In areas identified as Caribou corridor, maintain a minimum of 30% of the timber as 100+ years of age in a continuous, windfirm corridor. No more than 20% of the area may be in a non-green-up condition at any time. Timber extraction guidelines may be reconsidered in the future pending further research

Additional signs and other means are needed to identify wildlife crossing areas to reduce unnatural wildlife mortality

Continue to work with Canadian National Railway to reduce moose mortality on the railway

Manage the area between Tete Jaune and Mount Robson Park for high wildlife values when considering logging and/or other land use activities

Promote vegetation management strategies for

ungulates that maintain the quality and quantity of browse species (e.g., willow and red osier dogwood, Saskatoons, hazel nuts) during stand management

Maintain critical habitat attributes by establishing guidelines for areas where ungulate winter range is identified

2.3.5 PROTECTED AREAS

Protected areas preserve the biodiversity, recreation and cultural heritage values to provide a legacy for future generations. The Protected Areas Strategy (PAS), announced in May 1992, is an integrated process coordinating all of British Columbia's protected areas programs and objectives. It replaced previous government initiatives including the Old Growth Provincial Strategy and Parks and Wilderness for the 90s. It is the key policy in reaching government's goal of protecting 12% of the province's landbase by the year 2000.

The first goal of the Protected Areas Strategy is to protect large (over 1,000 hectares in size) representative examples of the natural diversity of the province. The second goal is to protect special natural, cultural and recreational features of the province. Special features are evaluated by their rarity and uniqueness and are usually under 1,000 hectares.

There will be No Staking Reserves (NSRs) in place for all the protected areas created through the LRMP process.

In the Robson Valley LRMP area (defined as the TSA plus Mount Robson and Mount Terry Fox Provincial Parks) 15.5% was protected prior to the LRMP process. Government provided the RVRT with a target of 5.32% for additional protected areas within the plan area. The LRMP process resulted in a total of 20.4% of the plan area being protected

BETTY WENDLE PROTECTED AREA

Total area: 14,415 hectares

BETTY WENDLE PROTECTED AREA



Total area: 14,415 bectares General Description

This resource management zone is comprised of the Betty Wendle Creek watershed system upstream of the eastern boundary of Bowron Lake Provincial Park. This area was originally within the Quesnel Forest District, but due to road access logistics, it was amalgamated into the Robson Valley Forest District in the mid-1980s.

In the 1980s, public concern grew for further protection of Bowron Lake Provincial Park. Water quality, grizzly and caribou habitat, audible industrial noise, visual qualities and the impact of road building were concerns associated with proposed timber harvesting. Management of this area was considered through a memorandum of understanding between the Ministry of Environment, Lands and Parks and the Ministry of Forests to address protection concerns. The area became a candidate area for Parks and Wilderness for the 90s.

The topography of this zone is generally rugged mountainous terrain. Betty Wendle Creek is a relatively short drainage with few tributaries. It terminates at Isaac Lake, inside the park boundary, which drains to the Cariboo River. The Betty Wendle area is known to receive heavy snowfall.

Biogeoclimatic Zones and Forest Cover

The entire area lies in the Northern Columbia Mountains ecosection, but is comprised of several different biogeoclimatic zones and subzones. The high elevations are ESSF wc2, while the middle elevations are ESSF wk1 similar to the Goat River and Milk River areas to the north. The central core of Betty Wendle Creek contains an area of sub-boreal spruce (SBS wk1) that is unique to the Robson Valley, although it is more common in the Quesnel Forest District. The low elevation area of Betty Wendle Creek near the park contains an interior cedar-hemlock subzone (ICH wk2) that is more fully represented to the west. Alpine tundra makes up the remainder of this zone.

Other than the Interior cedar-hemlock subzone mentioned above the forest cover is dominated by undisturbed stands of Engelmann spruce and alpine fir. Fire history is minimal in this wet area. Forest health concerns that have been noted include minor bark beetle attacks and a periodic spruce budworm attack.

Wildlife and Fishery Values

Water quality is very important in Betty Wendle Creek as it drains into Bowron Lake Provincial Park. Betty Wendle Creek is a known class A fish habitat and has rainbow trout and Dolly Varden fish distribution to enhance the sports fishery downstream in the park.

Caribou habitat is rated high in the northern high elevation area. Little information is available on grizzly habitat in this zone. However, as significant numbers of grizzly are known to frequent the mouth of Betty Wendle Creek in Bowron Provincial Park, it is likely that medium to high grizzly habitat exists in the lower elevation forests of this zone. The entire Betty Wendle drainage is noted as sensitive range for upland furbearers, wolverine and bear. There are concerns that road access may result in habitat loss and increased mortality rates from hunting and poaching. Commercial heliskiing operations are required to design flight lines and activities to minimize contact with caribou.

Resource Development

The Betty Wendle drainage has been allocated to Zeidler Forest Industries Ltd. and was placed in a deferral (or "log-around") area in 1991. No development has taken place to date, although the area does contribute to the allowable annual cut calculation.

Mineral potential for base or precious metals is indicated but No Staking Reserves presently exist in the drainage.

There is no existing range use in the area.

Recreation

This area is considered to have high significance for outdoor recreational opportunities. One area with potential for commercial backcountry recreation has been identified primarily in higher elevation locations. Several small alpine lakes exist throughout the zone. There is commercial heliskiing in this zone with the two tenures held by Crescent Spur Helicopter Holidays and Canadian Mountain Holidays (McBride). Helihiking also occurs, but is not yet a tenured commercial activity.

Summer recreational use is fairly low and comprised primarily of hikers and mountain climbers along the eastern boundary of this zone. Intensive recreational use occurs on the Bowron Lake chain in the summer months which makes this proposed protected area a natural addition to the existing park area.

Culture

No aboriginal sites have been identified in this area. An archaeological overview assessment conducted in 1995 has shown low potential in this entire area.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

For heliskiing, minimize the number of logged helipads by using natural openings where possible and where necessary allow minimal tree falling for safe helicopter landing

Honour existing guiding and trapping tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

Watershed restoration project is approved and can proceed in this protected area

CARIBOO RIVER PROTECTED AREA

Total area: 6,060 hectares

CARIBOO RIVER PROTECTED AREA



Total area: 6,060 hectares

General Description

This protected area lies adjacent to the easternmost boundary of Bowron Lake Provincial Park. The boundary of the protected area includes five kilometres of the Cariboo River and the tributaries flowing in from the eastern slopes. Toward the southeast, the boundary runs along the height of land above the Matthew River to the westernmost glaciers of Mt. Lunn. The area upstream from this protected area remains in the operable forest and will be accessed from kilometre 38 of the Milk River road system to the northeast.

In the 1980's, public concern grew for further protection of Bowron Lake Provincial Park. Water quality, grizzly and caribou habitat, audible industrial noise, visual qualities and the impact of road building were concerns of the proposed timber harvesting. The area became a candidate area for Parks and Wilderness for the '90s. The boundary for this protected area includes all areas considered visually sensitive as viewed from Bowron Lake Provincial Park.

The topography of this zone is generally rugged mountainous terrain with glaciers at the higher elevations. The Cariboo River drains an extensive area and is important for many resource values including forming Lanezi and Sandy Lakes on the southern portion of the Bowron Lakes Chain. South of the park, the Cariboo River joins the Quesnel River and empties into the Fraser River near Quesnel. This protected area is high in rainfall and annual snowpack.

Biogeoclimatic Zones and Forest Cover

The entire area lies in the Northern Columbia Mountains ecosection and contains several different biogeoclimatic zones and subzones. The lower elevations along the Cariboo River are interior cedar-hemlock (ICH wk2). The middle elevations are ESSF wk1, which is also found in the Betty Wendle, Milk and Goat river systems to the north. The upper elevations are ESSF wc2, which is also found in Betty Wendle Creek and further south near Foster Creek on Kinbasket Lake. Alpine tundra, rock and ice make up the remainder of this protected area.

The forests are dominated by Engelmann spruce and subalpine fir with the addition of cedar and hemlock at the lower elevations. Natural disturbances are minimal in this area with occasional spot fires, minor windthrow and seasonal avalanches or rockslides. Forest health concerns have been expressed regarding periodic spruce budworm attack.

Wildlife and Fishery Values

Water quality is critical for the Cariboo River for several reasons. There are important salmon values further downstream and although there is no current inventory information, it is likely that native fish species exist in the Cariboo River above Lanezi Lake. The high profile recreational usage on Lanezi and Sandy Lakes has generated additional public concern that the water quality be maintained.

Little information is available about the wildlife values in this protected area. Grizzlies are known to frequent the mouth of Betty Wendle Creek on Issac Lake and it is likely that medium to high grizzly habitat exists in the lower elevations along the Cariboo

River. There are concerns that road access may result in habitat loss and increased mortality rates from hunting and poaching.

Resource Development

This portion of the Cariboo River was allocated to the MOF small business program and was placed in a deferral (or "log-around") in 1991. No development has taken place to date, although the area does contribute to the allowable annual cut (AAC).

Mineral potential is rated low in this area and No Staking Reserves currently exist.

There is no existing range use in the upper Cariboo River.

Recreation

This proposed protected area has extremely remote access and a corresponding low level of recreational activity within the boundary. The primary interest at the present time is in providing a visual and auditory buffer for the established recreational users on Bowron Lakes Provincial Park. Maintaining water quality is also a recreational concern. A small subalpine lake exists on a tributary of the Cariboo River within this protected area. There is good potential for commercial heliskiing in the higher elevations of this protected area and the current tenure holder is Canadian Mountain Holidays (McBride).

Culture

No aboriginal sites have been identified in this area. An archaeological overview assessment conducted in 1995 has shown low potential in the drainage, although some of the valley bottom has unproven potential.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

For heliskiing, minimize the number of logged helipads by using natural openings where possible and where necessary allow minimal tree falling for safe helicopter landing

Honour existing guiding and trapping tenures

Review existing no staking reserve once proposed protected area is approved

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries Watershed restoration project is approved and can proceed in this protected area

FOSTER ARM PROTECTED AREA

Total area: 952 hectares

FOSTER ARM PROTECTED AREA



Total area: 952 hectares

General Description

This protected area is situated along the north side of the Foster Creek Inlet on the west side of Kinbasket Lake. The boundary generally runs from the lakeshore to the edge of the alpine above the Foster Arm. This area was a strong candidate for protection due to the diverse tree species and superior growing conditions present on the site. The presence of healthy western white pine throughout this area was an important factor in the decision as well as the opportunity to protect an area that represents the Kinbasket Lake ecosystems within the Land and Resource Management Plan (LRMP). The protected area is fully contained within the West Kinbasket Resource Management Zone.

Biogeoclimatic Zones and Forest Cover

The upper elevations are part of the Northern Columbia Mountains ecosection and the biogeoclimatic zone is ESSF wc2 (Engelmann spruce-subalpine fir). The lower elevations are part of the Upper Fraser Trench ecosection and have two biogeoclimatic subzones of interior cedar-hemlock. The area along the main lakeshore is ICH wk1 and the area along the Foster Inlet is ICH mm, which is generally under-represented in the province.

The higher elevations are primarily spruce and subalpine fir, whereas the middle and lower elevations have a large variety of tree species including western white pine,

Douglas-fir, cedar, hemlock, spruce and lodgepole pine. The area has a low-tomoderate level of natural disturbance with occasional spot fires and windthrow. The main forest health concern in this protected area is with white pine blister rust.

Wildlife and Fishery

The fishery values in this protected area are focused along the lakeshore, since only small creeks are present. Kinbasket Lake is considered class A fish habitat with most native fish species present as well as Kokanee salmon.

There is important wildlife habitat in the Foster Arm Protected Area. The entire preserve is classified as high caribou habitat. The western half of the area is considered high for grizzly density and the eastern half is considered moderate.

Resource Development

There has been no logging or other resource development within the boundary of this protected area. The general area was allocated to the MOF small business program and some logging blocks are evident along the lakeshore of the Foster Inlet adjacent to the protected area boundary. Any future road building from Howard Creek to Foster Creek would have to pass through the proposed protected area.

There is mining potential for polymetallic or carbonitite-related minerals throughout the protected area.

No range tenures exist in the area.

While guide/outfitting and trapping tenures exist for the West Kinbasket area, it is considered likely that protection in this specific area would have little or no impact on the tenure holders.

Recreation

There are limited recreational values associated with this protected area. There is some potential for hunting or lakeshore fishing. There is a designated area with commercial back-country recreation potential in the higher elevations above this protected area. There is potential for heliskiing in this same area and the tenure is held by Mike Wiegele.

Culture

There are no aboriginal sites indicated for this protected area.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

Minimize the number of logged helipads by using natural openings where possible and where necessary allowing minimal tree falling for safe helicopter landing

Road allowance (future location unknown)

Existing hunting and trapping tenure will be honoured

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

HOLLIDAY CREEK ARCH PROTECTED AREA

Total area: 397 hectares





Total area: 397 hectares

General Description

This magnificent natural arch has been protected as a reserve for Use, Recreation and Enjoyment by Public (UREP) since the mid-1970's. This protected area preserves more of the surrounding terrain that is critical to the integrity of the special feature. It includes a portion of the alpine tundra above the arch and both side boundaries will run down to Holliday (Baker) Creek. The terrain within this protected area is steep to extremely steep with frequent rock faces. It has a moderately wet climate, but is subject to summer drought due to the south exposure.

Biogeoclimatic Zones and Forest Cover

This protected area lies within the Northern Park Ranges and has the Engelmann spruce-subalpine fir biogeoclimatic zone (ESSF mm1). Alpine tundra dominates the higher elevations.

Wildlife and Fishery Values

The wildlife values in the area are highest for mountain goat. There are goat populations that have been frequently observed within this protected area. The lower elevations are important as winter range for moose and deer. The grizzly densities are rated high in the timbered area and rated moderate in the alpine area. It has been indicated that aquatic habitat is also an important wildlife feature in this area.

Holliday Creek has class A fish habitat within a kilometre downstream from the protected area, including salmon spawning grounds nearer to the Fraser River. Some or all of the following species are present in the Holliday Creek drainage: rainbow trout, bull trout and mountain whitefish.

Resource Development

There is an indicated potential for base or precious metals as well as industrial minerals along the southwestern boundary of the protected area. There is no road access or logging history for Holliday Arch.

There are no range tenures or agriculture lands within this protected area.

There are active traplines in the vicinity of this protected area. The lower slope trail along Holliday (Baker) Creek provides access for the trapper as well as the recreationalists. The protected area lies within a guide/outfitting tenure used infrequently at the present.

Recreation

Recreation has played an important part in the history of this proposed protected area. There are two important hiking trails leading to viewpoints near the natural arch. Baker Ridge Trail is accessed up a very steep cat trail from the west side and the Natural Arch Trail is accessed by approximately three kilometres of stream-side hiking and a steep climb up a hogsback to the east of the arch. The alpine is accessible through either route.

The heliskiing tenure in the area is held by Robson Helimagic, although Holliday Creek is part of a deferred heliskiing area pending the completion of a mountain goat study.

Culture

There have been no aboriginal sites indicated near this natural arch feature.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Manage as a non-motorized recreational use area

Any future trail development/improvement be designed to minimize impact on mountain goats

Honour existing guiding and trapping tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

Allow future road access adjacent to Holliday Creek, with appropriate riparian reserve, only if absolutely necessary

JACKMAN FLATS PROTECTED AREA

Total area: 615 hectares

JACKMAN FLATS PROTECTED AREA



Total area: 615 hectares

General Description

The Jackman Flats area has long been recognized for its provincially significant ecosystem representation. It is a very unusual area of shifting sand structures and unique plant communities which have intrigued the local residents since the settlement days in the early part of the century. A management plan for interim protection of this sensitive resource has been implemented over the past few years by the Tete Jaune Community Club; including boundary signage, road and trail monitoring and a public awareness program. This 615 ha. protected area lies between Highway 5 and the Blackman Road/ CN Rail right-of-way in a tract of land south of Tete Jaune Cache.

Biogeoclimatic Zones and Forest Cover

The topography of this small protected area is flat to rolling terrain with very sandy soils. The wind patterns between the Fraser system and the Kinbasket Lake area have created a mosaic of ridges, dunes and groups of stunted trees. The area receives lowto-moderate levels of snow during the winter, but there is usually a long drought period during the summer months. The proposed area lies within the Upper Fraser Trench ecosection and is in the xeric (dry) site series of the sub-boreal spruce biogeoclimatic subzone (SBS dh). The forests in this area are made up of stunted lodgepole pine trees with the occasional exception of a spruce or aspen in a wet depression.

In 1977, the Ministry of Environment recognized Jackman Flats as a unique area and applied for Ecological Reserve Status to protect it. Their report identified that the area contains six very different plant communities, four of which are found infrequently in other areas, two of which are not found elsewhere. Among its unique plants is *Stereocaulon condensatum* a species of lichen not found in other areas of the province. It was discovered by Trevor Goward in 1994.

There has been human access to these conifer stands since the railway construction era, but timber harvesting values are very low overall due to the low moisture and nutrients available to the trees. The threat of fire is very high in this area during the busy summer tourist months. Forest health concerns are mainly with lodgepole pine pests such as mistletoe and bark beetles. The close proximity to Highway 16 makes this area particularly sensitive to visual concerns.

Wildlife and Fishery Values

The area around Jackman Flats is known as important winter range for ungulates. The protected area is used as a travel corridor for deer, moose and elk. The grizzly density is rated as low, although it was rated as moderate before human development. There are no fish habitat values within Jackman Flats.

Resource Development

There is a potential for industrial minerals (mica, kyanite, silica) throughout this part of the Rocky Mountain Trench. The soil structure of this protected area is primarily sand with occasional pockets of loamy sand.

Highway 5 borders the east side of the protected area and Blackman Road parallels the west side. There are old roads crossing through the preserved area that are often used in spite of the restrictions in place.

There are no range tenures in this area. Although Jackman Flats is part of trapping and guide/ outfitting tenures, there has been little, if any, activity within the boundaries.

Recreation

The open nature of the Jackman Flats area is ideal for recreation but also makes it vulnerable to abuse. Recreation has been limited to hiking (nature walks) and cross-country skiing. There was previous motorbike activity in this area, but motorized use is no longer allowed. There is a concern regarding the enforcement of the non-motorized classification.

Culture

There have been no aboriginal sites identified in this protected area. The Secwepemc nation has indicated the Tete Jaune area as part of its traditional territory. The open forests of Jackman Flats would have provided a natural travel corridor to the Fraser River.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Consider closure of existing road with public input

Government to reconsider limiting access to local residents and restricting others to ensure that activities along the road do not endanger the protected area.

Manage as a non-motorized use area

Minimize site disturbance by keeping hiking use to designated locations and or trails

RVRT reached early consensus to protect this area

LOWER RAUSH PROTECTED AREA

Total area: 1,259 hectares

LOWER RAUSH PROTECTED AREA



Total area: 1,259 hectares

General Description

This area is situated in the lower stretch of the Raush River between four and eight kilometres upstream from the confluence with the Fraser River. The area is on the west side of the Raush and runs up steep slopes through three different biogeoclimatic zones before ending in alpine tundra and rock cliffs. It is totally contained within the Castle resource management zone.

Biogeoclimatic Zones and Forest Cover

This protected area is within the Northern Columbia Mountains ecosection. The valley floor has a sub-boreal spruce biogeoclimatic subzone SBS dh. The lower slopes are interior cedar-hemlock (ICH mm), which is an under-represented subzone within the LRMP area. The upper slopes are Engelmann spruce-subalpine fir (ESSF mm1). The area faces to the northeast and remains cool for much of the growing season.

The forest in the valley bottom is dominated by western white spruce with a mix of other species like Douglas-fir, hemlock, lodgepole pine and cedar. The lower slopes are mainly cedar and hemlock and the upper slopes are dominated by Engelmann spruce and subalpine fir (balsam). There are no records of this area having been logged in the past.

Fire disturbance is infrequent in this area, although there is a high instance of lightening strikes. Most fire damage results in small burn patches due to the moisture in the valley. Forest health concerns are low-to-moderate with the main concern being bark beetles.

Wildlife and Fishery Values

The wildlife habitat is one of the important features of the Lower Raush Protected Area. The alpine and subalpine areas are extremely important for mountain goat populations. The valley bottom is important winter range for moose and deer and provides summer range for bear and other species. The grizzly bear densities are moderate through the lower-to-upper forested slopes.

The alpine areas are rated as low grizzly density. The Raush River meanders through the lower stretch with a multitude of backwaters. This area is very important as aquatic habitat for bird nesting, fish rearing and non-fish aquatic species.

There is known class A fish habitat in the Raush River through this protected area. There are salmon spawning sites a few kilometres downstream near the Fraser River. It is most likely that native species such as bull trout, rainbow trout and mountain whitefish are found within the protected area.

Resource Development

The Raush River drainage has not been developed for timber extraction.

There is no mining potential recorded for this protected area.

There is one moderate-sized range tenure in the lower Raush River and a small portion of it may lie in the lower part of the protected area.

There has been active trapping in the lower Raush River since the railroad construction era and the lower elevation portion of the protected area may be critical to the trapping tenure holders. The Raush River is part of a large guide/outfitting tenure and has a history of infrequent but continual usage since the early part of the century.

Recreation

Recreation is currently low in this small protected area. There is no road access and most of the terrain is very steep with cliffs and scree slopes in the alpine. Hiking involves crossing a very large river and bushwhacking uphill. Jet-boating up the Raush from the Fraser River is done by a few local parties each summer season. Canoeing could be an attraction if road access and launch sites were improved. Hunters have historically used this river system and its surrounding lowlands.

Culture

There are no aboriginal sites identified in this protected area. The Secwepemc nation has identified the Raush River as generally having historical significance within their traditional territory.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Allow for future road access through this Protected Area only if absolutely necessary (future location unknown)

Honour existing guiding, trapping and range tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

SMALL RIVER CAVES PROTECTED AREA

Total area: 1,849 hectares



Total area: 1,849 hectares

General Description

This protected area is situated on the west side of Small River near its headwaters.

Biogeoclimatic Zones and Forest Cover

The area is approximately 50% alpine tundra, but contains small amounts of Engelmann spruce-subalpine fir forest (ESSF mm1). The remaining high elevation is occupied by glacier. The area contains a complex of caves with multiple openings over a wide area. It is considered to be very dangerous for inexperienced cavers. The area has been the site of ongoing research by the University of Toronto and others over the past few decades.

Wildlife values

This area is rated as low grizzly bear habitat and high mountain goat habitat.

Resource development

There is an old logging road in the valley below the protected area.

The area is part of a much larger band that shows good mining potential for base or precious metals.

There are trapping and guide/outfitting tenures in Small River, but it is likely that this protected area will not affect the tenure holders.

Recreation

There is a trail into this area. In winter, the area receives some heliskiing.

Culture

There are no aboriginal sites identified in this protected area.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

Minimize the number of logged helipads by using natural openings where possible and where necessary allowing minimal tree falling for safe helicopter landing

Honour existing guiding and trapping tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

SWIFTCURRENT RIVER PROTECTED AREA

Total area: 6,038 hectares



Total area: 6,038 hectares

General Description

This protected area in Swiftcurrent River forms an addition to Mount Robson Provincial Park along its west boundary. The middle section of Swiftcurrent River has been part of the park since its establishment. The remainder of the Swiftcurrent drainage is proposed to be added to Mount Robson Provincial Park.

The topography is moderately steep throughout this mountainous area with extremely steep cliffs around the headwaters of Swiftcurrent River. Significant landmarks are Mt. Goslin in the southwest and the icefields of Mt. Longstaff on the north. The climate is generally very wet and cool with heavy winter snow loads. Swiftcurrent River forms a braided channel throughout much of the upper reaches.

Biogeoclimatic Zones and Forest Cover

This protected area is within the Northern Park Ranges and has three biogeoclimatic zones. The low elevations near the Fraser River corridor are sub-boreal spruce (SBS dh). The main Swiftcurrent River is interior cedar-hemlock (ICH mm) and the higher elevations are Engelmann spruce-subalpine fir (ESSF mm1). Rock and ice dominate the alpine areas.

The forests are dominated by spruce and subalpine fir (balsam) with mixed stands of cedar, hemlock, Douglas-fir, spruce and lodgepole pine in the lower elevations. Fire damage has been moderate throughout the area with most activity on the south-facing slopes.

Wildlife and Fishery Values

The majority of this area has been identified as sensitive for mountain goats. The area near the mouth of Swiftcurrent and upstream along the Fraser River has been identified

as winter range for ungulates (moose, deer, elk) and summer range for bear species. The Fraser is considered sensitive aquatic habitat as well.

The forested areas are generally rated high for grizzly bear, with some moderate area near the Highway 16 corridor. The alpine is rated as low grizzly density.

The Fraser River is known class A fish habitat with salmon spawning beds near the mouth of Swiftcurrent River. The river itself flows rapidly down a steep gradient and has no recorded inventory of native fish species.

Resource Development

There have been small amounts of logging in the lower reaches of Swiftcurrent River. This operating area has been assigned to Hauer Bros. Lumber Ltd. An old logging road accesses the Swiftcurrent River drainage. This road is presently used for recreational purposes. Forest health concerns are generally low in these areas.

There are no range tenures in the Swiftcurrent drainage.

There is active trapping in the Swiftcurrent drainage. Guide/outfitting tenures have been issued for this area.

Recreation

The recreational activity is moderate in these areas but has potential for future use. The Swiftcurrent River area has been popular with local cross-country skiers for decades. Hiking and mountain climbing opportunities also exist. Commercial whitewater rafting is popular on the Fraser River. The heliskiing tenure for Swiftcurrent River and Small River is held by Robson Helimagic (based nearby in Valemount).

Culture

No aboriginal sites have been identified in these areas. The Fraser River corridor has been a human travel corridor since the fur-trading days and Swiftcurrent River was the scene of some prospecting activity around the turn of the century.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

Minimize the number of logged helipads by using natural openings where possible and where necessary allowing minimal tree falling for safe helicopter landing

Honour existing guiding and trapping tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

UPPER (MIDDLE) RAUSH PROTECTED AREA

Total area: 5,408 hectares

UPPER (MIDDLE) RAUSH PROTECTED AREA



Total area: 5,408 hectares

General Description

This protected area contains all of Quanstrom Creek, except the upper subalpine reaches. From the confluence of Quanstrom Creek and the Raush River, the protected area continues downstream along the Raush for approximately seven kilometres and includes the river, the riparian area and the western slopes to the height of land. The east slopes along the Raush River remain in the operable forest. The terrain is generally steep and rugged with scattered pockets of wetlands on the flatter areas near the Raush. The snowfields on Mt. Quanstrom contribute to the high moisture levels in the valley.

Biogeoclimatic Zones and Forest Cover

Lying within the Northern Columbia Mountains ecosection, the primary biogeoclimatic zone present is Engelmann spruce-subalpine fir (ESSF mm1). At the mouth of Quanstrom Creek and downstream along the Raush is a significant area of interior cedar-hemlock (ICH mm), which is an under-represented subzone within the LRMP area.

The forest on the lower slopes is a mixture of spruce, Douglas-fir, lodgepole pine, cedar and hemlock. The upper slopes along the Raush River and Quanstrom Creek are forested with spruce and subalpine fir. A large part of the Raush/Quanstrom Old Growth Area is contained within this protected area.

The south-facing slopes above the Raush River have a past history of fire damage from lightening strikes, while Quanstrom Creek has a lower fire frequency. There have been recent forest health concerns with bark beetles causing mortality in several tree species.

Wildlife and Fishery Values

Although no fish inventory information is currently available, it is likely that rainbow trout, bull trout and mountain whitefish are present in this system. There is known class A fish habitat in the lower stretches of the Raush River immediately north of this protected area.

Wildlife values are significant in this remote area. The forested areas are considered moderate for grizzly bear habitat. There is an important winter range for moose and deer along the Raush River. Mountain goats are likely to be found as populations have been identified just to the north, along the peaks that divide the Raush Valley from Castle Creek.

Resource Development

There has been no road building in this protected area and none of the area has been allocated to timber licensees. The area contributes to the allowable annual cut determination.

The area has shown low potential for mine operations.

There have not been any grazing or range tenures issued for this protected area, although a grazing licence exists immediately downstream at the north end.

Trapping tenures have been historically active in this area. The Raush River is part of a large guide/outfitting tenure and has a history of infrequent, but continual usage, since the early part of the century.

Recreation

There is potential for recreational activities within the Raush/Quanstrom area, but there has been a low level of public activity due to the lack of road access. The rugged mountains and extensive glaciers contribute to the high visual quality of this protected area. One large area with high back-country tourism potential has been identified on the east flanks of Mt. Quanstrom, which is partially included within this protected area. The primary activity at present is heliskiing with the tenure held by Canadian Mountain Holidays (McBride). The Raush has occasional jet-boat activity and has potential for canoeing if road access and launch sites were improved.

Culture

There are no aboriginal sites identified in this protected area. The Secwepemc nation has identified the Raush River as generally having historical significance within their traditional territory. The Canim Lake Band has noted the Raush Valley as a historic travel corridor into the Robson Valley.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Honour existing heliski licence

Allow for future road access through this Protected Area only if absolutely necessary (future location unknown)

For heliskiing, minimize the number of logged helipads by using natural openings where possible and where necessary allowing minimal tree falling for safe helicopter landing

Honour existing guiding and trapping tenures

Where resource development is planned close to protected area boundaries, the resource tenure holder(s) are responsible, through appropriate survey methods, to ensure development is outside protected area boundaries

WEST TWIN PROTECTED AREA

Total area: 32,494 hectares

WEST TWIN PROTECTED AREA



Total area: 32,494 hectares

General Description

This protected area was chosen due to the rich wildlife values, the wide biogeoclimatic representation and, most of all, the fact that this area is the only protected corridor across the Robson Valley trench. This area runs from the Cariboo Mountains in the south, through the main Robson Valley trench, and up the fronting ranges of the Rocky Mountains. The north boundary includes the timbered slopes that are visible from the main valley between, and including, La Salle Creek and Fleet Creek. From the Fleet area, the line runs south through the trench meandering to avoid the private land in the lower West Twin near the Fraser River. South of Highway 16, the line runs up the height of land between the West Twin and Legrand creeks, crossing the two upper forks of Clyde Creek on its way to Bell Mountain. The south boundary encompasses the Ozalenka Creek tributary of the Dore River and winds around to Mt. Halvorson. The line travels north between the Milk River and several upper tributaries of the West Twin. South of Bounding Creek, the line crosses the Goat River to include the La Salle lakes that lie several kilometres to the west. The line returns to the east along highway 16 and then descends toward the Fraser River on the west side of Goat River. Near the Fraser, the boundary swings in a loop to avoid private land and the community of Goat River and finally runs north up into the Rocky Mountains west of La Salle Creek.

The topography is diverse throughout this area. The majority of the upper West Twin Creek drainage has steep slopes, unstable soils and barren rocky peaks. The only glaciers in this area are on the west side of Mt. Halvorson. The alpine areas in the West Twin are scattered and isolated compared to the gentle alpine slopes of the Ozalenka Valley. The fronting ranges on both the north and south sides of the main trench are moderately steep and the trench itself is rolling forested terrain with occasional flat wet areas. The soil types in the trench are deeply organic and generally rich in nutrients. The area receives a high level of precipitation, both summer and winter, and the forested area has a low level of natural disturbance by fire.

Biogeoclimatic Zones and Forest Cover

The West Twin Protected Area is part of three ecosections: the Northern Columbia Mountains on the south; the Upper Fraser Trench in the middle section; and the Northern Park Ranges in the north. The predominant biogeoclimatic zone in the mid-toupper elevations is Engelmann spruce-subalpine fir. In the West Twin, the subzone is ESSF wk1 and in both the Ozalenka and the La Salle/Fleet areas, the subzone is ESSF mm1. The biogeoclimatic zone of the mid-to-lower elevations is interior cedar-hemlock (ICH wk3) with a few islands of sub-boreal spruce (SBS vk) near the Fraser River. The alpine tundra is mainly present in the south portion of this protected area.

The forests in the higher elevations are dominated by subalpine fir (balsam) and spruce. The lower elevations have dense forests of western hemlock and western red cedar with occasional spruce or balsam. Some of these cedar-hemlock forests are more than 500 years old and have areas with a variety of macrolichen species. The south-facing slopes of the Rocky Mountains have Douglas-fir and lodgepole pine as well. The lower areas near the Fraser River are forested with western white spruce and cottonwood. Fire history is negligible in this portion of the interior wet belt. Old growth is evident throughout this area. The north portion lies within the Morkill/McKale Old Growth Area, the main body of the protected area lies within the Legrand/West

Twin/Goat Old Growth Area and in the east within the Bell/McIntosh/ Clyde Old Growth Area.

Wildlife and Fishery Values

The wildlife values are extraordinary in this protected area. There is a known goat area from Bell Mountain west to Clyde Creek. The entire main trench area, the lower Goat River and much of the fronting ranges are known as winter range for moose and deer. There is high caribou habitat in the north below Mount Rider and in the south, the entire West Twin, Clyde, Ozalenka and Bounding Creek areas have also been rated as high habitat. The main valley trench provides caribou corridor as well as connectivity between the ranges for many other species. Grizzly densities are high throughout these same areas, but the rating has been dropped to moderate in the main trench area due to human access.

There is known class A fish habitat along both sides of the Fraser River, including the lower part of its main tributaries. The Goat River is class A fish habitat and supports important runs of Chinook salmon. There are salmon spawning areas within both the Goat River and the lower West Twin. La Salle Lakes are also class A fish habitat and have been stocked in the past with bull trout and rainbow trout.

Resource Development

The Small Business Forest Enterprise Program has been operating in this area. Road building and timber harvesting began in the 1970's and continued to the early 1990's. There are forest health concerns with spruce and balsam bark beetle and the hemlock looper attack in the mature forests and with leader weevils in the younger planted stands. The Ozalenka valley and two upper forks of the West Twin have been designated as a Wildlife Emphasis Area.

The CN Rail line near the Fraser River was completed in 1914. Road development through this proposed protected area began with Highway 16 in the late 1960's. Two decades later, a 34 km. loop road was constructed into the steep West Twin valley. At this same time, Mountainview Road, on the northeast side of the valley, was extended several kilometres to the west of Fleet Creek. There are two main access roads to agriculture lands in the valley bottom from Highway 16: one east of Goat River and a second along West Twin Creek (Lamco Road). Several important gravel pits exist near the highway corridor. There is also an existing BC Hydro distribution line along the highway corridor.

There is potential for base or precious metals in a band that crosses the Goat River from La Salle Lakes to Boulder Mountain. There is potential for industrial minerals (mica, kyanite, silica) that runs throughout the main trench area. There are two mineral claims in this proposed protected area (the Eagle and the Raven) held by one licensee. There is a residential tenure in the vicinity of the claims.

On the north side of the Fraser River, there are significant portions of two existing range tenures both accessed by Mountainview Road. There have been no range tenures issued within the remainder of this protected area.

Licenced trapping is actively pursued within this zone. Guide/outfitting tenures are present as well, but these are less active due to the lack of developed horse trails.

Recreation

The BC Forest Service sites at La Salle Lakes are the most popular recreation attraction in the north part of the forest district. They offer non-motorized boating, fishing, swimming, picnicking and camping and are within a few minutes of Highway 16. Little La Salle Lake is accessed by foot trail only. The key hiking feature in the area is Boulder Mountain, which has a trail starting at one kilometre on the Goat FSR. There is a forest interpretive trail east of the West Twin bridge and a forest viewing platform located below the highway east of the Goat River. There is alpine hiking available in many parts of this area, but bushwhacking is required. The Ozalenka Forest Service Cabin is accessed by a seven kilometre trail from the West Dore River. This area is very popular for both summer and winter use. The West Twin area is popular for berry picking. There is active helihiking and heliskiing activity in this area. The tenure holder for heliskiing in the area is Crescent Spur Helicopter Holidays.

Culture

There are no reported aboriginal sites in the West Twin Protected Area.

Land and Resource Management Direction

Before resource activities are approved adjacent to protected areas, referral comments from BC Parks will be considered

Commercial heliskiing licences honoured

Commercial helihiking, existing untenured use by current operator, allow helihiking one day per week, maximum six times per year in the Ozalenka Valley. This agreement should be implemented when this operator applies for tenure. Otherwise, designate the Ozalenka Valley a nonmotorized use area

Minimize the number of logged helipads by using natural openings where possible and where necessary, allowing minimal tree falling for safe helicopter landing

Consider developing a road access management plan to ensure that road development and use is coordinated in a manner sensitive to caribou habitat and environmental values

Where feasible, new access roads through Protected Areas to private or Crown land will be avoided

Utilize existing roads where feasible

Access allowed to CN Railway land, private and Crown land and existing gravel reserves, dumps, right-of-ways etc.

Save and except two mineral claims

Honour Frederickson residential tenure

Recognize BC Hydro transmission line right of way interest

Allow future hydro, gas, oil or other right-of-way through this P.A. subject to minimal impacts to protected area objectives. Allow future telephone and hydro lines into private land and where feasible coordinate with existing trails and roads

Ministry of Highways and Transportation to undertake future geotechnical work to prove and/or minimize area for gravel reserve interests.

Allow future gravel extraction from reserves subject to a management plan that minimizes disturbance to this protected area

Management plans and rehabilitation of any land use sites is the responsibility of land users as directed by BC Parks

Important macrolichen areas will be identified within the PAS area

Any future land use activities must avoid, wherever feasible, important macrolichen areas

Allow for CN Railway grade stabilization

Assess regeneration success of large clear cut areas within this protected area and priorize these areas for fill planting in the next few years

Honour existing grazing, guiding and trapping tenures

Watershed restoration project is approved and can proceed in this protected area.

3.0 SOCIAL, ECONOMIC and ENVIRONMENTAL IMPACT ASSESSMENT

3.1 INTRODUCTION AND BACKGROUND

It is important to note that there have been some changes to the original Recommended Plan between the time that these scenarios were analyzed and the plan was given final approval. There was one significant change (the Upper Goat was designated a subzone of the Goat River RMZ), as well as minor changes (small boundary modifications for Protected Areas). However, since the overall impact of these
changes to the assessments was considered to be marginal, the scenarios were not reassessed before final approval. That is, the assessments presented here carry over to the final plan for the most part.

Midway through the negotiation process, the Robson Valley LRMP developed several land use scenarios. Multiple accounts assessments were prepared and utilized in the negotiating process and in developing the Plan, which was approved April 30, 1999. A brief description and assessment of these scenarios (1) in summary matrix form is presented in this Appendix II of this report.

The impacts of the Plan are incremental to Base Case impacts. The Base Case is defined as the land and resource management plan that would likely have been implemented in the absence of an LRMP. It is assumed that the Base Case includes Provincial initiatives such as the Timber Supply Review (TSR), the Forest Practices Code (FPC), and Protected Areas Strategy (PAS), since these initiatives would have been implemented even without a formal land use plan.

Base Case PAs are assumed to be the percentage of Areas of Interest (AOIs) identified by the Regional Protected Areas Team (RPAT) because as a percentage of the land base, they are very close to Government's PAS target of 5.32% for new protected areas in the Robson Valley. Base Case FPC impacts include the riparian and wildlife tree components of the Code but exclude the biodiversity component due to difficulties in speculation about biodiversity impacts in the absence of the LRMP.

Due to resource constraints and the similarity of the Plan to an earlier scenario developed by the LRMP, no formal resource or Geographic Information System (GIS) analysis of the final plan was undertaken. The assessment of the Plan is thus based on resource analyses and approximate GIS area analysis undertaken by Government's Interagency Planning Team (IPT) for the four preliminary scenarios. Gary Holman, Consulting Economist and Eliot Terry, Consulting Biologist, undertook the socio-economic and environmental evaluations, incorporating input from the IPT, the Ministry of Employment and Investment and previous scenario assessments.

3.2 OVERALL SUMMARY OF SOCIO-ECONOMIC IMPACTS

The quantifiable socio-economic impacts of the Base Case and Plan arise primarily from timber supply impacts. Base Case initiatives such as TSR, FPC and RPAT AOIs could potentially place at risk 60-75 direct and indirect jobs (3% - 4% of total regional jobs) within the next 20 years. The Plan could place an additional 10 forest-related jobs at risk. The Plan would slightly increase long term harvest levels due to timber freed up by selection harvesting in visually sensitive areas. However, since the harvest level in both the Base Case and the Plan will be just over one-half current AAC, closure of a sawmill is likely in the long term (but no sooner than 20 years), unless new timber supplies (e.g., from Alberta or from currently inoperable wood in the TSA) are forthcoming.

The socio-economic impacts of the Plan for non-forestry sectors are more difficult to quantify, because they primarily involve longer term implications on potential activity. The Plan increases job growth potential in tourism and recreation and other nature-based activities such as trapping and mushrooming. The Plan may preclude a very

small proportion of mining, energy potential and agricultural growth, but may increase development costs in some areas requiring more sensitive management.

The Economic Strategy recommended as part of this Plan and increased growth potential in sectors such as tourism could substantially or completely mitigate the impacts of possible forestry job losses. Slow population and economic growth, and the gradual increase in the percentage of the local economy being service-based will likely continue in the Base Case and the Plan.

3.2.1 Forestry

The current Allowable Annual Cut (AAC) in the Robson Valley TSA is approximately 600,000 m3/year, although historically not all of the AAC has been harvested. The Base Case Timber Supply Assessment incorporated the 1994 Timber Supply Review (TSR) assumptions, updated the timber harvesting landbase to reflect removal of recommended Areas of Interest and updated the TSR forest practice assumptions to fully reflect the Forest Practices Code.

The above update to the 1994 timber supply projection, resulted in a harvest flow similar to TSR, in that the timber supply equivalent to the current AAC could be maintained for up to ten years before a decline of some 78,000 m3 in the second decade, and further declines of about 13% per decade thereafter, to a harvest level of 243,000 m3 by year 70, before climbing to a long term harvest level of 317,000 m3 by year 160.

With no future change in forest practices from those employed in 1994, beyond the implementation of the Forest Practices Code and the recommended Protected Areas Strategy, as reflected in what has been called the Base Case, some 50-60 forestry jobs and up to 15 spin-off jobs could potentially be at risk in the Robson Valley, within the next twenty years. The number of forestry-related jobs potentially placed at risk represent up to 4% of total employment in the Robson Valley. Further forestry job loss is likely in the Base Case as the AAC declines (at about 13% per decade) to long term harvest levels, and due to technological change / industry rationalization.

The harvest impacts of the Plan could also be deferred for up to ten years, but thereafter would decline by about 15% (13% due to Base Case and 2% due to the plan) per decade to 267,000 m3 by year 50, before climbing to a long term harvest level of 325,000 m3 by year 160. The incremental timber harvest impacts of new protected areas, sensitive management areas and visual quality objectives (VQOs) in the Plan compared to the Base Case, are relatively minor, potentially placing at risk an additional 10 direct and indirect forestry jobs. The impacts of new VQOs recommended in the Plan are largely offset by the assumption that existing and new VQOs (retention and partial retention zones) are harvested selectively, thus freeing up more timber than under a clear cut management regime. In fact, long term harvest levels are slightly higher in the Plan than in the Base Case because of the impacts of selection harvesting in existing and new VQOs.

The shorter term forestry employment impacts estimated above are characterized as "jobs at risk" because they are based on the somewhat unrealistic assumption that

firms and workers make no adjustments to minimize or avoid impacts. For example, firms may find alternative sawlog supplies (e.g., from Alberta), invest in value added to improve utilization or lower their labour costs through periodic shutdowns and/or attrition. In other words, the adjustment to harvest reductions could take the forms, for example, of lower average incomes due to longer periods of temporary unemployment. Workers could also supplement their forestry income with part-time employment in FRBC programs or other activities.

This is not to trivialize the fact that adjustments for individual workers who may be displaced and cannot find alternative employment, and for their families, can be very difficult in the absence of an affective economic strategy. However, there are a number of measures that could be implemented to mitigate the employment, income and government revenue impacts of land use changes in the shorter term, including timber supply alternatives, watershed restoration and incremental silvicultural activities funded by FRBC, and more labour intensive harvesting and value-added processing. These measures and other possible economic development initiatives are summarized in the Economic Strategy recommended as an integral part of this Plan.

Closure of a major processing facility in the Base Case or the Plan is unlikely in the next 20 years, given that the larger mills have historically operated at less than full capacity utilization, the availability of imports from Alberta, and the fact that the AAC may not be fully utilized. (2) The Plan would actually increase the long term harvest level slightly compared to the Base Case, due primarily to the effects of selection harvesting in VQOs. However, since the harvest level will be just over one-half of current AAC within 50-60 years in both the Base Case and the Plan, closure of one of the larger mills in the Valley is a distinct longer term possibility. These harvest reductions would result from the sustainability and management constraints associated with the Timber Supply Review process, regardless of the FPC or new protected areas.

The incremental impacts of the Plan at the provincial level, arising from marginal reductions in timber and chip flows to other processing facilities in BC, will be negligible.

3.2.2 Other Sectors: Tourism/Recreation, Mining, Energy, Agriculture, Botanical Forest Products, Fisheries and Trapping

The socio-economic implications of the Plan for non-forestry sectors are more difficult to quantify, and are generally less significant, at least in the short term, because they primarily involve creating or foregoing potential activity over longer periods of time. Also, 85% of the planning area is excluded from the Timber Harvesting Land Base (THLB). Therefore, while the Plan will provide better management for nature-based economic activities (e.g., trapping, guiding, wilderness tourism, wildcraft, fisheries), this additional management direction will be even more important if the THLB is expanded in the future.

3.2.2.1 Tourism/Recreation

In the Base Case, new Areas of Interest (AOIs) would permit further growth in sustainable recreation (e.g., camping and hiking) by tourists and residents. Over a ten

year period, it is estimated that growth in tourism supported by visitors to new PAs could generate the equivalent of 15 full-time jobs. (3) Growth in commercial backcountry tourism activities (e.g., heliskiing) will continue, although new PAs would place limits on this growth in some areas. The new Provincial commercial backcountry recreation policy will provide some additional investment certainty because of longer tenures, although such tenures do not exclude potentially conflicting uses such as timber harvesting. Continued clear cut harvesting in the Valley Trench would erode some of the scenic beauty valued by residents and visitors.

The Plan would be more supportive of long term backcountry tourism growth compared to the Base Case by creating additional parks (e.g., the Raush, Small River Caves, Swift Creek, addition to Mt. Robson). The Plan would better manage non-motorized recreation and high quality wilderness opportunities as a result of special management Resource Management Zones (RMZs) and access restrictions in a number of key areas (e.g., Holliday Creek, Tete Creek, Kiwa Glacier, Boundary/Horsey, Ozalenka Valley, Eagle Valley, Upper Raush, Selwyn Range and the Cushing drainage). The additional VQOs and the emphasis on partial cutting methods in the Valley Trench proposed in the Plan could encourage longer stays in the Valley compared to the Base Case, which could generate additional tourism spending and job gains.

The Plan also provides clearer direction with respect to the identification and management of recreation values such as trails and recreation sites, so that the visual impacts of timber harvesting are minimized. For example, 65% of high potential commercial backcountry and other recreation sites are located in special management RMZs recommended by the Plan, double the proportion in the Base Case. Also, new trails are to be located where possible outside the THLB.

Existing motorized recreation activities would be allowed to continue in most new PAs and other areas with motorized access restrictions, although expansion of these activities would be constrained. The Plan only places restrictions on less than 2% of the roaded areas and there is sufficient potential to accommodate growth in motorized recreation for a number of years outside of PAs and restricted areas. Traditional snowmobile use areas will also be supported and retained in the Plan.

From a provincial perspective, protection of the Betty Wendle drainage in the Base Case and in the Plan is very important to ecological, recreation and tourism values in the Bowron Lake Park adjacent to the Robson Valley. The new Betty Wendle PA would protect the wilderness backdrop to the Bowron and water quality and fisheries habitat in streams feeding the Bowron and Isaac lakes. This protected area and additional motorized access management in the Caribou River area, will also serve as a buffer against increased motorized access and industrial noise from the Robson Valley.

3.2.2.2 Mining/Energy

New PAs in the Base Case (i.e. the AOIs) and the Plan would not affect any existing or proposed new mines (e.g., mines in the Mine Development Assessment Process) or occurrences (i.e. mineral deposits that show promise or have a production history) in the planning area. (4) Establishing the AOIs as protected areas would preclude development of about 2% of high industrial mineral potential and 4% - 5% of medium

industrial and metallic potential, which is unlikely to have any noticeable short term economic impact. The West Twin AOI contains several gravel reserves, two of which are in current use. These reserves are an important component of total reserves and production in the Valley. Operation of existing and development of new reserves would likely be allowed if the West Twin were to be established as a PA under current Provincial policy. The Base Case places no sites with previous exploration activity, and very minor high metallic or high industrial in special management areas.

The Plan would place a similar proportion of high industrial mineral potential in new protected areas as the Base Case, but would increase the proportion of mineral potential in RMZs designated for sensitive management of wilderness and recreational values. The Plan places 4 of 8 exploration sites with recorded activity, about one-quarter of existing mineral tenures, about 20% of high industrial potential, and 5% of high metallic potential in these RMZs. Exploration and development is not precluded from these RMZs, but regulatory and management guidelines may be more stringently applied. Also, the Plan places restrictions on access in a number of watersheds, including helicopter-only access for initial exploration in all alpine areas. Depending on how access management guidelines are implemented, exploration and development costs could be increased, which could be significant for deposits that are marginally economic. The likelihood of production from these areas in the near future is low, although subject to a great deal of uncertainty due to the "hidden" nature of the resource and a number of unpredictable market, cost and competitive factors.(5)

The operation and development of the four gravel reserves in the West Twin Protected Area are acceptable resource uses. However, the Plan will provide more specific direction to more accurately delineate and minimize the size of these reserves, and to manage access, development and operations to ensure these activities are more consistent with the management objectives for the protected area.

The Forgetmenot gypsum deposit, the most promising mineral occurrence in the Robson, is located in the Boundary/Horsey RMZ which has management strategies designed to maintain high wilderness and recreation values. Future exploration and development of this deposit, which at full production could create about 20 jobs annually, would not be precluded although cost of development may be increased by management strategies in the Boundary/Horsey RMZ.

A review of the Base Case and Plans by BC Hydro indicates that there are no major hydro projects of concern to the Corporation that would be precluded by new protected areas. The West Twin Protected Area, which is common to the Base Case and the Plan (boundaries vary slightly), would not preclude right of ways for power lines or other linear development such as oil and gas pipelines. These developments are more clearly allowed for in the Plan, but could be more costly because of the implications of management objectives (e.g., re road access or routing).

Comparison of a mapped inventory of small hydro sites in the Robson by the RVRT Resource Advisory Group with maps for the Base Case AOIs and the Plan, indicates that the Base Case would preclude development of 1 out of 14 "very high / good" sites and 4 out of 100 potentially "viable" sites. (6) The Plan appears to have similar impacts. Forgone employment impacts, if any, would be primarily in the construction phase, not in operations, unless the site was important to the viability of some other kind of project or activity (e.g., mine).

3.2.2.3 Agriculture

There are no major differences between the Base Case and the Plan in terms of PA impacts on agricultural land. New PAs in the Base Case and the Plan would allow existing agricultural activity such as grazing, but would preclude expansion of these activities. The proposed West Twin PA, which is common to the Base Case and the Plan, would account for most of the grazing land affected. Expansion of intensive agriculture and / or grazing would be precluded on about 1,800 ha of ALR land. All of this ALR land is forested and therefore it primarily represents future potential rather than existing production.

The Plan would also preclude future grazing in the Morkill drainage special management area, although there is no existing activity now in this area. Grazing in the upper Raush special management RMZ would be allowed if consistent with management objectives. In general, the amount of grazing land affected is not a significant proportion of the total in the Valley, and impacts on existing activities are unlikely. The Plan also recommends the identification and approval of other opportunities for grazing or forage production in those Crown lands underutilized for agriculture (particularly adjacent to existing operators) and new timber harvesting areas.

3.2.2.4 Fisheries

The risk to salmon habitat will increase over time in the Base Case as harvesting and road access in salmon-bearing watersheds proceeds. Increases in peak stream flows and sedimentation resulting from timber harvesting activities and associated road construction / deactivation are the main risks to salmon habitat in the Robson Valley. Peak stream flow problems are mitigated by new Riparian Guidelines in the FPC (7) and by the fact that about 85% of the land base is currently excluded from timber harvesting, although operability lines could expand in the future. Sedimentation associated with harvesting and road building in the timber land base beyond riparian buffer zones can still be a significant problem. There are also risks associated with the large proportion of the salmon resource adjacent to private land, which are not addressed by the FPC.

The Plan includes enhanced riparian zones on the Fraser River mainstem and the lower McLennan River within RMZ A.(8) The Plan also recommends a number of strategies to identify, protect and enhance key fisheries habitats and populations. Access management provisions in the Plan may also result in less road development in salmon bearing watersheds than in the Base Case. Therefore, the risk of damage to anadromous fisheries values resulting from timber harvesting impacts on peak stream flows and sedimentation is likely lower than in the Base Case.

The potential gains (or prevention of future losses) in commercial fisheries harvesting and processing, First Nations subsistence fisheries and sport fishing for anadromous stocks which may result from the Plan, all accrue to non-residents of the Robson Valley. To fully realize the benefits of greater habitat protection, more selective commercial fishing, so that the relatively small chinook stocks of the Robson are not harvested with much larger Fraser stocks such as sockeye, may be required.

There is little data on the abundance and distribution of freshwater stocks that support recreational fishing in the Robson. It is likely that the Plan will provide somewhat more protection for freshwater stocks than the Base Case, for the reasons cited above. Access management provisions may help to prevent excessive harvesting pressure on the limited number of lake fisheries in the region. The main benefits of sustaining freshwater fisheries for future recreational enjoyment will accrue to residents of the area, although preservation of growth potential could be more significant for nonresident (i.e. tourist) use in the longer term.

3.2.2.5 Trapping and Botanical Forest Products

Income from trapping will likely decline in the Base Case as old growth-dependent species (e.g., marten) decline. Income from mushroom harvesting may also decline without explicit recognition in resource management plans, which may be addressed by forthcoming Provincial policy on botanical forest products. The Plan provides clearer recognition of these resources and activities in forest management (e.g., wild mushroom harvesting in RMZs A and B) and affirms them as allowable activities in protected areas, although establishment of new commercial operations is likely to be curtailed. PAs could also be beneficial for trapping if they protect critical habitat for species such as marten, which are then trapped outside the PA.

3.2.2.6 First Nations

The traditional territories of both the Shuswap Nations Tribal Council (SNTC) and the Lheidli T'enneh Nation cover almost the entire plan area. The Canim Lake Band's traditional territory overlaps with the Raush Valley and the McBride - Dunster area, while that of the Williams Lake Band overlaps with a small area at the head of Castle Creek. The Land Use Plan is without prejudice to the land claims of these First Nations groups, but the LRMP will form the basis of Government's position during treaty negotiations.

The SNTC, Secwepemc was the only group to submit a formal statement of interest to the LRMP, although formal discussions with other groups were held. The key principles in the SNTC position include the recognition of their rights to participate in land and resource management and economic development in the Valley and to carry on their traditional subsistence activities. Specifically, the SNTC want to maintain and protect: traditional occupation sites at Tete Jaune Cache, salmon runs in the Fraser River and its tributaries, biodiversity of plants and animals and water quality.

3.3 OVERALL SUMMARY OF ENVIRONMENTAL IMPACTS

The following summary highlights the potential environmental impacts of the Plan compared to the Base Case.

3.3.1 Protected Areas

The Plan recommends 10 new parks compared to 8 for the Base Case. Both the Base Case and the Land Use Plan would achieve similar representation (5.32% vs. 5.44% of TSA) by capturing 4 of 7 ecosections and all 12 subzone variants. As an existing protected area, Mount Robson Provincial Park (MRPP) provides representation of the Northern Park Ranges (NPK) ecosection and 5 subzone variants including alpine tundra, ESSF mm1, ESSF mm2 (unique to Mount Robson) and a small percentage of ICH mm and SBS dh.

3.3.2 Old Growth

Old growth forests provide essential habitat attributes for many plant and animal species. The Plan reduces the risk to old growth forests by managing key areas such as the lower Morkill River for high biodiversity emphasis. **Management Objectives and Strategies** outlined in the Plan provide increased certainty that old growth forests will be managed to provide habitat for the plant (e.g., macro-lichen diversity in the ICH wk) and animal communities dependent on them.

3.3.3 Biodiversity

Although more landscape units would benefit from higher biodiversity emphasis, the 3 recommended landscape units (lower Morkill-Cushing, Northern Trench, Upper Raush) would provide for more natural levels of biodiversity than the Base Case by maintaining a greater proportion of these landscape units in mature and old forest age classes. A higher biodiversity emphasis also allows for greater flexibility in maintaining connectivity through the use of FENs in these areas. Similar to the Base Case, landscape-level connectivity will remain poor in the southern portion of plan area (East and West Kinbasket RMZs).

3.3.4 Riparian Habitats

The outlook for species dependent on riparian habitats is relatively good under the Base Case due to the implementation of FPC **Riparian Management Areas.** Many species will benefit including blue-listed species such as American Bittern and Great Blue Heron. The Plan provides for similar levels of habitat protection except for enhanced protection of riparian habitats along portions of the Fraser River, McLennan River, Canoe River and the wetlands near the lower Raush River. In these areas, the Plan proposes 100 m riparian reserve zones along the Fraser River between McBride and Tete Jaune, 60 m along the McLennan River and 50 m along the Canoe River. All riparian areas would have 20 m riparian management zones similar to the FPC **Riparian Management Areas** regulations. Riparian habitat biodiversity will also be enhanced by management objectives and strategies for the lower Raush River wetlands.

3.3.5 Water Quality

Water quality for domestic water use will also benefit under the proposed enhanced riparian zones by reducing the risk of sedimentation. Riparian buffers have also been recommended around water intakes to maintain water quality.

3.3.6 Grizzly Bears

A number of high capability grizzly bear areas particularly higher elevation habitats receive adequate protection under current timber harvesting constraints and special management zones such as caribou zones identified in the Timber Supply Review. However, many seasonally important habitats at lower elevations remain at risk. The Plan significantly reduces the risks to grizzly bears over most of the plan area by:

- maintaining 100 m reserves zones adjacent to important avalanche chutes which will reduce potential displacement from key foraging areas;
- designating the Morkill RMZ a general resource management zone and recognizing the high grizzly bear values in the Cushing Subzone; and, most importantly
- enhanced access management strategies

Recommended direction to develop coordinated access management plans (CAMPs) and proposed gates at Cushing Creek, Upper Raush, Milk/Cariboo Pass and deactivation or gate on Hugh Allan Creek will significantly reduce the potential for bear/human conflict. However, strict monitoring of compliance will be required to ensure the effectiveness of the mitigation strategies.

Furthermore, it should be noted that large low intensity and/or protected areas are preferred options for maintaining viable grizzly bear populations. In the Plan, many high capability grizzly bear habitats remain in Resource Development Emphasis RMZs (Low and Medium Biodiversity emphasis) including the upper Goat, East and West Kinbasket. Therefore, although the access management strategies proposed will reduce the risk to grizzly bears, overall, populations will remain vulnerable in these areas due to increase human activity and landscape-level fragmentation.

3.3.7 Woodland Caribou

Similarly, access management strategies outlined in the Plan will benefit the small woodland caribou populations that occur in the Robson Valley. Although winter snowmobiling remains a potential risk factor, coordinated management strategies may reduce the potential adverse effects of harassment, and winter range displacement. Overall, the Plan provides increased certainty above the Base Case (i.e. TSR netdowns) that adequate habitat protection will occur. The majority of key caribou areas (e.g., West Twin) in the Plan are either proposed protected areas or specially managed improving the outlook for caribou in the short term. Areas of concern remain in the West Kinbasket Resource Development RMZ and Goat RMZ and subzone may provide suitable seral stage distributions for moose and wolves in close proximity to key caribou areas.

3.3.8 Ungulate Winter Range

The Plan proposes in the **Objectives and Strategies** to maintain quality and quantity of ungulate winter range throughout the Settlement/Agriculture and Rocky Mountain

Trench RMZs. Vegetation management strategies including the recommended direction to minimize the use of herbicides reduces the risk of damage to preferred forage species. Overall, the Plan improves the outlook for moose, deer, and elk by provided clear direction to lower level plans to maintain adequate quantities of mature and early seral stands.

3.3.9 Mountain Goat

Regionally important mountain goat populations occur in the Rocky Mountains and North Columbia Mountains of the plan area. The Plan enhances protection for mountain goats due to the special management designation of the Boundary/Horsey Creek RMZ and the management strategies proposed for the Holliday/Baker Creek Subzone. Together these will significantly reduce the risk associated with increased access and disturbance.

3.3.10 Fisheries

Although future road and resource development have the potential to negatively impact fish habitat, the Base Case outlook for fisheries on Crown land is relatively positive due to FPC **Riparian Management Areas.** The Plan reduces the risk to fisheries further by providing specific management strategies and objectives that are designed to maintain or enhance fisheries values.

3.3.11 Visual Quality Objectives

VQOs would be maintained in the Base Case over most of the plan area due to the designation of retention and partial retention zones. A reduction in VQOs would likely occur in the modification management zone. The Plan proposes selection silvicultural systems (i.e. partial-cutting) to enhance visual quality. Selection silvicultural systems will benefit scenic viewscapes along the valley walls of the trench as well as provide habitat and structural attributes required by some wildlife species. A potential negative effect of partial-cutting in all VQO areas is the greater risk to wildlife populations through increased access (more open roads). Access management objectives and strategies outlined by the Plan may mitigate to some degree the potential adverse effects of increased access throughout the VQO zones.

Overall, several aspects of the Plan improve the outlook for fish and wildlife habitats including:

- Over 43% of the plan area has been designated as general (19%) and special management (24%).
- Enhanced riparian buffers to maintain water quality and fisheries values.
- Access management plans and specific strategies that include road deactivation and gates will reduce risks to many regionally significant wildlife species including grizzly bear, woodland caribou and mountain goats.

The designation of 6 subzones to maintain high value wildlife habitat, wilderness, and scenic viewscapes.

However, some significant and moderate risk factors remain including:

- Resource Development Emphasis in the southern portion of the plan area. The East and West Kinbasket RMZs encompass a relatively large area which contain high capability grizzly bear habitat, old growth and a small herd of woodland caribou in Foster Creek. Although some access management strategies have been recommended to mitigate potential adverse effects, the cumulative impacts (forestry, tourism) suggest landscape-level connectivity will decline over time, limiting the potential to sustain these values.
- Similarly, the General Resource Management in the Goat RMZ may isolate and diminish the benefits of the West Twin and the Betty Wendle proposed protected areas. A more compatible buffer (e.g., special management, high biodiversity) would have maintained more natural levels of biodiversity and connectivity in this watershed and enhanced the value of the protected areas. The proposed gate in the pass leading from the Milk River to the Cariboo River will mitigate to some degree the potential adverse effects of increased access to the Cariboo RMZ.

ROBSON VALLEY BASE CASE AND RECOMMENDED LAND USE PLAN: SOCIO-ECONOMIC EVALUATION SUMMARY		
KEY ACCOUNTS	BASE CASE TRENDS (INCLUDES TSR, FPC and PAS AOIs)	RECOMMENDED LAND USE PLAN VS BASE CASE
Regional Impacts	60-75 jobs or equivalent income (3%-4% of regional total) potentially at risk in next 20 years due to TSR, AOIs and FPC. Can be mitigated by FRBC and greater resource	 Additional 0.6% of total RV employment or income potentially at risk in next 20 years, but could be offset by economic strategy in plan. Somewhat more growth potential in wilderness tourism

	 utilization. Slow economic and population growth in longer term, driven by tourism, in- migration, retirement incomes and import substitution. Gradual increase % of employment in service industries. 	 and other nature- based economic activity. Slightly less long term growth potential in mining, agriculture and intensive tourism activities. Economic Strategy coordinating FRBC/MOF measures with community economic development initiatives could more than offset incremental impacts of Plan. Otherwise, similar to Base Case.
ROBSON LAND US	VALLEY BASE CASE SE PLAN: SOCIO-ECO SUMMARY (co	AND RECOMMENDED NOMIC EVALUATION ont'd)
	SECTORAL IM	PACTS
Agriculture	 No existing jobs impacted, but expansion of grazing is precluded on 1,800 ha ALR land in West Twin AOI, most of which is forested. Slow / no growth in dairy and beef due to market and Crown range 	 No job impacts but precludes grazing expansion in West Twin PA and Morkill drainage. Grazing in other areas permitted subject to management objectives. Recommendations to identify other grazing opportunities in unallocated Crown lands and new logging areas should

	limits.	accommodate future growth.
Community Stability	 Population outmigration in the next 20 years unlikely, particularly if FRBC/resource utilization measures taken into account. In longer term, mill closure could disrupt community, unless alternative wood supplies can be secured. Slow population growth likely as result of inmigration and growth in other sources of basic income. 	 Coordinated Economic Strategy could offset disruptive impacts of mill closure and diversify local economy. Short and longer term population stability and trends similar to Base Case.
First Nations Concerns	Participation in resource management, economic development and protection of traditional activities of the SNTC, Lheidli T'enneh and Canim and	The LRMP will form basis of Government's position in treaty negotiations. Although LRMP will not prejudice outcome of negotiations, greater protection of environmental

ROBSON	Williams Lake Bands will be part of treaty negotiations for these groups.	values in the LRMP generally consistent with First Nations traditional activities and interests.
		nt'd)
Forestry	 Will continue as most important industry, but 50- 60 jobs or equivalent income (10% of forestry total) at risk within 20 years due to TSR, AOIs and FPC. Eventual closure of a mill likely (but not for at least 20 years) due to current sustainability / management constraints in TSR unless alternative wood supplies can be secured (e.g., imports from Alberta, expanded operability). Impacts can be mitigated by FRBC, higher timber utilization, more labour intensive harvesting 	 f 10 additional forestry jobs (or equivalent income loss) at risk in short term due to more sensitive management, VQOs and PAs. Otherwise, similar to Base Case.

	required by FPC.	
Guiding/ Trapping/ Wildcraft	Continued decline in guiding / trapping. Some wildcraft opportunities will be foregone unless these values explicitly recognized in management.	➡ Greater protection of key guiding and trapping species (e.g., grizzly and marten). Somewhat greater recognition of wildcraft values in management.
Mining / Energy	 No planned developments are expected/ would be precluded by AOIs. 1.5% of high industrial mineral potential and 4 sand and gravel tenures may be precluded by AOIs. 1 out of 14 very high / good small hydro sites and 4 out of 100 viable sites precluded by AOIs. Hydro / oil and gas corridor may be precluded or relocated to more costly route. 	 No existing job impact, but Forgetmenot gypsum deposit (20 jobs) in a Low Intensity RMZ which could increase cost of potential development. Increase of high industrial minera potential in sensitive management areas may resul in marginally higher development an operating costs. Sand and gravel / energy corrido are recommended a acceptable uses in the West Twir PA subject to management objectives.

ROBSON VALLEY BASE CASE AND RECOMMENDED LAND USE PLAN: SOCIO-ECONOMIC EVALUATION SUMMARY (cont'd)		
	SECTORAL IMPAC	TS (cont'd)
Quality of Life	 Increased hardship and stress for those forest workers who cannot find alternative employment, and their families. Likely mill closure in longer term would (no sooner than 20 years) exacerbate problems for forest workers and their families. FRBC and higher resource utilization could mitigate above concerns. Some erosion in environmental walues, scenis 	 More opportunities for nature-based economic and recreation activities. Better protection of environmental values. Scenic beauty of Valley Trench better protected by new VQOs and emphasis on partial cutting. Economic strategy in plan could help preserve quality of life and diversify local economy. Otherwise similar to Base Case.
Tourism	 beauty and nature-based economic activity. Higher potential for public recreation (est. 80,000 user-days and 15 PYs/ year) due to AOIs. AOIs will limit growth in intensive uses 	 New VQOs and emphasis on partial cutting will encourage longer visitor stays in McBride and Valemount. Small River Caves, Swiftcurrent Creek

	 recreation and backcountry lodges) in 7% of high potential commercial tourism sites. Continued growth in short term. Wilderness tourism constrained in longer term by cumulative visual and resource impacts of timber harvesting. 	 further opportunities for park recreation use. ➡ Intensity of commercial use limited in 15% of high potential commercial tourism sites due to new PAs. Access restrictions will limit snowmobiling and heli-ski/hiking in areas with wilderness management emphasis.
	ON VALLEY BASE CASE USE PLAN: SOCIO-ECC SUMMARY (C	AND RECOMMENDED NOMIC EVALUATION ont'd)
	GOVERNMENT	REVENUE
Economic Efficiency	Average household in BC would have to be willing to pay up to \$1.30 per year to offset loss in net timber value and to achieve environmental benefits of Case.	Average household in BC would have to be willing to pay up to an additional \$.20 per year to offset loss in net timber value and to achieve additional environmental benefits of Plan.
Local	Slow increase in tax base due to in-migration and tourism growth, interrupted by mill closure in	 Economic Strategy could diversify tax base and mitigate impacts of mill closure. Otherwise, similar

	longer term. → The region will get greater share of revenues from resource development due to FRBC and Columbia Trust.	to Base Case.
Provincial	Decline in timber-related revenues by second decade of \$0.9-\$2.3 million due to TSR, FPC and AOIs.	Incremental decline in timber-related revenues by second decade of \$0.1-\$0.4 million.

ROBSON VALLEY BASE CASE AND RECOMMENDED LAND USE PLAN: SUMMARY OF ENVIRONMENTAL ACCOUNTS		
KEY ACCOUNTS	BASE CASE TRENDS (INCLUDES TSR, FPC and PAS AOIs)	RECOMMENDED LAND USE PLAN VS BASE CASE
Biodiversity	 5.32% of plan area in new protected areas. 8 AOI's would achieve representation in 4 of 7 ecosections and all 12 subzone variants. 1 of 3 undeveloped 	 5.3% of plan area in new protected area. 10 proposed new parks would achieve similar representation in 4 of 7 ecosections and all 12 subzone variants. 1 of 3 undeveloped watersheds remaining (Betty Wendle 13, 900

	watersheds remaining (Betty Wendle 13,900 ha). Decline in biodiversity in longer term due to loss of old growth and road access particularly in valley bottom habitats in Goat RMZ and southern portion of plan area (East and West Kinbasket).	 ha). Risk to biodiversity reduced slightly in portions of plan area by managing more landscape units that meet high biodiversity age class objectives (Lower Morkill-Cushing, Northern Trench and Upper Raush). Improved connectivity by recommending Forest Ecosystem Networks (FENS) and maintaining mature forest linkages. Moderate to high risks remain in East and West Kinbasket RMZs due to resource development emphasis (similar to Base Case.
Fisheries	 Future road and resource development will negatively impact fish habitat. FPC <i>Riparian</i> <i>Management</i> <i>Areas</i> will mitigate impacts on Crown Land; 	 Reduced risk to fisheries values through enhanced riparian buffers along Fraser, McLennan and Canoe Rivers. Enhancement strategies outlined for Morkill, Holmes/McKale, and Goat RMZs

ROBSON LAND US	habitats on private land remain at risk. VALLEY BASE CASE SE PLAN: SUMMARY ACCOUNTS (c	outlook for maintaining migration and spawning habitat.
KEY ACCOUNTS	BASE CASE TRENDS (INCLUDES TSR, FPC and PAS AOIs)	RECOMMENDED LAND USE PLAN VS BASE CASE
Grizzly Bear (Blue- listed)	 Reduced impact to high elevation habitats (ESSF) due to current timber harvesting constraints. Low elevation habitats at most risk due to timber harvesting and road development. Increased access into high capability grizzly bear habitat may reduce populations over the long term. 	 Reduced risk to grizzly bear habitat due to enhanced access management objectives (CAMPs etc). Road deactivation and proposed gates at Cushing Creek, Hugh Allan Creek, Upper Raush River and the Milk/Cariboo Pass reduces the potential for bear/human conflicts. 100 m reserves adjacent to important avalanche chutes will reduce potential displacement from key foraging areas. Overall, proposed plan reduces risk levels from high to moderate over most of plan area; however, risk levels

		remain high over portions of East and West Kinbasket RMZs.
Mountain Goat	Majority (>90%) of high capability goat habitat in forest and non-forest exclusions.	Enhanced protection for key mountain goat habitat due to special management designation of the Boundary/Horsey Creek RMZ.
	 Proposed Holliday Arch AOI too small (400 ha) to significantly benefit goat population(s). LEH and no hunting zones will likely maintain current population levels. 	 Management strategies proposed for Zone E including Holliday/Baker Creek Subzone reduces risks associated with access and disturbance and enhances protection surrounding Holliday Arch AOI. Population(s) anticipated to remain stable in short and long term
ROBSON LAND US	VALLEY BASE CASE SE PLAN: SUMMARY ACCOUNTS (4	E AND RECOMMENDED OF ENVIRONMENTAL cont'd)
KEY ACCOUNTS	BASE CASE TRENDS (INCLUDES TSR, FPC and PAS AOIs)	RECOMMENDED LAND USE PLAN VS BASE CASE
Old Growth Dependent Species	Retention of mature and old growth forests in higher elevations will	Risk to macro-lichen forests reduced slightly due to proposed management strategy to identify

	 provide adequate habitat for some species. Amount of suitable habitat for forest interior species (e.g., marten) expected to decline over time, especially in Resource Development RMZs. Old growth dependent plants (e.g., macro- lichens) and animal species that live in valley bottom ICH and SBS habitats at risk. 	 and conserve representative areas of high lichen diversity. A greater proportion of old growth will be maintained due high biodiversity emphasis landscape units. Otherwise, similar to Base Case.
Riparian Habitat and Species	A positive trend for small red and blue-listed species (primarily waterfowl and wading birds) anticipated with implementatio n of FPC <i>Riparian</i>	 Enhanced protection (wider reserve zones) of riparian habitats along portions of the Fraser River, McLennan River, Canoe Rivers and the wetlands near the lower Raush. Otherwise similar to Base Case.

	Management	
	Areas on	
	Crown Land.	
Ungulate Winter Range	 Mature forest cover required during severe winters will be limiting. FPC Riparian Management Areas and Wildlife Habitat Areas may partly mitigate loss of mature forest cover in 	 Enhanced protection of ungulate winter range through management strategies proposed in Settlement/Agricultu re and Rocky Mountain Trench RMZs. Vegetation management strategies proposed to maintain quality and quantity of
	key babitat	winter range will
	types.	likely result in stable
		population levels in
	Ongulate	short and long term
	populations	short and long term.
	likely to	
	remain stable	
	in short term,	
	but may	
	decline over	
	long term.	
	1 II	
ROBSON	VALLEY BASE CASE A	AND RECOMMENDED
LAND US	SE PLAN: SUMMARY O	
	ACCOUNTS (co	nťd)
KEY	BASE CASE TRENDS	RECOMMENDED
ACCOUNTS	(INCLUDES TSR FPC	I AND LISE PLAN VS
Accounts	and PAS AOIs)	BASE CASE
Visual	Scenic quality of	VQOs enhanced
Quality	viewscapes	through proposed
Objectives	expected to be	partial-cutting
	maintained	regimes along
	through VQO	trench.
	retention and	However partial-
	partial retention	nowever, partial-

	management zones. Slight reduction of viewscapes in modification management zones.	cutting proposed along side valleys of trench increases open road network and therefore increases risk to wildlife populations. Access management may partly mitigate potential adverse effects. Partial cutting will reduce impacts to species dependent on stand-level attributes (e.g., snags, live trees, coarse woody dabric)
Water Quality	Current development restrictions in community watersheds and FPC will mitigate impacts on water quality. Water sources affected by private land development remain at risk.	Reduced risk of sedimentation problems for domestic water use due to proposed management strategies and enhanced buffer zones around water intakes and major rivers (see riparian).
Woodland Caribou (Blue- listed)	All Caribou High (late winter, summer habitat) netted out of timber harvesting land base.	Deactivation of roads will reduce summer access impacts, however, winter access via

and Corridor managed for arboreal lichen production (TSR). Some early winter habitat remains at risk in mid-slope ESSF and valley bottom ICH. Population(s) likely to remain stable in short term, however, increased risks from road access (summer and winter) and predation may reduce population(s) in long term.	remain a moderate risk factor. Proposed coordinated access management may mitigate potential adverse effects (i.e. harassment, displacement). Majority of key caribou areas either protected or specially managed. Population(s) likely to remain stable in short term; however, benefits of caribou management areas and proposed protected areas diminished by surrounding
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Robson Valley LRMP Social, Economic and Environmental Impact Assessment

(1) "Robson Valley LRMP Socio-Economic and Environmental Assessment of Proposed Land Use Scenarios", G. Holman and E. Terry in cooperation with Robson Valley LRMP Resource Support Team, January, 1996.

(2) The current harvest level in the Robson is estimated at about 585,000 m3, but over the 1990-95 period, harvest levels have averaged less than 500,000 m3, in part due to lower wood product prices.

(3) Based on an estimated increase of about 80,000 user-days annually and average daily expenditures of \$17 (Source: BC Parks), and assumed wage and salary content of 30% and average wage of \$25,000.

(4) There are currently no operating mines in the Robson Valley. No exploration expenditures were recorded in 1994, although exploration has been more active in previous years.

(5) MEMPR data for BC indicates the probability of a mineral showing becoming a producing mine is low.

(6) The resource inventory identified about 100 potentially viable small hydro sites, 14 good sites and 5 very good sites. Very small scale, "micro" hydro developments (e.g., for a backcountry lodge) that do not require storage dams may be allowed subject to management objectives for the protected area.

(7) The biodiversity guidelines in the FPC could indirectly protect fisheries habitat by affecting old seral stage retention in riparian and upland areas.

(8) Spawning habitat is more sensitive to resource development activities than migration habitat.

4.0 ECONOMIC STRATEGY

4.1 INTRODUCTION AND SUMMARY

An economic strategy should be a key component of a crown land use plan. The forestry sector is the main focus of this strategy for the Robson Valley LRMP since the most significant potential economic implications identified in the socio-economic assessment are with respect to this sector. The primary goals of the economic strategy are to expand economic opportunities and to mitigate potential impacts of the decline of timber supply (as identified in the 1994 Timber Supply Review, Forest Practices Code (FPC), Protected Areas Strategy (PAS), and the Robson Valley LRMP on workers and communities in the Valley.

While the economic strategy tends to be primarily forestry-related, it can also make an important contribution to economic goals that have been agreed to by the Robson Valley Round Table, including economic diversity, sustainability, more local processing of resources (particularly "value added" processing), and resource enhancement. The economic strategy, including the key recommendations listed below, were approved April 30, 1999, recognizing that both ministry and FRBC funds have become increasingly restricted since these recommendations were formulated:

- adopt "no net job loss" and the pursuit of jobs paying comparable wages to those of the traditional forest sector as the main objectives of the economic strategy
- commitments for appropriate funding and support of an economic strategy should be in place before the LRMP is implemented (e.g., annual funding contribution from FRBC)
- appropriate mitigation measures should be timed so that their effects coincide with any employment losses due to variations in forest industry activity
- the economic strategy for the LRMP should be formally linked with FRBC and integrated with ongoing initiatives (e.g., Valemount and McBride Economic Development Strategies, Columbia Basin Trust Fund) to maximize effectiveness and minimize duplication of effort
- a Technical Committee comprised of interested Valley residents, and key agencies such as Ministry of Forests (MOF) and Forest Renewal BC (FRBC) could meet regularly (e.g., every 3 months) to identify appropriate projects, possibly reporting to a broader Valley-wide economic development committee

4.2 POTENTIAL OPPORTUNITIES

4.2.1 Forestry

A large number of forest-related employment opportunities have been suggested in the **Robson Valley LRMP Socioeconomic and Environmental Assessment of Proposed Land Use Scenarios** (January 1996), economic development strategies for McBride and Valemount, the Columbia River Treaty Valemount Report, and in discussions with LRMP stakeholders and government agency staff.

It should be noted that the January 1996 Assessment indicated that reduction of unsalvaged losses, greater use of underutilized timber,(1) and selection harvesting could potentially generate about 30 jobs annually and that proposed FRBC-funded watershed restoration and intensive silviculture projects could generate up to another 40 jobs annually for a four-year period; additional projects could also likely be developed. These initiatives could generate roughly the same number of jobs as the cumulative job impacts of the Base Case and the Plan over the next 20 years.

4.2.1.1 Measures to Augment Short-term Timber Supply

Utilization of inoperable/problem forest types; the Timber Supply Review identified approximately 43,000 ha of these forest types, although only a portion would be suitable for local sawmills, and netdowns would have to be applied to address environmental values

- Related to the above, review of operability in the TSA to determine if additional timber volumes are available, possibly in conjunction with the next TSR
- Reduction of unsalvaged losses due to fire, blowdown, disease, and insect damage, while still maintaining biodiversity values at the stand level as per the FPC (e.g., coarse woody debris, snags, etc.); these losses are estimated at about 50,000 m3/yr, although only a portion of losses could be feasibly prevented
- MOF estimates that an annual harvest of about 6,000 m3 of birch and aspen could be sustained in the Robson Valley; these volumes could support higher value-added uses such as flooring
- Address Chief Forester's requirements in the last Robson Valley TSA AAC decision (e.g., higher utilization of cedarhemlock leading stands), within constraints imposed by management for old-growth/antique forests and subject to the final outcome of the LRMP
- Identify volumes and undertake commercial thinning in appropriate stands, particularly those regenerated from fires in the early 1900's
- Apply for a small forest licence in that portion of the Prince George Forest District more accessible to the Robson (e.g., 10 year, 1 million m3 licence in looper kill being advertised now in the PGFD) or request TSA boundary adjustment
- Identify and encourage ecosystem rehabilitation (e.g., West Twin drainage)
- Encourage more small business and woodlot sales to local contractors

4.2.1.2 Other Short-term Forestry Employment Initiatives

- FRBC-funded watershed restoration and intensive silviculture (e.g., pruning, brushing, weeding, etc.) that would be both seasonal and on-going in nature (MOF and the major licencees in the Valley have submitted a number of funding proposals to FRBC)
- More labour-intensive selection harvesting in VQOs and in low intensity RMZs
- Encourage measures for local hiring of forest workers

4.2.1.3 Forest Sector Research and Other Longer-term Forestry Initiatives

Feasibility/opportunities study for value-added wood processing (2) and evaluation of existing milling facilities to assess capability for higher value manufacturing (e.g., utility of veneer dryer, dry kiln) from the anticipated timber supply profile

- Feasibility/marketing study for wood-waste utilization (particularly hog fuel currently burned in teepee burners) and related value-added opportunities (e.g., wood pellet plant)
- Disseminate information on FRBC-sponsored loans for forestry businesses (e.g., value-added processors and logging contractors wishing to purchase equipment for selection harvesting) and encourage FRBC to make appropriate arrangements for the provision of such loans to qualified Valley businesses (3)
- Caribou research (e.g., review Caribou high habitat zones for harvesting opportunities and monitor selection harvesting experience in Caribou medium areas)
- Training, planning, GIS modeling in preparation for alternative/selection harvesting, hardwood management; establish training centre
- Review stumpage appraisal system to assess if revisions are possible to better reflect higher costs of more sensitive harvesting methods such as selection and helicopter logging (could also be financed by FRBCfunded financial/technical assistance to contractors)
- Potential forestry opportunities identified in the McBride Economic Development Strategy: establishment of a log sort yard; better linkage between Robson Valley Wood Processors Association and Small Business Forest Enterprise Program to encourage local value-added processing; training, information and technology programs to improve efficiencies: utilization of nonconventional timber and wood waste; establishment of cooperative marketing structures
- Environmental certification of wood product shipments from the Robson Valley
- Support efforts of Robson Valley Wood Processors Association (e.g., cooperative marketing, joint 16.1 award, log sort yard, improving wood utilization, etc.)
- Re-inventory of timber supplies in the TSA to determine accuracy of volume information, possibly in tandem with information requirements for the next TSR
- Encourage private land owners to cultivate commercial timber and provide silviculture training for such individuals
- Encourage local processing of timber harvested in Robson Valley

Investigate feasibility of importing more timber from other areas

4.2.2 OTHER SECTORS

4.2.2.1 Tourism/Recreation

- Trail building and maintenance, park infrastructure, signage, etc.(4)
- Inventory of outdoor recreation attractions, strategy for additional attractions (e.g., Bell Mountain), and appropriate signage and interpretation
- Development of management plans for new protected areas (e.g., West Twin) and other RMZs identified as having higher recreation use potential
- Tourism/recreation opportunities identified in McBride Economic Development Strategy: e.g., develop backcountry/ecotourism opportunities and facilities; facilitate sales of local arts and crafts
- Tourism/Recreation development possibilities identified in Valemount Economic Development Strategy: e.g., Kinbasket Lake hotsprings; community ski hill; development of multi-use trail system and adventure packages; etc.

4.2.2.2 Agriculture/Wildcraft

- Identification of alternative grazing opportunities, particularly on Crown land adjacent to existing operations, to accommodate future growth in the cattle and dairy industries
- Market under-utilized cattle and dairy farm products from the Robson Valley to other parts of BC and western Canada
- Initiate "buy Robson Valley" program for products
- Recognition of botanical forest products in timber management plans and appropriate regulations to preserve and realize their commercial potential

4.2.2.3 Mining

- Review no-staking mineral reserves and remove when no longer required
- Identification of unrealized gemstone and industrial mineral potential through government funded geoscience studies
- Provide opportunities for prospector training and assistance through grant programs

Promote the area to encourage investors to re-examine the potential for minerals (e.g., mica) for use in the building products, paint, and plastics industries

4.2.2.4 Other Initiatives

- Expand education and training opportunities (e.g., establishment of community learning centre, learning coordinator/programmer, distance education capabilities, sharing of computer/telecommunications equipment, Internet access, etc.)
- Enhance the Valley's desirability as a place to live and visit (e.g., downtown revitalization, new recreation centre, etc.)

4.2.2.5 Columbia River Treaty Committee Valemount Report

A report by the Kinbasket Research and Economic Development Committee to the Columbia River Treaty Committee on the impacts of the operation of the Kinbasket Reservoir and possible compensation/mitigation initiatives identified a number of opportunities, including:

Establishment of trust fund(s) to serve as a source of long term investment in the area

Completion of Kinbasket Reservoir rehabilitation (e.g., reservoir clean-up, restock fish populations, etc.)

Compensate for lost valley bottom habitat by protection of other areas (e.g., Starratt Wildlife Sanctuary, acquisition of key private lands, etc.)

Develop recreation and tourism potential of the Reservoir (e.g., recreation and camping sites, Canoe Valley Trail System, Canoe Mountain as a tourist attraction, etc.)

Develop alternative energy sources (e.g., small hydro, wind power)

Various economic development initiatives for Valemount (e.g., availability of natural gas, tourism and business improvement centres, forestry/fisheries research centre, university satellite campus, etc.)

4.3 RESPONSIBILITY FOR IMPLEMENTATION

One possibility is that a representative Technical Committee comprised of interested Valley residents plus staff from appropriate agencies such as Forest Renewal BC and Ministry of Forests could be designated as the body to recommend appropriate projects/initiatives. This group could report to a larger, Valley-wide economic development association, with the latter having responsibility for implementation of the overall strategy. This larger association could also ensure that the strategy would be coordinated with other community or regional economic development initiatives.(5) A

potentially complementary approach would be to nominate interested community members to sit on a regional body (e.g., as part of a wider Omineca-Peace FRBC "Regional Advisory Group" currently being organized) that would provide direct representation to FRBC regarding potential initiatives.

It has also been suggested that the IWA and other forest workers, possibly in conjunction with the licencees, create some form of "arm's-length" company or society to ensure that the priority for new jobs created using FRBC funds is given to forest workers in the Valley whose traditional jobs may be at risk.(6)

4.4 RESPONSIBILITY FOR FUNDING

The key funding source for the LRMP economic strategy should be FRBC, because the most significant potential economic impacts arising out of the Base Case and recommended LRMP Plan are forestry-related. Therefore, it is particularly important that the LRMP economic strategy be formally linked with FRBC. Most of the forestry initiatives summarized above, and a number of related initiatives (e.g., trail building and other recreation development) are consistent with FRBC funding criteria.(7)

FRBC is willing to play a more formal, on-going role in the LRMP economic strategy (e.g., to sit on a Technical Committee and consider means of providing on-going funding support) rather than simply responding to proposals on an ad hoc basis. LRMP consensus on the elements of an economic strategy would increase the likelihood that a more formal, on-going relationship with FRBC could be established.

4.5 TIMING OF EVENTS

While there was not agreement among LRMP members regarding the most appropriate timing of harvest flows, one of the key conclusions contained in the January 1996 socioeconomic assessment is that according to the timber supply analyses undertaken by MOF for the LRMP, harvest impacts associated with the TSR, FPC, PAS and the Robson Valley Land Use Plan can be deferred for about 10 years. (8) The analysis also indicates that impacts in the second decade would be about 80,000 m3/year (or 14% of current AAC), and even this potential impact could be offset by the incremental timber volumes discussed in this report. This would allow time for workers, forest companies and communities to adjust to harvest changes, for alternative timber supply and employment opportunities to be identified, and for growth factors in other sectors of the economy to take effect (e.g., tourism).(9)

The timing of harvest reductions due to TSR, PAS, FPC and the recommended LRMP remain, however, to be determined by the Chief Forester. If as expected, harvest changes are phased in, some key initiatives could be planned in advance and timed to coincide with the socioeconomic implications. Training (via Forest Worker Employment and Training Program, administered by the Ministry of Education, Skills and Training) could occur during the delay to maximize local hiring potential for FRBC-funded programs. However, it may not be appropriate to delay some FRBC initiatives for environmental reasons or other reasons.

To address concerns that delays would mean sacrificing projects, an annual allocation of FRBC funds to a "Robson Valley Forest Renewal Endowment Fund" is suggested, based on stumpage generated and relative significance of impacts in the region. This Fund could then be a source for longer term financing of initiatives. Withdrawals from the Fund could be increased when most needed. Such an approach would require FRBC to develop appropriate policies and administrative mechanisms.(10)

4.6 ALTERNATIVE STRATEGIES

It is recognized in the introduction that an explicit goal of this strategy is "no net job loss" and it is expected that those involved in implementation will work toward this goal. If, however, some reductions in traditional harvesting and/or processing jobs do occur (even if they are offset by creation of other forms of forest sector employment), there are ways to minimize the economic and lifestyle implications that such adjustments can otherwise entail.

For example, a potentially important strategy made possible by the phasing in of harvest reductions could be the achievement of employment adjustments through planned attrition and/or early retirement. Therefore, forest companies could reduce their work force over time prior to harvest reductions through these voluntary adjustments rather than laying off workers at the time of harvest reductions. (11) The attrition rate could be increased by offering pension bridging and skills/business training to forest workers.

Another adjustment strategy could be for local forest companies to achieve labour cost reductions through periodic shutdowns. In effect, the adjustment to harvest reductions could take the form of lower average forestry incomes due to longer periods of unemployment for forestry workers. Workers could also supplement their remaining forestry income with part-time employment in FRBC-funded initiatives, income support and training programs, or other endeavours.

The advantages of such adjustment strategies is that they could be less disruptive to employees who might otherwise by displaced, and to the families and communities that depend on the incomes of these workers.(12) They could also be less costly to implement. Such measures could also complement FRBC and other employment creation initiatives and be designed to maintain year-round employment for younger workers still supporting families.

However, while attrition/early retirement would mitigate impacts on employees and their families, there could still be an impact on the regional economy to the extent that these workers took other jobs or retired outside the region. Also, while periodic closures effectively distribute available employment among all employees, a marginal income reduction is also shared by the entire workforce, in the absence of supplementary income from agencies such as FRBC.

4.7 CONCLUSIONS

The economic strategy has focused on five main themes:

- 1. finding alternative fibre supplies for at least the short term;
- identifying possible employment opportunities for forest workers;
- 3. suggesting initiatives for FRBC funding;
- 4. pointing out areas that require further thought, research, and planning; and
- 5. listing ideas for longer term economic diversification.

The strategy has also had input from some LRMP members, the Ministry of Forests, the Ministry of Small Business, Tourism and Culture, and FRBC. FRBC has indicated that it wishes to become more involved in the Robson Valley, and an FRBC facilitator for the Robson Valley is now in place such that direct assistance for the development of appropriate proposals is available.

However, only with the benefit of active participation by those with the most at stake in the outcome can the key elements of this or any economic development strategy be successfully implemented. Therefore the technical expertise and local knowledge of Valley residents are necessary to achieve the desired results.

Finally, it should be reiterated that virtually all of the anticipated impacts on timber supply discussed above will occur even without a LRMP, due to the Timber Supply Review, Forest Practices Code, and Protected Areas Strategy. However, the economic strategy, with the necessary implementation efforts provided by a designated group of Valley residents and appropriate government agencies, has the potential to more than offset the implications of all these initiatives for at least the next 20-30 years.

Robson Valley LRMP Economic Strategy

(1) The historical under-utilization of the Robson Valley AAC could have positive implications for short term timber supply and employment. This is because harvest levels have averaged under 500,000 m3/year for the 1990-95 period, well under the AAC of 600,000 m3/year. Since the socioeconomic assessment used 600,000 m3/year as the "starting point," the impacts may be over-estimated. And while the most recent annual harvest estimate is 585,000 m3/year, this may have been due to temporarily high markets.

(2) If 5% more of the existing TSA harvest could be diverted to value-added processing, an additional 30-60 jobs could be created. This estimate is based on employment coefficient of 1-2 Person-Years, in addition to employment in primary breakdown, for every '000 m3 processed. (See **Cariboo-Chilcotin Land Use Plan**, 1994, p. 202.)

(3) Loans for forestry-related businesses are available from participating community development corporations (up to \$75,000) and some credit unions (up to \$250,000), made possible by FRBC's Forest Community Business Program. There is currently no credit union in the Robson Valley.

(4) FRBC is currently developing a policy for the funding of recreation initiatives. The intent is to fund forest-based recreation infrastructure (e.g. trails, campgrounds, boat launches etc.), forest interpretation (guides, maps, signs, etc.), and forest recreation management (skills upgrading, research, planning, etc.).

(5) This is essentially the approach being taken in the Cariboo-Chilcotin, under the auspices of the grass-roots "Cariboo Economic Action Forum".

(6) The IWA in the Kamloops area is currently negotiating with a major licencee and FRBC to initiate such a pilot project, to ensure that the interests of potentially displaced forest workers are represented in the most pro-active manner possible. The Kamloops project is likely to consist of silviculture work combined with classroom silvicultural training. A related development is that government has recently passed Bill 12, the *BC Forest Renewal Amendment Act*, 1996, which directs and gives first priority on FRBC funded projects to eligible BC forest workers facing work reductions.

(7) Discussions with FRBC staff in Prince George indicate that the Corporation is already actively involved in the Robson Valley, with at least 20 projects approved in principle. It is also anticipated that a locally accessible facilitator for FRBC-funded initiatives in the Valley will be in place soon - this individual will assist the Valley in priorizing "forest opportunities" to be considered for FRBC funding.

(8) The current AAC exceeds the long term harvest level, and there are differing views over how quickly the AAC should approach the long term level, a decision which is at the discretion of the Chief Forester. The socioeconomic assessment chose to assess this particular harvest flow alternative based upon what seems be the most likely outcome, given recent AAC decisions by the Chief Forester, including the last decision for the Robson Valley TSA.

(9) The disadvantage of deferring timber harvest reductions is, of course, that adjustments to the long term harvest level will also be delayed, resulting in even greater reductions in subsequent decades.

(10) Note that FRBC already has the ability to provide funding for multi-year projects.

(11) For example, if the annual attrition/turnover rate of forest workers is 1% per year, an 18% reduction in the workforce (about 90 workers) could be achieved without layoffs over 10 years. This compares to estimated job impacts of about 60 -70 forest workers attributable to the Base Case and Land Use Plan over the next 20 years in the absence of an economic strategy.

(12) In other words, such strategies in some cases may better achieve preservation of a worker's "current lifestyle" as opposed to retraining and/or directing a worker into an unfamiliar job

5.0 IMPLEMENTATION, MONITORING AND AMENDMENT

5.1 INTRODUCTION

The Robson Valley LRMP is a working document that is to be implemented by all relevant government agencies through agency-specific management activities, more detailed level plans, resource development permits and land dispositions. In the absence of more detailed level plans, all resource-specific development plans or permits will conform to the resource management zones objectives described in this plan. While it is recognized that the Robson Valley LRMP may result in more stringent activities than required by current legislation, it is not meant to direct less than the minimum requirements of the legislation.

More detailed level plans will include a section that describes the linkages to the Robson Valley LRMP. This will include an explanation of how the more detailed level plan meets the objectives outlined in this plan. Conversely, it is recognized that the resource management zone objectives may be amended as part of the plan's review process in the future based on feedback from these detailed level plans.

5.2 DECLARATION OF THE ROBSON VALLEY LRMP AS A HIGHER LEVEL PLAN

Under sections 3 (1) and 3(2) of the *Forest Practices Code of BC Act*, the three ministers (Ministry of Forests, Ministry of Environment, Lands, and Parks, Ministry of Energy and Mines) may establish resource management zones and objectives as higher level plans. Declaration occurs either after the plan is approved or concurrent with plan approval. Prior to submission for declaration as a higher level plan, the following referrals and assessments must be completed: an appropriate social, economic and environmental assessment of all resource values, the public and First Nations have been consulted, an interagency review has been conducted and zones and objectives are included in the document as the basis for direction to operational planning. The ministers may elect to bring the plan proposed for declaration to their Cabinet colleagues for comment.

After approval, operational plans must then be consistent with the Higher Level Plan derived from the Robson Valley LRMP. While the Robson Valley LRMP may result in more stringent forest practices than required in the Code, it does not direct less than the minimum requirements of the Code.

5.3 TRANSITION

To ensure continuity of resource development plans or permits this LRMP includes phase in provisions. These provisions facilitate a smooth transition from the operational plans in effect at the time the LRMP is approved by government, to operational plans which reflect this plan.

Licenced resource tenure holders have generally been involved in a substantive way during the development of the Robson Valley LRMP. However, they do require some time and opportunity to design and institute management practices that will be consistent with the intent of this plan.

Responsible managers should strive to ensure that resource-specific development plans and permits are consistent with the intent of strategies and objectives contained within the LRMP. For example, the forest service district manager should review all forest development plans after 1997 to ensure they meet the spirit and the intent of the
LRMP. In addition, short term guidance may be forwarded to resource tenure holders by the responsible managers for incorporation of innovative strategies that will meet the objectives in the plan.

During this transition period, agencies will prepare an implementation matrix and action plan to ensure strategies and objectives are carried out, and review existing local level plans and resource management plans. Copies of the plan will be distributed to all licenced resource users, resource agency staff and stakeholders and made available to the interested public.

Operational Plans must be consistent with any higher level plan developed from the Robson Valley LRMP.

5.4 IMPLEMENTATION AND MONITORING

5.4.1 Reports and Review

The Robson Valley LRMP will be implemented through plans at a lower level administered and approved by the appropriate resource ministries. The term of this LRMP will be 10 years with a formal review in year 5, and the major public strategic planning process to renew this document beginning in year 8. The LRMP participants recommend implementation reporting be used to provide feedback to the public and LRMP participants regarding the successes and challenges of putting this plan into action. The reports will require field work and office auditing in addition to personal interviews, and they should focus on all levels, from field work to management activities.

5.4.2 Implementation Committee

An implementation committee of no more than eight (8) public members will meet twice every year with the Interagency Planning Team (IPT) to monitor progress of implementation. These public members will be recommended by previous participants of the Robson Valley Round Table. The Implementation Committee should represent a balanced mixture of all interests found in the Robson Valley.

Chaired by the Forest Service, the mandate of this committee would be to review and provide input to the Annual Monitoring Report, to provide meaningful insight, background information, help identify gaps and put forward ideas and recommendations that will help agencies and responsible managers implementing the declared higher level plan. The committee could also recommend the formation of adhoc subcommittees to tackle specific issues as they arise. Ultimately all agencies have a responsibility in the success of the plan.

5.4.3 Annual Report and Meeting

Each year, the Interagency Management Committee (IAMC) will prepare an LRMP Monitoring Report. It will include:

actions taken to conform with plan direction;

- compliance with plan requirements; and,
- instances of non-compliance and actions that may be taken to ensure compliance.

The report will collate available indicators on how well the plan is meeting stated objectives. Each agency will be responsible for collating information, revising the indicators as necessary, and raising issues that need to be addressed. This material will generally be referenced for the eight year review and renewal of the LRMP process, or a major amendment process, if required.

Following release of the Monitoring Report, the IAMC will hold an annual meeting to review the report and solicit public comment. The meeting would be widely advertised, and LRMP participants, resource agency staff and interested public would be encouraged to attend. The meeting will be an opportunity for the public to raise issues that may require a plan update, or amendment of the plan.

It is anticipated that annual meetings may be held in June, unless field trips are more suited to another season to review specific resource management practices, or more participants would be available at another time.

5.4.4 Audits

To provide better monitoring of the implementation of the LRMP, the IAMC may recommend to hold an audit when deemed necessary. If an audit is to be conducted, it would be conducted by government's auditing services, through telephone and personal interviews with LRMP participants, resource agency staff, resource users and the general public.

5.5 DIRECTION FOR MORE DETAILED LEVEL PLANNING

All more detailed level plans should include a section that describes the linkages to the LRMP. For example, forest development plans should include an explanation of how they are consistent with the objectives outlined in the declared higher level plan. Conversely, it is recognized that the resource management zone objectives and strategies in this recommended LRMP may be amended in the future based on feedback from more detailed level plans.

$5.6\ \text{RELATIONSHIP}$ BETWEEN PREVIOUS PLANNING INITIATIVES AND THE ROBSON VALLEY LRMP

In April 1991, the Tete Jaune-Croydon Local Resource Use Plan (LRUP) was approved by the Ministry of Forests District Manager and incorporated into forest management practices. The Upper Canoe-Valemount LRUP was approved in December 1992. The intent of the LRUPs was to better integrate all resource values and uses to maximize the social, economic and environmental benefits. The Crescent Spur-Loos LRUP and the Old Growth Conservation Strategy for the Robson Valley remain in draft format and further development of these documents were postponed pending the outcome of the LRMP process. Many of the directions provided to lower level plans from the LRUPs and other government initiatives have been consolidated in one fashion or another into the LRMP. Where the objectives and strategies in the LRMP conflict with those of a LRUP, then the LRMP will supersede the LRUP. Wherever possible, the remaining portions of these lower level plans will be integrated with landscape units and objectives, sensitive areas and objectives for interpretive forest sites, recreation sites or recreation trails and objectives, where it is practical to do so. A process will be developed to ensure the objectives and intent of these planning initiatives will be incorporated into landscape unit plans. The process will include public participation.

5.7 UPDATES AND AMENDMENTS

5.7.1 Plan Updates

Plan updates are minor changes to the plan. Minor changes include:

revision of wording;

revised priorities for plans at a lower level;

small changes to boundaries or Resource Management Zones;

refinements to objectives and strategies suggested by plans at a lower level;

changes required to make the plan conform with provincial laws, regulations or policies.

The Annual Monitoring Report will contain proposed plan amendments. The IAMC will approve plan updates. All changes to the plan will be documented and circulated to the public interest groups and tenure holders.

5.7.2 Scheduled Amendments

Scheduled amendments are those prepared within the formal review in year 5. The IAMC will establish the terms of reference for the amendment process, consistent with existing legislation and regulations. The public will be consulted in the amendment process.

5.7.3 Unscheduled Amendments

The 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 and regulations.

A social, economic and environmental impact assessment will accompany any major amendment process. The public will be consulted in the amendment process.

5.8 INTERPRETATION AND APPEAL

From time to time, the public or agencies may become concerned about how the plan is being interpreted or about specific practices that are occurring. In all instances, the purpose of a resolution process will be to uphold the spirit of the plan at the time it was developed. The IPT chair, with the guidance of the Inter-agency Planning Team, should be the first avenue for interpretation on the intent of any section of the LRMP.

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

Where a concern is raised over land use objectives and strategies, the concern will be addressed directly to the affected agencies. The responsible manager will respond to the concern in writing in consultation with IPT chair and Inter-agency Planning Team where necessary. If a party feels that the matter is not satisfactorily resolved, the concern will be forwarded to the IAMC for resolution.

The IAMC will determine if the decision is consistent with the approved plan. If it is, no further action will be taken. If it is not, the responsible agency will be advised that the decision is not consistent with the plan.

Any further concerns that are not addressed by the above statements will be addressed by a plan update or amendment

6.0 POLICY AND ADMINISTRATIVE RECOMMENDATIONS

There are a number of policy/administrative concerns that the non-government RVRT sectors want to forward to government for consideration. Some of these concerns represent RVRT consensus and some represent individual sector(s).

VALUE

OBJECTIVE

- Respect resource tenure rights
- Respect job security

STRATEGY

- Encourage the development of road access to Quesnel timber supply and market place
- Wood harvested by licencees in the Robson Valley will be processed in this valley
- When licencing commercial backcountry operations, give preference to local established operating

ECONOMY -TIMBER

VALUE GENERAL ENVIRONMENT

OBJECTIVE

Conserve and protect air and soil quality

businesses

- Give contract and licence preference to local residents
- No increases in taxes for timber values on private land
- Support the use of biodegradable products on all Crown land
- Identify and where appropriate, sign natural and human history sites (coordinate with museum societies)
- Adjust stumpage appraisal system to accurately reflect costs in a timely manner that are associated with silvicultural systems other than clear cutting
- Reduce the need for high elevation spur roads by crediting road building costs (from roads not built) towards feasible alternative harvesting systems
- Trees harvested for mining operations will be directed to Small Business Programs where volumes warrant

STRATEGY

There was early consensus by non-government participants of the RVRT that they are opposed to water diversions of any kind in the plan area not withstanding consideration of small hydro, domestic and conservation uses

- The non-government RVRT participants recommend that the regional district develop zoning designations (greenbelt) that direct or encourage private land owners to sustain the natural state of riparian and other important habitat
- To restore existing developed areas, the RVRT also recommends that tax relief programs be developed by the BC Assessment Authority through the property taxation system to compensate land owners that convert/restore riparian and other important habitat
- Promote sound land use management practices and restoration programs on Crown and private land
- Government should consider developing financial and other incentives to encourage alternative methods of brushing and weeding and noxious weed control by companies and private individuals
- No motorized hunting in currently unroaded areas
- Award local contracts for noxious weed control rather than for entire region

GENERAL POLICY	Increase enforcement of government guidelines and regulations and increase personal,	Request that the number of Conservation Officers in the plan area be increased by one full time and one seasonal person and support staff
	professional, governmental and commercial accountability for land and resource use and management	Request that the number of local Forestry field workers in the plan area be sufficient to ensure compliance with LRMP, FPC and the Forest Act
VALUE	OBJECTIVE	STRATEGY
GRIZZLY BEARS		Ensure sustainable hunting levels and increase enforcement to deter poaching
HOLLIDAY/		Proposed roads must be brought before the LRMP
BAKER CREEK		implementation committee with local public input
SUBZONE OF BOUNDARY/		
HORSEY RMZ		
WATER QUALITY		Support the maintenance of existing stream flow and stage stations and request additional water gauges on drainages with potential water quantity problems

APPENDIX I - RVRT BIODIVERSITY INFORMATION

The RVRT discussed biodiversity in two phases. In Phase I, biodiversity importance was considered over larger geographic areas of the plan area and in Phase II, the Table

considered Phase I information and then determined biodiversity emphasis by recommended landscape unit.

PHASE I

The RVRT struck a subcommittee to deal with this issue and report back to the Table. The biodiversity RVRT subcommittee and the RVRT generally agreed on the relative importance of higher biodiversity in the following areas within the plan area:

- Morkill River drainage
- Lower Kinbasket Lake
- 📑 Goat River drainage
- Boundary/Horsey Creek RMZ F
- Upper Raush River drainage

However, in Phase I, the RVRT did *not* provide any *specific objectives or strategies* for these areas.

PHASE II

When the Biodiversity Guidelines (FPC) were released, the RVRT then discussed and negotiated biodiversity emphasis objectives by recommended landscape units to provide more detailed area specific direction. The eventual outcome included two lists. Refer to page 204 for A and B Lists and options that follow:

- ➡ A LIST: represents Spring 1996 negotiations of the RVRT for biodiversity objectives except for landscape unit 9 for which agreement was not reached. The IPT later recommended the biodiversity emphasis for this area.
- B LIST: represents Conservation Sector option which address concerns of the biodiversity (FPC) guidelines to achieve long term sustainability.

RVRT OPTIONS PRESENTED

Conservation Sectors Option – Biodiversity

Emphasis: All areas in the forest district should be managed at a minimum of 'medium' (intermediate) and the majority should be managed as 'high' biodiversity. The age-class objectives should also apply separately to each ecosystem site series, and until site series are adequately mapped, the age-class objectives should be applied separately to the valley bottom and mountainous side-slopes of the BEC subzone variant within a landscape unit. In high biodiversity areas there should be 33% retention, and in medium biodiversity there should be 23% retention of old growth.**Resource Sectors Option** – **Biodiversity Emphasis:** The Negotiated List (A List) represents biodiversity emphasis by landscape units from the majority of the Table sectors. These sectors were able to agree on all landscape units except for one, the Upper Raush, whose designation was assigned by the government Interagency Planning Team (IPT). Although we agree with the relative importance of having different landscape units, we have always maintained that too much High emphasis will have significant socio-economic impacts to the communities in the plan area. To this end, we have negotiated at the Table with the understanding that a complete socio-economic analysis will be required to measure the impact of biodiversity emphasis recommendations.

BIODIVERSITY RECOMMENDATION TABLE

PROPOSED LANDSCAPE UNITS

- 1. Upper Goat
- 2. PAS (Betty Wendle Drainage)
- 3. Caribou
- 4. Dore
- 5. Lower Goat
- 6. Castle
- 7. West Twin
- 8. Lower Raush
- 9. Upper Raush
- 10. Kiwa-Tete
- 11. Canoe
- 12. Kinbasket
- 13. Foster
- 14. Dawson
- 15. Lower Hugh Allan
- 16. Kinbasket
- 17. Swift
- 18. Horsey
- 19. Holmes
- 20. McKale
- 21. LaSalle
- 22. Morkill-Cushing
- 23. Upper Morkill
- 24. Forgetmenot
- 25. South Trench
- 26. North Trench

BIODIVERSITY	EMPHASIS
A LIST	B LIST
Intermediate	High
Intermediate	PAS
Intermediate	High
Intermediate	High
Intermediate	PAS
Intermediate	High
Low	Intermediate
Intermediate	PAS
High	High
Low	Intermediate
Low	Intermediate
Low	Intermediate
Intermediate	PAS
Intermediate	PAS
Low	Intermediate
Low	Intermediate
Intermediate	High
Low	Intermediate
Low	Intermediate
Low	Intermediate
Intermediate	High
High	High
Intermediate	High
Intermediate	High
Low	Intermediate
High	High

27. Upper Hugh Allan **Notes:**

Intermediate High

- 1. Resource Sectors subsequent to the A List negotiation reduced the proposed protected area for the Betty Wendle and chose an intermediate (medium) label.
- 2. Intermediate biodiversity emphasis label is the same as medium

APPENDIX II - SUMMARY OF SCENARIOS

ROBSON VALLEY LRMP SCENARIOS 1 AND 2

SOCIO-ECONOMIC EVALUATION SUMMARY

KEY INDICATOR	SCENARIO 1 VS BASE CASE	SCENARIO 2 VS BASE CASE
Regional Impacts	Additional 0.6% of total RV employment potentially at risk in next 20 years.	Additional 0.3% of total RV employment potentially at risk in next 20 years.
	Somewhat more growth potential in tourism and other nature-based economic activity.	Somewhat more growth potential in tourism and other nature-based economic activity than
	Somewhat less growth potential in mining.	Base Case, but less than in Scenario 1.
	agriculture and intensive tourism activities.	Otherwise, similar to Base Case.
	Otherwise, similar to Base Case.	
	SECTORAL IMPAG	стя
Agriculture	Same as in Base Case, except additional limits on grazing expansion in high BEAs.	Similar to Base Case.
Forestry	10 additional forestry jobs at risk in short term.	5 additional forestry jobs at risk in short term but
	Proposed access restrictions, larger	more than offset by Economic Strategy.

riparian buffers and visually sensitive harvesting around Kinbasket could increase impacts, but could be offset by Economic Strategy. Otherwise, similar to Base Case. Guiding / Somewhat greater protection for important Trapping / species such as marten Wildcraft and grizzly. Somewhat greater protection for wildcraft. Mining / No planned developments, but Energy Forgetmenot gypsum mine (20 PYs) precluded by NSRs. 22% of medium/high potential would be precluded by NSRs and PAs. Some uncertainty due to high biodiversity zones. Sand and gravel / energy impacts same as Base Case. Tourism New VQOs will increase attractiveness of McBride and Valemount to visitors. 8,000 more rec userdays/year in Upper Raush PA. Access restrictions may preclude snowmobiling and heli-ski/hiking, and

- Long term harvest level slightly higher due primarily to smaller PAs in Betty Wendle, Cariboo and Raush.
- Otherwise similar to Base Case.
- Similar to Base Case.

➡ Similar to Base Case.

- New VQOs in Trench same as Scenario 1, but fewer explicit provisions for other visually sensitive areas (e.g., Kinbasket).
- Less park-related and more motorized activities than in Scenario 1.
- Intensity of commercial use limited in 7% of H /

offset VQO/PA job gains.

Intensity of commercial use limited in 16% of H / M commercial tourism sites due to new PAs. M commercial tourism sites due to new PAs.

Community Impacts

Community Short and longer term Short and longer term **Stability** population stability and population stability and trends similar to Base trends similar to Base Case. Case. Economic Average household in BC Average household in BC would have to be willing Efficiencv would have to be willing to pay up to \$1.50 per to pay up to \$1.60 per year to offset loss in net year to offset loss in net timber value and to timber value and to achieve additional achieve additional environmental benefits of environmental benefits Scenario 1. of Scenario 2. First Same as Base Case. Same as Base Case. Nations Local Similar to Base Case. Similar to Base Case. **Provincial** Incremental decline in Incremental decline in timber-related revenues timber-related revenues by second decade of of up to \$0.1 million.

> More opportunities for nature-based activities.
> Trench b

Better protection of environmental values.

\$0.1-\$0.4 million.

- Scenic beauty of Valley Trench better protected by new VQOs.
- Otherwise similar to Base Case.
- Scenic beauty of Valley Trench better protected by new VQOs.
- Otherwise, similar to Base Case.

ROBSON VALLEY LRMP SCENARIOS 3 AND 4

Quality of

Life

SOCIO-ECONOMIC EVALUATION SUMMARY

KEY INDICATORS	SCENARIO 3 VS BASE CASE	SCENARIO 4 VS BASE CASE
Regional Impacts	 Additional 13%-15% of total RV jobs potentially at risk in next 20 years. Population decline in short term, with growth resuming in longer term due to attractiveness of new parks to tourists and in-migrants. Impacts could only be partially offset by Economic Strategy. 	 Net increase of 3%-4% total RV employment in next 20 years, compared to Base Case. Higher population growth in short term, but erosion in quality of tourism opportunities and scenic beauty will detract from long term growth.
	SECTORAL IMPA	СТЅ
Agriculture	No further growth in grazing on Crown land likely.	No constraints on grazing expansion on Crown land.
Forestry	 Mill closure and loss of 210-250 additional direct jobs (50% of total) possible in next 20 years. Impacts could only be partially offset by FRBC and higher timber utilization. 	 Loss of 50-60 forestry jobs would be avoided in short term. Harvest level and associated jobs could be maintained for longer period. Economic Strategy would further increase jobs, although rationale for FRBC spending weaker. Harvest level and employment higher in long term but mill closure still possible due to TSR.
Guiding / Trapping / Wildcraft	 Significantly enhanced protection for important species such as marten and grizzly. Significantly greater protection for botanical 	Significantly less protection for these activities.

forest products.

- Mining / Most sand and gravel pits, Energy Most sand and gravel pits, mineral occurrences and potential, small hydro sites, energy ROW would be precluded.
- **Tourism** New PAs will increase attractiveness of McBride and Valemount to visitors.
 - Much higher potential for growth in low intensity / wilderness recreation and tourism.
 - Potentially severe constraints on commercial backcountry tourism growth.

- None of the sand and gravel pits, mineral occurrences and potential, small hydro sites, energy ROW would be precluded from development.
- No VQOs will erode scenic beauty and attractiveness of Valley to visitors/in-migrants.
- Little / no growth potential in park-related / wilderness recreation and tourism.
- Higher potential for motorized and commercial backcountry tourism, but wilderness opportunities significantly eroded in longer term.

СОММ	TMDACT	r c
COMP	THLEAC	5

- Community Population decline and Stability severe disruption of the valley economy very likely in short term.
 - Population growth would likely resume in the longer term, but only after a very long and difficult adjustment period.
- Economic Average household in BC ■
 Efficiency would have to be willing to pay up to \$6.90 per year to offset loss in net timber value and to achieve

- Population growth would be higher in the short term.
- Mill closure less likely in the longer term but erosion of tourism potential would reduce opportunities for diversification.
- Average household in BC would have to be paid up to \$1.70 per year to offset loss in net timber value and to accept

	additional environmental benefits of Scenario 3.	environmental costs of Scenario 4.
First Nations	Same as Base Case.	Same as Base Case.
Local	Likely mill closure would significantly reduce local tax base in short term.	Better possibility that mill closure could be avoided in long term.
	Tax base, driven by tourism-related investments, could resume growth in longer term.	Less long term potential for growth in tourism- related tax base.
Provincial	Incremental decline in timber-related revenues of about \$2.1-\$7.6 million in short term.	Incremental gain in timber-related revenues of up to \$2.3 million in short term.
Quality of Life	 Significantly higher protection of environmental values and scenic beauty. Significant increase in hardship and stress for forest workers who cannot 	 Significant erosion in environmental values and scenic beauty. Difficult adjustments of forest workers and their families would be delayed for several decades.
	employment, and their families.	

ROBSON VALLEY LRMP SCENARIOS 1 AND 2

ENVIRONMENTAL EVALUATION SUMMARY

BASE CASE	SCENARIO 1	SCENARIO 2
Mount	MRPP and 7	➡ MRPP and 6
Robson	proposea	proposea
Provincial	parks would	parks would
Park	achieve	achieve
(MRPP) and	representation	representatio
8 AOI's would	in 3 of 7 ecosections	n in 3 of 7 ecosections
	BASE CASE Mount Robson Provincial Park (MRPP) and 8 AOI's would	BASE CASE SCENARIO 1 → Mount Robson Provincial Park (MRPP) and 8 AOI's would BASE CASE SCENARIO 1 → MRPP and 7 proposed parks would achieve representation in 3 of 7 would would

achieve representat ion in 4 of 7 ecosections and all 13 subzonevariants.

6.3% of LRMP planning area in protected areas.

- 1 of 3 undevelope d watersheds remaining (Betty Wendle).
- 41% of timber harvesting land base (THLB) meets high biodiversity age class objectives.
- Decline in overall biodiversity in longer term due to loss of old growth, habitat fragmentati on and road access.

and 11 of 13 subzonevariants.

- 11.5% of LRMP planning area in protected areas.
- Increased representation of ESSF mm1 and ICH mm. ESSF wc2 and ICH wk1 underrepresented.
- 1 of 3 remaining undeveloped watersheds totally protected (Betty Wendle) plus total protection of Upper Raush landscape unit.
- 54% of THLB in high biodiversity.
- Risks to maintaining biodiversity reduced; however, decline in longer term due to loss of old growth, habitat

and 11 of 13 subzonevariants.

- 4.9% of LRMP planning area in protected areas.
- Reduced representatio n of ESSF wk2, ICH wk2, ICH wk1, ICH mm, SBS wk1, ESSF wc2.
- No undeveloped watersheds remaining.
- 43% of THLB in high biodiversity.
- Risks to maintaining biodiversity slightly reduced; however, decline in longer term due to loss of old growth, habitat fragmentation and road access.

Grizzly Bears (Blue-listed)

Reduced impact to high elevation habitats (ESSF) due to current timber and manageme nt constraints .

Low elevation habitats at risk due to low biodiversity emphasis.

Increased fragmentati on and access into high grizzly bear habitat may reduce populations over long term. fragmentation and road access.

- Reduced impact on grizzly bear populations by managing more low elevation habitats for high biodiversity and road deactivation.
- Increased protection provided by Upper Raush and Betty Wendle PAs.
- Possible slower rate of decline; increased access into high grizzly bear habitat may reduce populations over long term.

 Increased protection from Holliday and Mount Robson PAs. Special management in Holmes and Medium biodiversity proposed in many high grizzly bear areas may provide suitable seral stage distribution in low elevation habitats. Proposed road deactivation will partly mitigate effects of roads.

- Increased fragmentation and access into high grizzly bear habitat may reduce populations over long term.
- Increased protection from Holliday and Mount Robson PAs. General Management Objectives

Mountain Goat

Majority (>90%) of goat habitat in forest and non-forest exclusions.

Proposed

	AOI at Holliday Creek too small to benefit goat populations ↓ LEH and no hunting zones will likely maintain current population levels.	 Small-Horsey landscape units. Populations likely to remain stable. 	 and Strategies indicate minimized disturbance. Populations likely to remain stable.
Old Growth	AOI's will protect 10.2% of old growth forests present in the timber harvesting land base.	Proposed parks will provide a slight increase in protected old growth forests present in the timber harvesting land base from 10.2% (Base Case) to 11.1%.	Proposed parks will reduce amount of protected old growth forests present in the timber harvesting land base from 10.2% (Base Case) to 5.7%.
Other Old Growth Dependent Species	Retention of mature and old growth forests in higher elevations will provide adequate habitat for some species.	 Enhanced protection due to high biodiversity emphasis landscape units, especially for valley bottom ICH habitats. Reduced risk to ICH 	 Enhanced protection of low elevation habitats due to medium biodiversity emphasis. Slightly reduced risk to ICH dependent plant and

	 Carrying capacity of forest interior species such as marten expected to decline over time. Old growth dependent plant (e.g., macro- lichens) and animal species that live in valley bottom ICH and SBS habitats at risk. 	dependent plant (e.g., macro-lichens) and animal species by shifting towards more natural levels of mature and old growth. 2 incremental biodiversity emphasis options: Low High.	animal species by shifting towards more natural levels of mature and old growth. 1 incremental biodiversity emphasis option: Low Medium.
Riparian Habitat and Species	A positive trend for red and blue listed bird species dependent on riparian habitats (crown land only) is anticipated with implement ation of FPC <i>Riparian Manageme</i> <i>nt Areas</i>	 Enhanced protection of riparian zones (300m buffers) along Fraser, Canoe and McLellan Rivers. Enhanced protection of wetlands in Lower Raush landscape unit. 	Same as Base Case.

	and <i>Wildlife</i> <i>Habitat</i> Areas.		
Species at Risk	Positive trend anticipated for red and blue listed bird species dependent on riparian habitats through implement ation of FPC <i>Riparian</i> <i>Manageme</i> <i>nt Areas</i> and <i>Wildlife</i> <i>Habitat</i> <i>Areas</i> .	 Similar to Base Case. Enhanced protection provided in Lower Raush and Upper Raush proposed protected area. 	Similar to Base Case.
Ungulate Winter Range	Majority of ungulate winter range in low and medium biodiversity ; mature forest cover limiting during severe winters; populations likely to decline over long term.	 Enhanced protection of ungulate winter range due to high biodiversity emphasis. Deer populations still vulnerable in severe winters due to low biodiversity emphasis areas. 	 Enhanced protection of ungulate winter range due to medium biodiversity emphasis; however, mature forest cover may still be limiting during severe winters. Deer populations still vulnerable in

	 Riparian Manageme nt Areas will partly mitigate loss of mature forest cover. Winter range on private land vulnerable. 		severe winters due to low biodiversity emphasis areas.
Woodland Caribou (Blue-listed)	 All caribou high (late winter, summer habitat) netted out of timber harvesting land base. Caribou medium and corridor. Managed for arboreal lichen production. Some early winter habitat remains at risk in mid- slope ESSF and valley bottom ICH forests. Small 	 Less predation risk by managing low elevation habitats for high biodiversity and minimizing enhancement of moose/deer range. High biodiversity may also provide more suitable seral stage distribution for foraging and travelling. Enhanced benefits anticipated from strict access management. Population(s) likely to 	 Slightly less risk of predation by managing by managing by managing valley bottoms for medium biodiversity in the Lower Morkill- Cushing, Northern Trench and Foster. Deactivation of roads will mitigate summer access impacts; however, winter snowmobiles will have increased access to alpine.

population(s) likely to remain stable; however increased risks from road access and predation over long term. remain stable.

Populations may remain stable; but potential exists for decline in long-term.

FISHERIES

RESOURCE BASE CASE SCENARIO 1 SCENARIO VALUE	2
 Anadromous Future road and resource development will negatively impact fish habitat. FPC Riparian Management Areas will in high biodiversity impacts on crown land; riparian crown land; riparian trisk. Majority of migration and spawning habitat managed for low Managed for low 	o se. on of n sity s.

biodiversity.

Freshwater	 Future road and resource development will negatively impact fish habitat. FPC <i>Riparian</i> <i>Management</i> <i>Areas</i> will mitigate impacts on crown land; riparian habitats on private land remain at risk. 	Enhanced protection for freshwater species in high biodiversity landscape units. Increased protection from proposed extended riparian zones and buffers.	Similar to Base Case. Slightly higher proportion of fish habitat in medium biodiversity emphasis.
Range	45 grazing tenures and current Animal Unit Months (AUMs) expected to remain similar.	No expansion of grazing tenures in high biodiversity emphasis areas; reduced range conflicts.	Same as Base Case.
Recreation	Expanding road network will increase seasonal access to recreation areas. Quality of wilderness- based recreation activities likely to	Additional 1,200 resident user- days. In Upper Raush proposed protected area. More protected area, high biodiversity and access restrictions better preserve wilderness	Smaller Betty Wendle PA means less protection of Bowron Lake viewscapes and fish and wildlife values. Otherwise similar to Base Case.

	decline. Additional 12,000 resident user-days in AOI's. Betty Wendle AOI provides protection of Bowron Lake viewscapes and fish and wildlife values.	recreation opportunities. Less motorized access to recreation areas.	
Visual Quality Objectives	Scenic quality of viewscapes expected to be maintained through VQO retention and partial retention management zones.	Enhanced VQOs in trench. Enhanced VQOs in high biodiversity landscape units and special considerations around Kinbasket Lake.	Enhanced VQOs in trench.
Water Quality	Current development restrictions in community watersheds and FPC will mitigate impacts on water quality. Water sources affected by private land development	Reduced risk of sedimentation problems due to high biodiversity emphasis and proposed enhanced riparian zones.	Same as Base Case.

still at risk.

ENVIRONMENTAL EVALUATION

Alternative Land Use Scenarios:

Scenario 3 (Conservation Emphasis) and 4 (Timber Emphasis)

Overview

Scenario 3 proposed three land use designations:

Protected areas: assumed managed according to provincial park policy Special Management: assumed to be similar to caribou medium management General Management: i.e., integrated resource management or current management practices

Scenario 4 proposed:

No new protected areas

No harvesting constraints due to visual quality objectives No harvesting constraints due to caribou management All landscape units managed for low biodiversity emphasis

Land Use Designation	Scenario 3	Scenario 4
	% Planning Area	% Planning Area
Proposed Protected Area	69	0
Special Management	21	0
General Management	10	100
Total	100	100

Real breakdown of the proposed land use designations for each scenario

Approximately 69% of the planning area is proposed as new protected area including 10 landscape units that would be totally protected (Dawson, Upper Hugh Allan, Lower Hugh Allan, Foster, Horsey-Small, Lower Morkill, Upper Morkill, Forgetmenot, La Salle-East Twin and West Twin). In addition, portions of the Canoe, Holmes, Upper Goat, Betty Wendle, and Cariboo landscape units would receive protected area designations and special management considerations. The major portions of 5 landscape units would receive special management considerations including the Kiwa-Tete, Canoe, McKale, West Kinbasket- Howard and East Kinbasket-Ptarmigan. The majority of the Southern Trench, Castle and portions of the Northern Trench and Dore landscape units would be managed for general management.

Potential Impact of Scenarios on Biodiversity

The large geographic area proposed in Scenario 3 as new protected area would greatly reduce the risk of losing biodiversity by maintaining natural levels of disturbance and ecosystem processes over both the short and long term. Species expected to benefit the most from this scenario would be dependent on late successional forests, old-growth and require relatively large undisturbed areas. Therefore, species such as grizzly bears, marten, and caribou, would likely have the necessary space to maintain viable populations (assuming no catastrophic events such as disease and weather). Similarly, small mammals and bird species dependent on old growth attributes (coarse woody debris, snags) would be expected to benefit. This would be especially true for those plant and animal species that live in the valley bottom ICH forests.

Conversely, Scenario 4 would result in the greatest negative impact to biodiversity over the long term by maintaining the whole planning area in a state of low biodiversity (Table 1). The abundance of early seral stages would provide habitat for some pioneering plant and animal species; however, species and ecosystem processes dependent on late successional forests and old growth attributes (coarse woody debris, snags) would decline below Base Case projections. The resulting increase in fragmentation and road access associated with intensive forest management would exacerbate the decline of old growth dependent species resulting in possible extirpation of populations.

In relative terms, the potential risk to biodiversity, from most to least, (including the middle scenarios) would be: Scenario 4, Base Case, Scenario 2, Scenario 1, Scenario 3

APPENDIX III - GLOSSARY OF RESOURCE PLANNING TERMS

access management plan:

an **operational plan** that shows how road construction, modification and deactivation will be carried out to protect, or mitigate impacts on **known** resources or **sensitive areas** while maximizing the efficiency of forest resource development.

age class:

any interval into which the age range of trees, forests, **stands** or forest types is divided for classification and use. The intervals are usually based on age in divisions of 10 years.

agriculture:

agriculture is the practice of growing and harvesting plants or animals, on land (including substrates) or in water, for the production of food, fibre, fuel, medicine, ornamentals and industrial products or uses associated with or ancillary to the production of food, fibre, fuel, medicine, ornamentals and industrial items.

agricultural land:

land that is used for farming, including ranching, and land that has biophysical attributes that make it suitable for agricultural use. The latter includes lands identified by the Canada Land Inventory agricultural capability classes 1 to 5, as well as unique lands that have the capability to sustain agriculture in the regional context.

Agricultural Land Reserve (ALR):

land designated and reserved for agricultural purposes under the *Agricultural Land Commission Act* (the reserve covers about five percent of the province and includes most of BC's high quality **agricultural land**). It includes both private and public lands, and covers land being farmed and land with agricultural potential. Non-agricultural uses on the ALR are regulated.

allowable annual cut (AAC):

the allowable rate of timber harvest from a specified area of land. The chief forester sets AACs for **timber supply areas (TSAs)** and **tree farm licences (TFLs)** in accordance with Section 8 of the *Forest Act*.

alpine:

the zone in a mountain system which lies above the timberline.

animal unit month (AUM):

the amount of forage required to feed a mature 1,000 pound cow with or without unweaned calf at her side, or equivalent (one 2-year-old horse or five deer) for one month.

archaeological sites:

locations containing or with the potential to contain the physical remains of past human activity. These sites are assessed through archaeological investigations (see also **cultural heritage resource**).

backlog treatment:

any silviculture activity applied to areas harvested before October 1, 1987, for major licensees and January 1, 1988, for the Small Business Enterprise Program.

base case (LRMP):

present conditions and likely future developments in a planning area in the absence of any changes to existing land and resource management. This should include a description of current resources and resource uses, current management strategies and land use designations, and relevant historical conditions and trends, as well as a discussion of their contribution to current and long term social, economic and environmental conditions. In LRMP, the base case provides a benchmark for scenario evaluation.

benefit/cost analysis:

an analytical technique that estimates the net benefits and costs of a management scenario using fully quantified social (non-market) costs and benefits as well as financial (market) costs and benefits.

biodiversity:

biological diversity is the diversity of plants, animals and other living organisms in all their forms and level 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 stands can be determined from Biodiversity Field Guide.

biodiversity - lower level

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.

biodiversity - intermediate level

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

biodiversity - higher level

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.

biodiversity - 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 understorey vegetation diversity.

biogeoclimatic ecosystem classification:

a hierarchical classification scheme having three levels of integration: regional, local and chronological; and combining climatic, vegetation, and site factors.

biogeoclimatic zone:

a large geographic area with a broadly homogeneous macroclimate. Each zone is named after one or more of the dominant climax species of the ecosystems in the zone, and a geographic or climatic modifier. British Columbia has 14 biogeoclimatic zones.

biological diversity: (see biodiversity).

blue-listed species:

sensitive or vulnerable species as identified by the Ministry of Environment, Lands and Parks. Blue-listed species are considered to be vulnerable and "at risk" but not yet endangered or threatened. Populations of these species may not be 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.

botanical forest product:

non-timber based products gathered from forest and range land. There are seven recognized categories: wild edible mushrooms, floral greenery, medicinal products, fruits and berries, herbs and vegetables, landscaping products, and craft products.

broadcast burning:

intentional burning of debris on a designated unit of land, where the fuel has not been piled or windrowed, allowing fire to spread freely over the entire area.

brushing:

a silviculture activity done by chemical, manual, grazing, or mechanical means to control competing forest vegetation and reduce competition for space, light, moisture, and nutrients with crop trees or seedlings.

buffer strip:

a strip of land (often including undisturbed vegetation) where disturbance is not allowed or is closely monitored to preserve or enhance aesthetic and other qualities along or adjacent to roads, trails, watercourses and recreation sites.

capability:

the potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at given levels of management intensity. Capability depends upon this set of conditions and site conditions such as climate, slope, landform, soils, and geology.

carrying capacity:

the average population that can be sustained on a management unit, compatible with management objectives for the unit. It is a function of site characteristics, management goals and management intensity.

clearcutting with reserves:

means a variation of the **clearcutting silvicultural system** which retains a variable number of **reserve** trees either uniformly or in small groups, for purposes other than regeneration.

clearcutting silvicultural system:

defined as a **silvicultural system** that removes an entire **stand** of trees from an area of one hectare or more, and greater that two tree heights in width, in a single harvesting operation. A new **even-aged stand** is obtained by planting, natural or advanced regeneration or direct seeding. The opening size and dimensions created are generally large enough to limit significant microclimatic influence from the surrounding stand.

coarse woody debris:

sound and rotting logs and stumps that provide habitat for fungi, plants, animals and insects and their predators, and that provide a source of nutrients for soil development.

commercial backcountry recreation:

those outdoor recreational activities undertaken on a fee-for-service basis, with a focus on experiences associated with natural environments in rural or remote settings.

Commission on Resources and Environment (CORE):

a body established by the British Columbia government, independent of the various provincial ministries, whose legal mandate as defined in the *Commissioner on Resources and Environment Act* was to "develop for public and government consideration a British Columbia-wide strategy for land use and related resource and environmental management." CORE was dissolved in 1996 after fulfilling its mandate.

community watershed:

defined in the Forest Practices Code of British Columbia Act as

a)the drainage area above the most downstream point of diversion on a stream for a water use that is for human consumption and that is licenced under the *Water Act* for

i) a waterworks purpose, or

ii)a domestic purpose if the licence is held by or is subject to the control of a water users' community incorporated under the *Water Act*

if the drainage area is not more than 500 km2 and the water licence was issued before June 15, 1995 or

b)an area that is designated as a community watershed under subsection (10).

compatible:

capable of existing or operating together in harmony

connectivity:

a qualitative term describing the degree to which late-**successional** ecosystems are linked to one another to form an interconnected network. The degree of interconnectedness and the characteristics of the linkages vary in natural landscapes based on topography and natural disturbance regime. Breaking of these linkages results in **fragmentation**.

consensus:

defined by the Robson Valley Round Table, Terms of Reference, dated May 11, 1994, Section 8.1 as: consensus will have been reached when there is agreement by all members present to support the outcome.

conserve:

to keep in a safe or sound state

corridor:

a band of vegetation, usually older forest, that serves to connect distinct **patches** on the landscape. Corridors are part of the **forest ecosystem network (FEN)**, and by providing **connectivity** they permit the movement of plant and animal species between what would otherwise be isolated patches.

critical habitat:

areas considered to be critically important for sustaining a population and where **development** may cause an unacceptable decline in the population. A rating of the importance of the habitat (e.g., high, medium, low) may also be used.

critical wildlife 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. From the Prince George BC Environment staff: This is a non-comprehensive listing of what might be defined as "critical" habitats for some of the development activities that are referred to in the objectives and strategies. Critical habitats include, but are not limited to: licks, seeps, springs, wetlands, breeding sites (elks, rutting arenas, etc.), birthing sites (calving, spawning, etc.), riparian zones, colonies, rookeries, hibernacula, winter range and over wintering area (caribou, ungulates, trumpeter swam, etc.), caves, talus slopes, avalanche chutes, denning sites, nesting sites and cliffs.

Crown land:

land that is owned by the Crown; referred to as federal Crown land when it is owned by Canada, and as provincial Crown land when it is owned by a province. Land refers to the land itself and the resources or values on or under it.

cultural heritage resource:

an object, a site or the location of a traditional societal practice that is of historical, cultural or archaeological significance to the Province, a community or an aboriginal people. Cultural heritage resources include **archaeological sites**, **structural attributes**, **heritage landscape features** and **traditional use sites**.

cutblock:

defined in the *Forest Practices Code of British Columbia Act* as a specific area of land identified on a forest development plan, or in a licence to cut or a cutting permit issued under a master licence to cut, road permit or Christmas tree permit, within which timber is to be or has been harvested.

deactivation:

measures taken to stabilize roads and trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation.

designate:

a person undertaking work/activity on behalf and with the authority of another. For example, BC Environment or designate will usually be a contractor or licensee who is doing work to the standards and with methods approved by BC Environment.

development:

any initiative that generates access to the harvesting of forest products.

economic impact analysis:

analytical techniques that estimate the economic impacts of management **scenarios** on income, revenues and employment within specific communities, regions or the province as a whole.

ecosection:

an ecological unit based on climate and physiography.

ecosystem:

a functional unit consisting of all the living organisms (plants, animals and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size — a log, pond, field, forest or the earth's biosphere — but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, or range ecosystem.

endangered species: (see threatened or endangered species)

enhance:

raise, to add or contribute to. Improve. Increase.

environmentally sensitive area (ESA):

areas requiring special management attention. ESAs for forestry include potentially fragile, unstable soils that may deteriorate unacceptably after forest harvesting, and areas of high value to non-timber resources such as fisheries, wildlife, water and recreation.

equivalent clearcut area (ECA):

the area of a **cutblock** weighted to estimate an equivalent effect on snow hydrology as the area of a clear-cut unregenerated block. As examples, a 10 ha clear-cut unregenerated block has an ECA of 10 ha; if a fully stocked **stand** has regenerated to a height of 6 m, the block now has an ECA of 5 ha. If, instead of being clear-cut the block was selection logged with 30% volume removal, the ECA is estimated to be 3 ha.

evaluation accounts:

accounts of the social, economic and environmental values (not necessarily monetary) affected by differing management strategies. Typically used in **multiple accounts analysis** to determine socio-economic impact.

even-aged stand:

a stand of trees consisting of one or two **age classes** (see also **uneven-aged stand**).

even-aged system:

a **silviculture** system that is designed to regenerate and **maintain** an **even-aged stand**. Clearcutting, seed tree and shelterwood are even aged systems.

five year silviculture plan:

a five year plan prepared annually to determine the progression of a **silviculture** program for a given forest licencee.

forest cover type:

forest **stands** consisting of a plant community made up of trees and other woody vegetation, growing more or less closely together.

forest development plan:

a five year plan prepared annually to determine the progression of forest access development for harvesting **timber** for a given forest licencee.

forest ecosystem network (FEN):

a planned landscape zone that serves to **maintain** or restore the natural connectivity within a **landscape unit**. It consists of a variety of fully **protected areas**, **sensitive areas** and **old growth management areas**.

Forest Land Reserve (FLR):

land designated under the *Forest Land Reserve Act*. This land includes private land within a **tree farm licence** and private land classed as managed forest land under the *Assessment Act*, as well as designated **Crown land** in the **Provincial forest**. Removal

of land from the Reserve is restricted. The purpose of the Reserve is to **maintain** the commercial working forest of British Columbia. FLR exclude all ALR lands.

forest practices:

any activity that is carried out on forest land to facilitate uses of **forest resources**, including but not limited to **timber** harvesting, road construction, **silviculture**, **grazing**, **recreation**, pest control, and wildfire suppression.

forest practices code (FPC):

commonly used to refer to the legislation (including the *Forest Practices Code of British Columbia Act* and associated regulations), standards and **guidebooks** that govern **forest practices** in BC.

forest resources:

defined in the *Forest Practices Code of British Columbia Act* as resources and values associated with forests and range including, without limitation, **timber**, water, **wildlife**, fisheries, **recreation**, **botanical forest products**, forage and **biological diversity**. (see also **resource values**)

fragmentation:

the process of transforming large continuous forest **patches** into one or more smaller patches surrounded by disturbed areas. This occurs naturally through such agents as fire, landslides, windthrow and insect attack. In managed forests, timber harvesting and related activities have been the dominant disturbance agents.

free growing:

healthy trees with growth unimpeded by competition from herbaceous plants, shrubs, or other trees.

genetic diversity:

variation among and within species that is attributable to differences in hereditary material (DNA).

grazing:

the consumption of any kind of standing, non-woody vegetation by livestock or wildlife.

green up:

the process of re-establishing vegetation following logging to achieve specific management objectives (for example, rate of harvest control, visual cover for wildlife, visual quality, or hydrological recovery). The most common standards of green-up are:

- ➡ green-up: the minimum height and stocking levels which trees (as described in either a silviculture prescription or regional stocking standards) on a cutblock must achieve before an adjacent stand of timber may be harvested.
- visually effective green-up: the stage at which regeneration on a cutblock is perceived by the public as being newly established forest. The forest cover on the cutblock must generally be of sufficient height to block stumps, logging debris, and bare ground from view. Once achieved, an adjacent stand of timber is available for harvest.
- hydrological green-up: the point at which a secondgrowth stand of timber will hydrologically resemble old growth in terms of timing and quantity of water yield.

greened-up:

for the purposes of the *Forest Practices Code of British Columbia Act* means a **cutblock** that supports a **stand** of trees that

a) has attained the green-up height specified in a **higher level plan** for the area, or

b) in the absence of a higher level plan for the area, has attained a height that is 3m or greater, and

i) if under **silviculture prescription**, meets the stocking requirements of that prescription, or

ii) if not under a silviculture prescription, meets the stocking specifications for that **biogeoclimatic ecosystem classification** specified by the regional manager.

group selection system:

a variant of the **selection silvicultural system**. It is defined as a **silvicultural system** that removes trees in defined groups to create stand openings with a width less that two times the height of adjacent mature trees, and that manages the area as an **uneven aged stand**.

guidebooks:

guidebooks are guidelines and recommendations on how to best achieve the requirements of the *Forest Practices Code of British Columbia Act*. The guidebooks are not legally enforceable. However, specifications and procedures recommended by the
guidebooks may be incorporated into plans, prescriptions and contracts in which case those specifications and procedures may become legally enforceable.

habitat:

the place where an organism lives and/or the conditions of that environment including the soil, vegetation, water and food.

habitat management:

management of the forest to create environments which provide habitats (food, shelter) to meet the needs of particular organisms.

heritage landscape feature:

a landscape feature that represents historical, architectural, archaeological, paleontological, or scenic significance to the province.

heritage trail:

a trail having cultural significance by reason of established aboriginal use or use by early immigrants (see also **cultural heritage resource**).

higher level plan:

defined in the Forest Practices Code of British Columbia Act as an objective

- a) for a resource management zone,
- b) for a landscape unit or sensitive area,

c) for a recreation site, recreation trail or interpretive forest site.

hydrological green-up: (see green up).

impact assessment:

a study of the potential future effects of resource development on other resources and on social, economic and/or environmental conditions

indicator:

analytical tools that provide quantitative or qualitative information by which biophysical conditions can be measured. In LRMP, indicators are used to identify the existing state of the resource(s) as part of the base case, to assess the impacts of alternative plan scenarios, and to monitor progress toward achieving management objectives.

indicator species:

in forestry, species of plants used to predict site quality and characteristics.

inoperable lands:

lands that are unsuited for timber production now and in the foreseeable future by virtue of their: elevation; topography; inaccessible location; low value of timber; small size of timber stands; steep or unstable soils that cannot be harvested without serious and irreversible damage to the soil or water resources; or, designation as parks, wilderness areas, or other uses incompatible with timber production.

integrated resource management (IRM):

a land management regime that identifies and considers all **resource values**, along with social, economic, and environmental objectives, with the goal of resource stewardship guided by the principle of sustainable use.

Integrated Resource Planning Committee (IRPC)

the headquarters inter-agency committee that is responsible for coordinating the development of principles, policies and procedures for **strategic Land and Resource Management Planning**.

Interagency Management Committee (IAMC)

the interagency committee of senior land and resource management officials in each region of the province. The committee is responsible for integrating all resource planning and protected areas work in a region and for setting regional planning priorities.

Interagency Planning Team (IPT):

committee of local resource managers from government agencies who provide technical support for a **Land and Resource Management Plan**.

interest:

in reference to land, includes a right or estate in the land, and only occurs in the case of leases, rights of way and Crown grants.

interpretive forest site:

a designated forest site and ancillary facilities developed by the Minister of Forests to interpret, demonstrate, or facilitate the discussion of the natural environment, **forest practices**, and **integrated resource management**.

known:

as currently understood via all reasonable sources of information.

lakeshore management area:

the lands directly adjacent to a lake, in which forest practice standards are designed to **maintain** the unique combination of fish, wildlife, water, and recreation values that occur on and around lakes. For the purposes of the *Forest Practices Code of British Columbia Act* it means an area established adjacent to a lake with a **riparian class** of L1, consisting of a **riparian reserve zone**, determined in accordance with Part 10, and a **lakeshore management zone**.

lakeshore management zone:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as that portion of the **lakeshore management area** established by the district manager around a lake with a **riparian class** of L1 that is outside of any **riparian reserve zone** or, if there is no riparian reserve zone, that is located adjacent to the lake.

Land and Resource Management Plan:

a strategic, multi-agency, integrated resource plan at the subregional level. It is based on the principles of enhanced public involvement, consideration of all **resource values**, **consensus** based decision making, and resource **sustainability**.

Land and Resource Management Planning (LRMP):

an integrated sub-regional **consensus**-based process requiring public participation that produces a Land and Resource Management Plan for review and approval by government. The plan establishes direction for land use and specifies broad resource management **objectives** and **strategies**.

Resource Management Division (RMD):

RMD is the provincial government office established to coordinate both the administration of interagency Land and Resource Management Planning, and was to coordinate between government agencies and the **Commission on Resources and Environment**.

landscape inventory: (see visual landscape inventory)

landscape unit:

landscape units are planning areas delineated on the basis of topographic or geographic features. Typically they cover a **watershed** or series of watersheds, and range in size from 10,000 to 100,000 ha.

large organic debris (LOD):

entire trees or large pieces of trees that provide channel stability or create fish habitat diversity in a stream channel.

linear development:

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

local resource use plan (LRUP):

a plan approved by the district manager for a portion of the **Provincial forest** that provides area-specific resource management objectives for integrating resource use in the area. These plans are prepared pursuant to Section 4(c) of the *Ministry of Forests Act*.

logging plan:

a map and written plan, describing the road building, harvesting, and other related operations that are submitted for a Forest Officer's approval to ensure that the applicable standards and obligations stated in the **silviculture prescription** and the harvesting agreement are met.

long-run impacts:

the effects of differing management regimes on the long term **sustainability** of the forest land base.

maintain:

to keep in an overall existing state (as of repair, efficiency or validity). This does not mean that status quo conditions prevail, but rather that resource development is sensitive to other values.

mineral:

ore of metal and every natural substance that can be mined and that either is in place where it was originally formed or deposited, or is in talus rock, and includes rock or other materials from mine tailings, dumps and previously mined deposits of minerals, but does not include: coal, petroleum, natural gas, earth, soil, peat, marl, sand and gravel, and rock and riprap used in the construction of roads, buildings or structures.

multiple accounts analysis (MAA):

an analytical technique that specifies a framework of **evaluation accounts** under which management scenarios can be systematically assessed in terms of their social,

environmental and economic impacts. It is flexible, often utilizing non-monetary valuations of the likely effects.

natural disturbance types:

forest cover types resulting from natural disturbance regimes, such as wildfires, windstorms and, to a lesser extent, insects and landslides. For the purposes of setting biodiversity objectives, five natural disturbance types are recognized as occurring in BC:

- NDT1 Ecosystems with rare **stand-initiating** events
- ▶ NDT2 Ecosystems with infrequent stand-initiating events
- ▶ NDT3 Ecosystems with frequent stand-initiating events
- ▶ NDT4 Ecosystems with frequent **stand-maintaining** fires
- ▶ NDT5 Alpine Tundra and Sub-alpine Parkland ecosystems.

natural regeneration:

the renewal of a forest stand by natural rather than human means, such as seed onsite from adjacent stands or deposited by wind, birds or animals.

no staking reserve:

there are two types of reserves which are currently in use to manage mineral lands. A "no staking" mineral and/or placer reserve precludes location (staking) of a mineral and/or placer claim. To permit location with specific conditions or restrictions, a "subject to conditions" reserve would be established.

not satisfactorily restocked (NSR):

productive forest land that has been denuded and has failed, partially or completely, to regenerate either naturally or by planting or seeding to the specified or desired **free growing** standards for the site.

objective:

an aim, goal or end of action. Objectives and associated **strategies** contained in plans provide direction on land use and resource management for the plan area.

old growth:

forest that contains live and dead trees of various sizes, species, composition and **age class** structures. Old growth forests, as part of a slowly changing but dynamic **ecosystem**, include climax forests but not sub-climax or mid-seral forests. The age and

structure of old growth varies significantly by forest type and from one **biogeoclimatic zone** to another.

old growth attributes:

structural attributes and other characteristics of old growth forests, including: large trees for the species and site; wide variation in tree sizes and spacing; accumulations of large dead standing and fallen trees; multiple canopy layers; canopy gaps and understorey patchiness; elements of decay such as broken or deformed tops or trunks and root decay; and the presence of species characteristic of old growth.

old growth management area:

areas that contain specific **old growth structural attributes**, and which are mapped out and treated as special management areas.

operational plan:

Forest Practices Code of British Columbia Act states that within the context of areaspecific management guidelines, operational plans detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting the resource are set out to enable site-specific operations to proceed. Operational plans include **forest development plans**, **logging plans**, **range use plans**, **silviculture prescriptions**, **stand management prescriptions** and **site plans**.

partial cutting:

refers generically to **stand** entries, under any of the several **silvicultural systems**, to cut selected trees and leave desirable trees for various stand objectives. Partial cutting includes harvest methods used for seed tree, shelterwood, selection, and **clearcutting with reserves** systems.

patch:

a **stand** of similar-aged forest that differs in age from adjacent patches by more than 20 years. When using the term patch in designing landscape patterns it refers to the size of either natural disturbance openings which led to even-aged forests or those openings created by **cutblocks**.

patch cutting (or patch-cut system):

a **silvicultural system** that creates openings less than 1 ha in size and is designed to manage each opening as a distinct even-aged opening.

plan:

a detailed formulation of a program of action.

planning cell:

a unit of land within a Timber Supply Area. Historically, used as a specific land unit in which the timber resources had been inventoried.

pre-harvest silviculture prescription (PHSP):

a document that applied site-specific field data and developed forest management prescriptions for areas in advance of logging. Replaced under the *Forest Practices Code of British Columbia Act* by **silviculture prescriptions**.

productive forest land:

forest land that is capable of producing a merchantable stand within a defined period of time.

protect:

the shielding, guarding, or defending of a value or an interest from harm or danger. Human activities can occur that may affect the value or interest but must be carried out in a manner to save significant harm or danger to the value or interest.

protected area:

a land designation for areas of land and water set aside to protect natural heritage, cultural heritage or recreational values (may include national park, provincial park, or ecological reserve designations).

Protected Areas Strategy (PAS):

the Provincial government strategy in place to meet BC's commitment to develop and expand the protected areas system to protect 12% of the province by the year 2000. The goals of the strategy are to protect viable, representative examples of natural diversity in the province, and special natural, recreational and cultural heritage features.

Provincial forest:

Crown forest land designated under Section 5 of the Forest Act.

qualitative measures:

measures generally expressed in non-numeric terms.

quantitative measures:

measures generally expressed numerically.

range:

any land supporting vegetation suitable for wildlife or domestic livestock grazing, including grasslands, woodlands, shrublands and forest lands.

range development:

defined in the Forest Practices Code of British Columbia Act as

(a) if related to the management, for range purposes, of range land or livestock, a structure, excavation or constructed livestock trail, and

(b) a practice, excluding grazing, that is designed to improve range conditions or facilitate more efficient use of range land for range purposes.

range land:

defined in the *Forest Practices Code of British Columbia Act* as Crown range and land subject to an agreement under Section 18 of the *Range Act*.

range use plan:

an **operational plan** that describes the range and livestock management measures that will be implemented to ensure that range resources are protected and that the management objectives for other identified **resource values** are achieved.

reclamation:

returning the land and watercourses to a use and productivity equal to or better than what existed prior to mining.

recreation:

any mental or physical revitalization and the voluntary pursuit of leisure activities. Outdoor recreation is recreation that takes place out-of-doors, and forest recreation takes place in a forest or wildland setting.

recreation feature:

defined in the *Forest Practices Code of British Columbia Act* as a biological, physical, cultural or historic feature that has recreational significance or value.

recreation features inventory:

an inventory of biological, physical, cultural, or visual features that have an ability to attract and sustain **recreational** use.

recreation inventory:

the identification, classification and recording of the types and locations of amenity resources. It is the umbrella inventory that includes the **recreation features inventory**, **visual landscape inventory** and recreation opportunity spectrum inventory, and inventories of rivers, sites, trails, caves and other recreation features.

recreation resource:

defined in the Forest Practices Code of British Columbia Act as

a) a recreation feature,

b) a scenic or wilderness feature or setting that has recreational significance or value, or

c) a recreation facility.

recreation site:

a site and its ancillary facilities established under Section 6 of the *Forest Practices Code of British Columbia Act* or designated under the *Forest Act* before the coming into force of this act and developed by the Ministry of Forests for **recreation** or to protect a **recreation resource**.

recreation trail:

a trail and its ancillary facilities established under Section 6 of the *Forest Practices Code of British Columbia Act* or designated under the *Forest Act* before the coming into force of this act and developed by the Ministry of Forests for **recreation** or to protect a **recreation resource**.

red-listed species:

threatened or endangered species as identified by the Ministry of Environment, Lands and Parks. The taxa on the red list are either Extirpated, Endangered or Threatened, or are being considered for such status. Any indigenous taxon (species or sub-species) threatened with imminent extinction or extirpation throughout all or a significant portion of its range in British Columbia is Endangered. Threatened taxa are those indigenous species or sub-species that are likely to become endangered in BC if factors are not reversed.

referral:

the process which by applications for permits, licenses, leases, etc., made to one government agency by an individual or industry are given to another agency for review and comment.

regional land use plan:

a plan resulting from one of the CORE regional processes.

Regional Protected Areas Team (RPAT):

the inter-ministry committee in each region that is responsible for conducting the technical inventories and analyses required to identify gaps in the protected areas system, identify areas of interest, consult with the public and propose study areas.

regionally important species:

species which are not **red-** or **blue-listed**, that require management practices that differ from standard **integrated resource management** guidelines in order to fulfil critical habitat needs; or locally or regionally threatened or declining species or those that may reasonably be expected to decline without protection of critical habitats.

reserve zone: (see riparian reserve zone)

reserve:

an area of forest land that, by law or policy, is not available for timber harvesting or production.

reserves:

the retention of live or standing dead trees, pole size or larger, on site following harvest for purposes other than regeneration. Reserves can be uniformly distributed as single trees or left in small groups, and they can be used with any **silvicultural system**. (see **clearcutting with reserves**)

resource agency:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as any government agency, ministry or department having jurisdiction over a resource that may be affected by any activity or operation proposed under a **higher level plan** or **operational plan**.

resource analysis:

the critical examination of resources and environment so as to support planning and decision-making. Resource analysis consists of:

gathering, examining and interpreting relevant resourcerelated information;

organizing and integrating information to assist in developing **scenarios**; and,

assessing the impacts of a proposed course of action (scenario).

resource impact assessment:

attempts to predict the effects of a set of land use designations and management strategies (base case and alternative scenarios) on the bio-physical resources in the planning area.

resource management zone (RMZ) — from regional or subregional plan:

a division or **zone** of the planning area that is distinct from other zones with respect to biophysical characteristics, resource issues or resource management direction. Resource management zones (in LRMP these include settlement, agriculture, high intensity resource development, general resource development, low intensity resource development and protection) may be drawn on a map to describe general management intent. The zones are usually further defined using descriptive objectives and strategies to explain future land use and resource management activities.

resource management zone (RMZ) — under the Forest Practices Code:

an area established under the *Forest Practices Code of British Columbia Act* by the chief forester in accordance with policy direction from Cabinet or designated ministers. While the primary source of resource management zones and objectives will be approved Land and Resource Management Plans or regional Land Resource Management Plans, Cabinet or the ministers can direct the chief forester to establish a resource management zone independent of a regional or sub-regional planning process.

resource unit:

resource units are a geographic subdivision of the area encompassed by a Land and Resource Management Plan.

resource value:

values on Crown land which include but are not limited to **biological diversity**, fisheries, **wildlife**, **minerals**, oil and gas, energy, water quality and quantity, **recreation** and **tourism**, natural and **cultural heritage resource**, **timber**, forage, **wilderness** and aesthetic values.

riparian:

the land adjacent to the normal high water line in a stream, river or lake and extending to the portion of land that is influenced by the presence of the adjacent ponded or channelled water. Riparian areas typically exemplify a rich and diverse vegetative mosaic reflecting the influence of available surface water.

riparian class:

refers to the classification given to streams, wetlands and lakes under Part 10 of the *Forest Practices Code of British Columbia Act* Operational Planning Regulation.

riparian habitat

vegetation growing close to a watercourse, lake, swamp, or spring that is generally critical for wildlife cover, fish food organisms, stream nutrients and large organic debris, and for stream bank stability.

riparian management area (RMA):

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as an area, of width determined in accordance with Part 10 of the regulation, that is adjacent to a stream, 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**.

riparian management zone:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as that portion of the **riparian management area** that is outside of any **riparian reserve zone** or if there is no riparian reserve zone, that area located adjacent to a stream, wetland or lake of a width determined in accordance with Part 10 of the regulation.

riparian reserve zone:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as that portion, if any, of the **riparian management area** or **lakeshore management area** located adjacent to a stream, wetland or lake of a width determined in accordance with Part 10 of the regulation.

road deactivation:

measures taken to stabilize roads and trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation.

rotation:

the planned number of years between the formation or regeneration of a **stand** and its final cutting at a specified stage of maturity.

salvage harvesting:

logging operations specifically designed to recover damaged timber (dead or in poor condition) but still yield a wood product. Often carried out following fire or insect attack.

scenario:

a complete and workable set of **resource management zones**, **objectives** and **strategies** for the planning area which represent one potential option for analysis purposes.

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 silvicultural system:

a **silvicultural system** that removes mature **timber** either as single, scattered individuals or in small groups at relatively short intervals, repeated indefinitely, where the continual establishment of regeneration is encouraged and an **uneven aged stand** is **maintained**.

sensitive area:

any area that would be prone to increased frequency of landslides, erosion or compaction after forest development activities.

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 become altered over time.

short-run impacts:

the immediate (first five years or so) effects of implementing a decision (see also **longrun impacts**).

silvicultural system:

a planned program of treatments throughout the life of the stand to achieve stand structural objectives based on **integrated resource management** goals. A silvicultural system includes harvesting, regeneration and stand-tending methods or phases. It covers all activities for the entire length of a **rotation** or cutting cycle.

The forest practices code Silvicultural Systems Guidebook identifies six major categories of silvicultural system: five **even-aged systems** and one **uneven-aged**

system. Even-aged categories include the **clearcut**, patch-cut, coppice, seed tree and shelterwood systems. Uneven-aged systems are termed **selection silvicultural systems**.

silviculture:

silviculture is the art and science of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

silviculture prescription:

a site-specific **operational plan** that describes the forest management objectives for an area. It prescribes the method for harvesting the existing forest **stand**, and a series of silviculture treatments that will be carried out to establish a **free growing** stand in a manner that accommodates other resource values as identified.

single tree selection system:

a variant of the **selection silvicultural system**. It is defined as an **uneven-aged system** in which new **age classes** are created by the removal of individual trees of all size classes, more or less uniformly throughout the stand.

site:

an area described or defined by its biotic, climatic, and soil conditions in relation to its capacity to produce vegetation; the smallest planning unit.

social, environmental and economic (SEE) impact assessment: (see socioeconomic analysis and multiple accounts analysis (MAA))

socio-economic analysis:

an assessment of the impacts of a course of action on the social and economic wellbeing of a community, region, or the province as a whole. When socio-economic analysis is expanded to include environmental impacts it is generally referred to as social, environmental and economic (SEE) impact assessment (see also **multiple accounts analysis (MAA)**).

stand:

a community of trees sufficiently uniform in species composition, age, arrangement, and condition to be distinguishable as a group from the forest or other growth on the adjoining area, and thus forming a silviculture or management entity.

stand-initiating events:

occur when natural disturbances such as wildfire, wind, landslides and avalanches significantly alter an ecosystem. In most cases there is considerable mortality of plant species, some degree of site disturbance and the initiation of successional processes that will form a new plant community with a different structure and likely a different composition than its predecessor.

stand-maintaining events:

the fairly frequent occurrence of wildfires, either as surface or as surface and crown fires, which serve to **maintain** an **ecosystem** at a particular **successional** stage. This may result in a "fire climax" such as is found in the Ponderosa pine or interior Douglas-fir types, or in a coastal forest of mid-seral tree species in relatively even-aged stands.

stand management prescription:

a prescription for the application of treatments for forest **stand** management such as brushing, weeding, spacing, or fertilizing.

statusing:

the identification of interests and conflicts in a particular area of land by searching records, maps and other documents for jurisdictions and tenures.

strategic Land and Resource Management Planning:

planning at the regional, sub-regional and, in some cases, at the local level which results in land allocation and/or resource management direction. Strategic Land and Resource Management Planning at the regional and sub-regional level involves the preparation of **resource management zones**, **objectives** and **strategies**.

strategies:

specific management instructions to achieve an **objective**.

structural attributes:

Components of a forest stand (including living and dead standing trees, canopy architecture, and fallen dead trees) which together determine stand structure.

subzone:

smaller geographic areas within a RMZ. There are usually one or two unique values identified within a subzone that require specific management direction.

succession:

the replacement of one plant community by another in progressive development toward climax vegetation.

sustainability:

a state or process that can be **maintained** indefinitely. The principles of sustainability integrate three closely interlinked elements — the environment, the economy and the social system — into a system that can be **maintained** in a healthy state indefinitely.

sustained yield:

a method of forest management that calls for an approximate balance between net growth and the amount harvested.

threatened or endangered species:

"red listed" species, as identified by the BC Ministry of Environment, Lands and Parks. These are indigenous species that are either threatened or endangered.

timber:

trees harvested for commercial purposes.

timber licence (TL):

area-based tenures which revert to the Crown when merchantable timber on the area has been harvested and the land reforested. Many of these licences have been incorporated into tree farm licences.

timber supply area (TSA):

an integrated resource management unit established in accordance with Section 7 of the *Forest Act*. TSAs were originally defined by an established pattern of wood flow from management units to the primary timber-using industries.

total resource plan:

a plan that covers a specific area that provides detailed operational direction for how resource use and management will meet strategic and local objectives.

tourism:

the aggregate of all business that directly provides goods or services to facilitate business, pleasure or leisure activities away from the home environment.

traditional use site:

any site which indicates that an area has been utilized traditionally by the First Nations.

uneven-aged stand:

a **stand** of trees consisting of 3 or more **age classes**.

uneven-aged system:

a **silvicultural system** designed to create or **maintain** and regenerate an uneven aged stand structure. Single tree and group selection are uneven aged **silvicultural systems**.

unique areas:

natural, ecological, recreational or cultural areas.

visual impact assessment:

an evaluation of the visual impact of resource development proposals on forest landscape.

visual landscape analysis:

the process of recommending **visual quality objectives** based on the **visual landscape inventory**, number of viewers, level of concern and in consideration of other values.

visual landscape inventory:

the identification, classification, and recording of the location and quality of visual resources and values.

visual quality objective (VQO)

a resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQOs are commonly used: preservation; retention; partial retention; modification; and, maximum modification.

visually effective green-up: (see green up).

watershed:

an area of land that collects and discharges water into a single main stream through a series of smaller tributaries.

watershed assessment:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as 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**.

wetland:

a swamp, marsh or other similar area that supports natural vegetation that is distinct from adjacent upland areas.

wilderness:

an area of land generally greater than 1,000 ha that predominantly retains its natural character and on which the impact of humans is transitory and, in the long run, substantially unnoticeable.

wildlife:

defined in the Forest Practices Code of British Columbia Act as

(a) a vertebrate that is a mammal, bird, reptile or amphibian prescribed as wildlife under the *Wildlife Act*,

(b) a fish, including

(i) any vertebrate of the order Petromyzoniformes (lampreys) or class Osteichthyes (bony fishes), or

(ii) an invertebrate of the class Crustacea (crustaceans) or class Mollusca (mollusks)

from or in the non-tidal waters of the British Columbia, and

(c) an invertebrate or plant listed by the Minister of Environment, Lands and Parks as an endangered, a threatened or a vulnerable species, and includes the eggs and juvenile stages of these vertebrates, invertebrates and plants.

wildlife habitat:

areas of land and water that support specific wildlife or groups of wildlife.

wildlife patch:

a stand of trees and other habitat features (e.g. wetland, lick, etc.) deferred from harvest to **maintain** some habitat requirement for wildlife (e.g. hiding/security cover,

thermal cover, nesting, perching, forage, etc.). The size and shape required for a wildlife patch will depend on the habitat requirement being provided.

wildlife tree:

defined in the *Forest Practices Code of British Columbia Act* Operational Planning Regulation as a tree or group of trees that are identified in an **operational plan** to provide present or future wildlife habitat. A wildlife tree is a standing live or dead tree with

special characteristics that provide valuable 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.

woodlot licence:

a form of tenure agreement, under the *Forest Act*, for not more than 400 hectares (Coastal BC) and 600 hectares (Interior BC) of Crown land which may be (and in rare occasions, may not be) managed with some private land.

zone:

a land use classification and designation applied to a map which outlines land use intentions, objectives and permissible uses.

APPENDIX IV GLOSSARY OF ACRONYMS

AAC: Allowable Annual Cut

ALR: Agricultural Land Reserve

AOI: Area of Interest

AT: Alpine Tundra

AUM: Animal Unit Month

BBT: Big Bend Trench

BEO: Biodiversity Empahsis Options

BGC: Biogeoclimatic

CAM: North Cariboo Mountains

CAMP: Coordinated Access Management Plan

CAMP: Coordinated Action Management Plan **CN:** Canadian National **CNR:** Canadian National Railway **CORE:** Commission on Resources and the Environment **CPK:** Columbia Park Ranges **DEO:** Designated Environment Offiecer **DFO:** Department of Fisheries and Oceans **DM:** District Manager of Forests **ECA:** Equivalent Clearcut Area **ELUC:** Environment and Land Use Committee ESA: Environmentally Sensistive Area **ESSF:** Englemann Spruce - Subalpine Fir FEN: Forest Ecosystem Network FLR: Forest Land Reserve **FPC:** Forest Practices Code FRBC: Forest Renewal BC FSR: Forest Service Road **GIS:** Geographic Information System HAR: Hart Ranges HLP: Higher Level Plan **IAMC:** Interagency Management Committee **ICH:** Interior Cedar-Hemlock **IPT:** Interagency Planning Team **IRM:** Integrated Resource Management

IRPC: Integrated Resource Planning Committee **IWA:** International Woodworkers Association **IWMP:** Integrated Watershed Management Plan **LOD:** Large Organic Debris LRMP: Land and Resource Management Plan LRUP: Local Resource Use Plan **RMD:** Resource Management Division MAA: Multiple Accounts Analysis **MELP:** Ministry of Envoronment, Lands and Parks **MOF:** Ministry of Forests **MRPP:** Mount Robson Provincial Park **NDT:** Natural Disturbance Type **NEA:** Natural Environment Area **NKM:** Northern Kootenay Mountains **NPK:** Northern Park Ranges **NSR:** No Staking Reserve **NSR:** Not Satsifactorily Restocked **OCP:** Official Community Plan OGA: Old Growth Area **PA:** Protected Area **PAS:** Protected Area Strategy **PGRLMG:** Prince George Region Lakeshore Management Guidebook **PHSP:** Pre-Harvest Silviculture Prescription PY: Person Year

RCMA: Recreation and Conservation Management Area **RMA:** Riparian Management Area **RMZ:** Resource Management Zone **ROW:** Right of Way **RPAT:** Regional Protected Areas Team **RV:** Robson Valley **RVRT:** Robson Valley Round Table SBS: Sub-Boreal Spruce **SEE:** Social, Environmental and Economic **SNTC:** Shuswap Nation Tribal Council **TFL:** Tree Farm Licence **THLB:** Timber Harvesting Land Base **TL:** Timber Licence **TSA:** Timber Supply Area **TSR:** Timber Supply Review **UFT:** Upper Fraser Trench **UREP:**Use, Receration and Enjoyment by Public **VQO:** Visual Quality Objectives WHMA: Wildlife Habitat Management Area YORA: Yellowhead Outdoor Recreation Association

APPENDIX V RESOURCE VALUE MAPS

A compendium of all resource value maps used to develop this LRMP, compiled by the Interagency Planning Team (IPT), are included in the attached folio.

- Map 1 <u>Resource Management Zones with Sub-Zones</u>
- Map 2 Robson Valley Forest District
- Map 3 Robson Valley Biogeoclimatic Unit
- Map 4 MoF 1994 Timber Supply Analysis Gross Landbase
- Map 5 <u>Robson Valley Sensitive Wildlife Areas</u>
- Map 6 <u>Robson Valley Grizzly Density</u>
- Map 7 Robson Valley Round Table Fisheries Inventory February 1994
- Map 8 Robson Valley Known Class A Fish Habitat (resident) April 1995
- Map 9 Scenic Areas with Visual Quality Objectives
- Map 10 Operability
- Map 11 Timber Harvesting Land Base and Exclusions
- Map 12 <u>Timber Harvesting Land Base</u>
- Map 13 <u>1994 Timber Supply Analysis Timber Harvesting Land Base</u>
- Map 14 <u>Robson Valley Mineral Potential</u>
- Map 15 Robson Valley Medium and High Capability Sites for Backcountry Tourism (All Season Activities) June 6, 1995

Activities) June 6, 1995

- Map 16 Robson Valley Recreation Map
- Map 17 Robson Valley Forest District Heliski Operation