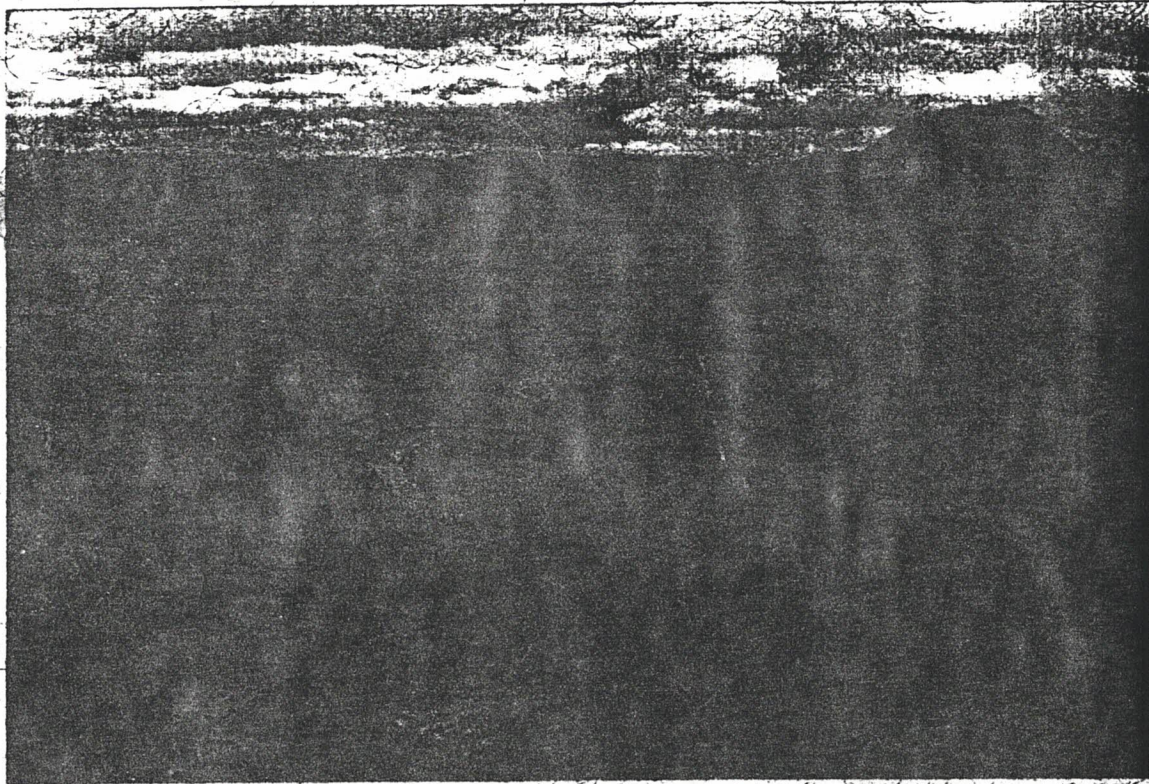




MORICE RIVER



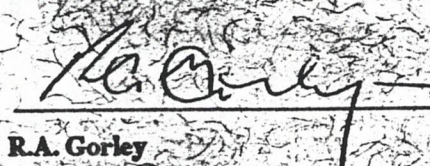
LOCAL RESOURCE USE PLAN



MORICE FOREST DISTRICT

Morice River Local Resource Use Plan

Approved By: _____



R.A. Gorley
District Manager
Morice Forest District

Date: _____

August 19/92

Submitted By: _____



Brian Simpson
Operations Manager
Morice Forest District

Acknowledgements

The Morice Forest District would like to thank all of the members of the planning team. Without their dedication and commitment to reach consensus on these guidelines it would never have been possible.

The planning team consisted of:

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Local Resident

Guide Outfitter

Ministry of Forests

B.C. Lands

Northwood Pulp and Timber Limited

Ministry of Energy, Mines and Petroleum

B.C. Wildlife Federation

Steelhead Society

Ministry of Forests

Department of Fisheries

Regional District

Northwood Pulp and Timber Limited

Houston Forest Products Company

Ministry of Environment

Ministry of Forests

A special thanks should be extended to the members of the working sub-committee consisting of Glenda Ferris, Mike Buirs, Mike Dunbar, Tim Smith and Brian Simpson. The small group had the unenviable task of putting discussions into words and forming these guidelines.



File: 200-20/MRPC

August 04, 1992

To: Al Gorley
District Manager
Morice Forest District

From: Brian Simpson
(Operations Manager)
Committee Chairman, MRPC

Subject: Morice River Local Resource Use Plan

On behalf of the Morice River Planning Committee I submit the attached document for your approval. This document represents the best package of management strategies that our committee can develop at this time. The decisions reached within the Committee producing the document were derived through a consensus process.

One issue remains a concern to the Committee members and warrants being highlighted here. There are Forest and Range lands that presently fall outside the jurisdiction of Provincial Forest Lands and consequently activities on these lands may not be held accountable to the management guidelines that are depicted here. It is the desire of this Committee to seek all opportunities to have these lands included within the Provincial Forest landbase. This would ensure a consistent management approach towards activities across the landbase within the planning area.

If you have any questions about this document during your review process the Committee and it's members remain at your disposal.

Brian Simpson
(Operations Manager)
Committee Chairman, MRPC

Attachment



File: 200-20/MRPC

August 19, 1992

Mr. Brian Simpson, Chairman
Morice River Corridor Planning Committee
c/o Morice Forest District
Bag 2000
Houston, British Columbia
V0J 1Z0

Dear Brian:

I am pleased to approve the guidelines recommended by your Committee for management of the Morice River Corridor. These guidelines and the supporting information with them are a major and critical step towards developing a long term integrated resource use plan for the area. The guidelines will take effect immediately and remain in place for an initial period of three years. I will be instructing Forest Service staff to undertake a number of activities prior to July 30, 1995, at which time the guidelines will be extended or updated:

1. Through Forest Licenses and the Small Business Forest Enterprise Program, plans are to be developed for roads and harvesting in all operating areas which overlap the corridor area. These plans will utilize the guidelines developed by your committee.
2. Establishment of a water quality sampling program near areas which are proposed for roads and harvesting.
3. Development of a contingency plan for recreation development which ensures that increasing use of dispersed (undeveloped) sites can be managed consistent with the intent of the guidelines.
4. Development, in cooperation with the Ministry of Environment, of a wildlife habitat inventory assessment and update program for the corridor. The purpose of this is to provide an ongoing measure of the quantity and quality of habitats.

.../2

Mr. Brian Simpson, Chairman

Page 2

August 06, 1992

5. Analysis of the impacts on timber production (AAC/LRSY) of management assumptions under the guidelines compared to previous management assumptions and a report by March 31, 1994.
6. An assessment and refinement of Silviculture practices which meet the objectives for management of the corridor, (clearcut size and other systems, site preparation and plantation management).

I support the proposal to have the planning committee reconvene and conduct a review of guideline implementation. I suggest that a further review occur in mid 1994, at which time funds could be provided to retain and an independent consultant to assist the committee with such a review. Upon completion of that assessment, the planning committee could likely disband.

I would like to thank all of the people who contributed such a great deal of time and effort to develop these guidelines. I know there were many late nights and stressful negotiations. I am particularly grateful for the many hours of volunteer time which went into this project.

Yours truly,

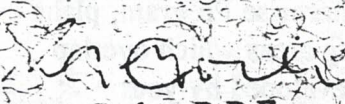

R.A. Gorley, R.P.F.
District Manager

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Executive Summary

Introduction

The Morice River flows from Morice Lake, about 75 kilometres south of Highway 16, joining the Bulkley River near Houston. The resource values in the planning area, a corridor ranging from seven to 12 kilometres in width surrounding the river, are high. They include important fish and wildlife habitat and populations, quality recreation opportunities, scenic landscapes and valuable timber and mineral resources. The purpose of this Local Resource Use Plan (LRUP) is to develop resource management guidelines which maintain important resource values, to provide for the compatible use of the diverse resources and to reduce the potential for resource use conflicts. Public consultation in this planning process ensures that the values, opinions and knowledge of the public are included in the LRUP.

The important resource values in the Morice River valley have been recognized for some time. A forest access road was first developed up the river in the 1950s. In 1983 a forest fire burned a large tract of forest on both sides of the river. The fire, along with severe wind damage (1984) and insect pest outbreaks led to a dramatic increase in salvage logging. In 1985 the river was proposed as a candidate in the Provincial Recreation Corridors Program. Two years later Morice Forest District staff started the corridor planning process and formed a planning committee with government, industry and other user group representation. In 1988 a preliminary options report, concentrating on recreation and landscape values, was reviewed by the planning committee. They decided more information was needed and a wider range of resource issues should be considered. That marked the beginning of this LRUP process.

Executive Summary

Resource Values

Many resource values exist within the planning area but the major values can be summarized under four headings: fisheries, wildlife, recreation and timber.

From a fisheries perspective, most attention in the planning area falls on the four species of salmon and steelhead trout. High-use spawning sites and ideal juvenile fish habitat occur throughout the entire river. B.C. Environment (BCE) recognizes the importance of the river's sport fishery by designating it a Class 2 angling stream. The fisheries resource in the Morice River watershed is significant nationally, regionally and locally.

The diversity of habitat in the planning area is responsible for the diversity of wildlife found there. Of primary management concern are grizzly bears, moose and deer but other species, such as wolf, lynx, marten, bald eagles and owls, also have a sensitivity to development in the planning area. The population of grizzly bears using the area is provincially significant. The winter range used by moose is regionally significant. This area also contains heavily used deer spring and winter ranges.

Morice Lake and River have been heavily used for recreation by locals for many years and, recently, use by non-locals is increasing. Camping, boating, hunting, fishing, hiking, cross-country skiing and wildlife viewing are some of the more popular activities. The viewscape is very important for recreational enjoyment of the area. Four Forest Service recreation sites are found in the area. There is also a municipally-run campground and boat launch near Houston. The corridor includes parts of two guide outfitter territories.

Executive Summary

one angling guide camp, and portions of 10 registered traplines. The lake and river are a regionally significant recreation feature.

From a timber standpoint, the valley is well-accessed and contains a large proportion of highly productive, valley-bottom land. In fact the 35,619 ha of net productive forest land in the planning area is more productive than the District average and represents about five per cent of the productive capacity of the District. The net volume of timber in the area is about 10.2 million cubic metres, more than half of which is lodgepole pine.

Guidelines

The Planning area has been divided into two primary zones, A and B, to distinguish between resource management sensitivity levels. Zones are recommended based on the principle that fisheries, wildlife, recreation and timber values increase as one approaches the river. Therefore management objectives and resource emphasis has changed with distance from the river. In General, as one moves from the planning area boundary through Zone B, towards Zone A, management and harvesting considerations become more restrictive.

'Zone A' is a narrow band, varying between 0.3 and 1.5 kilometres, encompassing the river flood plain and immediate upland slopes. Maintenance of fish, wildlife and recreation resource values is the management priority in this zone. Figure 2 gives examples of specific prescriptions regarding maintenance of these values. Timber production is not a management objective and timber harvesting will not occur unless a forest health problem is significant.

Executive Summary

'Zone B' is the remaining area outside Zone A to the planning area boundary. This zone is subdivided into Special Management Areas (SMAs) and Integrated Resource Management Areas (IRMAs). SMAs include all areas defined as having special features, plus a surrounding buffer. A special feature is either: (i) high quality wildlife habitat such as a wetland system; (ii) sensitive streamside habitat; (iii) wildlife movement areas connecting (i) and (ii); (iv) identified sensitive viewscapes. Buffers will vary in size depending upon the feature's level of importance to primary resources. IRMAs contain all land base not in SMAs and are the main timber production sites within the planning area. Although timber harvesting and protection activities will occur within Zone B, restrictions apply. Management tools, such as Integrated Resource Management Plans and Coordinated Access Management Plans, will be developed.

Implementation and Monitoring

In areas of complex resource interaction, Local Resource Use Plans (LRUPs) may be produced. LRUPs establish area-specific integrated resource management objectives and guidelines. The degree of LRUP complexity varies to fit the local situation and depends upon the potential for resource use impact and conflict. LRUPs can be relatively quick and simple processes involving two user groups and one resource, or can be long and involved with multiple user groups, a number of resource values and a public participation component.

LRUPs guide "licensed" resource users to prepare Five-Year Development Plans. These plans detail things like location, methods, schedules and management responsibilities regarding timber harvesting.

Executive Summary

LRUPs provide guidelines on activities in specific locations of a forest district. These plans coordinate with the umbrella of the Forest Land Management Plan (FLMP) for the timber supply area. The FLMP determines broad, long-range management strategies for timber harvesting (AAC), range and recreation at the TSA level. The FLMP is the District's link to provincial and regional policies and priorities.

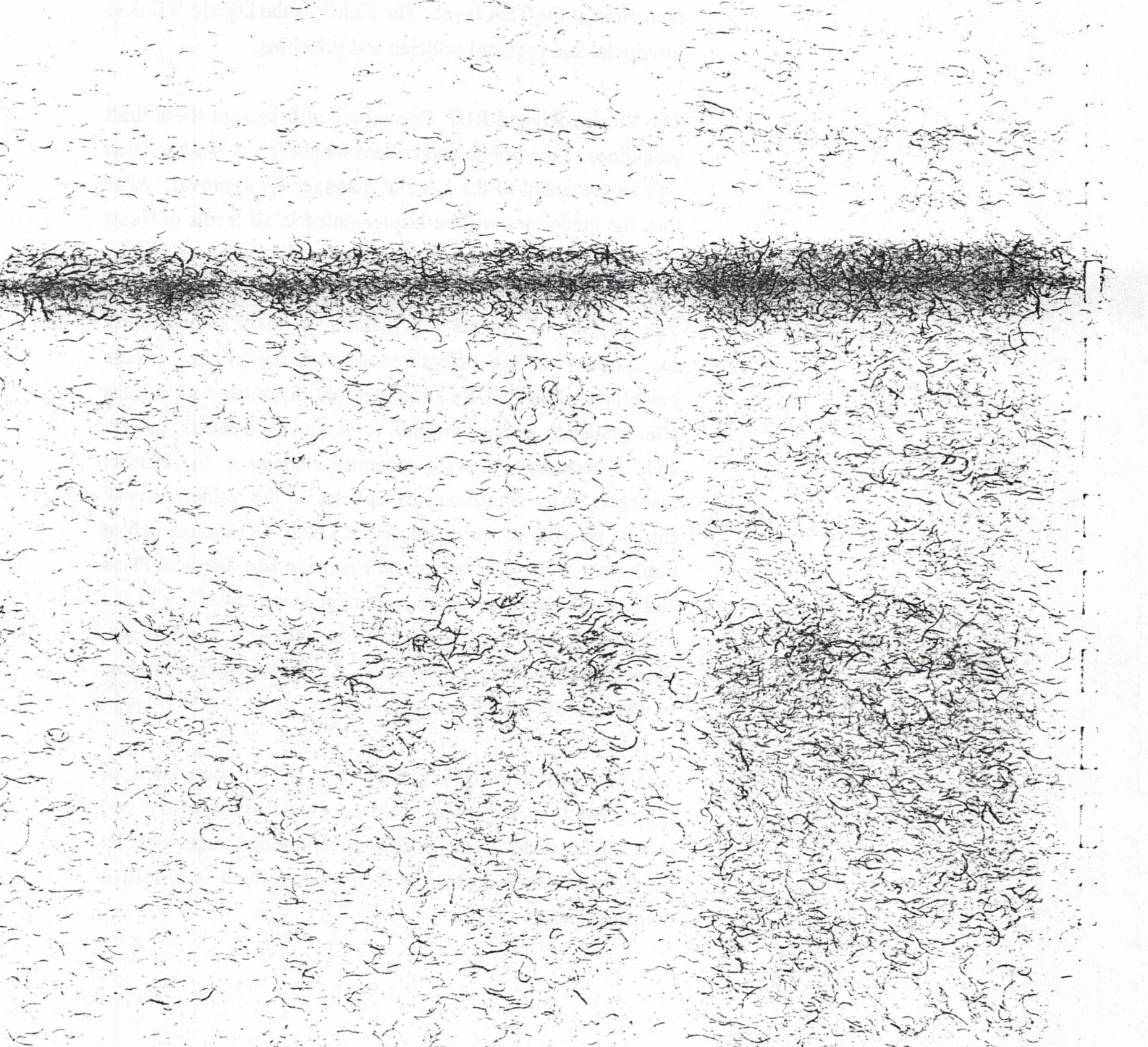
The Morice River LRUP Committee will present these draft guidelines to the public and collect feedback. A final revision will be presented to the District manager for approval. After this, the guidelines will be implemented in all levels of forest management planning and operations in the planning area.

The Ministry of Forests will maintain primary responsibility for monitoring the effectiveness and compliance of the guidelines. The LRUP Committee will reconvene 12 months after guideline implementation to conduct a technical review and, if necessary, provide recommendations to the District manager. Any significant exceptions to the guidelines will first be referred to members of the LRUP Committee before implementation. The Integrated Resource Management Plans and Coordinated Access Management Plans called for in the guidelines will take time to complete—in the interim, development will be conducted in a manner which conforms to these LRUP guidelines.

The Committee which guided this LRUP consisted of representatives from government agencies, industry and interested parties. These guidelines represent a huge effort by the Committee and represents their view of the best collective course of action.

Executive Summary

Continuous public involvement will remain an integral part of the monitoring strategy through existing Five Year Development Plan public meetings and the Preharvest Silviculture Prescription (PHSP) advertisement process. All members of the public are invited to visit the Morice Forest District or Licensee offices to provide their concerns.



Executive Summary

Table 1 : ZONE MANAGEMENT HIGHLIGHTS

VALUE	ZONE A	SPECIAL MANAGEMENT AREAS (SMA)	ZONE B INTEGRATED RESOURCE MANAGEMENT AREAS (IRMA)
Fisheries	- maintenance of vegetated buffers adjacent to streamside areas. - maintenance of natural hydrologic flows	- development near a water source will require a detailed plan	- same as SMA
Wildlife	- buffers adjacent to riparian areas to maintain visual cover - any management activities maintain a significant portion of stand components	- maintenance of some canopy cover adjacent to high quality habitat - windfirm boundaries - activities retain 70% of area available of stand's structure and function	- maintain mature/immature clumps and wildlife trees - retain deciduous non-commercial species
Recreation	- no new sites, roads or commercial development - maintain existing sites - any management activities will conform to VQO of retention - riverside development not encouraged	- development as per District Recreational Plan - identified sensitive landscapes as (SMAs) require VQOs prior to approval	- development requires landscape analysis from key viewpoint - VQOs will be established prior to approval - VQO of partial retention within 500 m of Morice River
Timber	- timber is not a management objective - harvesting only if forest health threatened - where required, any management activity will require a detailed prescription for review and referral, to all agencies, prior to approval	- harvesting maintains a minimum 40 m buffer with no roads or landings - harvesting within buffer ensures windfirm boundaries and considers snag retention, visual screening, 70% retention by area of stand structure and function	- Integrated Resource Management Plans to be coordinated - Windfirm boundaries are required with consideration of: - 60 ha maximum clearcuts - maximum 180 m to wildlife cover - retain cover where broadcast burning not used - maintenance of water quality and streamside stability of streams and creeks
Silviculture	- no pesticides or fertilizers - no prescribed burning - modified silviculture stands will be applied	- reduced stocking standards and/or modified treatment regimes considered - mechanical site preparation preferred - no pesticides or fertilizer - no prescribed burning	- broadcast burning only where necessary - mechanical site preparation preferred - retention of non-commercial brush types - can modify free-to-grow requirements to meet other identified resource objectives
Roads	- no new main road - where possible no new roads or landings will be built - all new access trails deactivated after use (as per deactivation plan) - low ground pressure equipment or winter access for required management activities	- road development will be a part of approved Integrated Resource Management Plan - skid trail access deactivated immediately after use - no landings	- non-active roads inspected for drainage and erosion - access study required for new main roads - branch roads identified through an IRM Plan process - new branch roads within 500 m of Zone A, deactivated upon completion of planting - road right-of-ways will continue to be seeded
Protection	- restricted use of fire retardant - restricted use of heavy equipment	- same as Zone A	- early detection and immediate action strategy
Other Resources	- Referral process adhered to for all activities - Guided by all guidelines - Management of range use to ensure minimum impact on browse and water quality		

Introduction

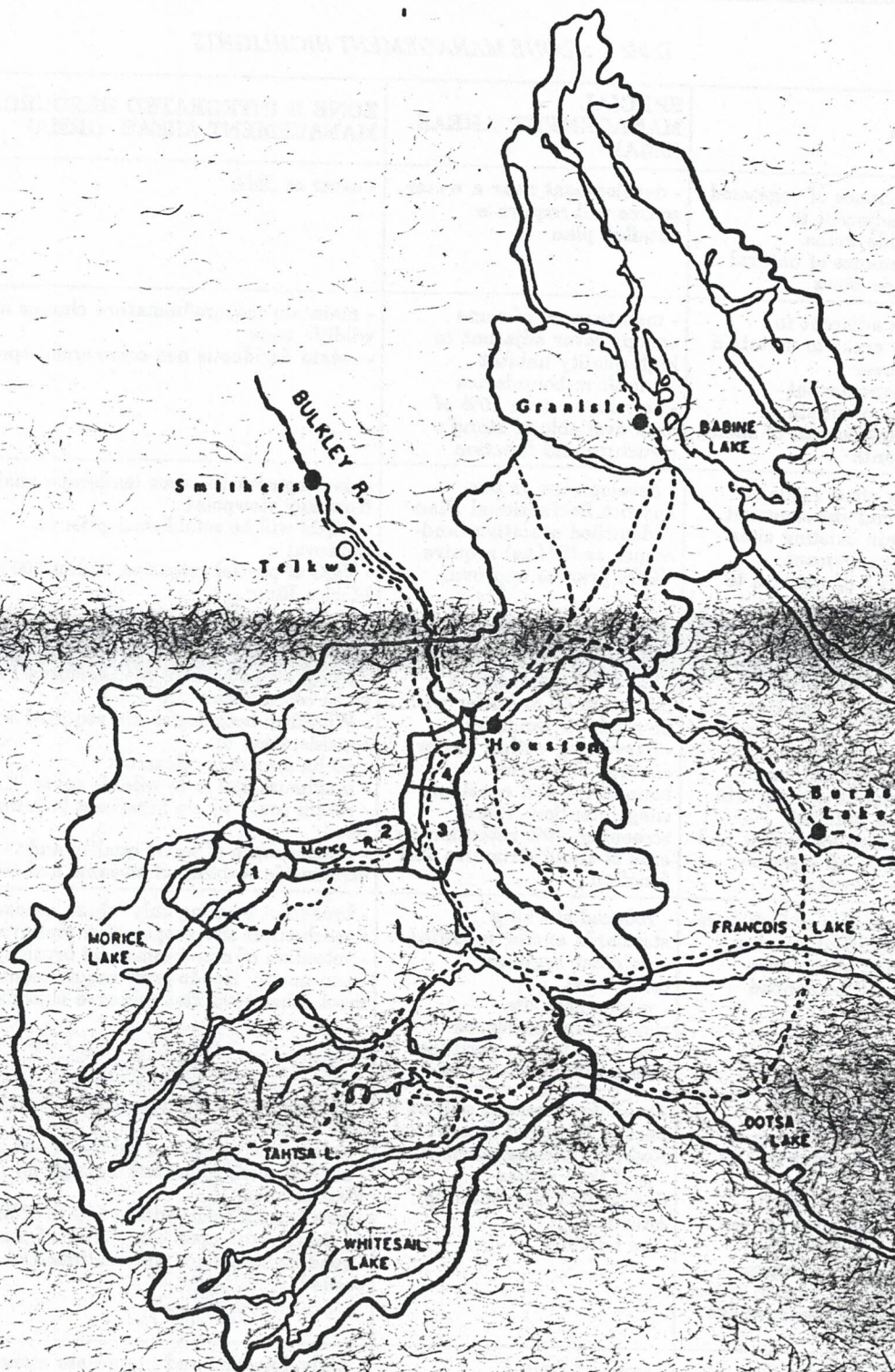


Figure 1: MORICE RIVER STUDY AREA

Introduction

The Morice River flows some 75 kilometres from Morice Lake to join the Bulkley River near Houston. The study area for this Local Resource Use Plan is a corridor ranging from about seven to twelve kilometres in width surrounding the outflow of Morice Lake and following the Morice River downstream to its confluence with the Bulkley River (see Figure 1). Approximately 56 000 hectares are contained within the study boundary. The area was designed to include all landscapes visible from the Morice River, from important viewpoints adjacent to the river and from the Morice Lake recreation site.

The Morice River valley is well known as a destination for local anglers, hunters, boaters and campers. The river and adjacent forest lands attract large numbers of recreational users. The quality scenic landscapes in the area are an important factor in this use. The Forest Service maintains three recreation sites along the Morice River and one on Morice Lake. The District Municipality of Houston also operates Bymac Park, a camping facility on the river bank.

The Morice valley contains important fish and wildlife habitats. The Morice system is a major producer of salmon, steelhead, Dolly Varden and whitefish. Heavily used spawning areas are found throughout the river. Juvenile rearing habitat and over wintering pools are found in all sections of the river. The valley also provides a diverse mix of habitats supporting a wide variety of wildlife species. Of particular importance are the high use grizzly bear areas along the upper river (above Fenton Creek), the high quality moose winter range (below Lamprey Creek) and the mule deer winter ranges. (As per maps in Appendix 1).

Introduction

A large and very valuable timber resource is also found in the valley. This area is an important source of supply for the two large lumber companies and numerous small logging operators in the Houston area. Large tracts of valuable mature timber occur and the very productive growing sites can make a substantial long term contribution to the local timber supply. Favorable terrain, good access and moderate distances to town and mills make the area particularly attractive for timber management.

The Morice valley also contains other important resources. The area in general is considered to have high mineral potential and there are a number known mineral occurrences in the study area. There are some agricultural holdings in the lower valley and crown grazing tenures are established over part of the study area. A number of archaeological sites are known to occur along the river and there are probably others which are undiscovered.

The purpose of this Local Resource Plan is to develop resource management guidelines that identify and maintain valuable important resource systems; assign resource management emphasis; provide a framework for the compatible use of these diverse resources considering social, economic and environmental needs; and reduce resource management conflicts.

The important resource values in the Morice valley have been recognized for some time. A forest access road was developed up the Morice River in the 1950s. Timber development plans in the area have for many years been subject to review and adjustment for fish and wildlife habitat concerns. The hydrology and fisheries of the Morice system were the subject

Introduction

of considerable study as part of the Alcan, Kemano II proposal. This proposal to divert a portion of the water in the Morice system to the Nechako Reservoir has since been abandoned. In 1983 the Swiss Forest Fire destroyed a large tract of forest on both sides of the Morice River. The fire along with severe wind damage in 1984 and the subsequent insect pest outbreaks led to a dramatic increase in logging activity.

In 1985 the Morice River was listed as a candidate in the Provincial Recreation Corridors Program. In 1987 the Forest Service initiated a planning process as required by the Recreation Corridors Program. A draft Terms of Reference was circulated and interested parties were identified. A planning committee was then formed consisting of representatives from various interest groups, forest companies, guide outfitters, local and regional government and resource agencies.

In May 1988 the Forest Service produced a preliminary Options Report which concentrated on recreation and landscape values as seemed to be indicated by the Recreation Corridor candidacy. After reviewing the Options Report the planning committee decided that more information was needed and that the plan should address a wider range of resource issues. The committee also reached a consensus that the Morice River should not be recommended for registration as a Recreation Corridor as greater local control and management flexibility could be achieved without this status.

Public participation has been an integral part of this planning process. Public representatives on the planning committee have been directly involved in the process leading to this draft. Public participation will continue to be important in the completion and implementation of this Local Resource Use Plan.

This section presents detailed information on the key resources of the Morice Valley. Other resource values will be identified as and when required.

Fisheries Resources

The river supports four species of salmon, steelhead, trout, Dolly Varden, char, and whitefish. High use spawning sites occur throughout the entire river but are more concentrated in the upper river (units 1 and 2). Tributaries and locations where these streams enter the Morice are of particular importance in this regard. The complexity of the river channel between Gosnell and Owen Creeks makes this area ideal juvenile fish habitat.

Each year, thousands of anglers are attracted to the Skeena system from around the world to fish for steelhead trout. The Morice itself supports up to 5000 angler days. Reaches near Houston are heavily fished during the peak of steelhead season. The upper river is subjected to less angling pressure but provides a unique and valuable opportunity for steelhead anglers wishing to fly fish in pristine surroundings. Anglers can usually depend on this area when the rest of the Skeena system becomes high, coloured and unfishable.

The Morice River has been classified as a Class 2 Angling Stream. Class 2 waters contain "high natural values," often in attractive settings where regulations will focus on managing guided activity, but where the number of resident anglers will not be restricted.

Interagency planning will be required to maintain the high natural values of the Morice River but the objective of maintaining an unmodified landscape experience may not always be met.

Resource Values

The maintenance of the diverse and quality of angling opportunities that currently exists on the Morice River is a high priority of the Fisheries Branch of the B.C. Environment.

Wildlife Resources

The Morice River corridor offers a diverse mix of coniferous, deciduous, wetland, riparian and upland habitats. These conditions result in a corresponding diversity of wildlife species including grizzly and black bear, moose, mule deer, wolf, a variety of furbearers, small game and numerous non-game birds and mammals.

The primary objective of wildlife management in British Columbia is maintaining the diversity and distribution of species. This is only achievable through maintenance of a diversity of habitats. Due to the mountainous terrain, winter snow conditions, and growing site conditions, riparian zones such as the Morice corridor take on a wildlife importance far greater than a simple measure of the surface area would suggest.

Riparian Zone

The area adjacent to a stream, lake or wetland where there is an influence of water on the vegetation.

The grizzly bear is a species of particular management concern within the province, within Skeena Region, and within the Morice corridor specifically.

In terms of habitat, one of the key elements is maintenance of security cover in areas of food concentration. The Morice offers such a situation with abundant riparian feeding opportunities and the attraction of fish in the late summer and fall. Bears will move considerable distances to exploit seasonal food resources, thus illustrating the wider impact of management practices in the corridor.

Resource Values

Black bears are also found in the corridor, but are of less specific management concern.

The corridor is of special significance to moose and secondarily mule deer. Although the entire Morice watershed is used for summer and fall range, wintering capability is centered on the lower elevations of the corridor. Radio telemetry studies in similar situations (ie. the Nadina River) show individual moose will migrate as far as 100 kms to such wintering sites.

In a recent analysis (Bulkley Valley Moose Plan) of moose wintering potential within a 20,000 km² area from Endako to Kispic, only 28% was class 3 or better potential wintering capability, only 15% was class 1 or 2 wintering potential. Further, crown land under forest and grazing management account for over 50% of the moose carrying capacity in the region. The Morice corridor is one of the major areas containing class 1 and 2 winter range and is of regional significance.

The Bulkley Valley and Lakes areas contain the vast bulk of the interior mule deer populations in Skeena Region. The corridor contains heavily used deer spring and winter ranges key to their survival. With the relatively heavy snow depths encountered in this area, maintenance of forest canopy cover for snow interception is required to reduce snowpack for wildlife movement within winter range areas.

Although bear, moose and deer are the featured species for the planning process, there are a great many other species making heavy use of the area. Habitat prescriptions that maintain diversity will benefit a great many associated species. A habitat map (see Appendix 1) outlines critical habitat for a number of identified species.

Resource Values

Some species noted in the area that have greater sensitivity to management include bald eagles, kestrels and several cavity nesting birds (owls, woodpeckers, etc.). These species utilize riparian habitats and require perching and nesting opportunities be preserved.

Two furbearer species of particular management interest in the general area are lynx and marten.

The general habitat objectives for the area should include:

- Maintaining the general diversity of stand types and age classes including old growth characteristics
- Maintain high density of browse on riparian areas and in cutblocks for wintering moose and deer
- Maintain wildlife trees, snags and large woody debris as perching, resting and nesting sites

The Bulkley Valley/Lakes area (Management Units 6-04 to 6-09) as a whole accounts for 70% of the moose hunting activity of the Skeena Region and 90% of the mainland deer hunting. This translates into 4078 hunters and 27,513 hunter-days of recreation for moose alone in 1991.

Non-hunting use of wildlife is more difficult to measure. Surveys of such use for Skeena as a whole show that more than 26% of the residents participate in direct wildlife activities (feeding, photography, etc.) where enjoyment of wildlife is the primary objective, and over 70% enjoy indirect activities where wildlife is not the primary goal, but for which wildlife observation is an important part. Of these people, 88% indicated just watching wildlife as important to their outdoor experience. More than 90% of the indirect users considered seeing wildlife as increasing their enjoyment of outings.

Resource Values

In terms of wildlife related tenures, the corridor includes parts of two guide outfitter territories, and 10 registered traplines.

Recreation Resources

The planning area provides a very attractive collection of recreation features and opportunities for a diverse range of outdoor recreation activities. The recreation resource was described in the *Morice Corridor Recreation Resource Inventory*, 1987. The area has been heavily used by local recreationalists for many years. In recent years an increasing number of non-locals have been using the area. Some are taken into the area by guide outfitters while others find their own way with the help of maps and brochures or with word of mouth descriptions.

Morice Lake is a significant recreational feature. The Forest Service recreation site is well used for camping and as an access point for boaters using the lake and upper Morice River. It is also an important viewpoint, providing a panoramic view of Nanika Mountain and surrounding landscapes across the lake.

The Morice river attracts large numbers of recreational users. Fishing and boating, are the main activities. The Forest Service maintains recreation sites at the mouth of Lamprey Creek, at Owen Flats and at "Aspen" on the lower river. A guide camp is located on the banks of the upper river and the Municipality of Houston operates a camping and boat launch facility at Bymac Park on the lower river. Numerous cobble beaches, rock formations, excellent water quality, angling opportunities, and attractive landscapes are features which attract recreational use.

Resource Values

Canoeing, kayaking and jet boating are popular activities on the Morice River. With adequate water levels the entire length of the river is navigable for these watercraft. Access/egress points are found at the recreation sites and at other locations where the river flows adjacent to roads.

The Morice River has a meandering drainage pattern of pools and riffles with the exception of the Morice Canyon which is a torrent. The elevation drop from Morice Lake to the Bulkley River is approximately 122 meters. According to the International River Classification System the Morice ranges from grade I to III except for the canyon which is grade IV in difficulty. Low water levels and log jams can present some difficulties.

Landscape Resources

Landscape values are very important in the recreational enjoyment of the Morice River area. Landscape values for the corridor were assessed in the *Morice River Landscape Inventory and Analysis*, 1986. Visible landscapes were mapped and landscape sensitivities were assessed. Discussions of landscape management guidelines and appropriate Visual Quality Objectives (VQOs) have been an important part of the planning process. VQOs define the acceptable level of alteration to natural landscapes in a specified area.

Visual Quality Objections (VQOs)

VQOs refer to the degree of acceptable alteration of the visual landscape by human disturbance.

Through most of the upper and lower reaches of the river, there are limited opportunities for large scale panoramic views. Vegetation along the river bank effectively screens adjacent middle and background slopes making them only partly and intermittently visible from the river. Such landscapes are described as "enclosed." Within these landscapes there is

Resource Values

considerable variety in vegetation, beaches, rock forms and water features. This gives the immediate river corridor a high landscape value.

Between Fenton Creek and the Aspen recreation site, the landscape has been heavily modified by the Swiss fire and logging activities. Much of the original vegetation has been killed and/or removed, right down to the river bank. Most of this stretch of the river provides panoramic views of the hills and mountains in the middle and background. Vegetation is rapidly regrowing along this section of the river and the landscape will gradually become more enclosed.

The immediate corridor along the river is the dominant landscape feature for river users. Middle and background slopes have only a minor influence on river related activities due to distance, viewing duration and other viewing factors.

Timber Resources

Timber is an extremely important resource in the Houston area. The forest industry is the major employer and main source of economic activity throughout the region. The study area itself contains approximately 49,000 hectares of productive Crown forest land. The Morice River valley is well accessed and contains a large proportion of highly productive low elevation and valley bottom land. These factors make it particularly valuable relative to the total timber production of the TSA.

In forest management planning, the land base is assessed for its capability and suitability for timber production. The total land base and timber stock is reduced for physical, environmental

Resource Values

and economic constraints on timber production. Table 2 shows these estimated reductions and the resulting "Net Productive Landbase" for the Morice River planning area.

Table 2: Morice River Timber Net Downs (hectares)

TOTAL AREA	55 997
- Non Forest Land (swamps, rock, etc)	6952
- Roadways and Landings	409
PRODUCTIVE FOREST LAND	
- Non-Stocked Land (mainly Swiss Fire) ¹	1414
- Non-Commercial Types (brush, etc)	2245
- *Environmentally Sensitive Areas	4201
- Low Volume Stands	946
- Deciduous Stands	4211
NET PRODUCTIVE LAND	35 619
Note: *Includes net downs for wildlife and recreation and ecosystem reserve resources as defined in the 1981 TSA analysis.	

The Morice River study area contains 4.6 percent of the net productive land in the entire Morice Forest District. The 35,619 hectare net area has a productive capacity of approximately 90,000 to 100,000 cubic meters per year. With intensive silviculture, the productive capacity could be improved. The net area within the study boundary is 37% Good Site, 49% Medium and 14% Poor Site. This distribution reflects the relative abundance of highly productive land in the Morice valley. The study area is more productive than the district average, representing roughly five to six percent of the productive capacity of the Morice Forest District.

¹Revised in 1991 by Ministry of Forests survey data for the Swiss Fire

Resource Values

A total of 12.2 million cubic meters of timber are found in the study area. The net down process deducts 1.2 million cubic meters from Environmentally Sensitive Areas and 0.4 million cubic meters from deciduous stands. Other minor deductions bring the "net volume" down to 10.2 million cubic meters. Pine stands contain 55% of this volume with 25% in balsam stands and 20% in spruce stands.

The age of timber stands is quite important as older stands are susceptible to damage from insects and other agents such as fungi and wind. All three major timber species (pine, balsam, spruce) in this area become susceptible to damage by bark beetles at older ages. In addition, beetle populations can breed up in older stands which if left untreated can then move off to affect adjacent areas. There continues to be extensive beetle populations in the study area. At this time, only minor beetle populations have been detected in the lower valley. Diligent monitoring and potentially rapid treatment will be required to minimize the risk of serious beetle epidemics. Table 3 shows the age class distribution of stands in the Morice valley.

Table 3.: Age Classes of Net Timber Stands

Age Class	Age Range (Years)	Ha	Area %	Volume (million m ³)	%
1	1-20	6006 ¹	17		
2	21-40	81	-		
3	41-60	459	1		
4	61-80	1183	3	0.2	
5	81-100	967	3	0.3	2
6	101-120	5865	17	2.1	21
7	121-140	9287	26	3.3	32
8	141-250	9971	28	3.7	36
9	251+	1802	5	0.6	6
TOTAL		35619	100	10.2	

¹Revised in 1991 by Ministry of Forests Survey data for the Swiss Fire.

Detailed timber data listed by Management Unit, and Landscape Sensitivity Zone is available upon request.

Mineral Resources

The Morice River occurs within a regional geologic setting which has high mineral potential. Three mines in the area: Equity Silver Mines, Silver Queen (New Nadina) and Dome Mountain are or have been producers. The Silver Queen occurs within the vicinity of the study area on the east side of Owen Lake. Locally there are also two developed prospects with known reserves, the Poplar and Lucky Ship. The Lucky Ship, a known molybdenum deposit, is situated just south of the study area boundary on the east side of Morice Lake. A copper-molybdenum project, the Poplar, is situated on the northeast side of Tagetochain Lake again just south of the study area boundary.

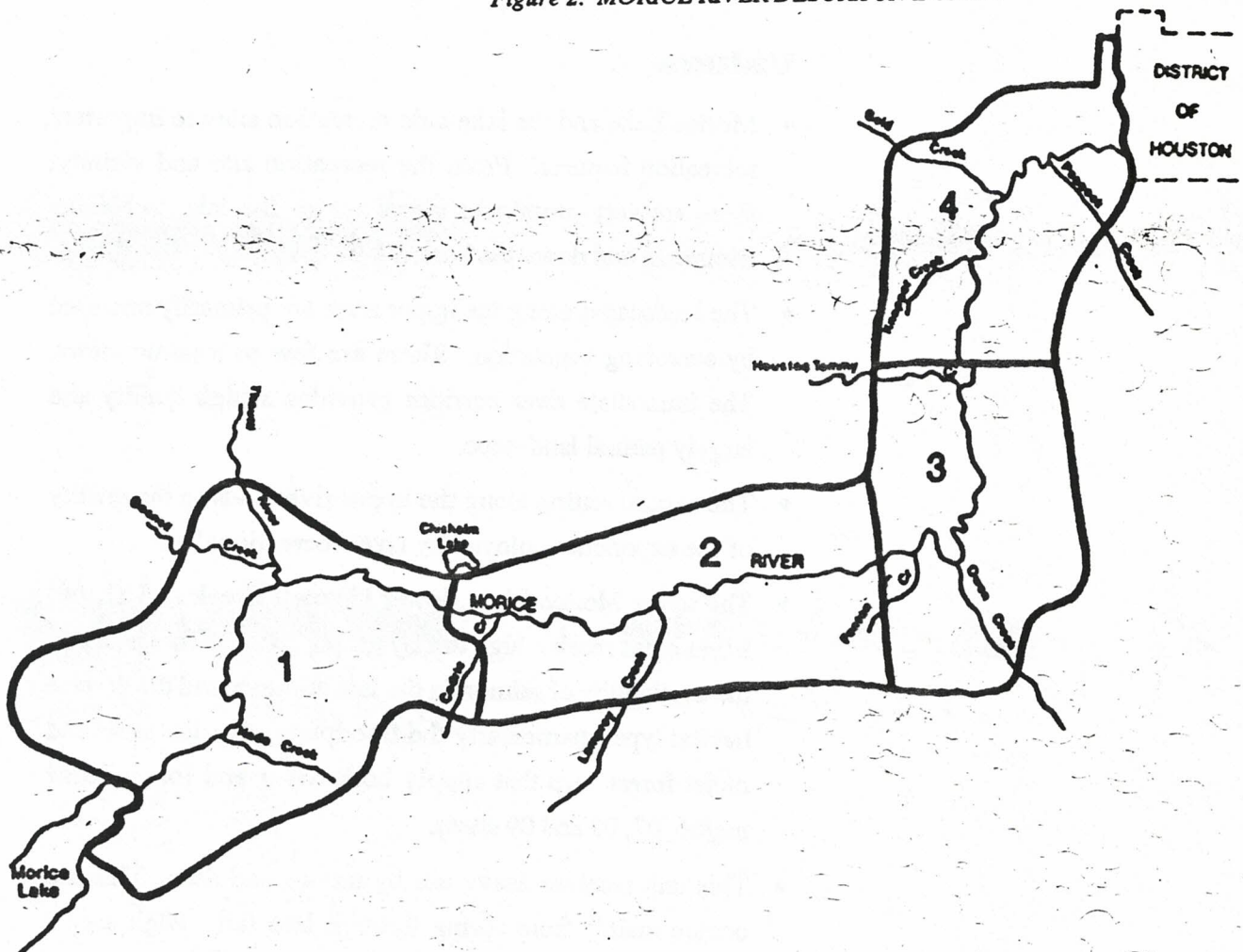
Fifteen mineral occurrences, predominately of copper, silver and molybdenum mineralization, are situated within the designated area. These occurrences are generally on the upper slopes of the mountains enclosing the Morice River valley. Their location most likely reflects the limitations to mineral exploration imposed by the extent of glacial overburden within the valley bottom and not the absence of mineralization in the valley.

There is active prospecting and mineral exploration in the area and all the occurrences south of the Morice River are held by valid mineral claims. Road access to these properties may be necessary for property evaluation and would be needed if development results. Additionally, the Silver Queen mine is accessed by the Morice River and Owen Lake Forest Service roads. Continuance of this access is imperative not only for the Silver Queen but also as a transportation corridor for a number of other deposits located further to the south.

Unit Specific Descriptions and Values

The planning area is divided into four management units based on the current condition of the area and common management objectives. Figure 2 shows the four units.

Figure 2: MORICE RIVER DESCRIPTIVE UNITS



Note: Area is broken down into units for descriptive purposes only.

Unit Specific Descriptions and Values

Unit 1 "Upper River" Morice Lake to Tagit Confluence

Description

Unit 1, the "Upper River Unit", stretches from Morice Lake to the confluence of Tagit Creek. The unit is currently in a largely natural condition and contains very high quality fish, wildlife, landscape and recreation values.

Values

- Morice Lake and the lake side recreation site are important recreation features. From the recreation site and vicinity, there are very prominent views across the lake to Nanika Mountain and down the lake.
- The landscapes along the upper river are primarily enclosed by screening vegetation. There are few panoramic views. The immediate river corridor provides a high quality and largely natural landscape.
- The natural setting along the upper river adds to the quality of the experience enjoyed by river recreationalists.
- The upper Morice River, lower Goznell Creek and Thautil River areas receive high use by grizzly bears. This is due to the availability of salmon in the late summer and the diverse habitat types, particularly the floodplain, riparian areas and moist forest sites that supply both cover and forage (SBS mc/06, 07, 08 and 09 sites).
- This unit receives heavy use by moose and deer. This use occurs mainly from spring through late fall. High use of the floodplain areas occurs in the spring when the cow moose select these areas to give birth to their calves.
- The mainstem of the Morice River and the lower reach of the Gosnell River in this unit are heavily used spawning areas for salmon and steelhead trout.

Unit Specific Descriptions and Values

- The side channels off the main river are particularly important as rearing habitat for juvenile fish.
- This unit of the planning corridor is heavily used by the commercial angling guide as well as non-guided anglers.
- Mountain Goats are found on Nanika Mountain and on the rock outcrops along the Morice West road upstream of Cedric Creek.
- There is a mineral occurrence on Nanika Mountain.
- This section of the planning area contains a large volume of valuable accessible timber.

Unit 2, "Lamprey"

Tagit Confluence to Fenton Confluence

Description

Unit 2, the "Lamprey Unit," stretches from the confluence of Tagit Creek to the confluence of Fenton Creek. There has been considerable timber harvesting, and the main access road closely follows the south bank of the river through much of this unit.

Values

- This section of the river provides a high quality fishing and river recreation experiences. Scenic values and the natural setting have been impacted by the adjacent road and logging development.
- A large volume of accessible timber is contained within this unit.
- Five mineral occurrences are found in this unit on the south side of the Morice River between Lamprey Creek and Owen Creek. One additional occurrence is on the North side near the river.

Unit Specific Descriptions and Values

- The Morice River in this unit receives high use by grizzly bears. This is due to the availability of salmon in the late summer and the diverse habitat types in this unit. Of particular importance, is the floodplain, deciduous forest types and moist forest sites (SBSdk/08, 09 and 10 - SBSmc/06, 07, 08 and 09 sites).
- Moose and Mule Deer winter range is found in this unit. It is concentrated along the river bottom, adjacent to the large wetland systems and low shrub open steppe forest types (SBSdk/04 sites). Maintaining forest cover adjacent to these areas is important. High use of the floodplain areas occurs in the spring when cow moose give birth to their calves.
- Fish spawning and rearing habitats are found throughout this section of this unit. Lamprey Creek is an important salmonid spawning and rearing area.
- This unit of the planning corridor is heavily used by non-guided anglers and a commercial angling guide.

Unit Specific Descriptions and Values

Unit 3 "Swiss Fire"

Fenton Confluence to South Boundary of the Aspen Recreation Site

Description

Unit 3, the "Swiss Fire Unit", stretches from the confluence of Fenton Creek to the south boundary of the Aspen Recreation Site (south of Houston-Tommy Creek). This unit has been heavily modified by the Swiss Fire in 1983 and by subsequent timber salvage and rehabilitation activities.

Values

- The recreation, landscape, wildlife and timber resources in this unit have been altered by the Swiss Fire and subsequent salvage and rehabilitation operations.
- This section of the river is heavily used by anglers due to excellent access to good fishing spots.
- Some valuable timber remains within the unit. Restocked forest lands are making a significant contribution to long term timber supplies.
- There is a mineral occurrence on Morice Mountain.
- Moose winter range is found along the Morice River, Owen Creek and Houston-Tommy Creek.
- Important spawning sites, rearing areas and over winter holding pools are found in this section of the Morice river.
- Owen Creek and the lower reach of Houston-Tommy Creek have high fisheries value and are used as a spawning and rearing streams by salmonids.
- Mountain Goats are found on Morice Mountain.

Unit Specific Descriptions and Values

Unit 4, "Lower River" Aspen Recreation Site to Confluence with Bulkley River

Description

Unit 4, the "Lower River Unit", stretches from the south boundary of the Aspen Recreation Site to the confluence of the Morice River with the Bulkley River. Very high fish, wildlife and recreation values are found in the valley bottom area adjacent to the river.

Values

- Large tracts of valuable timber are found at some distance from the river. Areas adjacent to the river are dominated by deciduous stands.
- The section of the river in this unit contains high quality landscape values. The scenic landscapes as seen from the river are largely intact.
- This section of the river receives the highest recreational use by anglers and boaters. The Aspen Recreation site and Bymac Park are located on the river in this unit.
- Moose and Mule Deer winter range is found in this unit. It lies adjacent to the main river, in the aspen dominated (SBSdk/01 & 07 sites) slopes above the river and adjacent to the low shrub open forest sites (SBSdk/04). Existing forest cover adjacent to these high quality wildlife habitats is important.
- Wildlife habitat enhancement has been carried out in this unit to increase the amount and quality of forage available to wintering ungulates.
- The Morice River in this section is heavily used for rearing by juvenile fish. Some spawning areas and over winter holding pools occur in this section of the river also.

Unit Specific Descriptions and Values

- This section of the corridor receives heavy use by guided and non-guided hunters.

Zone A—Management Guidelines

Introduction - General

Two zones have been identified within the planning area to distinguish between distinct management sensitivity levels. Zone A is a relatively narrow band encompassing the river flood plain and the immediate upland slopes. Zone B contains the remaining area outside of Zone A to the planning boundary. Zone B is further broken down into two distinct sub-zones; special management areas and Integrated Resource Management areas. It is important to highlight the need for flexibility in the specific location of these zones and sub-zones to allow for adjustments, as ground checked information becomes available and as management needs change.

The construction of the Morice-Thautil road is being conducted in compliance with conditions provided by the District Manager. Once these LRUP guidelines are approved they will become the guidelines for the completion of this road. Harvesting between the road and the Morice River will not take place within the short term (i.e. 2 years). This measure is necessary to allow the wildlife an opportunity to adjust before further modification to the local habitat occurs.

Zone A - Guidelines

Within this zone, timber production is not a management objective. In general, management activities will not be planned and natural processes will not be interfered with.¹ Management activities including harvesting may be considered for forest health priorities where primary resource values (habitat, floodplain stability, water quality) are not severely impacted.

Forest Health

Maintenance of the health and well being of a forest ecosystem through the planned and effective management of forest pests.

¹See 'Floodplain Stability, Morice River, between Own Creek and Thautil River' study prepared for the B.C. Forest Service, Houston, B.C.

Zone A—Management Guidelines

This zone ranges from approximately 0.3 to 1.5 kilometers in width. Fish, wildlife and recreation resources are extremely valuable and important. Maintenance of these resource values is the management priority in Zone A. The zone contains some high value timber stands but there are serious physical and environmental constraints to timber harvesting activities.

It is recognized that the ability to carry out development activities within Zone A is very limited due to the high sensitivity of the primary resource values. Any development activity proposed within this zone will require a detailed prescription for review and referral to all agencies before any approval will be considered.

FISH

Objectives:

The maintenance of water quality, important spawning and rearing habitats is the key fisheries management objective.

Streamside buffers are critical to maintain streamside stability, natural geographic processes, litter and food input and a source of large organic debris.

Maintenance of the natural hydrological flows to maintain critical juvenile rearing habitat areas in side channels.

Guidelines:

Vegetated buffers will be maintained adjacent to streamside areas to provide streambank stability, nutrient input and a source of large organic debris. Ground water flows critical to fish rearing will be identified in subsequent years and amended to this document.

Zone A—Management Guidelines

WILDLIFE

Objectives:

The maintenance of productive high quality wildlife habitats and canopy cover adjacent to these habitats is the key management objective. This is of particular importance along heavily used riparian areas.

Guidelines:

Buffers will be maintained on all riparian areas (streams and wetlands). These buffers will be required to provide visual cover as dictated by terrain breaks, timber type breaks and/or windfirm boundaries.

Within riparian areas and riparian buffers, any management activities will maintain as much of the structural and functional components of the stand as possible.

RECREATION

Objectives:

The key objective for recreation management is to maintain the high quality recreation experience, including natural landscape values along the length of the Morice River and along the northeastern portion of Morice Lake, within the planning boundaries.

Guidelines:

No new recreation sites, roaded recreation access or commercial recreation developments are to be established in Zone A.

On existing recreation sites, management activities to maintain public health, safety standards and clean attractive sites and facilities will continue.

Zone A—Management Guidelines

Any management activities within Zone A must conform to a Retention Visual Quality Objective (VQO) as seen from the river for important stream side fishing and other recreation sites, as identified on the Overview Map (see Appendix II).

RANGE

Objectives:

The key objective is to ensure that all range use is managed in a manner that is compatible with the primary resource values.

Guidelines:

All range tenures issued within the planning area will comply with the B.C. Ministry of Environment and B.C. Ministry of Forests, *Procedures for Environmental Monitoring in Range and Wildlife Habitat Management*, (1990).

Renewal of existing tenures will include this requirement. (See appendix VI).

On creeks with smaller flows (in the 5 cubic feet per second range) the grazing impact by domestic animals shall be low impact use.

Natural tree vegetation shall be preserved to protect the stream domain and discourage animal use of stream banks.

Grazing animals will be encouraged to use low profile/visibility watering areas. Salt placement must be used to reduce grazing within vicinity of creeks and rivers. Recommend 100 m distance between licks and watering areas.

Cattle must be managed away from areas identified as key recreation areas (as per Appendix II).

Zone A—Management Guidelines

TIMBER

Objectives:

Within Zone A, all areas are removed from the working forest land base. Timber production is not a management objective. The key management objective is to maintain the fish, wildlife and recreation values.

Guidelines:

Where forest management activities are proposed, treatments must not conflict with guidelines designed to maintain any of the three priority resource values.

Harvesting may be considered for high forest health priorities (see Protection Section) where the treatment does not conflict with guidelines to maintain priority values. Where harvesting is considered, selection systems removing less than 50% of the volume will be considered first. If this proves impractical, patch retention, shelterwood or group selection blocks to a maximum 2.5 hectares may be applied. A maximum 25% of any given 100 hectare area may be treated per 20 year period.

SILVICULTURE

Objectives:

Within Zone A, silviculture standards will be modified to recognize higher priority resource values for this area. All silviculture strategies will be designed to minimize impact and maintain, protect and or enhance the other values within this zone.

Guidelines:

Modified silviculture standards will be applied within Zone A. No pesticide* or fertilizers will be applied. Prescribed burning will not be applied for silvicultural purposes.

**Pheromone use may be considered where a specific forest health management prescription is approved.*

Zone A—Management Guidelines

ROADS

Objectives:

The key access management objective is to minimize access development.

Guidelines:

Where possible no roads or landings will be built.

No new main (Class 1-5) roads are to be constructed within this zone.

All new access trails in this zone will be deactivated after use. A deactivation plan will be prepared and approved prior to the construction of any access. Deactivation plans are to follow the outline in the "Site Disturbance Guidelines¹." Where access is required for management activities, special low ground pressure equipment or winter access over snow will be used to minimize the need for bladed access construction.

PROTECTION

Objectives:

Take fire control action necessary to control all wildfires before 10 a.m. the day following discovery.

Minimize impact of wildfires and fire control action to maintain the resource values of the area.

Harvesting or other management activities should be directed towards enhancement of Forest Health.

Guidelines:

The Ministry of Forests will continue to take fast and complete fire control action within this zone.

¹Land Management Handbook "Developing Timber Harvesting Prescriptions to Minimize Site Degradation"

Zone B—Management Guidelines

The use of Fire Retardant or foaming agents will be restricted to areas that have no potential to drain into water courses.

Light Hand on the Land

Managing the fire rather than all-out control is the objective. A variety of suppression actions are with the dual objective of fire control and environmental protection. Suppression of wildfires while maintaining a high standard of caring for the land.

The use of “*Light Hand on the Land*” fire control tactics will be a priority in this zone. Heavy equipment will only be used where absolutely necessary.

Forest Health activities will be conducted only where clear strategies have been identified and form an integral part of an approved Forest Health plan for the area as a whole.

In cases where Forest Health treatments have serious conflict with the priority resources of this zone these treatments will not be carried out.

ZONE B GUIDELINES

Zone B is the area remaining between Zone A and the LRUP boundary. This zone contains significant resource values identified using wildlife habitat mapping, stream classification, landscape analysis, and other sources (see appendices). These areas will require special management and harvesting considerations that, in general, will be more restrictive as planning moves from the LRUP boundary towards Zone A. Zone B is further divided into the following two areas: Special Management areas (SMAs) and Integrated Resource Management Areas (IRMAs).

Zone B—Management Guidelines

Special Management Areas (SMA):

Include one or more of the following:

- High quality wildlife habitat including such areas as wetland systems, small lakes, deciduous forest types, riparian areas, dry southerly aspects, etc.
- Sensitive stream side habitat including such areas as fishbearing streams and values such as water quality.
- Wildlife corridors and values such as areas linking points 1 and 2 above to Zone A.
- Identified sensitive viewscapes as per Appendix II (See Overview Map).
- A Special Management Area includes the area within the significant feature and a surrounding buffer (i.e. wetland system). These buffers are expected to vary in size depending on the features level of importance to the primary resources.
- Identification of Special Management Areas has been completed on maps included in Appendix I. It is important to realize that this exercise was completed primarily on the strength of the polygon descriptions written on the forest cover maps. Some of these areas will be tree special management areas and some may not. In addition, there may be more out there not identified on these maps. The final confirmation of Special Management Areas can only be determined in the field. The maps enclosed in this report provide a sound basis to work from.

FISH (SMA):

Objectives:

The maintenance of streamside vegetation, water quality, important spawning and rearing habitats is the key fisheries management objective.

Guidelines:

Development proposed near or about a watercourse will detail

Zone B—Management Guidelines

a plan based on a collection of streamside information and will consider the following:

- maintenance of streamside cover
- use of partial harvesting systems
- special falling techniques
- machine reserves
- buffers

For more detailed guidelines refer to the Timber, Silviculture and Road Sections.

WILDLIFE (SMA)

Wildlife Corridors

Areas of connecting riparian areas, wetlands and forest stands that are important for wildlife movement, cover and habitat especially between summer and winter ranges.

Old Growth

Relatively old forests, in general are a minimum of 120-200 years old in this region.

Integrated Resource

Management Plan Concept

The Integrated Resource Management Plan concept involves forest land planning over an entire area (landscape unit). The process identifies and considers resource uses and values in combination with timber harvesting and incorporates them in an overall plan.

Objectives:

To protect, maintain and/or enhance the productivity of high quality wildlife habitats. To keep wildlife corridors (SMAs) as continuous movement routes for wildlife linking SMAs, Old Growth stands and riparian areas, from the river to higher elevations.

Maintenance of canopy cover (for hiding, snow interception, forage, thermal protection) adjacent to high quality habitat areas to ensure continued use by wildlife.

Guidelines:

In the event of a catastrophic event such as wildfire, long term planning will have to be adjusted to reflect the impact of the event.

Each wildlife corridor shall be treated as a unique unit. All activities within a given unit, will be planned according to a long term plan.

No development will proceed in a wildlife corridor unless the proposed blocks are developed in conjunction with a long term

Zone B—Management Guidelines

plan for the unit. Harvesting must be conducted in a manner that maintains, protects and/or enhances the objectives of the identified resource values.

Windfirm boundaries are the highest priority.

Harvesting within wildlife corridors must address:

- Wildlife habitat needs, the Morice District Old Growth Strategy, ecosystem characteristics and identified resource values.
- Clearcut sizes within any SMA will range from .5 ha to 10 ha with 10 ha the maximum size.
- Clearcut blocks will, where possible, include clump retention. Where clump retention patches are proposed, the area of clump retention areas should be of an acceptable size (> .5 ha) and provide a diversity of tree sizes and species.
- Operational activities will retain 70% of the area available structurally and functionally, within the corridor.
- Clearcut systems are tied to the identified 'green-up' requirements and may only be used over a maximum of 30% of the area.
- Additional areas greater than 30% may be harvested at any one time through utilizing appropriate partial cut systems.
- Harvesting next to clearcuts may only occur once 'green-up' on adjacent blocks reaches the required height as defined by the identified habitat requirements for the unit (i.e. hiding 5 m, thermal 9 m)
- Where clump retention is utilized, the delay in harvesting adjacent stands may be shortened.
- All activities in the corridor will attempt to maintain forest canopy cover to facilitate wildlife movement.

See Timber, Silviculture and Road Guidelines

Zone B—Management Guidelines

RECREATION (SMA)

Objectives:

Where suitable, high quality recreational potential, including visual quality will be maintained or enhanced.

Guidelines:

Any proposed recreational development and access, shall be developed as per an approved District recreational plan (i.e. hiking/walking trails). Recreational development within Special Management Areas will not be encouraged except for lakeside development. (See Appendix II).

Areas with sensitive landscape concerns should be identified as Special Management Areas and will require VQOs to be set prior to operations. (See Appendix II).

RANGE (SMA)

Objectives:

The key objective is to ensure that all range use is managed in a manner that is compatible with the primary resource values.

Guidelines:

All range tenures issued within the planning area will comply with the B.C. Ministry of Environment and B.C. Ministry of Forests, *Procedures for Environmental Monitoring in Range and Wildlife Habitat Management*, (1990).

Renewal of existing tenures will include this requirement. (See appendix VII).

On creeks with smaller flows (in the 5 cubic feet per second range) the grazing impact by domestic animals shall be low impact.

Zone B—Management Guidelines

Natural tree vegetation shall be preserved to protect the stream domain and discourage animal use of stream banks.

Grazing animals will be encouraged to use low profile/visibility watering areas. Salt placement must be reused to reduce grazing within vicinity of creeks and rivers. Recommend 100 m distance between licks and watering areas.

Cattle must be managed away from areas identified as key recreation areas (as per Appendix II).

TIMBER (SMA)

Objectives:

The management objective in Special Management Areas will be to maintain these areas in a productive state for identified resource values. Since Special Management areas can be small it is difficult to manage them in isolation from the surrounding forest land base which is mainly included in the Integrated Resource Management Area. Forest management practices (harvesting, silviculture and access) in these two areas will need to be closely coordinated.

Guidelines:

All harvesting within the buffer zone of a Special Management Area should be designed to maintain windfirm boundaries and consider the following.

Provide for wildlife tree recruitment/retention and cover for wildlife where possible.

As a general guideline the buffer zone of a Special Management Area will maintain a minimum 40 metres wide with 70% of the buffer area's characteristics retained structurally and functionally.

Zone B—Management Guidelines

No roads or landings within the minimum buffer width of 40 metres.

Maintenance of water quality will be a key priority.

Retention of deciduous (non-commercial) species.

SILVICULTURE (SMA)

Objectives:

To ensure that the silviculture strategy reflects/coordinates with the proposed harvesting strategy for this area.

To maintain a flexible silviculture strategy that protects and maintains the natural diversity of ecosystem characteristics consistent with the resource values identified for this zone.

Guidelines:

Reduced stocking standards and/or modified treatment regimes may be considered in this zone. The Management strategy should consider:

- stocking levels prior to and after treatment
- protection and maintenance of identified resource values for this area
- mechanical site preparation, where required, will be the primary site preparation method
- no pesticide* or fertilizers will be applied in this zone (same as Zone A).
- Prescribed burning will not be applied for silvicultural purposes.

* Pheromone use may be considered where a specific forest health management prescription is approved.

Zone B—Management Guidelines

ROADS (SMA)

Objectives:

Road development in this area will be restricted to maintain and/or protect the resource values identified for this area.

Guidelines:

All road development will be on a 'site specific' basis and as part of an approved IRM plan

Trail access will be temporary and will be deactivated immediately after harvesting

There will be no spur roads or landings located in this area

Site disturbance will be minimized

Area disturbed shall be minimized

PROTECTION (SMA)

Objectives:

All harvesting and other management activities shall be prioritized, directed towards maintaining and/or protecting the resource values identified for this area. The secondary objective will be to maintain forest health. An aggressive monitoring program is crucial. Where serious conflicts exist between objectives and forest health, management decisions may reduce forest health treatments.

Guidelines

Refer to Zone A guidelines

Zone B—Management Guidelines

Integrated Resource Management Areas (IRMA)

Integrated Resource Management Areas contain all the land base outside Zone A not identified as Special Management Areas above.

FISH (IRMA)

Objectives:

The maintenance of fish habitat, water quality and productivity are the key fisheries objectives for this area.

Guidelines:

Seasonal streams and ephemeral creeks outside Special Management Areas that have important downstream values will be identified when harvesting plans are prepared. All harvesting operations will be conducted to maintain water quality and stream bank stability.

See Special Management Areas, Zone B Guidelines.

WILDLIFE (IRMA)

Objectives:

To maintain or enhance where possible the productivity of the forested sites contained in the integrated resource management areas for the wildlife resources that use these habitats.

Guidelines:

Where possible, the retention of mature/immature clumps, wildlife trees and deciduous species will be a high priority on areas proposed for harvesting.

RECREATION (IRMA)

Objectives:

Any proposed recreation development and access shall be developed as per an approved Recreation Plan (i.e. boat launch sites, ATV trails, recreation sites, etc.).

Zone B—Management Guidelines

Guidelines:

Any proposed development will require a Landscape Analysis from key viewpoints as identified in Appendix II. The Visual Quality Objectives will be established prior to Ministry of Forests' approval.

Within 500 M of Morice River the VQO will be partial retention.

TIMBER (IRMA)

Objectives:

To integrate the utilization and management of the timber resource with other resource values. All harvesting and road development will follow the Integrated Resource Management (IRM) Planning concept. This area constitutes the main timber production zone within the planning area.

Guidelines:

Long Term (IRM) plans will be coordinated by the Ministry of Forests. All block design will incorporate windfirm boundaries as a first priority. The goal across this zone will be to have a range of opening sizes from 5-60 hectares. The maximum size is 60 hectares.

Openings will be designed so that distance from hiding cover will be minimized. Hiding cover will be retained within block boundaries, where possible, depending on site preparation methods. The goal will be to maintain a maximum distance of 150-180 m to protective cover for wildlife, depending on terrain conditions and suitability of cover.

Harvesting techniques will consider retention of immature/mature coniferous clumps, deciduous trees, non-commercial brush areas, treed swamp etc.

Zone B—Management Guidelines

Seasonal streams and ephemeral creeks outside Special Management Areas that pose a risk to important downstream values will be identified when harvesting plans are prepared. All harvesting operations will be conducted to maintain water quality and stream bank stability.

All block design will incorporate windfirm boundaries as a first priority. Where fringe blowdown salvage is proposed, management decisions on a specific basis will consider:

- maximizing blowdown removal
- minimizing blowdown area harvested
- minimizing site disturbance
- creation of windfirm boundaries (i.e. feathering)

Zone B—Management Guidelines

SILVICULTURE (IRMA)

Objectives:

Clear cutting will be the primary silviculture system. Where possible structural diversity will be retained within proposed blocks (i.e. snags, immature clumps, deciduous trees, treed swamps, etc.)

Guidelines:

Broadcast burning will be prescribed only where necessary [i.e. high elevation north slope areas, wet, deep organic soils, brush sites, winter logging (high stump with steep slopes, areas with high erosion potential)].

Deciduous leading types will not be converted to conifer plantations in this zone.

Mechanical Site Preparation will be the primary site preparation tool.

Non-commercial brush types within blocks should be retained to provide wildlife cover and habitat diversity. Types less than 4 ha will not be treated in this zone.

The established guidelines for achieving free growing requirements may be modified to meet other resource value objectives (i.e. allowing deciduous and herbaceous growth such as willow and osier dogwood for wildlife forage and cover). Where brushing and weeding is required for crop tree establishment, prescribed treatments will include manual and/or herbicide where appropriate.

Zone B—Management Guidelines

ROADS (IRMA)

Coordinated Access

Management Planning

A Local Resource Use Planning process which is designed to incorporate, at varying levels, industrial and public forest access requirements on existing and planned access roads

Objectives:

Road development will be identified through the IRM Planning Process and a long term *Coordinated Access Management Plan*.

Guidelines:

All non-active roads will be inspected by the Ministry of Forests to ensure adequate drainage and erosion concerns are addressed.

All roads will be maintained by the user for the term of their permit (i.e. road permit, cutting permit). (See site degradation hand book December 1989 for description of road maintenance measures which could be undertaken.)

No new main haul roads are anticipated within Zone B (except Houston-Tommy FSR and Chisholm FSR). Where main roads are proposed, an access study will be required.

Branch roads must be identified through an IRM Plan process. Branch roads will be kept to a minimum length and will be located and designed to minimize total disturbance.

All road right-of-ways will continue to be grass seeded throughout this zone.

Where necessary roads and ditches in proximity to creeks will be gravelled or rip rapped to reduce erosion.

All new branch roads, spur roads and landings within 500 m of Zone 'A' will be deactivated upon completion of planting. This deactivation of 'new' roads means prevention of heavy vehicle access (i.e. 4 x 4, 2 x 4) and will consider the following measures:

Zone B—Management Guidelines

- log obstructions, rocks, gates, etc.
- culverts and bridges removed to allow unimpeded flow surface waters
- cross ditching and water bars as required
- grass seed/deciduous shoot planting

PROTECTION (IRMA)

Objectives:

The strategy for this area is early detection and immediate action to minimize the risk to Forest Health. Forest Health management decisions will recognize increasing restraints as activities move towards the river.

Increased emphasis will be given to using a “light hand on the land” approach to all fire control activities within the area.

Guidelines:

Harvesting of the timber resource will be guided by the following criteria listed in descending order of priority:

- infested timber types
- uninfested timber types classed as high hazard/risk to infestation
- remaining timber types

The strategy for this area is early detection and immediate action to minimize chances for a forest pest outbreak.

Implementation

Implementation:

The planning committee recognizes the need to implement these management guidelines as quickly and efficiently as possible. It is also necessary to provide the general public an opportunity to review and comment on the guidelines prior to them being approved by the Morice Forest District Manager.

These steps will be followed to complete the implementation strategy:

STEP 1: June 16, 1992

Morice River LRUP Committee completes review and approves LRUP Management Guidelines to be circulated through a public review process.

STEP 2: July 15, 1992

Public Information Process: Advertise and conduct a public meeting providing the committee an opportunity to present the guidelines to the general public and collect feedback.

STEP 3: August 10, 1992

Final version of the LRUP Guidelines presented to the Morice Forest District Manager for approval.

STEP 4: August 15, 1992

Approved LRUP Guidelines.

STEP 5:

Guidelines complied with in all levels of Forest Management planning and operations. (i.e. PHSP, Timber Harvest applications, Total Chance Plans, etc..)

Implementation

Exceptions:

Operations or strategies which are exceptions to these guidelines will require the approval of the District Manager. All exceptions must be supported by a clear rationale that clarifies the need for a variance. Where these variances are significant, a referral of the issue to the Morice River LRUP Committee Members will be conducted prior to action taken.

Other Activities:

Commercial or private development plans that fall outside the realm of these management guidelines will continue to be a concern to the primary resource values of the area. This document provides planners with the guidance to plan and implement forest management activities in a manner that ensures the integration, conservation and consideration of all other resource values. This document is not expected to cover those activities 'outside' the mandate of the Ministry of Forests, but it will provide a basis to guide those outside activities (where considered) during the planning phase.

All agencies granting authority to conduct operations within the planning area on Crown Land are required to conduct a referral process. This process remains an integral part of the system and the Ministry of Forests input on the referral process will reflect the principles emersed within these guidelines.

This referral process will help address the need to provide direction to all development regardless of its nature. This step is necessary to ensure development is conducted in a manner that is consistent with the management objectives of the Morice LRUP and fully recognizes the unique values and sensitivity of the area.

Monitoring:

The Ministry of Forests maintains the primary responsibility for monitoring the effectiveness and compliance of the guidelines once approved and implemented.

It is recognized that approved Integrated Resource Management Plans and Coordinated Access Management Plan are initiatives that will require additional time to complete. In the interim, development will be conducted in a manner which conforms to those objectives and guidelines.

Compliance monitoring including Preharvest Silviculture Prescriptions will take place during all phases of Forest Management operations. Preharvest Silviculture Prescription audits which are performed across the T.S.A. on a regular basis will be conducted within the planning area to ensure strict compliance with the guidelines.

The Morice, LRUP committee will reconvene approximately 12 months after approval of the guidelines to conduct a technical review of these guidelines. The Terms of Reference for this review will be as follows:

- Evaluate compliance with guidelines
- Assess if guidelines are operationally practical
- Achievement of Land Management Objectives
- Provide recommendations to District Manager for revisions to the guidelines
- Determine strategy for future committee involvement if necessary

Monitoring

Revisions to these guidelines may occur to reflect changes in public values, improved scientific or technical knowledge and forest management practices. All revisions will be referred to members of the LRUP committee prior to implementation.

Continuous public involvement will remain an integral part of the monitoring strategy through existing Five Year Development Plan public meetings and the PHSP advertisement process. All members of the public are invited to visit the Morice Forest District or Licensee offices to provide their concerns at any time. The Ministry of Forests will maintain a file of all public correspondence which will be used as reference material during the technical review process.

Appendices

I. Habitat Maps (1:20,000)

II. Overview Map (1:50,000)

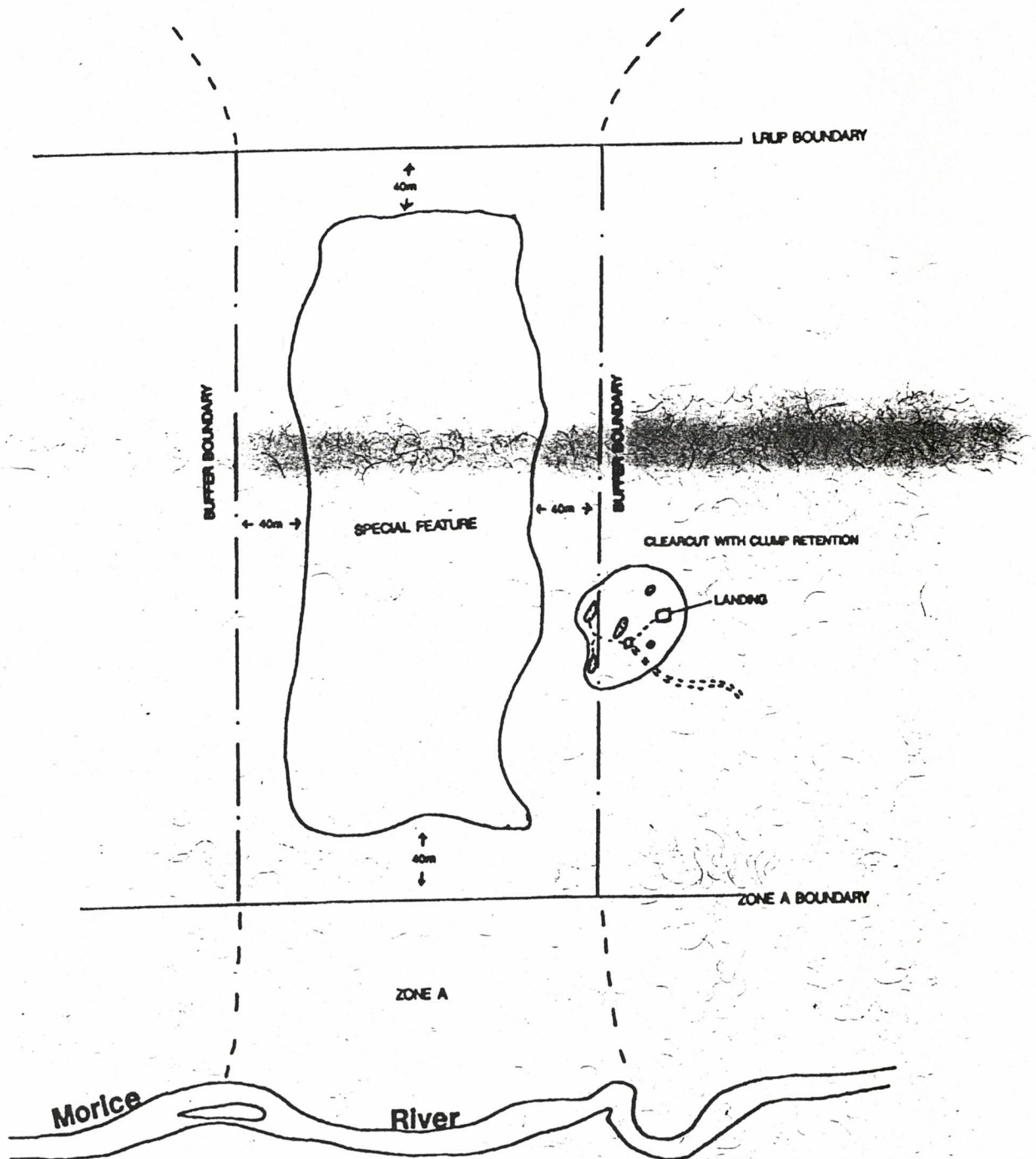
III. Zone B Buffer

IV. Wildlife Corridor

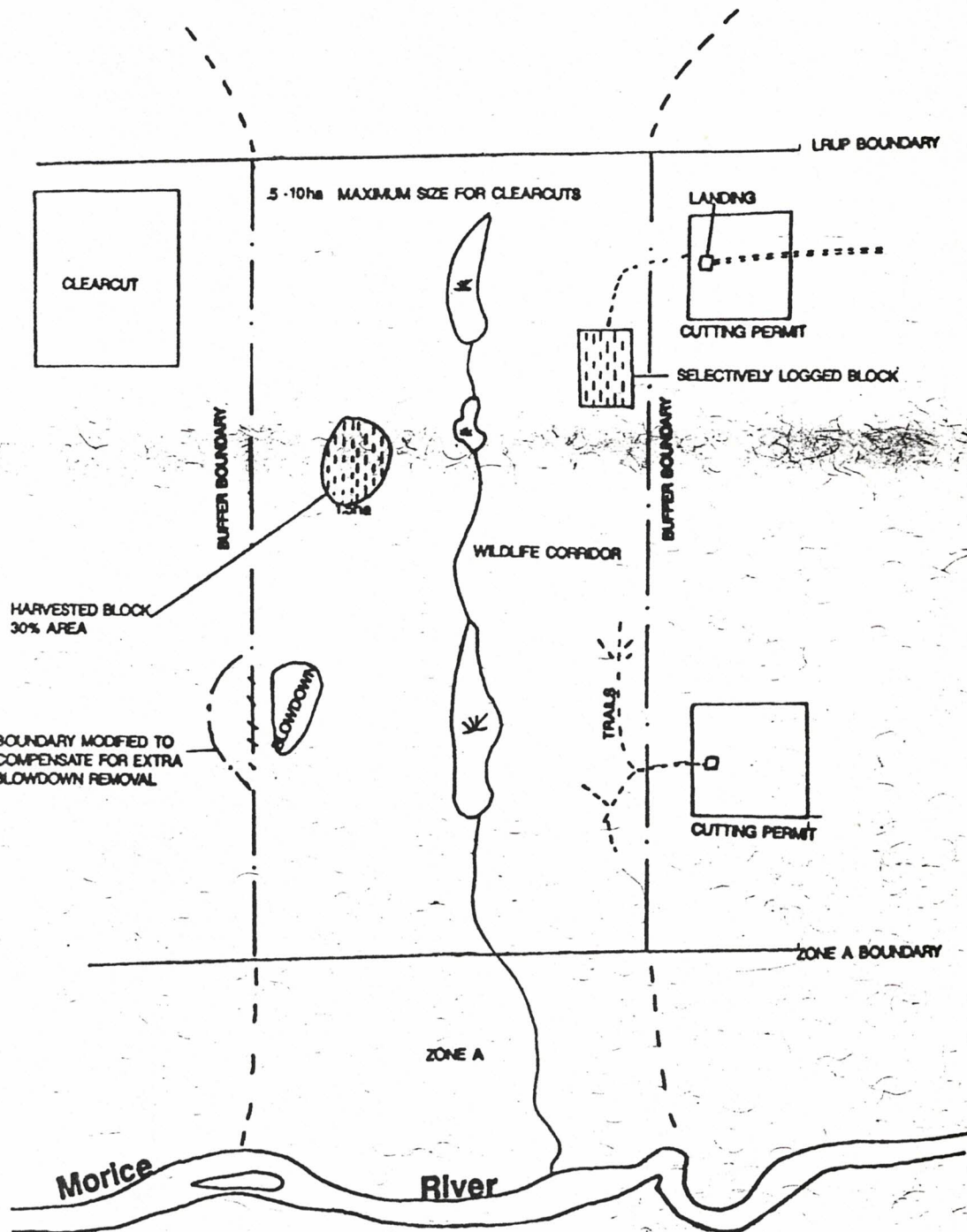
V. Wildlife Corridor 'Greenup'

VI. Excerpt from B.C. Ministry of Environment and B.C. Ministry of Forests, *Environmental Monitoring in Range and Wildlife Habitat Management*, (1990).

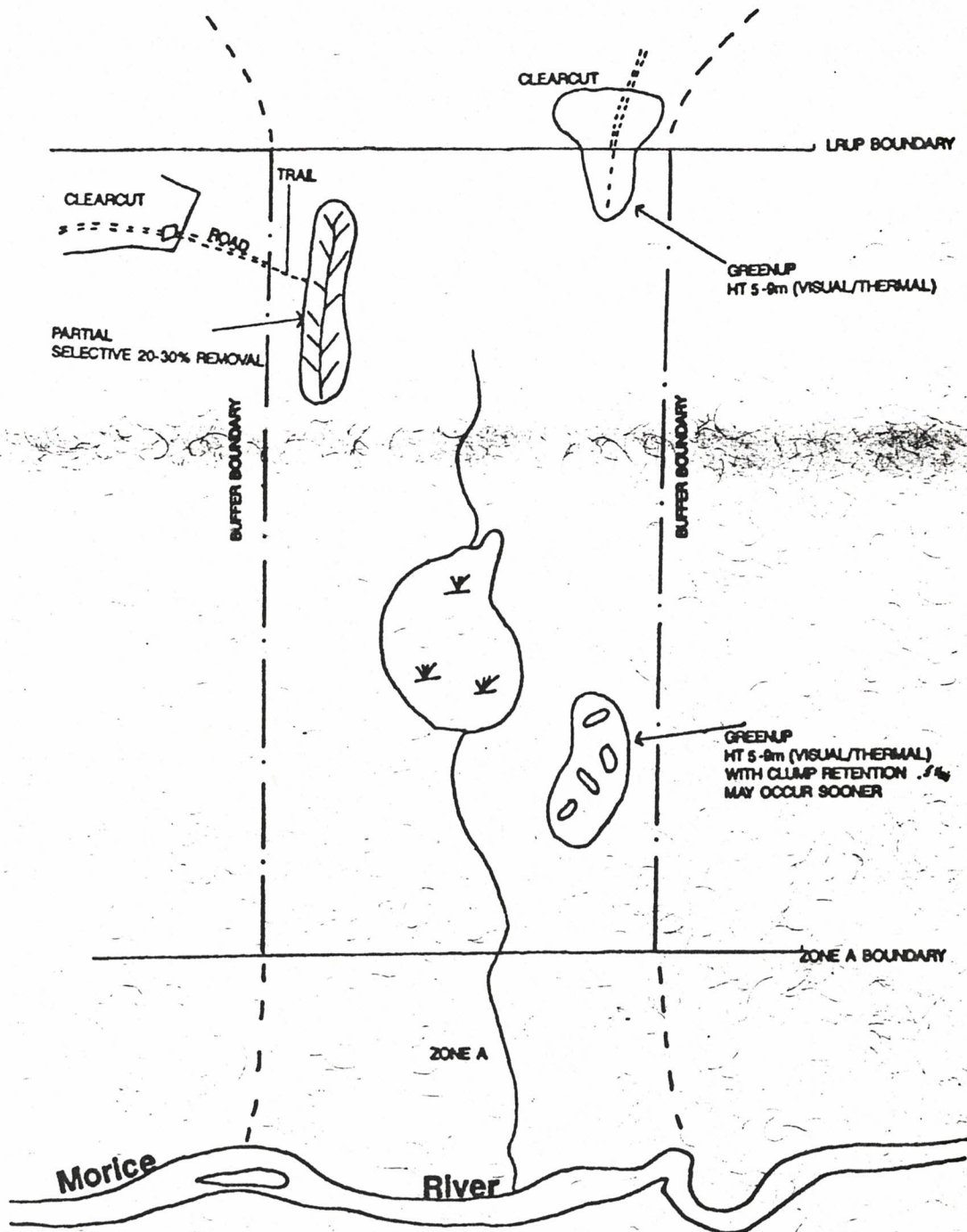
Zone B Buffer



Wildlife Corridor



Wildlife Corridor Greenup



Morice River Corridor Guidelines for Range Use

A. Guidelines for livestock grazing on high value ungulate range/habitat: specifically Class 1, 2 & 3 moose winter range and Class 3 & 4 deer winter range.

1. Forage Utilization - moderate use

Maximum forage utilization of key indicator species as follows:

- 10 cm (4") bunchgrass forage species - 8 cm (3") sodgrass forage species

Utilization range approximately 36-65%. Plants appear rather uniformly grazed. 15-25% of number of current leafage of key forage species remain intact. No more than 10% of the number of low-value forage plants are used.

Key forage species: Bunchgrasses: Elymus glaucus, Pleurum pretense, Bromus vulgaris, Festuca saximontana, Dactylis glomerata; Sodgrasses: Agrostis scabra, Poa pratensis.

2. Browse Utilization:

i) below 1.5 metre browseline - light use of key browse species. Where 16-35% of current years growth appear cropped/browsed. 65-84% of available leader growth of key plants remain intact.

ii) above 1.5 metre browseline - slight use of key browse species.

Note: livestock grazing above this browseline is not expected.

Where 1-15% of leader growth exhibits use, little disturbance. Plants have appearance of very slight use.

Appendix VI

Key plants: Amelanchier alnifolia, Salix spp.; Cornus stolonifera.

Such forage/browse criteria are measurable using the habitat monitoring system and procedures with random plot selection.

Reference: B.C. Ministry of Environment and B.C. Ministry of Forests, *Procedures for Environmental Monitoring in Range and Wildlife Habitat Management*, (1990).

