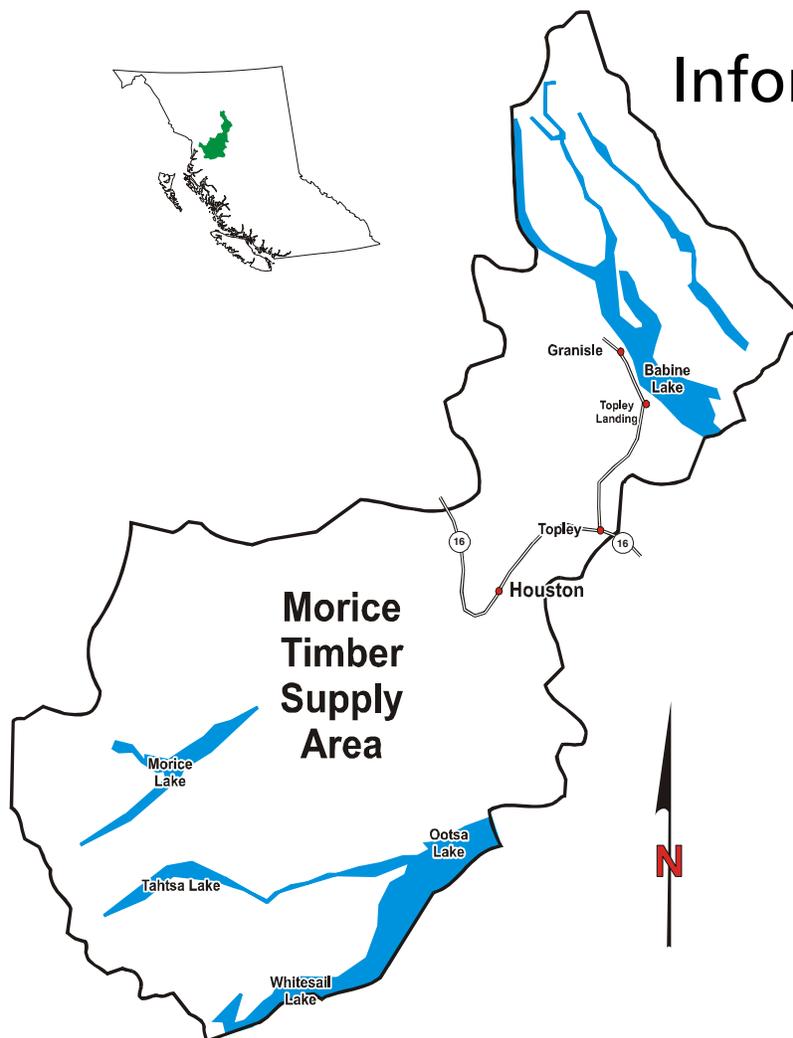


Timber Supply Review

Morice Timber Supply Area

Information Report
March 2001



BRITISH
COLUMBIA

Ministry of Forests

Introduction

The British Columbia Forest Service is required by law to formally review the timber supply* in all timber supply areas* and tree farm licence* areas in the province. A review of each of the areas is completed at least once every five years. The main objectives of the reviews are:

- to identify the economic, environmental and social information that reflects the current forest management practices—including their effects on the short- and long-term timber supply
- to identify where improved information is required for future timber supply forecasts
- to provide the chief forester with information to make any necessary adjustments to the allowable annual cuts* for the next five years.

* Throughout this document, an asterisk at the end of a phrase or word indicates that a definition can be found in the margin.

Objective of this document

The objective of this document is to provide an opportunity for public review of the draft data and management assumptions that will be applied in reviewing the timber supply for the Morice timber supply area. This document represents the early stages of the timber supply review process and is intended to provide a non-technical overview of the draft data and management assumptions that will be used in the upcoming *Morice Timber Supply Area Analysis Report*.

The *Morice Timber Supply Area Analysis Report* will be one of the documents that the chief forester will consider in making the allowable annual cut determination under Section 8 of the *Forest Act*. Public input is encouraged to ensure the best information is used in determining allowable annual cuts.

This report contains a general description of the data assumptions and current forest management practices related to timber supply for the Morice timber supply area. For the purpose of this timber supply review, current practices can be defined as forest management practices that are currently implemented and enforced. Future forest management objectives that may be established but are not currently implemented are not included.

The draft data and management assumptions are summarized on pages six through nine. For a more detailed description of the information, please contact the Morice Forest District Office in Houston or the Prince Rupert Forest Region Office in Smithers and request a copy of the data package. The public will have 30 days to review and comment on the information report and data package. A response form at the end of this document will assist you in providing your comments. Written comments will be accepted until **April 30, 2001**.

Timber Supply Review process

In British Columbia, a process of determining allowable annual cuts has been in place since the late 1940s. However, the process has changed significantly since then. More recently, the process has had some minor revisions designed to improve efficiency and encourage earlier public review through the release of this report.

Figure 1 (next page) illustrates the five-step process that has been developed for the Timber Supply Review of timber supply areas. The diagram indicates the current status of the timber supply review for the Morice timber supply area, and the estimated time required for each step.

Timber Supply Review

in the Morice TSA

Timber supply

A harvest level that is forecasted to be available over time, under a particular management regime.

Timber supply area

An integrated resource management unit established in accordance with Section 7 of the *Forest Act*.

Tree farm licence

Provides rights to harvest timber, and outlines responsibilities for forest management, in a particular area.

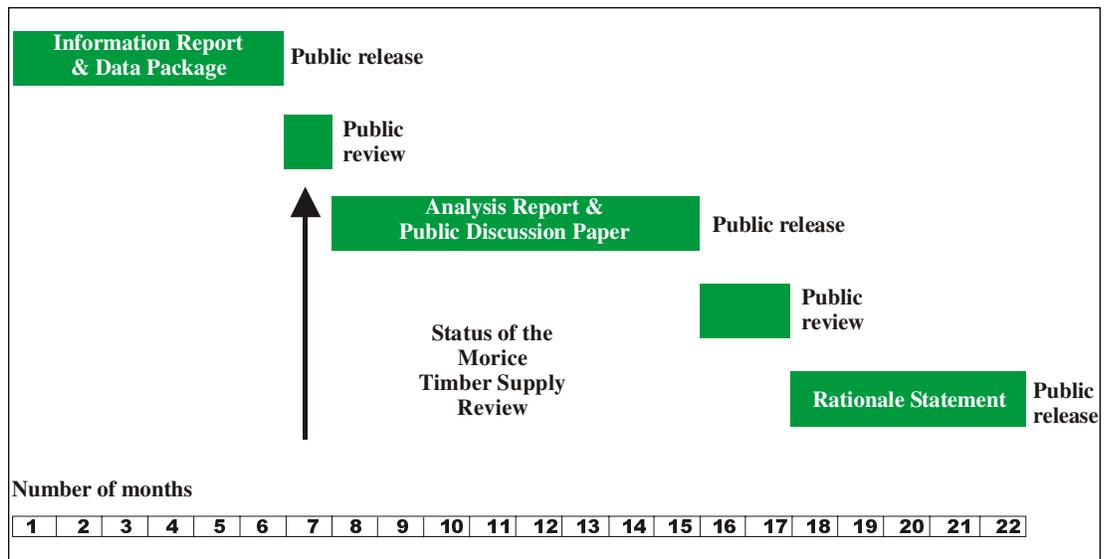
Allowable annual cut (AAC)

The rate of timber harvest permitted each year from a specified area of land, usually expressed as cubic metres of wood per year.

Timber Supply Review

in the Morice TSA

Figure 1.
Status of the timber supply review process for the Morice TSA



The process for reviewing the timber supply and establishing the allowable annual cut for tree farm licence areas is based on similar principles (for timber supply areas); however, the process takes 30 months from start to completion. By the end of 2001, a new review process for all tree farm licences will only require 20 months for completion.

The chief forester's responsibility

Determining the allowable annual cuts for Crown forest lands in British Columbia is the responsibility of the province's chief forester. It is one of the chief forester's most important responsibilities since it affects the local and provincial economies and environment—now and in the future. Section 8 of the *Forest Act* requires the chief forester to consider the following factors to determine allowable annual cuts for timber supply areas and tree farm licence areas:

- a) the rate of timber production that may be sustained from the area, taking into account:
 - the composition of the forest and its expected rate of growth
 - the time in which the forest will become re-established
 - silvicultural treatments, including reforestation

- standards of timber utilization
 - constraints on the amount of timber produced from the area due to use of the forest for purposes other than timber production
 - any other information which relates to the capability of the area to produce timber
- b) the short- and long-term implications to the province of alternative rates of timber harvesting from the area
 - c) the nature, production capabilities and timber requirements of established and proposed processing facilities
 - d) the economic and social objectives of the Crown for the area, the region and the province, as expressed by the minister of forests
 - e) abnormal insect or disease infestations and major salvage programs planned for the timber on the area.

Some of these factors can be measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent, professional judgement based on the best available information. Information that is relevant to the factors listed above is provided to the chief forester by government agencies, the minister of forests and the public.

One of the objectives of the Timber Supply Review is to incorporate changes arising from new information, new practices and new government initiatives

that may have an impact on timber supply. In the event of significant change, the allowable annual cut may be reviewed in less than the required five years.

Following the release of the allowable annual cut determination by the chief forester, the minister of forests apportions the cut to the various licences and programs.

Principles of the Timber Supply Review

In determining allowable annual cuts—in addition to the requirements outlined in Section 8 of the *Forest Act*—the following principles have been developed.

The Timber Supply Review:

- is a decision-making process for establishing the allowable annual cut for timber supply areas and tree farm licence areas by the chief forester based on a five-year cycle, as required under Section 8 of the *Forest Act*; **it is not a process for making land-use or management decisions**
- incorporates the best information available including all relevant current practices, and identifies where new information is needed
- reflects the results of implemented plans and land-use decisions, and provides a benchmark for future planning processes
- involves other agencies, affected groups and the public

Description of the timber supply area

The Morice TSA is located in the south-eastern portion of the Prince Rupert Forest Region and is administered from the Morice Forest District office in Houston. The total size of timber supply area is about 1.5 million hectares. It is bordered to the west by the Cascade Mountains and to the south by Tweedsmuir Park.

The area includes the community of Houston and the smaller communities of Topley and Granisle. The Highway 16 corridor and the area from Owen Lake to Francois Lake support many farms and ranches.

First Nations

Within the timber supply area there is only one First Nations community, which is located at Topley Landing. Several First Nations have asserted territories within the TSA and some have submitted comprehensive land claims covering portions of the timber supply area. Once the treaties have been finalized, they will be considered in the timber supply review.

All of the First Nations have expressed concerns about timber harvesting in areas with high cultural and economic values. An archaeological overview assessment, which identifies sites of potential cultural and heritage significance, has been developed. As impact assessments and traditional-use surveys are completed, they are considered in operational planning. Any available information regarding cultural or archaeological sites will be considered in the timber supply review.

Forest land resources

Numerous natural resources are associated with the forest land base. Forest products, recreation and tourism amenities, and a variety of wildlife habitat are among the wide range of values and uses found in the Morice timber supply area.

Topography varies from mountainous in the southwest to rolling in the north and east. Major rivers in the Morice TSA include the Bulkley, Morice and Nadina. There are also two large lakes, Babine in the north and Ootsa in the south. The overall climate is transitional between coast and interior with cool summers, and short and cold winters.

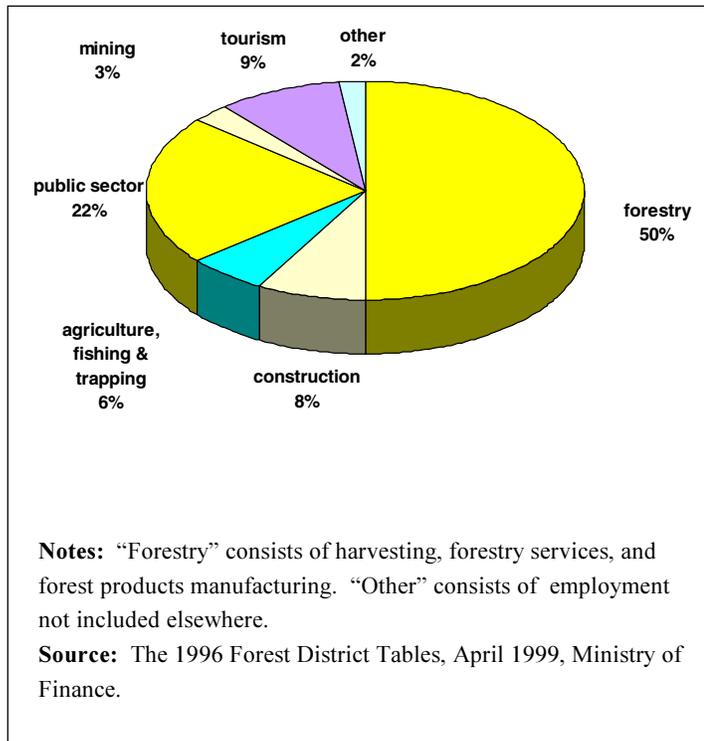
Five biogeoclimatic zones are found in the district and include the Sub-boreal Spruce, Engelmann-Spruce-Subalpine Fir, Alpine Tundra, Coastal Western Hemlock and Mountain Hemlock. Dominant trees species are lodgepole pine, spruce and subalpine fir. The distinct ecological features and the unique nature of the area contribute to high biodiversity values. The timber supply area hosts a wide variety of wildlife and fish species including moose, grizzly bear, lake trout, trout, steelhead and salmon. Many of these are regionally or provincially significant while others are commercially important.

Forestry employment in the timber supply area is supported by harvesting and silviculture activity and the processing of wood products at two major facilities: Houston Forest Products and Canfor Ltd. in Houston. During the spring of 2000, almost 350 people were employed at mills in the Morice timber supply area. In addition, two secondary manufacturing industries, Pleasant Valley Reman and Corwood Timber Products Ltd., together employed approximately 65 people.

The forestry sector supports numerous other jobs in the region through companies and employees purchasing goods and services from local businesses. This

spending is another indicator of the role forestry has in the economy. For every 100 direct forestry jobs in the Morice timber supply area, another 25 to 65 indirect and induced jobs are supported, depending on the type of forestry activity (logging or manufacturing) and the associated level of income. In comparison, every 100 jobs in the public sector or tourism supports another ten to 24 positions.

Figure 2.
Total employment
by sector for the
Morice timber
supply area, 1996



History of the allowable annual cut

On July 16, 1996 the chief forester set the allowable annual cut at 1,985,815 cubic metres.

As part of the 1996 determination, the chief forester gave direction to resolve uncertainties with respect to the timber supply in the Morice timber supply area. In preparation for the next allowable annual cut determination, the following issues were examined:

- **environmentally sensitive soils** – in the last timber supply review, there was concern about the classification of environmentally sensitive soils and their reduction from the timber harvesting

The economy

The economy of the Morice timber supply area is well diversified. Figure 2 illustrates total employment by industry sector for the area. While forestry is an important sector of the economy, the public sector, tourism and construction are also important sources of employment.

land base. Since then the district has studied the sensitive soils as classified in the forest inventory mapping and has completed terrain stability mapping. The results of the studies have refined the reductions for sensitive soils.

- **recreation areas**– the previous determination noted minimal overlap between the 1991 recreation inventory and the 1986 environmental sensitivity classification of high value recreation areas. As a result, a new recreation inventory was completed in 1998 to resource inventory classification standards. The new recreation inventory will be used for this timber supply review.
- **operability mapping** – during the last timber supply review concern was expressed that there seemed to be minimal harvesting on moderate to steep slopes. The chief forester requested that the district try to improve operability mapping. The district staff have reviewed operability and found limited harvesting occurring above an elevation of 1360 metres. Therefore, for this timber supply review, areas above 1360 metres are not included in the timber harvesting land base. Operable areas have been classified by harvesting methods and the analysis will examine the past and future harvest contribution from each class.
- **regeneration delay*** – in the previous timber supply review a regeneration delay of four years was used. It was noted that while reducing the regeneration delay had no effect on the short-term timber supply, a short regeneration delay could increase the long-term harvest level. To ensure that the best information reflecting current practice was used for this timber supply review, the district examined various reports and found that the actual regeneration delay was closer to two years, thus a two-year delay will be used in the analysis.

- **forest inventory audit** - recently an inventory audit of the Morice timber supply area was completed. The results of the audit indicated that overall for the Morice timber supply area the inventory provides a reasonable estimate of existing volumes.

Note: For more information on these points, please refer to the Morice Timber Supply Area Rationale for Allowable Annual Cut Determination, July 16, 1996.

Current timber supply review

Public forest lands in British Columbia provide recreational enjoyment, fish and wildlife habitat, water supplies, timber resources and many other benefits. The Ministry of Forests manages the timber, range and recreation resources on public lands, and the Ministry of Environment, Lands and Parks manages fish, wildlife, water resources and parks. Both agencies subscribe to the principle of integrated resource management*, where all resources are considered when making forest management decisions.

The Forest Practices Code* is now law and has been fully implemented in the timber supply area since June 15, 1997. The new practices may influence both the short- and long-term timber supply.

The data and management assumptions that will be used in the timber supply analysis will be based on the resource management practices that are currently approved and implemented in the Morice timber supply area. The chief forester will also consider any new information, based on implemented changes, at the time of the allowable annual cut determination.

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Regeneration delay

The period of time between harvesting and the date at which an area is occupied by a specified minimum number of acceptable well-spaced trees.

Integrated resource management (IRM)

The identification and consideration of all resource values, including social, economic and environmental needs, in resource planning and decision-making.

Forest Practices Code

Legislation, standards and guidebooks that govern forest practices and planning, with a focus on ensuring management for all forest values.

**Environmentally
sensitive areas**

Areas with significant non-timber values, fragile or unstable soils, impediments to establishing a new tree crop, or high risk of avalanches.

**Draft data and
management assumptions
for public review**

The public is encouraged to review the data and management assumptions for completeness and accuracy. In determining an allowable annual cut, the chief forester will consider these assumptions as required by Section 8 of the *Forest Act*. The following general outline contains some of the more pertinent information that will be used in the timber supply analysis and, subsequently, in the chief forester's allowable annual cut determination for the Morice timber supply area. More detailed information can be found in *Appendix A: Data Package*. This appendix is available upon request from the Ministry of Forests offices listed at the end of this report.

Land base factors

- **operable area** - the forested area in the Morice timber supply area has been assessed for terrain and economic limitations. Only those areas that are considered physically and economically accessible will contribute to the timber harvesting land base.
- **low productivity sites** - in addition to the above, forest types that are not considered fully available for harvesting due to forest characteristics such as low growth potential will not contribute to the timber harvesting land base.
- **marginal timber types** – a number of stand types, including deciduous forests, are not currently harvested in the Morice TSA. These stands will not contribute to the timber harvesting land base.
- **environmentally sensitive areas*** - an evaluation of the environmental concerns and the past level of harvesting within these areas was used to determine their contribution to the timber harvesting land base. In the Morice timber supply area, environmentally sensitive areas include

areas with sensitive soils, areas prone to avalanche, high value wildlife habitat and areas with regeneration problems. Highly sensitive areas will not contribute to the timber harvesting land base.

- **forest roads** - harvesting and road construction follow provincial guidelines. Since the last analysis, existing roads have been mapped and the associated areas will be removed from the timber harvesting land base. The area projected to be covered by future roads was estimated and will also be deducted from the timber harvesting land base.
- **proposed protected areas** - there are ten proposed protected areas—approved by cabinet as official study areas—in the Morice timber supply area. In the timber supply analysis, harvesting in these areas will be deferred for ten years. As it is likely that only half of the study areas will eventually be designated as protected areas, the analysis will examine the impact to timber supply of permanently removing half of the area.

Inventory factors

- **Forest inventory** – most of the current forest cover inventory has been updated to 1998 to account for recent harvesting and silviculture activities.

In the Morice timber supply area, the dominant tree species are lodgepole pine (54%), spruce (23%) and subalpine fir (23%) by area.
- **minimum harvestable ages** - for the purposes of the timber supply analysis, the minimum harvestable age is defined as the earliest age at which a forest stand is projected to reach a merchantable size. This age is based on the time required for regenerated stands to achieve a minimum stand volume of 150 cubic metres per hectare for leading lodgepole pine and spruce stands, or 200 cubic metres per hectare for leading subalpine fir stands.

Forest re-establishment factors

- **basic silviculture** - British Columbia laws require that areas that are harvested and expected to produce timber in the future must be reforested with ecologically suitable species within a specified time frame. The most common silvicultural practice is to harvest; then if necessary prepare the site for reforestation; reforest by planting a mix of species or by relying on natural regeneration; and control competing vegetation.

In the Morice timber supply area, reforestation is achieved predominantly by planting a mixture of coniferous species with a component of natural regeneration. In the timber supply analysis it is assumed that areas will be planted within two years after the completion of harvesting.

Timber utilization factors

- **timber utilization** - volume estimates will be based on the utilization of all trees which meet or exceed the following standards: a minimum 10-centimetre top diameter; a maximum 30-centimetre high stump; and a minimum diameter—at 1.3 metres above the ground—of 12.5 centimetres for lodgepole pine, 17.5 centimetres for spruce and subalpine fir.

Infestations, devastations, and salvage of timber

Each year portions of the forests in the Morice timber supply area are damaged by natural agents such as insect, disease, fire and wind.

Since 1995, the level of insect attack by three (mountain pine, spruce and western balsam) types of bark beetle has increased to epidemic levels in the Morice timber supply area. Mostly it is the mountain pine beetle (MPB), *Dendroctonus ponderosae* Hopkins (Coleoptera: Scolytidae), that is the most damaging insect attacking lodgepole pine in the area.

The insect is small and kills mature trees by boring through the bark and mining the phloem — the layer between the bark and wood of a tree.

The district is currently focusing much of the current allowable annual cut to the salvaging of the attacked timber. However, it is anticipated that some of the damaged timber will not be salvaged due to access and economic limitations. To account for all natural agents, the unsalvaged volume for the first 50 years is estimated to be 171,959 cubic metres annually and thereafter 104,572 cubic metres annually.

Factors to be considered for purposes other than timber production

Forest management guidelines used to manage forest resources such as biodiversity, scenic values, wildlife habitat and water quality will be included in the timber supply analysis through the use of forest cover requirements, and volume and land-base reductions.

- **visually sensitive areas** - these are areas where the maintenance of scenic landscapes is a priority for recreation and tourism management. They are often located along highways and recreational waterways. Road construction and logging within these areas are planned and implemented to minimize visual impacts. The current practice in visually sensitive areas is that harvested areas must have trees that are at least five metres tall before adjacent areas can be harvested. Also, forest cover requirements will vary according to the degree of visual sensitivity and will permit a maximum of between one and 25 per cent of a visual landscape area to have forests less than five metres tall at any time.
- **riparian habitat*** - to meet the requirements of the Forest Practices Code, a portion of the timber harvesting land base will be considered unavailable for timber harvesting to account for

Riparian habitat

The stream bank and flood plain area adjacent to streams or water bodies.

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Wildlife tree

A standing live or dead tree with special characteristics that provide valuable habitat for conservation or enhancement of wildlife.

Coarse woody debris

Logs and stumps that provide habitat for plants, animals and insects, and a source of nutrients for soil development.

Seral stages

Sequential stages in the development of plant communities that successively occupy a site and replace each other over time.

Landscape unit

A planning area based on topographic or geographic features, that is appropriately sized (up to 100 000 hectares), and designed for application of landscape-level biodiversity objectives.

riparian habitat areas along streams, wetlands and lakes. In the analysis, an area reduction will be applied to account for riparian habitat (5.4 per cent of the total timber supply area).

- **biological diversity** - or biodiversity, is the full range of living organisms, in all their forms and levels of organization, and includes the diversity of genes, species, and ecosystems, and the evolutionary and functional processes that link them. The Forest Practices Code requires that biodiversity be examined at both the stand and landscape level.

Leaving wildlife tree* patches and coarse woody debris* for stand-level biodiversity is current practice in the Morice timber supply area. Generally, coarse woody debris objectives can be met by the contributions of non-merchantable timber left on site after harvesting. The current practice for leaving wildlife tree patches requires that a percentage of each cutblock be retained. This requirement is partially met by utilizing riparian management areas and other areas outside of the timber harvesting land base. To account for wildlife tree patches within the timber harvesting land base, a 3.6-per cent reduction will be applied to existing and future volume estimates.

Landscape-level biodiversity, primarily old-growth requirements, will be addressed in the timber supply analysis by applying averaged seral stage* requirements to each draft landscape unit* and biogeoclimatic variant. This approach has been taken because at this time the landscape units and biodiversity objectives are still draft and have not yet been formally established.

Sensitivity analyses will be undertaken to examine the potential impact on timber supply of applying the draft biodiversity emphasis objectives from the Prince Rupert Regional Landscape Unit Planning Strategy.

Other information to consider

- **Innovative Forestry Practices Agreements** - An application was submitted for an Innovative Forestry Practices Agreement (IFPA) which covers part of the Lakes and Morice TSAs. Innovative agreements allow the holder(s) to request an increase in the allowable annual cut associated with their replaceable licence. Licence AAC increases based on these agreements are determined by the Forest Service regional manager. The IFPA process is not part of the Timber Supply Review in which the chief forester determines AACs for TSAs and TFLs.

Implications of alternative rates of harvesting

- **Alternative rates of harvesting** - There are many alternative harvest forecasts that can be produced for a given set of forest conditions and management assumptions. Each alternative usually represents a trade-off between the harvest level in the short term and the subsequent rate of decline to the long-term harvest level. For the projected base case forecast, the initial harvest forecast will be based on trying to achieve the current rate of harvest in the short term without compromising the long-term harvest level. The implications of alternative short-term rates of harvest will be tested in sensitivity analyses.
- **Implications related to community dependence** - The impact of timber supply adjustments on local communities and the provincial economy is an important consideration in the timber supply review. The June 1995 *Morice Timber Supply Area Socio-Economic Analysis* reported that, provincially, harvesting, silviculture and processing activities associated with the harvesting of the Morice timber supply supported 1,164 direct person-years* and 1,746 indirect and induced* person-years of employment. About 40 per cent of these jobs are

located in the Morice timber supply area.

The socio-economic section of the upcoming timber supply analysis report will review the current role of the forest sector in the timber supply area. To provide this update, information on employment and fibre flows will be gathered from licensees, processing facilities, the B.C. Forest Service and other stakeholders. Indirect and other related employment at both local and provincial levels will also be estimated using employment multipliers provided by the Ministry of Finance and Corporate Relations.

To examine the implications of alternative rates of harvest, employment co-efficients, reported in person-years per 1,000 cubic metres, will be developed and used to estimate changes to employment levels now and in the future from any potential harvest level changes.

Timber processing facilities

The socio-economic analysis will examine the implications of potential changes in timber supply for the area's two major processing facilities: Houston Forest Products' and Canfor Ltd., Houston Division, sawmills near Houston. Implications for other manufacturing plants outside of the Morice timber supply area, but reliant on its timber supply, will also be examined. These include the West Fraser Mills' Fraser Lake sawmills in Lejac. During 1997, the Houston facilities processed approximately one million cubic metres of timber.

Economic and social objectives of the Crown

In a letter and a memo to the chief forester, the minister of forests has expressed the Crown's economic and social objectives for the province. The harvest flow objectives to be used in the timber supply analysis (see above, "Alternative rates of harvesting") are consistent with the minister's stated objectives.

In addition, economic and social objectives for the area and the general region will be derived from public input.

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Person-year(s)

One person working the equivalent of one full year, defined as at least 180 days of work. Someone working full-time for 90 days accounts for 0.5 person-years.

Indirect and induced jobs

Indirect jobs are supported by direct business purchases of goods and services. Induced jobs are supported by employee purchases of goods and services; for example, at retail outlets.

Your input is needed

Establishing the allowable annual cut is an important decision which requires well-informed and thoughtful public input. Feedback is welcomed on any aspect of this *Information Report*, the *Data Package Appendix* and other topics related to the timber supply in the Morice timber supply area. The response form at the end of this document will assist you in preparing your comments. As well, Forest Service staff would be pleased to discuss questions or concerns that may help you prepare your response.

Please mail the completed response form and your comments to the Forest Service district manager located at the address below. Your comments will be accepted until **April 30, 2001**.

After receiving public input, the B.C. Forest Service will finalize the data and management assumptions that will be applied in this timber supply analysis. The timber supply analysis will be completed and available for review by Summer/Fall 2001. You may also wish to participate in the second public review period, which will follow the release of the *Morice Timber Supply Area Analysis Report*.

Following the second public review period, the chief forester will examine all the information available in order to review the timber supply for the Morice timber supply area. The chief forester will then establish the allowable annual cut based on his consideration of the factors as required under Section 8 of the *Forest Act*.

You may identify yourself on your response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If copies of the responses are requested, personal identifiers will be removed before the responses are released.

**For more information contact and/or
mail your comments to:**

District Manager
Morice Forest District
B.C. Forest Service
Bag 2000
2430 Butler Ave.
Houston, B.C.
V0J 1Z0

Phone: (250) 845-6200
Fax: (250) 845-6276

or electronically mail to:

Debbie.JanningStewart@gems4.gov.bc.ca

APPENDIX A

Data Package

Description of Data Inputs and Management Assumptions

This appendix is available upon request from the
Ministry of Forests.

Offices are located at:

Morice Forest District
2430 Butler Ave.
Houston, B.C.
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