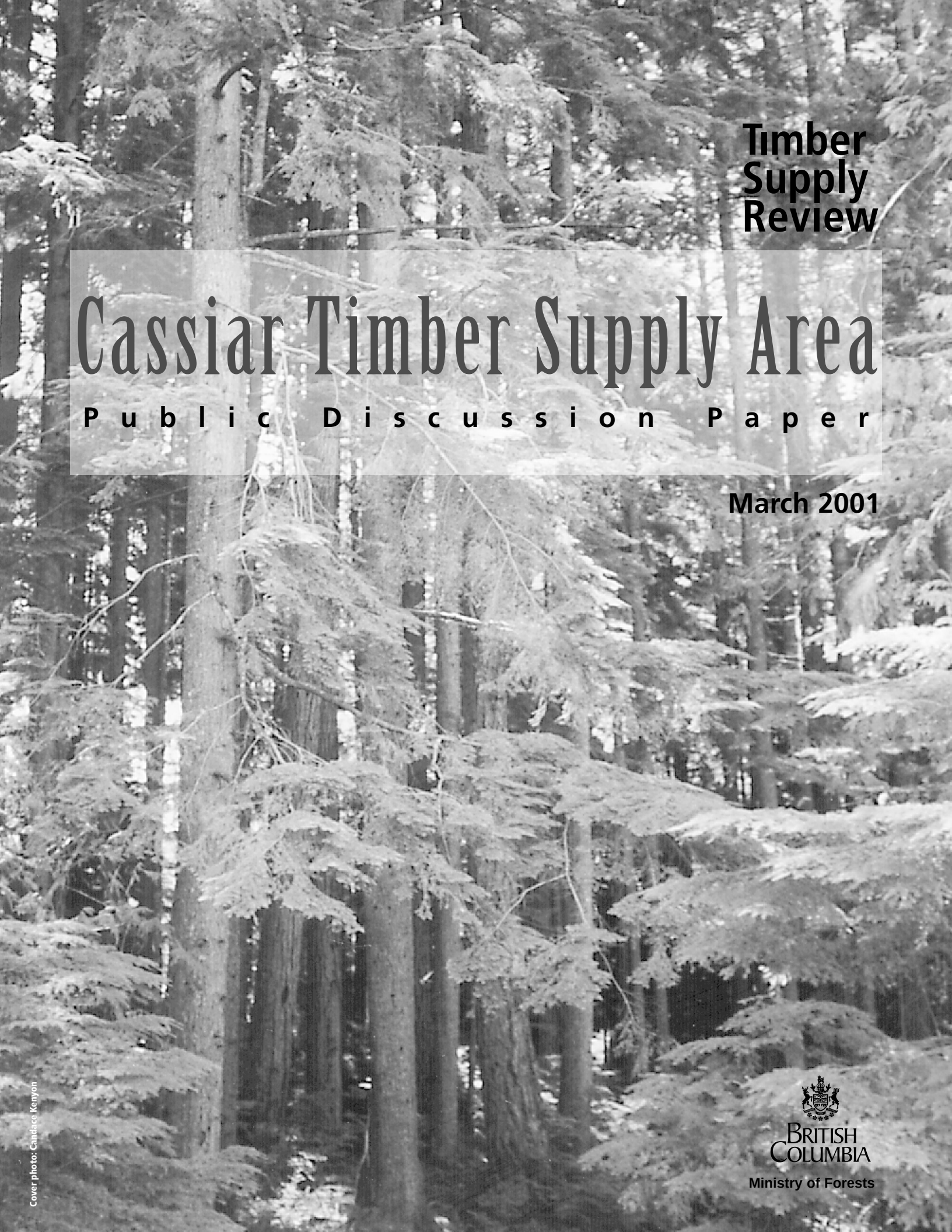


Timber Supply Review

Cassiar Timber Supply Area

Public Discussion Paper

March 2001

BRITISH COLUMBIA

Ministry of Forests

Cover photo: Candace Kenyon

Introduction

The British Columbia Forest Service is reviewing the timber supply for all timber supply areas (TSAs) and tree farm licences (TFLs) in the province. This review examines the impacts of current forest management practices on the timber supply, economy, environment and social conditions of the local area and the province. Based on this review, the chief forester may, if necessary, adjust the allowable annual cut (AAC) for the Cassiar TSA.

The chief forester reviews and sets new AACs for all TSAs and TFLs every five years. The objectives of the Timber Supply Review are:

- to identify relevant current forest management practices and assess their effects on short- and long-term timber supply, and identify related economic, environmental and social factors
- to identify where improved information is required for future timber supply forecasts
- to provide the chief forester with information to use when making AAC determinations that will apply for the next five years

Timber Supply Review in the Cassiar TSA

The *Cassiar TSA Data Package and Information Report* were released in November, 1999. Following the release, the documents were reviewed by the public and government agencies. The B.C. Forest Service has now completed the *2001 Cassiar TSA Analysis Report* which is summarized in this discussion paper. The objectives of this document are to provide British Columbians with an overview of the Timber Supply Review process and harvest level forecasts for the Cassiar TSA and to encourage them to provide comments during an 80-day public review period. Public comments will be accepted until **May 31, 2001.**

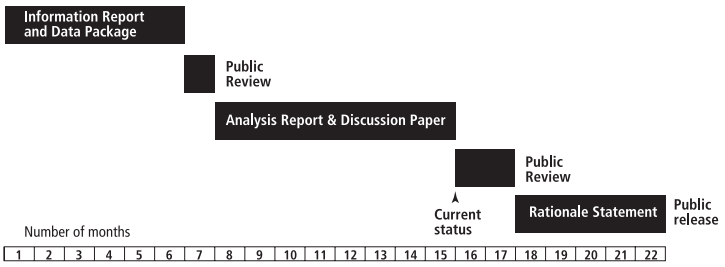
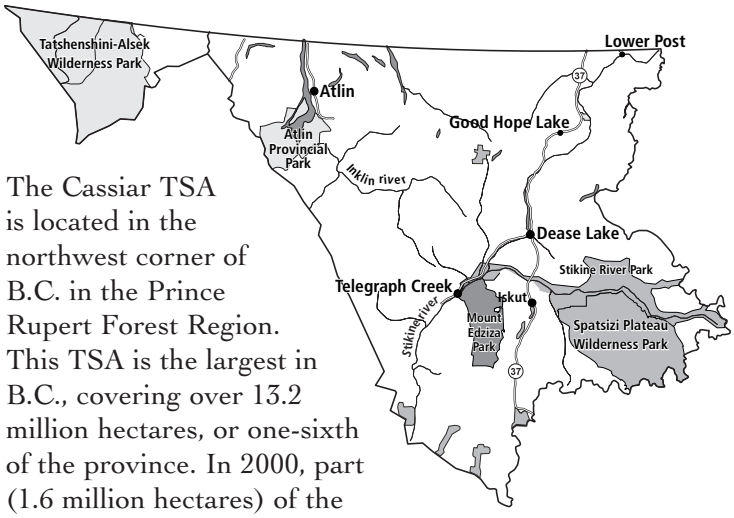


Figure 1. *Review process for the Cassiar TSA*

Before setting a new AAC, the chief forester will review all relevant reports and public input. The chief forester's determination will be outlined in a rationale statement which, along with the summary of public input, will be available to the public upon release. Following the release of the AAC determination by the chief forester, the minister of forests may apportion the AAC to various licences and programs.

Description of the TSA



The Cassiar TSA is located in the northwest corner of B.C. in the Prince Rupert Forest Region. This TSA is the largest in B.C., covering over 13.2 million hectares, or one-sixth of the province. In 2000, part (1.6 million hectares) of the Muskwa-Kechika Management Area in the Cassiar TSA was transferred to the Fort Nelson TSA. Except for provincial park areas, the TSA boundaries coincide with those of the Cassiar portion of the Bulkley/Cassiar Forest District. The Cassiar TSA is administered from the Bulkley/Cassiar forest district office in Smithers, with a field office in Dease Lake.

****A timber supply area is an integrated resource management unit established in accordance with section 7 of the Forest Act.***

The Cassiar TSA is the least populated TSA in the province. From 1991 to 1996 the population decreased by about one-third to approximately 2,000 people, largely due to the closure of the Cassiar asbestos mine. The communities in this TSA include Dease Lake, Atlin, Telegraph Creek, Iskut, Good Hope Lake and Lower Post.

Natural resources

The forest land in the Cassiar TSA provides numerous resource values, many of which are undeveloped and located in inaccessible areas of the TSA. These resources include forest products, minerals, recreation and tourism amenities and wildlife habitat.

The western part of the Cassiar TSA consists of rugged, ice-capped mountains, dissected by several major river valleys. However, the majority of the Cassiar TSA is characterized by mountains and plateaus separated by wide valleys and lowlands. Approximately 75 per cent of the TSA is tundra, rock and alpine, while 25 per cent is forested.

Forests in the Cassiar TSA range from areas of coastal forest in the west, to extensive areas of boreal forest in the majority of the TSA. Lodgepole pine stands dominate about 49 per cent of forests within the timber harvesting land base, mainly in the northern part of the TSA, while white spruce dominates about 47 per cent, mainly in the southern portion. Other species include subalpine fir, sitka spruce, black spruce, Roche spruce (a white spruce/sitka spruce hybrid), western and mountain hemlock, as well as cottonwood, aspen and birch.

The Cassiar TSA supports an abundance of wildlife species. Moose are the most numerous ungulate, but thinhorn sheep, caribou and mountain goats are also plentiful. Grizzly bears, black bears, wolverines, lynx and wolves are common throughout the valleys of the TSA. Many bird species also occur, and several breed nowhere else in B.C.

A wide variety of fish species is found in the Cassiar TSA, particularly because the TSA's watersheds drain into different oceans and, therefore, fish species vary. All five salmon species are found in the Stikine, Taku and Tatshenshini watersheds, while freshwater fish are found throughout the TSA and include rainbow trout, Arctic grayling, Dolly Varden char, lake char, white sucker, whitefish and northern pike.

Parks, recreation sites and trails, and roaded and non-roaded areas provide extensive opportunities for outdoor activities in the Cassiar TSA. The area is valued for large expanses of pristine wilderness that permit multi-day trips into remote backcountry areas, especially along the rivers. Several provincial parks—Atlin Lake, Stikine River, Spatsizi Plateau, Mount Edziza and Tatshenshini-Alsek—offer internationally-recognized backcountry wilderness opportunities. The Cassiar TSA is also one of the finest big-game trophy hunting areas in North America. Other recreational activities include hiking, canoeing, rafting, kayaking, fishing and wildlife viewing.

Land use planning

The Cassiar Iskut-Stikine Land and Resource Management Plan (LRMP) was initiated in 1997. The plan area covers approximately 5.2 million hectares in the Cassiar TSA, roughly corresponding to the watershed of the Stikine River and the Canadian portion of the Unuk River watershed.

The planning process provided an opportunity for the public, interest groups and government to make recommendations regarding proposed protected areas and future management of public forest lands in the planning area. In early 2000, the LRMP planning table reached a consensus on land use and submitted an agreement to the provincial government. Government approved the plan recommendations in October 2000, which increased protected areas by more than 200,000 hectares. The plan recommendations were finalized after the beginning of the timber supply analysis. The impact of the LRMP table's recommendations was assessed in sensitivity analyses. This information will be provided to the chief forester for consideration prior to the AAC determination.

Current allowable annual cut

The current allowable annual cut (AAC) for the Cassiar TSA is 400,000 cubic metres, partitioned into three timber supply blocks. This AAC was set in 1996 and was an increase from the previous level of 140,000 cubic metres per year.

Socio-economic profile

Regional economy

Overall, the economy of the Cassiar TSA relies primarily on the public sector, tourism and mining. As Figure 2 shows, in 1996 (the last year for which this type of data is available) the public sector was the largest employment sector, providing nearly half of the labour force. At that time the forestry sector

accounted for about 18 per cent of employment in the TSA. However, there has been no significant harvesting in the TSA since 1997. Tourism provided about 13 per cent of the labour force, followed by mining at eight per cent. The Cassiar TSA has one of the highest potentials for metallic minerals in the province.

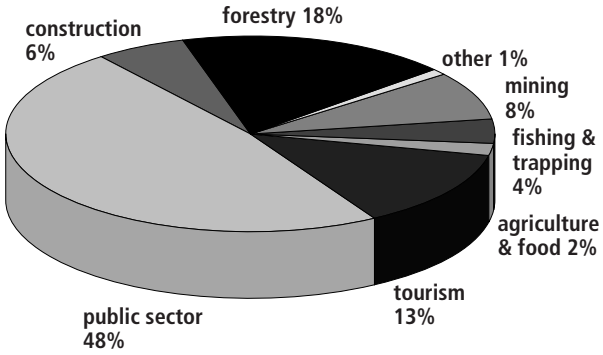


Figure 2.
Cassiar TSA—Estimates of Employment by Sector, 1996
Source: 1996 Census

During 1996, the forestry sector supported numerous other jobs in the region through companies and employees purchasing goods and services from local businesses. Each 100 full-time direct forestry jobs in the Cassiar TSA was estimated to support another 35 to 64 jobs, depending on the forestry activity (harvesting or timber processing). In comparison, 100 direct jobs in the tourism sector support an estimated six to 18 indirect and induced jobs.

Table 1 illustrates the potential contribution of the forest industry associated with the Cassiar TSA timber harvest to both the regional and provincial economies. Figures in this table are based on the current AAC of 400,000 cubic metres, although timber harvesting has not occurred in the Cassiar TSA for at least three years, and prior to that the annual harvest rate was well below the AAC.

	TSA	Provincial
Direct employment (person years)	88	428
Total employment (person years)	114	951
Total employment income ($1999 millions per year)	3.5	26.8
Provincial government revenues ($1999 millions per year)	n.a.	20.7

Table 1. ***Summary of local and provincial economic information associated with the current AAC.***

Timber supply forecasts

A timber supply computer model was used to project several possible timber supply forecasts for the next 250 years. One of these forecasts is the base case harvest forecast which illustrates the effect of current forest management on timber supply. Because there has been no industrial forestry in the Cassiar TSA for the last few years, staff in the Bulkley/Cassiar Forest District provided descriptions of management practices that would be in place if harvesting were to occur. The base case is not an AAC recommendation, but rather it is one of many sources of information the chief forester will consider when setting the AAC.

The base case forecast is presented in this report for discussion and comparison; due to areas of uncertainty, the AAC determined by the chief forester may be greater or less than the level forecast in the base case.

The base case harvest forecast for the Cassiar TSA projects an even-flow harvest level equal to the current AAC of 400,000 cubic metres. An alternative forecast shows that a higher steady harvest level (maximum even flow) of 441,000 cubic metres per year can be achieved. These harvest levels are projected to be maintained over the long term without requiring future harvest level reductions or creating future timber supply disruptions.

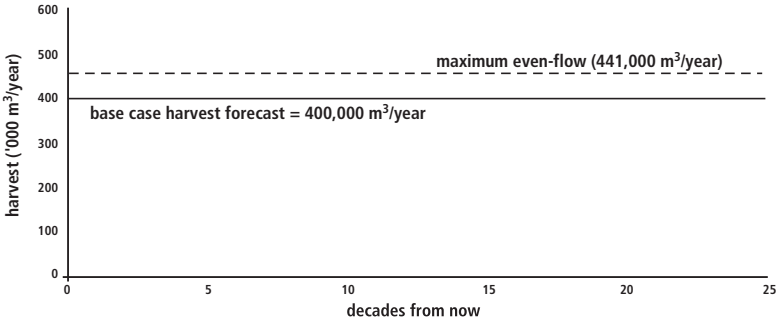


Figure 3. ***Base case timber supply forecast and maximum even-flow forecast, Cassiar TSA 2000***

During the last timber supply review many concerns were expressed about the certainty of the data assumptions for the Cassiar TSA. Since then, new information for the Cassiar TSA has been gathered. The base case harvest forecast is about half of the level projected in the last timber supply analysis in 1994. The most significant changes are a 50 per cent reduction in the size of the timber harvesting land

base and a higher estimate of unsalvaged losses. The current timber supply analysis indicates a stable long-term timber supply.

Sensitivity analyses: examining uncertainty

Because forests are complex and constantly changing, timber supply analysts assess how their timber supply forecast results might be affected by uncertainties in the inventory information and management practices. These uncertainties are generally examined in sensitivity analyses, which the chief forester will consider in determining an AAC. The sensitivity analyses are useful for assessing how any changes in information, or uncertainties and risks might affect timber supply.

In the Cassiar TSA, several sensitivity analyses were conducted to examine the stability of the timber supply. Three key sensitivity analyses are discussed below. For a complete listing, please refer to the *2001 Cassiar TSA Analysis Report.*

Uncertainty in estimated size of timber harvesting land base

Determining the size of the timber harvesting land base involves environmental, economic, cultural and technological considerations. Uncertainty in the size of the timber harvesting land base can result from changes in the economics of timber harvesting, land use decisions, and harvesting and milling technology. In the Cassiar TSA, due to the vast area and a history of limited harvesting, there is uncertainty about the area available for harvesting. The area could be smaller or larger than currently estimated.

Figure 4 shows the results of increasing and decreasing the timber harvesting land base by 10 per cent. If the timber harvesting land base is decreased by 10 per cent, the projected harvest level would be 396,900 cubic metres per year. If the land base is increased by 10 per cent, the initial harvest could start at 485,000 cubic metres per year.

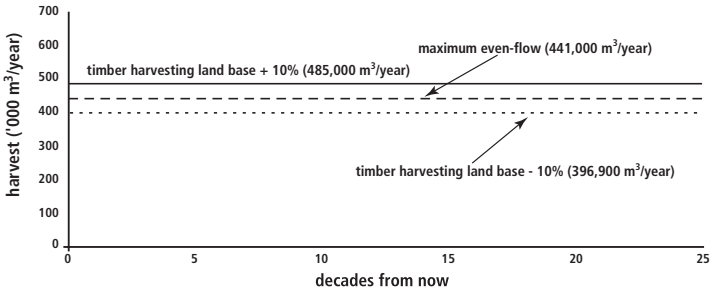


Figure 4. *Uncertainty about the size of the timber harvesting land base—Cassiar, 2001*

Effects of LRMP recommendations

Cassiar Iskut-Stikine LRMP recommendations for further exclusions for wildlife tree patches and riparian areas results in an estimated two per cent reduction in the timber harvesting land base. The LRMP also recommended the creation of a number of protected areas. Since the timber harvesting land base already excludes most of the area within the proposed protected areas, the effect of removing the remainder of these areas is a reduction of only 236 hectares. It is also of note that as a result of further study, the timber harvesting land base in this analysis is smaller than that reported in the LRMP discussions.

Figure 5 shows that if the LRMP recommendations are implemented, the long-term harvest level would decrease by one per cent to a harvest level of 437,000 cubic metres.

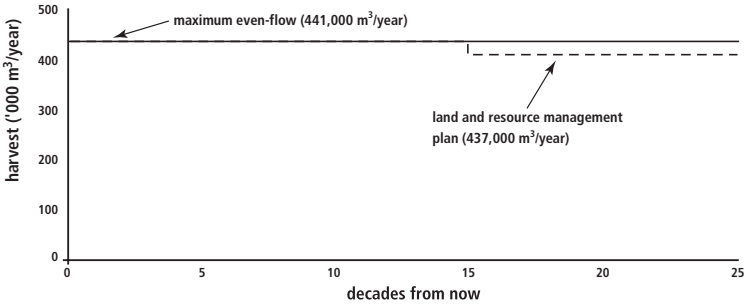


Figure 5

The effect of implementing the land and resources management plan recommendations—Cassiar, 2001

Uncertainty in the estimate of catastrophic losses due to fire

In 1982, the Eg fire burned about 183,000 hectares of the Cassiar TSA. Approximately 13 per cent of the area burned was within the timber harvesting land base. Since most of this area was transferred to

the Fort Nelson TSA as the Muskwa-Kechika area, the fire losses were not included in the estimate of non-recoverable losses (24,108 cubic metres per year) for the Cassiar TSA base case.

It is possible that a large fire could occur again within the timber harvesting land base and affect the timber supply. However, it is difficult to predict with any certainty when a large fire might occur. A sensitivity analysis shows that if a fire the size of the Eg fire were to occur once every 50 years, a steady harvest level of 411,000 cubic metres per year could be maintained. Nonetheless, if a fire were to affect a large amount of harvestable timber, an immediate assessment of the impact on the timber supply could be warranted.

In summary, defining the timber supply for the Cassiar TSA involves careful consideration of the uncertainty regarding the available information.

Implications of changes in the AAC

Environmental Implications

The Forest Practices Code sets out standards that any forest practices would need to meet. These standards are designed to maintain a range of biodiversity and wildlife values. In the Cassiar TSA, about 75 per cent of the total TSA land base is considered not available for timber harvesting and will provide for the maintenance of many environmental values. Approximately five per cent of the forested area (or 1.3 per cent of the total TSA) is considered available for harvesting. Forested area both in and outside of the timber harvesting land base will aid in the maintenance of critical forest habitats for many species. Forest cover requirements for moose, caribou, goat, grizzly bear, as well as wildlife tree patch and riparian requirements were included in the analysis.

First Nations

First Nations people comprise 55 to 65 per cent of the Cassiar TSA population. The First Nations that have asserted traditional territory within the TSA are the Tahltan First Nation, the Dease River First Nation, Kwadacha First Nation (formerly Fort Ware Band), Lower Post First Nation, Taku River Tlingit First Nation, and Champagne-Aishihik First Nations.

Most bands are participating in provincial treaty negotiations. The impacts of any treaties on the Cassiar TSA land base are unknown at this time. When the impacts are known, they will be considered in future AAC determinations.

Archaeological Overview Assessments have been completed for parts of the Cassiar TSA and will form the basis for determining areas and sites that may require further assessment. Archaeological Impact Assessments will be carried out as part of future development planning to adjust forestry practices so cultural heritage sites are protected. However, the impact of measures required to protect known sites remains unquantified at this time, and therefore could not be incorporated into the analysis. When the impacts have been quantified, they will be incorporated into future timber supply analyses and AAC determinations.

Community Implications

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. The base case harvest forecast for the Cassiar TSA suggests that the current harvest level of 400,000 cubic metres per year could be maintained indefinitely. In 1996, harvesting in the Cassiar TSA provided 18 per cent of the basic employment in the TSA. However, considering that the 1999 actual harvest levels were negligible, and that the average 1996-1999 harvest levels were less than 10 per cent of the AAC, the forestry employment impacts of maintaining the current AAC should be minimal and could be positive.

Your input is needed

Establishing the AAC is an important decision that requires well-informed and thoughtful public input. Feedback is welcomed on any aspect of this discussion paper, the *2001 Cassiar TSA Analysis Report* and other issues related to the timber supply in the Cassiar TSA. Forest Service staff would be pleased to answer questions or discuss concerns that would help you prepare your response. Please send your comments to the forest district manager at the address below. Your comments will be accepted until May 31, 2001.

You may identify yourself on the 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 the responses are made public, personal identifiers will be removed before the responses are released.

A summary of public comments will be attached to the AAC rationale and will be available from the district office when the chief forester's AAC determination is announced.

For more information contact and/or mail your comments to:
District Manager
B.C. Forest Service
Bulkley/Cassiar Forest District
Bag 6000
3333 Tatlow Road
Smithers, B.C. V0J 2N0
Phone: (250)847-6300, Fax: (250)847-6353

Dease Lake Field Office
B.C. Forest Service
Bulkley/Cassiar Forest District
Bag 2000
Stikine & Commercial
Dease Lake, B.C. V0C 1L0
Phone: (250)771-8100

or electronically to Fred.Oliemans@gems7.gov.bc.ca

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Background Information Regarding TSR

The Chief Forester's Responsibility

Determining the allowable annual cuts (AACs) for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses and public input, as well as government's social and economic objectives.

This responsibility is required by legislation in the *Forest Act,* Section 8. It states that the chief forester shall specifically consider the following factors:

1. 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 that it will take the forest to become re-established
   - silviculture treatments, including reforestation
   - standards of timber utilization
   - constraints on the amount of timber that may be produced due to use of the forest for other purposes.
2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The nature, production capabilities and timber requirements of established and proposed processing facilities.
4. The economic and social objectives of the Crown for the area, region and province—as expressed by the minister of forests.
5. Abnormal insect or disease infestations, and major salvage programs planned for the timber on the area.

Some of these factors can be readily measured and analyzed—others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forest. In these determinations, the chief forester considers relevant information from all sources.


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