

**Timber  
Supply  
Review**

# Cranbrook Timber Supply Area

**P u b l i c   D i s c u s s i o n   P a p e r**

**December 1999**



**BRITISH  
COLUMBIA**

**Ministry of Forests**

# 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 Cranbrook TSA.

By law, the chief forester must review and set new AACs for all TSAs and TFLs every five years. The objectives of the Timber Supply Review are:

- to identify current forest management practices and assess their effects on the 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 make any necessary adjustments to the AACs for the next five years

## Timber Supply Review in the Cranbrook TSA

The *Cranbrook TSA Data Package and Information Report* were released in January 1999. Following the release, the documents were reviewed by licensees, the public and government agencies. The B.C. Forest Service has now completed the *1999 Cranbrook 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 and forecasts for the Cranbrook TSA and to encourage them to provide comments during the 60-day public review period. Public comments will be accepted until February 18, 2000.



Figure 1 Review process for the Cranbrook TSA.

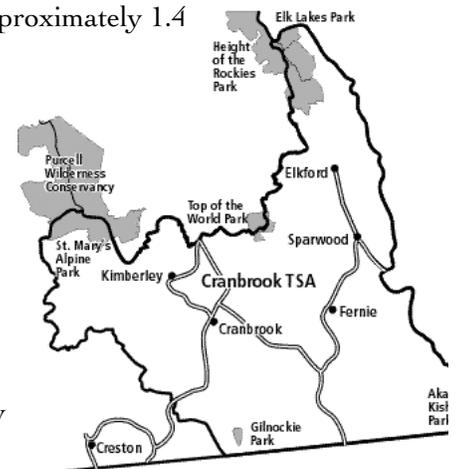
Before setting a new AAC, the chief forester will review all relevant reports and public input. The chief forester will outline his determination in a rationale statement, which along with the Summary of Public Input, will be publicly available upon release. Following the release of the AAC determination by the chief forester, the minister of forests will apportion the AAC to the various licences and programs.

## Description of the TSA

The Cranbrook TSA, situated in the southeastern corner of British Columbia, is administered by the Cranbrook Forest District office.

The TSA covers approximately 1.4 million hectares.

The total population of the TSA in 1996 was estimated to be 47,600 people. The major communities are Cranbrook and Kimberley, which have a combined population of nearly 25,000. Other communities include Fernie, Sparwood and Elkford. From 1991 to 1996, the population of the TSA increased by about four per cent.



### The natural resources

Numerous natural resources are associated with the forests in the Cranbrook TSA. These include old-growth forests, significant wildlife and fish habitat, and tourism and recreation opportunities. Other important resources include range, farm land, coal and mineral deposits.

The variety of terrain and climate creates an exceptionally diverse environment. Due to the range of habitat types, the area is unique in North America in its density and diversity of ungulate populations, other large and small mammals, and birds. Wildlife species in the area include elk, mule deer, white-tailed deer, moose, goat, caribou, black and grizzly bear, cougar, lynx, marten, raptors and owls.

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

The Rocky Mountain Trench, generally located south of the Wasa area to the U.S. border, is an example of a unique habitat type in the TSA. This area has been subject to a long history of wildfires, and is considered a natural fire-maintained ecosystem. A strategy is being developed to manage this area for a wide range of resource uses, including livestock grazing, wildlife habitat, recreation and harvesting.

The Cranbrook TSA offers exceptional opportunities for recreation and tourism. Numerous parks lie within and adjacent to the TSA.

The timber harvesting land base—the area considered available for timber harvesting—comprises 31 per cent of the Cranbrook TSA. Twenty seven per cent of this area is covered by younger forests, between 61 to 80 years of age, that have regenerated following wildfires or harvesting.

### Land-use planning

In July 1997, the Kootenay-Boundary Land-Use Implementation Strategy was approved by government. The strategy provides details on forest practices and making the most efficient use of the available timber. It also provides an expression of the government's commitment to achieve the Crown's social and economic objectives for the region, including the Cranbrook TSA.

### Current allowable annual cut

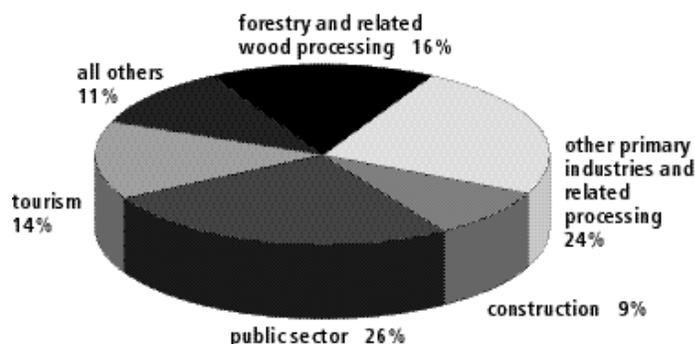
In January 1996, the chief forester set the AAC for the Cranbrook TSA at 850,000 cubic metres, a reduction of approximately six per cent from the previous AAC.

## Socio-economic profile

### Regional economy

The 1996 census indicates that the public service sector provided the largest component, 26 per cent, of employment in the area (see Figure 2). Primary industries and related processing, other than forestry, is the second largest sector, accounting for 24 per cent of the experienced labour force. Forestry and related wood processing is ranked third at 16 per cent of the workforce.

Most of the timber harvested in the Cranbrook TSA (associated with the current AAC of 850,000 cubic metres) is processed by local milling facilities. Total annual milling capacity is approximately 1.0 million cubic metres. To meet this requirement, additional wood supply for the mills is obtained from private lands, nearby TSAs and various other sources.



SOURCE: The 1996 Forest District Tables. Ministry of Finance and Corporate Relations. April 1999.

**Figure 2** Estimation of total employment by sector for the Cranbrook TSA.

The forest industry provides an important source of employment and revenue to the communities within the Cranbrook TSA. As part of the Timber Supply Review, socio-economic data have been collected regarding the forest industry.

Table 1 illustrates the potential contribution to both the regional and provincial economies of forest activities associated with the Cranbrook TSA timber supply.

	TSA	Provincial
Direct Employment(person years)	677	806
Total Employment(person years)	1,040	1,567
Total EmploymentIncome (\$'98 millions/year)	\$42.96	\$63.04
Provincial Government Revenues (\$'98 millions/year)	n.a.	\$26.46

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

Note: Employment estimates are based on the current AAC of 850,000 cubic metres per year. Provincial government revenue is based on average revenues from 1996 to 1998.

## Timber supply forecasts

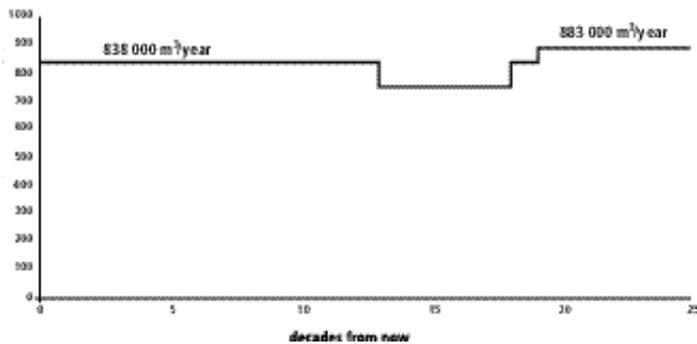
A timber supply computer model is used to project several possible timber supply forecasts for the next 250 years. One of these forecasts is the base case forecast, which illustrates the effect of current forest management on timber supply. The base case is not an AAC recommendation, but rather one of many sources of information that the chief forester will consider when setting the AAC for the Cranbrook TSA.

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.

As shown in Figure 3, the harvest level projected for the Cranbrook TSA starts at 838,000 cubic metres per year — the current AAC harvest level adjusted to account for 12,000 cubic metres associated with new woodlot licences issued since the previous AAC determination. Once woodlot licences are issued, they no longer contribute to the AAC for a TSA. The AACs for woodlot licences are set locally by the district manager.

The base case indicates that the current harvest level could be maintained for many years without requiring rapid reductions in future harvest levels or creating severe future timber disruptions. However, the level is forecast to decline temporarily during the transition from harvesting mainly the existing mature forests to harvesting managed forests. In the long term, the rate of harvest is projected to increase gradually to the long-term harvest level of 883,000 cubic metres per year.

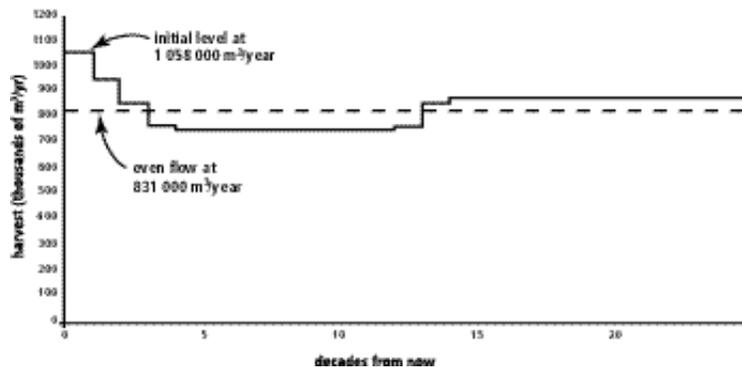
The timber supply analysis shows that the area projected to be harvested annually fluctuates around an average of about 4,000 hectares throughout the 250-year forecast period.



**Figure 3** Base case forecast for the Cranbrook TSA, 1999.

The harvest level projections in the 1999 timber supply analysis show a more stable timber supply than in the 1995 timber supply analysis. This result is mainly due to changes in the analysis methods for reflecting the management requirements for old-growth, visual quality and riparian habitat. The analysis also includes greater recognition of inoperable forests in achieving objectives for other values than timber, and lower unsalvaged loss estimates.

The base case forecast is only one of several possible harvest level projections. As shown in Figure 4, alternative timber supply projections can start at either higher or lower levels.



**Figure 4** Alternative timber supply projections for the Cranbrook TSA, 1999.

There is concern regarding the base case forecast due to the increasing forest health risk of the aging lodgepole pine forests in the TSA. Lodgepole pine is a pioneer species; if not harvested at or near maturity, it becomes increasingly susceptible to mountain pine beetle infestation or wildfires. In attempting to maintain a steady harvest flow over the long term, it is assumed in the base case that lodgepole pine will often be harvested beyond maturity.

The chief forester, in making his AAC determination, will carefully consider the base case and the alternative timber supply projections.

## Sensitivity analysis: 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 Cranbrook TSA, sensitivity analyses were conducted to examine the effects of uncertainty about several factors, such as the estimate of unsalvaged losses, the timber supply contribution from areas with steep slopes, and the impacts of managing for biodiversity. One critical issue is the potential increase in the size of the timber harvesting land base, as discussed below. For a complete list of issues, please refer to the *1999 Cranbrook TSA Analysis Report*.

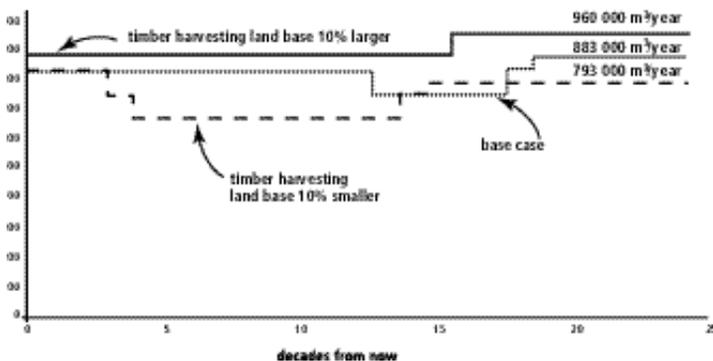
## Uncertainty about the size of the timber harvesting land base

The Cranbrook TSA is a large area, comprised of complex terrain and forest types. Determining how much of this area should realistically contribute to the timber supply—after reflecting environmental objectives—involves difficult decisions and projections about future economics and technology.

A postwood and special forest products inventory report was completed in January 1999 to evaluate the timber inventory for approximately 20,000 hectares of small diameter, densely spaced lodgepole pine forests that are not included in the timber harvesting land base in the analysis. The report shows that approximately 11,000 hectares may be suitable for harvesting posts and rails. This result indicates a potential opportunity to increase the harvest level in the short term, or to offset projected reductions in the long term. Copies of the report are available from the Cranbrook Forest District office.

As part of the Kootenay-Boundary Land-Use Plan, a fire-maintained ecosystem adjustment strategy has been completed. The strategy has three components that may potentially affect timber supply: restoring range land, maintaining open forest and managing fire-maintained forests.

During the development of the timber supply analysis, components of the strategy were included. However, subsequent planning has shown that not all of the area identified as requiring a one-time harvest for range restoration was included in the timber harvesting land base. There may be an additional 5,500 hectares of generally small trees that require a one-time harvest. Some of this additional area and timber supply may overlap with the postwood and special forest products land base and will be examined prior to the AAC determination.



**Figure 5** *Uncertainty about the size of the Cranbrook TSA timber harvesting land base, 1999.*

Figure 5 illustrates the potential timber supply impact of uncertainties about the size of the timber harvesting land base.

## Implications of changes in the AAC

### Environmental implications

Current forest management follows the standards set out by the Forest Practices Code. These standards are designed to maintain a range of biodiversity and wildlife values. In the Cranbrook TSA, about 43 per cent of the productive forested area is not considered available for timber harvesting and will provide for many environmental values. Forested area both in and outside of the timber harvesting land base will aid in the maintenance of critical forest habitats for many species.

### First Nations implications

Most of the First Nations people in the Cranbrook TSA are part of the Ktunaxa First Nations who have traditional territory within the TSA. The total First Nations population is estimated to be about 1,100 people.

The two First Nations communities in the TSA — St. Mary's and Tobacco Plains—have a combined population of approximately 400 people. These two communities are part of the Ktunaxa/Kinbasket Tribal Council, which has submitted a comprehensive land claim that covers the southeast corner of the province, including the Cranbrook TSA.

First Nations people work in the forest industry particularly in silviculture, fire fighting, and harvesting and processing; nonetheless, total employment is low. First Nations in this TSA are concerned about this low rate of forest-related employment, and about the effects of timber harvesting on fish and wildlife, and in areas with high cultural value.

Archaeological overview assessments have been completed to identify sites of potential archaeological significance. Information regarding archaeological studies will be considered in the Timber Supply Review.

### Community implications

The implication of changes in the AAC for local communities is an important consideration in the Timber Supply Review. The current AAC of

850,000 cubic metres, if fully harvested, supports approximately 677 person-years of direct employment and a further 363 person-years of indirect and induced employment within the Cranbrook TSA. The initial forecast indicates the current harvest level in the TSA could be maintained for up to 130 years; only after that are the harvest and associated employment levels projected to decline slightly. However, changes in markets and technology may impact these numbers even if timber supply remains constant.

## 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 *1999 Cranbrook TSA Analysis Report* and other issues related to the timber supply in the Cranbrook 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 B.C. Forest Service district manager at the address below. Your comments will be accepted until February 18, 2000.

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 requested, 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:

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Cranbrook Forest District  
1902 Theatre Road  
Cranbrook, BC  
V1C 6H3

Phone: (250) 426-1700  
Fax: (250) 426-1777 or electronically mail to  
Tom.Volkers@gems9.gov.bc.ca.

Visit our website at <http://www.for.gov.bc.ca/tsb>

# Background Information Regarding the Timber Supply Review

## 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 in which the forest will 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 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 forests when determining AACs. In these determinations, the chief forester considers relevant information from all sources.