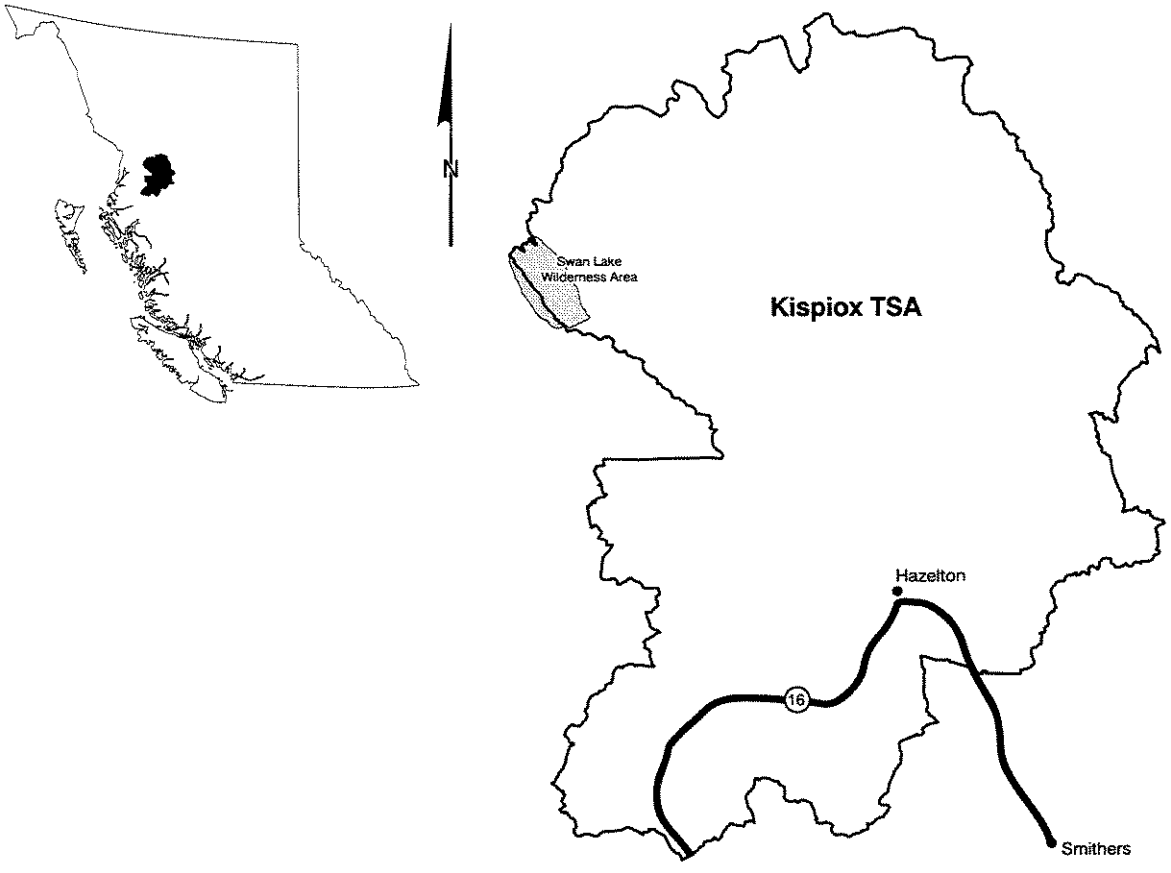
Kispiox Timber Supply Area

Timber Supply Review Discussion Paper
August 1996



BRITISH COLUMBIA
Ministry of Forests

Kispiox Timber Supply Area

Timber Supply Review Highlights

- The British Columbia Forest Service is reviewing the timber supply* in all timber supply areas* and tree farm licence* areas in the province. The review examines the impacts of current forest management practices* on the timber supply*, economy, and environment of the local area and the province. Based on the results of this review, the chief forester may decide to maintain or adjust the allowable annual cut* for the Kispiox Timber Supply Area.

- The current allowable annual cut in the Kispiox Timber Supply Area is 1.1 million cubic metres. Most of the Kispiox Timber Supply Area timber is processed by four sawmills and a whole log chipping plant in the area. The wood processing capacity in the district is higher than the allowable annual cut; thus, the district is normally a net importer of wood.

- Timber harvesting in the Kispiox Timber Supply Area supports approximately 583 person-years* of direct forestry employment in the area. An additional, 286 person-years of spin-off employment are estimated to be created through forest company and employee spending. About 45 per cent of all employment in the Kispiox Timber Supply Area is related to the forest industry. Other main sources of employment are public sector services, (government, education and health), tourism-related services and construction. There has recently been an increase in tourism related jobs and this trend is expected to continue as developments such as the Seven Sisters Ventures will attract more tourism to the area. Forestry related jobs have also increased, partially due to Forest Renewal B.C. watershed restoration projects and intensive silviculture projects in the Kispiox Timber Supply Area.

- Based on the best information available on forest management practices being implemented in 1995 when the timber supply analysis was initiated, the base case* timber supply forecast indicates the current allowable annual cut (1.1 million cubic metres) can be maintained for approximately 40 years (Figure 5). Beginning in the fifth decade the harvest level declines by 10 per cent per decade until it reaches a long-term harvest level of 630,000 cubic metres per year in decade 10. (page 7)

- Three factors suggest that the short-term timber supply may be lower than initially predicted:
  - the timber harvesting land base may be smaller than assumed in the base case due to land deferrals and access management concerns (page 7)
  - grizzly bear habitat identification and management may reduce the timber supply (page 8)
  - unsalvaged losses may be higher than assumed due to balsam bark beetle (page 8)

- Two factors may increase or decrease the timber supply:
  - the reduction for roads and landings may over or underestimate actual losses (page 8)
  - there is uncertainty about the lands classified as environmentally sensitive in the inventory file (page 8)

- The chief forester must determine an allowable annual cut as part of a strategy to achieve the projected long-term sustainable timber supply level. The base case forecast provides one alternative, but the chief forester may select other harvest levels based on his consideration of the factors required under Section 7 of the *Forest Act*.

- A Land and Resource Management Planning* process involving the public, interest groups and government agencies, has been completed for the Kispiox Timber Supply Area. Those aspects of the Land and Resource Management Plan which have been applied operationally have been included in the analysis.

*** Throughout this document, an asterisk at the end of a phrase indicates the phrase is defined in the definition section on the back of this page.**

Definitions

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

Base case forecast
The timber supply forecast that illustrates the effect of current forest management practices on the timber supply using the best available information.

Current forest management practices
Forest practices that were being approved and implemented in the timber supply area when this review was initiated. These practices are described in this paper starting on page 5.

Environmentally Sensitive Areas
Areas identified as requiring special management to protect important recreation and scenic values, fish and wildlife resources, sensitive soils and unstable slopes.

Forest licence
An agreement with the provincial government which grants a private interest the right to harvest a specific volume of timber each year from Crown land within a timber supply area.

Forest Practices Code
A law which requires high quality forest practices, with heavy penalties for violators. Implementation of the Code began on June 15, 1995.

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

Land and Resource Management Plannuing
A consensus-building process involving a cross-section of the public, interest groups and government agencies, to recommend resource management objectives and strategies in a defined area for consideration and approval by Cabinet.

Person-year
For the forest sector, a person-year is defined as the equivalent of one person working full-time for nine to 12 months. For example, one person working full-time for five to six months accounts for 0.5 person-years.

Protected Areas Strategy
A provincial initiative to protect representative ecosystems and special features on a regional basis.

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

Timber harvesting land base
Crown forest land within the timber supply area that is currently considered feasible and economical for timber harvesting.

Timber supply
The volume of timber available for harvesting over time, under a particular management regime.

Timber supply area
An area of Crown land defined in accordance with the *Forest Act* primarily by an established pattern of wood flow from the forest to the primary timber-using industries.

Tree farm licence
An agreement entered into with the provincial government which provides for the establishment, management and harvesting of timber by a private interest on a defined area of Crown land in accordance with the *Forest Act*.

Kispiox Timber Supply Area

Introduction

The British Columbia Forest Service is reviewing the timber supply in all timber supply areas* and tree farm licence* areas in the province. The objectives of this review are to:

- identify the economic, environmental and social consequences of existing forest management practices—including their impacts on the short- and long-term timber supply
- identify where improved information is required to make reliable forecasts
- provide the chief forester with information to make necessary adjustments to the allowable annual cuts for the next five years.

This discussion paper summarizes the technical reports for the Timber Supply Review in the Kispiox Timber Supply Area and encourages British Columbians to comment on the findings. Public comments will be accepted until October 16, 1996. You will find a response form at the end of this paper to help you provide input.

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 economy and environment—now and in the future. Section 7 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 licences:

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 judgment based on the best information that is available. By law, the chief forester is independent of the political process and is not directed by the minister of forests when determining allowable annual cuts. In these determinations, the chief forester considers relevant information from any source, including interest groups. However, these determinations cannot be inappropriately influenced by the advocacy efforts of any group.

Timber Supply Review process

The Timber Supply Review is an improvement over past methods, with better information and superior analytical techniques. The process was designed to stimulate public discussion through the release of reports and this discussion paper, and to accommodate new information, techniques and ideas.

A five-step process has been developed for the Timber Supply Review in timber supply areas:

- Timber Supply Analysis Report
- Socio-Economic Analysis
- Public Discussion Paper
- Public input period
- Allowable Annual Cut Determination Rationale

In July 1992, the Kispiox Resource Management Plan Socio-Economic Impact Assessment was published by the Economics and Trade Branch of the Ministry of Forests. Although the report is four years old, staff in the Economics and Trade Branch feel that the basic information contained the report is useful for the Kispiox Allowable Annual Cut determination. However, some sections of the impact assessment have been updated and this current information has been included in this discussion paper.

A commitment to incorporate change

The *Forest Act* requires the chief forester to reassess the allowable annual cut for each timber supply area and tree farm licence area at least every five years after this review is completed to incorporate new information, new practices and government policies. Implementation of major government initiatives such as the Forest Practices Code*, the Protected Areas Strategy* and the land-use recommendations of Land and Resource Management Plans may have significant impacts on the timber supply in specific timber supply areas and tree farm licences. In these cases, the chief forester may decide to determine the allowable annual cuts more frequently than every five years.

Forest Practices Code

The *Forest Practices Code of British Columbia Act* became law on June 15, 1995. This law requires better forest practices throughout the province, and establishes heavy penalties for violators. As the Code is implemented, forest management practices are being changed to meet its requirements. These new practices may influence both short- and long-term timber supply.

As the *Interim Timber Harvesting Guidelines for the Interior Portion of the Prince Rupert Forest Region*, have been implemented in the Kispiox Timber Supply Area for some time, extensive changes in forest management practices are not anticipated to meet the requirements of the Code. Information will be provided to the chief forester on the timber supply impacts of these practices for consideration in this allowable annual cut determination. In some cases, however, further implementation and experience with the Code will be required before the timber supply effects of new practices can be properly assessed, making it necessary to incorporate some factors in future allowable annual cut determinations.

Land and Resource Management Plan

From late 1989 to November of 1991, a planning group consisting of approximately 40 people representing various community perspectives met with government representatives and developed the "Kispiox Resource Management Plan" which was a consensus agreement on land use in the Kispiox TSA. A "Harvest Level Committee" made up of people who were part of the original planning group that developed the "Kispiox Resource Management Plan" was convened in 1992 to recommend an Annual Allowable Cut for the next five years, a transition rate to the long run sustained yield of all forest resources and the actions needed to make that transition while minimizing hardship in local communities. These recommendations will be considered along with other public input and the minister's statement of the social and economic objectives of the Crown when the chief forester determines the AAC for the Kispiox TSA.

In 1994 a core group of six individuals, who had been instrumental in developing the 1991 consensus on land use, again met with government agencies to forward the Kispiox Resource Management Plan to senior government as the Consensus Management Direction. In June of 1995, Provincial Cabinet accepted the majority of the recommendations in the Consensus Management Direction and directed local government agencies and the public to write a formal Land and Resource Management Plan based on the Consensus Management Direction. This was done and the resulting Kispiox Land and Resource Management Plan (LRMP) is now before Cabinet for final approval. Aspects of the LRMP which are being operationally applied have been incorporated into the timber supply analysis.

Protected Areas Strategy

Due to their recent cabinet approval as new protected areas, the Babine Wilderness Area and the Swan Lake Wilderness Area have been excluded in the base case analysis. The Upper Kispiox Study Area and the Seven Sisters Study Area within the Kispiox Timber Supply Area have been proposed as study areas and areas of interest under the Protected Areas Strategy. These areas are being studied through Local planning processes but, until final decisions are made on these areas by Cabinet, the chief forester will not consider the impact on timber supply of removing them from the timber harvesting land base*. These areas have therefore been included in the timber harvesting land base for this review.

Timber Supply Review in the Kispiox Timber Supply Area

Forest Service staff in the Kispiox Forest District finalized the data for the timber supply analysis in December, 1995. The Forest Service then conducted and released a short- and long-term timber supply analysis (*Kispiox Timber Supply Analysis*, August, 1996). A summary of the data and assumptions used in the analysis occurs in Appendix A of that report. This report and the "Kispiox Resource Management Plan Socio-Economic Impact Assessment" are available from the Kispiox Forest District office in Hazelton and the Prince Rupert Forest Region office in Smithers.

This discussion paper summarizes these two reports and highlights critical factors the chief forester must consider to determine the allowable annual cut for the Kispiox Timber Supply Area. In conjunction with the release of this discussion paper, Forest Service staff will actively solicit public input to ensure the information in the Timber Supply Review is correct. Input will be accepted until October 16, 1996 and will be summarized in a report to the chief forester and the minister of forests.

After considering all of these factors, the chief forester will determine the allowable annual cut for the Kispiox Timber Supply Area before the end of 1996. This determination and a *Rationale Statement* for the determination will be released to the public with the *Summary of Public Input*.

Throughout this discussion paper the page numbers from the technical reports are provided so you can refer to them for additional information (*TSAR* is the *Kispiox Timber Supply Analysis Report*, and *SEA* is the *"Kispiox Resource Management Plan Socio-Economic Impact Assessment"*.

Description of the Kispiox Timber Supply Area

The Kispiox Timber Supply Area covers 1,222,624 hectares in north-central British Columbia. The Kispiox Forest District is situated around the confluence of the Skeena and Bulkley Rivers. Other major rivers flowing through the district are the Babine and Kispiox Rivers. Topography within the district is mountainous with large valley bottoms dissecting the district.

Forest resources

Timber

Figure 1 shows that 26 per cent of the land base is presently included in the timber harvesting land base — the area suitable and available for timber harvesting with current land management objectives and harvesting methods. The remainder of the land base is either not managed by the B.C. Forest service, is not forested or is not suitable for timber harvesting, due to uneconomical timber, severe reforestation difficulties, slope instability, low productivity, environmental sensitivity or wildlife habitat concerns. (*TSAR* pages 8-9)

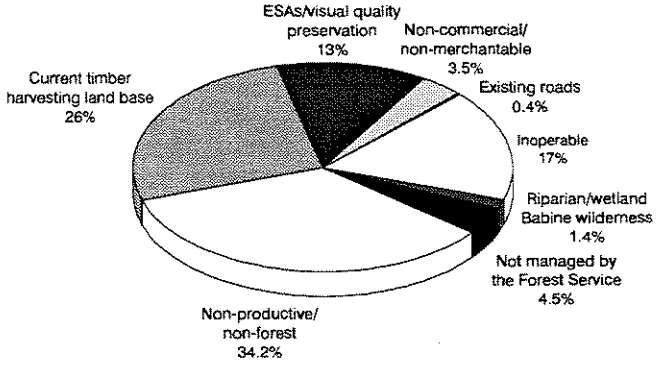


Figure 1 *Classification of the land within the Kispiox Timber Supply Area*

Figure 2 shows that western hemlock and subalpine fir (balsam) dominate the forests in the Kispiox Timber Supply Area, with some spruce on sites with higher moisture level. The majority of the spruce and pine is found on sites that have been regenerated. Due to the relatively short harvesting history within the timber supply area, approximately 60 per cent of the timber harvesting land base is composed of forests older than 200 years (total area 192,000 ha). These older forests are frequently diseased and have a high degree of rot. (*TSAR* pages 10-11)

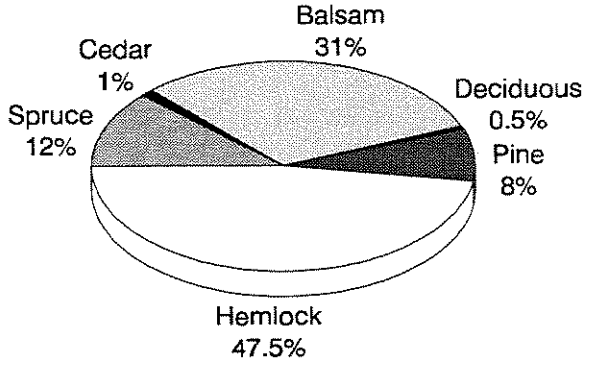


Figure 2 *Area occupied by the dominant commercial tree species in the timber harvesting land base*

Wildlife and fisheries

The Kispiox Forest District is in a zone of transition between coastal and interior ecosystems. Distinct ecological features as well as the unique nature of the forests in this transitional zone contribute to high biodiversity values. Habitats within the district are used by significant populations of grizzly bear, black bear, mountain goat and moose. The forests also provide habitat for songbirds, raptors and owls, marten, fisher, other medium sized carnivores and many smaller mammal species. Many of these species are dependent upon the mature and old forest ecosystems occurring within the Kispiox District.

The Skeena River and its tributaries is a highly productive system for many fish species. This system provides important spawning habitat and migration routes for chinook, coho, sockeye and pink salmon. The Kispiox, Bulkley, Babine, Kitsequecla and Suskwa Rivers provide critical habitat for steelhead stock, whose population has been declining. Bull trout, a species of special concern due to its sensitivity to angling pressure and spawning habitat disturbance, also occur within the Kispiox District.

Recreation and tourism

The many rivers and mountainous terrain in the Kispiox Timber Supply Area provide a wide range of recreational opportunities. Hiking, mountain biking,

hunting, fishing, rafting, climbing, paragliding, boating, back-country recreation and wildlife viewing are common activities for residents and tourists in the summer months. In the winter, snowmobiling, ice fishing and cross-country skiing are popular. The highway travel corridors are also highly valued for their scenery. It is expected that recreation and tourism activities will continue to grow in the future.

Current allowable annual cut

The total allowable annual cut in the Kispiox Forest Timber Supply Area is 1.1 million cubic metres. Approximately 73 per cent of the allowable annual cut is allocated to long-term forest licences*, 23 per cent is harvested through the Small Business Forest Enterprise Program administered by the Forest Service, one per cent is allocated to woodlot licences and three per cent is unallocated.

Socio-economic profile

In July 1992, as part of the Kispiox Resource Management Plan, a Socio-Economic Impact Assessment of the Kispiox Timber Supply Area was released. Much of the information contained in that document remains relevant and hence that report serves as the foundation for the following socio-economic information. Community population, industry employment, and forest sector information, however, have been updated in this report using more recent data.

Population

The Kispiox Timber Supply Area includes the District of New Hazelton (1994 estimated population 819) the Village of Hazelton (1994 estimated population 355) the communities of Cedarvale, South Hazelton, Two Mile, Kitwanga, Kispiox Valley, Kitseguecla, Glen Vowell, Kitwancool and Hagwilget. The 1994 estimated total population of the timber supply area was approximately 6200.

First Nations

The Gitxsan, Carrier-Sekani, Nisga'a, Gitanyow and Wet'suwet'en First Nations traditional territories overlap the Kispiox Timber Supply Area. There are six Gitxsan aboriginal bands residing in the planning area, the Gitanmaax at Hazelton, Gitsegukla at Kitseguecla, Sikadoak at Glen Vowell (includes Kuldo and Kisgegas), Kispiox at Kispiox, Gitwangak at Kitwanga and Gitanyow at Kitwancool. There is also one Wet'suwet'en band at Hagwilget near New Hazelton.

Local economy

Figure 3 illustrates the total local employment dependencies by industry in the Kispiox Forest District. As the graph indicates, the local economy in the Kispiox Timber Supply Area is heavily dependent on forestry, supporting over 60 per cent of the non-government sector employment.

Tourism and recreation industries arising from the beautiful scenery, wildlife populations and varied outdoor activities are also important economic factors. Tourism activity tends to be part-time and seasonal with most visitors arriving between May and October. Sports fishing in the Kispiox, along with significant wildlife populations (including moose, deer and black bear), help drive summer tourism which supplements employment and income for local merchants and outdoor guides. Other major sources of employment are public sector services, (government, education and health) and construction.

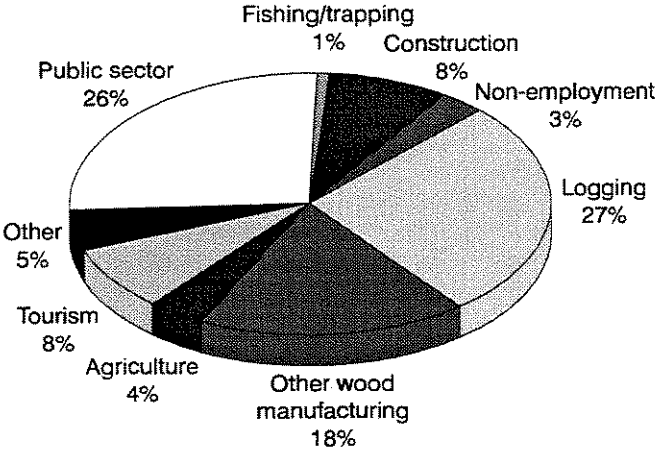


Figure 3 Kispiox Forest District Employment Dependencies

Forest sector

Approximately 20 logging companies and contractors operate in the timber supply area. The Kispiox Timber Supply Area produces a variety of different sized logs as well as a relatively large pulp log component. These factors lead to complicated wood flows between companies attempting to obtain the most appropriate size and quality of log for their operation. On average, 10 to 15 per cent of the timber supply area harvest is exported from the area. However, when all sources of wood (including wood from other timber supply areas and private lands) are included, mills located within the Kispiox Timber Supply Area are considered net importers of fibre.

Most of the Kispiox Timber Supply Area timber is processed by four sawmills and a whole log chipping

plant. In recent years virtually all of the wood chips produced in these facilities were processed at the Skeena pulp mill at Prince Rupert. The Repap Enterprises Inc. (formerly Skeena Cellulose Inc.) mill at Carnaby employs approximately 144 people. Also located within the timber supply area is the Repap chip mill at New Hazelton, employing approximately 15 people. Repap also operates two sawmill facilities located outside the timber supply area—one at Terrace and the other at Smithers.

The mill operated by Kispiox Forest Products Ltd. (formally known as Isolite-Stege) employs approximately 88 people at South Hazelton. C GED Forest Products Ltd. (formally operated by Westar) and Kitwanga Lumber Company Ltd. employ 50 and 42 people, respectively, at Kitwanga. Companies located within the Kispiox Timber Supply Area also process timber from other timber supply areas, private land, Reserve land, and the Small Business Forest Enterprise Program.

Harvesting, processing and silvicultural activities relating to the current allowable annual cut in the Kispiox Timber Supply Area generate an estimated 583 person years of direct forestry employment within the timber supply area. An additional 286 person years of spin-off employment are estimated to be created through forest company and employee spending. In total, the current allowable annual cut generates approximately 869 person years of employment in the Kispiox Timber Supply Area.

Provincial economy and revenues

Provincially, it is estimated that timber harvested in the Kispiox Timber Supply Area generates approximately 2233 person years of employment throughout the province. Approximately 39 per cent of this occurs within the Kispiox Timber Supply Area.

Approximately $28.4 million in provincial government revenues are generated annually by timber harvesting in the Kispiox Timber Supply Area. In addition, approximately $15.4 million in federal government revenues are also generated annually. These figures are based on the average total fees for harvesting public timber in the area, plus estimated personal income taxes and corporate tax revenues. These estimates include the increased stumpage revenues being generated to fund the Forest Renewal Plan.

Management practices

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

The timber supply analysis was based on management practices implemented in the Kispiox Timber Supply Area in late 1995, when this analysis was initiated. Readers are encouraged to review the *Kispiox Timber Supply Analysis Report,* 1996 (pages 13-15 and Appendix A) for more detailed information.

Management zones and integrated resource management practices

For the timber supply analysis, Forest Service staff divided the timber harvesting land base into management zones by grouping areas where similar integrated resource management practices are implemented. This approach permits an analysis of the different types of forests and the range of practices in the Kispiox Timber Supply Area. The area in each zone was estimated from the *Kispiox Land and Resource Management Plan* and existing plans in the timber supply area. Site specific practices implemented in any one area may differ from the practices used in the analysis for each zone.

The portion of the timber harvesting land base in each management zone is shown in Figure 4 . This information used in the analysis to account for the integrated resource management practices in each zone is described below.

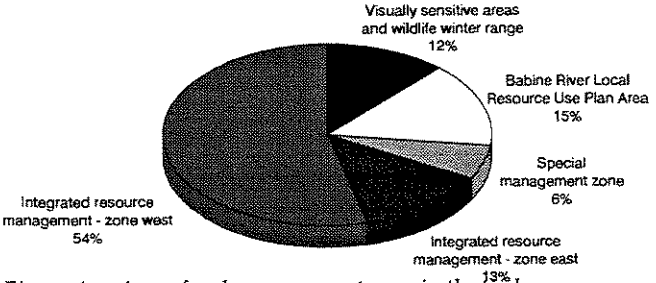


Figure 4 *Area of each management zone in the timber harvesting land base*

All areas in the following section refer to the timber harvesting land base. The total area in each of these management zone would be larger.

- **Visually sensitive zones** (38,665 hectares) — important viewscapes from Upper Skeena, Babine and Kispiox Rivers, Swan Lake and from Highways 16 and 37. The management objective is to maintain sufficient forest cover to limit visible changes in the landscape. Two zones have been identified based on visual quality objectives:

- moderately visually sensitive (partial retention) zone (27,951 hectares) — In this zone at least 12.2 per cent of the timber harvesting land base must have trees at least six metres tall at any time.
- most visually sensitive (retention) zone (10,714 hectares) — In this zone at least 2.6 per cent of the timber harvesting land base must have trees at least six metres tall at any time.

- **Wildlife winter range** (739 hectares) — areas mapped as prime winter habitat for deer. At least 15 per cent of the timber harvesting land base within this zone can only be harvested every 150 years, and at least six per cent of the timber harvesting land base within this zone must be greater than 150 years old at any one time.

- **Babine River Local Resource Use Plan** (47,768 hectares) — The Babine River Land and Resource Use Plan area has been subdivided into the following zones:
  - special management zone (5,319 total hectares.) — at least 30 per cent of the timber harvesting land base must be greater than 140 years at any one time.
  - sub boreal spruce subdrainage (17,042 hectares) — no more than 33 per cent of the timber harvesting land base may have forests less than three metres tall at any time, and a minimum of 30 per cent of the area would be required to have forests older than 80 years at all times.
  - englemann spruce sub alpine fir subdrainage (25,407 hectares) — a maximum of 30 per cent of the timber harvesting land base may have area less than three metres tall at any time, and a minimum of 50 per cent of the area must have forests older than 80 years at all times.

- **Special management zone** (20,354 hectares) — In the first three special management zones, harvesting has been deferred for 10 years to allow for collection of data on the different values in these areas and the preparation of appropriate plans. Within each of these zones no more than 33 per cent of the timber harvesting land base is permitted to have forests less than three metres tall at any time. In addition, a maximum of 22 per cent of the forested landscape can be less than six metres at any time. The special management zones are:
  - East Kispiox/Kuldo (741 hectares)
  - Atna/Shelagyote (158 hectares)
  - Rocher De Boule (851 hectares)
  - Seven Sisters (7,393 hectares)
  - Upper Kispiox (11,211 hectares)

- **Integrated resource management zone** (210,391 hectares) — includes the remaining timber harvesting land base not assigned to another zone. In this zone, a maximum of 33 per cent of the timber harvesting land base can be less than three metres tall at any time. In addition, a maximum of 22 per cent of the forested landscape can be less than six metres at any one time. This area has been sub-divided into the IRM west zone (170,249 hectares) and the IRM east zone (40,142 hectares)

Current practices

The current forest management practices that are approved and implemented in each zone are briefly described below.

- **Basic silviculture** — British Columbia laws require areas that are harvested and expected to produce timber in the future to be reforested with ecologically acceptable species within a specified time frame. The most common silvicultural practice is to clear-cut harvest with patch retention, site prepare if required: reforest by planting and control competing vegetation if needed. In addition, selection management is being practiced in some forest stands. It is assumed that, on average, harvested areas will be restocked within two to three years.

- **Unsalvaged losses** — Timber losses due to wildfire, insects, diseases and wind are minimized as much as possible, and damaged timber is harvested when possible. Unsalvaged losses of merchantable timber to fire are expected to be approximately 5,932 cubic metres per year. Losses due to balsam bark beetle are undetermined at this time.

- **Wildlife/biodiversity** — Many of the forest cover requirements described in *Management zones and integrated resource management practices* above are designed to protect and maintain wildlife and general biodiversity values. In addition, the forests that were deducted from the timber harvesting land base, including environmentally sensitive areas, forests dominated by deciduous trees, and forests that have been uneconomical to harvest contribute to wildlife habitat and biodiversity.
  - stand level biodiversity has resulted in a five per cent volume reduction on 50 per cent of the cutblocks (as per the *Kispiox Land and Resource Management Plan*).
  - riparian* reserve zones, as per the Forest Practices Code, have been deducted from the timber harvesting land base. This amounts to 15,074 hectares (two per cent) of the productive forest land being excluded from harvesting.

- **Harvestable ages** — Minimum harvestable age is defined as the time it takes for forests to grow to harvestable size. For the timber supply analysis, minimum harvestable ages for existing forests were based on species and timber productivity, and ranged from 95 to 170 years. For regenerated

forests, minimum harvestable ages were defined as being between 65 and 135 years.

- **Timber utilization** — Within cutblocks, all timber that meets or exceeds the following size limits and is suitable for manufacturing lumber or pulp chips must be utilized:
  - lodgepole pine — diameter at stump height: 15 centimetres
  - other species — diameter at stump height: 20 centimetres

- **Roads and landings** - Road building and harvesting layout follow provincial and regional standards. For the timber supply analysis, 9.2 per cent of the timber harvesting land base with forests up to 40 years old was deducted for existing roads and landings. To account for future roads and landings, the remaining timber harvesting land base was reduced by 9.2 per cent following harvesting.

Timber supply forecasts and critical factors

It is important to understand that the timber supply forecasts presented in the analysis report and in this paper do not represent either a short-term allowable annual cut determination or a long-term strategy to adjust harvest levels. The base case forecast and the critical factors described below will be considered by the chief forester to determine the allowable annual cut for the next five years.

Base case forecast

To complete the timber supply analysis for the Kispiox Timber Supply Area, a computer model was used to generate a base case* timber supply forecast using the following principles:

- maintain the current allowable annual cut for as long as possible, or if this was not possible, find the maximum initial harvest level
- if the predicted long-term sustainable timber supply level was lower than the initial harvest level, reduce the timber supply level within a defined range of eight to 12 per cent per decade, until the long-term level was reached
- if possible, maintain the timber supply at or above the predicted long-term sustainable level at all times

Using the best information available when the analysis was started in 1995 and meeting the conditions described above, the base case forecast for the Kispiox Timber Supply Area indicates the current allowable annual cut of 1.1 million cubic metres can be maintained for approximately 40 years (Figure 5). Beginning in the fifth decade the harvest level declines by 10 per cent per decade until it reaches a long-term harvest level of 630,000 cubic metres per year in decade 10. (*TSAR* page 17-23)

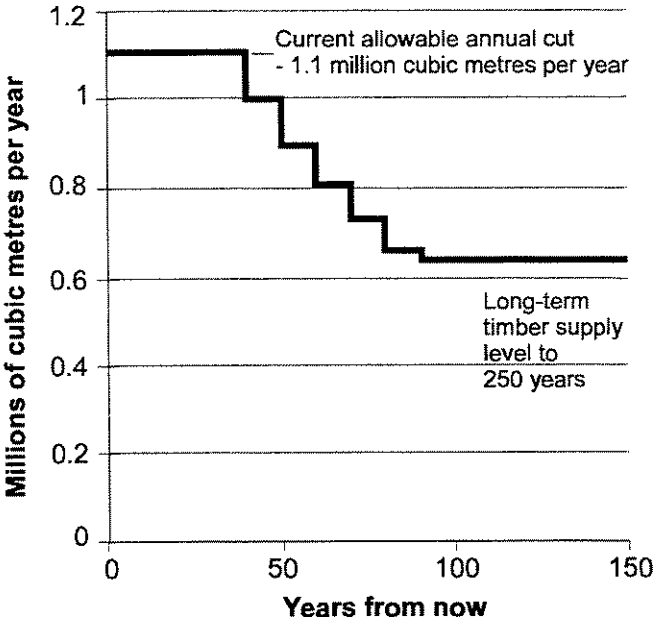


Figure 5 Base case timber supply forecast

Examining critical factors

Since 1995 when the data was prepared for the timber supply analysis, Forest Service staff have been collecting more information for some of the factors in the analysis. Also, tests completed during the timber supply analysis identified which factors had the greatest effect on the timber supply forecasts. These critical factors are discussed in this section. Other factors were tested and are discussed in the *Kispiox Timber Supply Analysis Report* (pages 24 to 38) but were not considered critical to this review and therefore are not included in this discussion paper.

The chief forester must carefully evaluate this information when assessing the allowable annual cut and identifying where improved information is needed. We encourage you to do the same.

Factors indicating the short-term timber supply may be lower than predicted in the base case

- **Size of the timber harvesting land base.** In the timber supply analysis, the definition of the

timber harvesting land base was based on the best available information about forest values, and the physical and economical feasibility of harvesting with current technology. However, there are several areas within the timber harvesting land base that are presently deferred from harvesting or have access management concerns. While the *Kispiox Land and Resource Management Plan* has solved many of the land use issues in the planning area, to date there has been very little, if any, timber harvesting in the northern portion of the Kispiox Timber Supply Area. Figure 6 shows that failure to access the northern portion of the timber harvesting land base would have an impact on short-term timber supply (*TSAR* page 31).

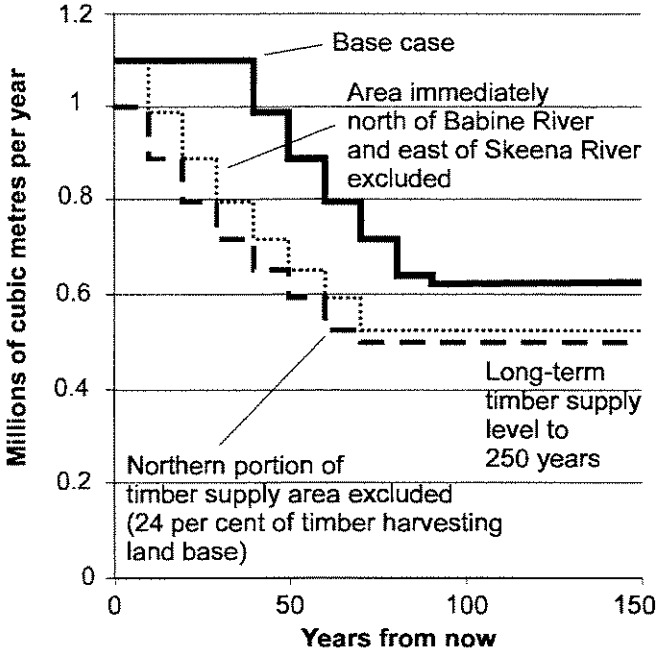


Figure 6 Impacts of changes in the size of the timber harvesting land base

- **Wildlife**
  Since evaluation of grizzly bear habitat and management requirements was not available at the time the analysis was initiated, grizzly bear management practices were not explicitly assessed in this review. Management for grizzly bear habitat may reduce the projected timber supply.

- **Unsalvaged losses**
  Recent studies in other areas and visual observations indicate timber losses due to the balsam bark beetle are higher than estimated in the forest inventory, particularly in forests where balsam is the major species and the trees are more than 120 years old. The district intends to complete studies to verify the timber losses due to the balsam bark beetle. Improved estimates will be available for the next timber supply analysis.

Factors indicating the short-term timber supply may be higher or lower than predicted in the base case

- **Roads and landings**
  In the timber supply analysis, 9.2 per cent of the timber harvesting land base with forests up to 40 years old was deducted for existing roads and landings. The remaining timber harvesting land base was reduced by 9.2 per cent following harvesting to account for future roads and landings. Further studies will be required to ensure the accuracy of the per cent reduction for roads and landings. The per cent reduction for roads and landings may be more or less than what was estimated.

- **Environmentally sensitive areas**
  In the timber supply analysis 157,302 hectares of forested land was removed as environmentally sensitive. A large portion of this area was removed due to problems with regeneration. District staff feel that further studies are required to determine the accuracy of these reductions. The amount of forested area classified as environmentally sensitive may be more or less than that shown in the inventory file.

Other factors which may impact the timber supply

- **Maintaining older forests**
  The *Kispiox Land and Resource Management Plan* includes an objective of maintaining 12 per cent of the forested area in forests older than 200 years, distributed throughout the landscape. Forest cover requirements for the visually sensitive, riparian, and deer winter range zones will aid in maintaining adequate older forests. In addition, areas not included in the timber harvesting land base such as environmentally sensitive areas, inoperable forest and problem forest types will provide older forests. In the base case, this old-growth requirement was not directly modeled; thus, a sensitivity analysis was completed to determine if there would be any impact on timber supply from this guideline. Figure 7 illustrates that, while there is no short-term impact of applying the old growth guideline there is a drop in the harvest level during the mid- and long-term. (*TSAR* page 34)

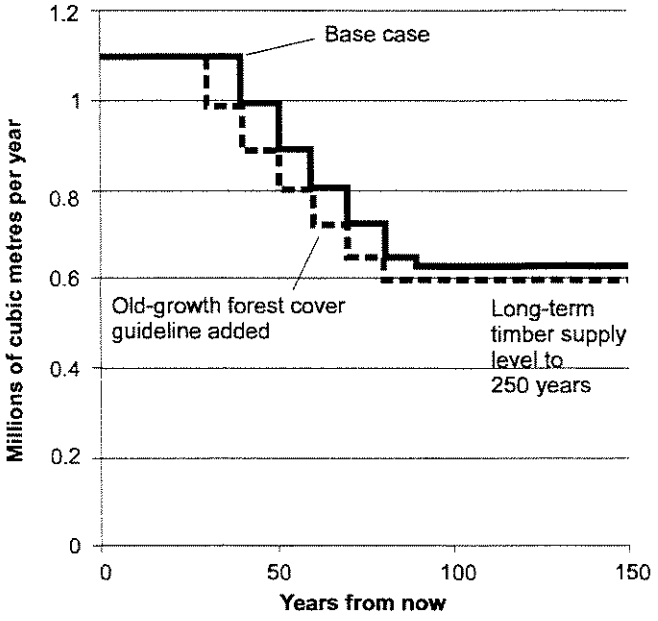


Figure 7 Impact of changes to the requirements to maintain older forests

Environmental and socio-economic impacts

Environmental concerns

The base case forecasts harvesting levels that may affect fish, wildlife and biodiversity. These levels will create younger forests on much of the area and this could have negative consequences for wildlife species that depend on older forests. Small, dispersed cutblock harvesting will increase fragmentation and may affect those species requiring extensive undisturbed tracts of mature forest. However, the increase in younger forests could potentially result in increased habitat for some species such as moose, deer, black bears and many small mammals.

If not properly managed, increased road access may have negative impacts on wildlife and fisheries species through increased hunting and angling pressure. Access may also have a negative impact on sensitive habitats.

First Nations impacts

As no reduction in the harvest level is indicated for the short- and medium-term, there will be no direct impact on employment of First Nations people, working in forest related activities within the Kispiox Timber Supply Area. In the long-term, the impacts on those employed in the forest industry would be the same as for the general population. It is notable that First Nations are concerned with their ability to access a share of the allowable annual cut in the near future to assist with economic development.

Conflicting resource uses in traditional territories are also of concern. Specifically, the impact of past harvesting practices on wildlife habitats, trapping and traplines, aquatic habitats and the fisheries resource, and cultural/historical values is seen as critical. Trapping in particular is culturally important and is often in direct conflict with harvesting. Unchanged harvest levels will likely continue to impact these activities, but this is an area where cooperative initiatives could prove beneficial.

Incomplete information on the location of cultural/historical sites currently exacerbates the conflicts. Comprehensive inventories of First Nations cultural heritage areas and areas of traditional use have been initiated but are not complete. As inventories are completed, areas may need to be removed from the timber harvesting land base and harvesting practices may need to be modified in order to protect aboriginal rights. This could impact the short- and long-term timber supply.

The Gitxsan Treaty Office, the Wet'suwet'en, the Gitanyow Heriditary Chiefs, the Nan'oot'en and the Tsimshian in the Kispiox Timber Supply Area have registered an intent to negotiate a land claim through the B.C. Treaty Commission process. These groups often see treaty negotiations and forest resource management goals as being closely linked.

Community and provincial impacts

The impact of timber supply adjustments on local communities and the provincial economy is an important consideration in the timber supply review. Communities in the Kispiox Timber Supply Area recognize the importance of the timber industry in their economy, and have expressed concern about possible changes in timber supply resulting from this review and other government initiatives, such as the Forest Practices Code and the Protected Areas Strategy.

Chief forester's determination

The chief forester must determine an allowable annual cut as part of a strategy to achieve the projected long-term sustainable timber supply level. The base case forecast provides one alternative, but the chief forester may select another harvest level based on his consideration of the factors required under Section 7 of the *Forest Act* which are listed on page one of this paper.

Your input is needed

The allowable annual cut is an important determination requiring well-informed and thoughtful public input. We ask you to answer the questions on the response form at the back of this paper. We encourage you to add any additional comments you feel are relevant. If you prefer, additional comments or a detailed submission may be written on separate pages.

Feedback is welcomed on any aspects of this *Discussion Paper*, the *Timber Supply Analysis Report* and the *Socio-Economic Impact Assessment*, and other topics related to the timber supply in the Kispiox Timber Supply Area. Forest Service staff would be pleased to discuss questions or concerns that would help you prepare your response.

Please mail the completed questions and your comments to the forest district manager at the address below. Your comments will be accepted until October 16, 1996.

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 the responses are requested, personal identifiers will be removed before the responses are released.

A summary of public comments will be available from the district manager when the chief forester's allowable annual cut determination is announced.

For more information contact:

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Kispiox Timber Supply Area
Timber Supply Review

Discussion Paper Response Form

The *Forest Act* requires the chief forester to consider the following factors to determine the allowable annual cut for timber supply areas and tree farm licence areas:

- the rate of timber production that can be sustained from the area
- the short- and long-term implications for the province of alternative rates of timber harvesting from the area
- the timber requirements of established and proposed timber processing facilities
- the economic and social objectives of the Crown, as expressed by the minister, for the area, the general region, and the province
- abnormal pest infestations in the timber on the area and major salvage programs that are planned

The technical reports that have been prepared for the Timber Supply Review of the Kispiox Timber Supply Area provide information on these factors. We welcome further input from the public to ensure the best available information is used in the allowable annual cut determination. Please provide your comments on this form, or in another format by October 16, 1996.

A. Economic and social objectives

Please use the space below to provide your comments regarding the economic and social objectives you believe should be considered in determining the allowable annual cut for the Kispiox Timber Supply Area.

B. Technical forestry factors and impacts of alternative rates of harvest

Please use the space below to provide any information which you believe may assist the chief forester in considering the technical factors to determine the allowable annual cut for the Kispiox Timber Supply Area. Further information on the critical factors outlined on pages 7 to 8 in this paper would be most helpful.

Which community sector listed below best describes your interests?

- ☐ local business
- ☐ outdoor tourism
- ☐ general public
- ☐ First Nation
- ☐ timber industry
- ☐ environmental conservation
- ☐ other (please define)_____
- ☐ government agency (please identify)

Name (optional) _____

Address (optional) _____

Mail your comments to:

Sharon Robertson
District Manager
Kispiox Forest District
Box 215
Hazelton, B.C.
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