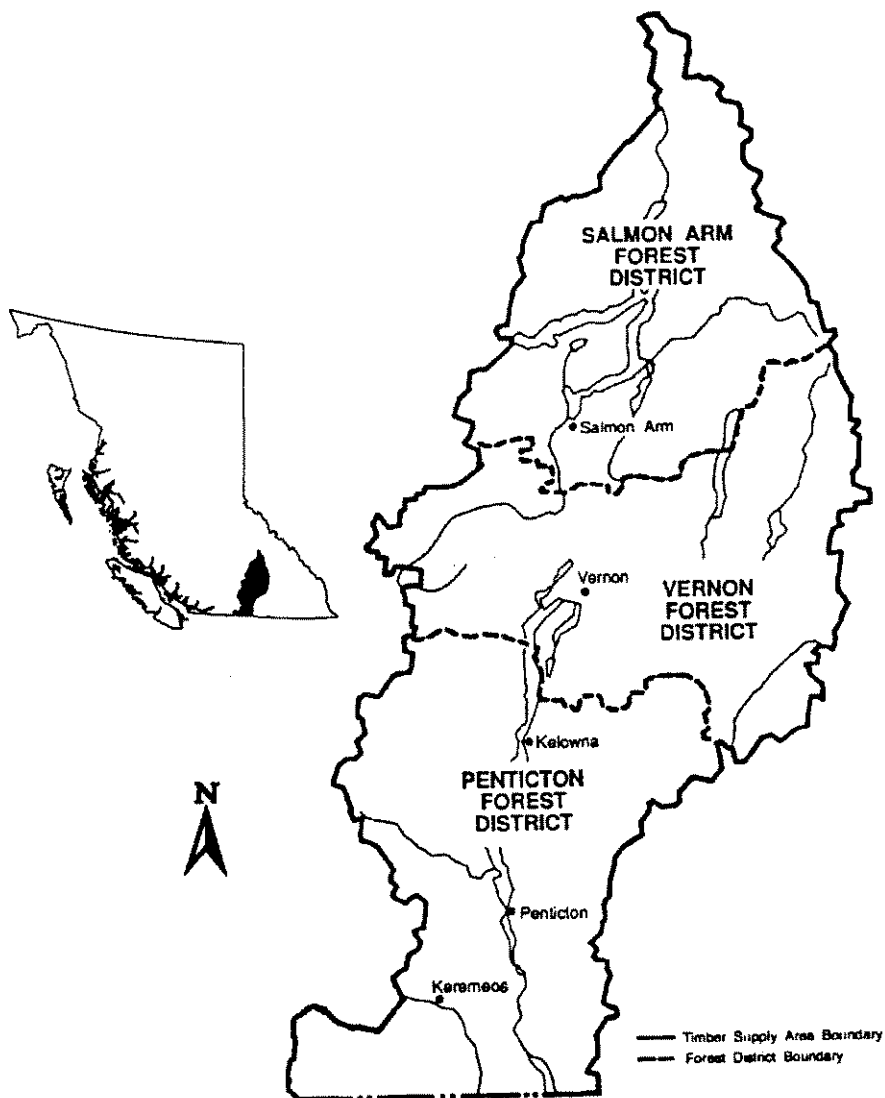




MINISTRY OF FORESTS

Okanagan Timber Supply Area

Timber Supply Review Discussion Paper
October 1994



Province of
British Columbia
Ministry
of Forests

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Timber Supply Review Highlights

- The British Columbia Forest Service is reviewing the timber supply for all timber supply areas* and tree farm licence areas* in the province. The review examines the impacts of current, integrated resource 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 adjust the allowable annual cut* for the Okanagan Timber Supply Area*.
- The current allowable annual cut of 2,615,000 cubic metres per year in the Okanagan Timber Supply Area provides 63 per cent of the wood supply for local mills with the rest coming from outside or from lands not considered to be in the timber supply area. (page six)
- A total of 6,384 person-years of employment* are created within the timber supply area from the current allowable annual cut. An additional 2,116 person-years are created provincially from the current harvest. (page seven)
- The current allowable annual cut cannot be maintained in the long term with current integrated resource management* practices. The large amount of mature timber in the timber supply area allows for a long transition period to the long-term sustainable level. Beginning 20 years from now, the timber supply is projected to decline 593,000 over the following 20 years to a level of 2,022,000 cubic metres per year. (page five)
- Economic impacts resulting from changes to timber supply would be concentrated in a number of mill locations and adjacent communities, including Lumby, Lavington, Armstrong, Canoe (Salmon Arm) and Westbank. In all of these communities, the forest sector is the dominant employment income generating sector. (page eight)
- Opportunities exist in the forestry sector to reduce the employment impacts of timber supply adjustments by encouraging value-added manufacturing in high employment milling operations.
- There may be opportunities to offset reductions in the short-term timber supply by:
 - harvesting forest types that are not currently considered merchantable; and,
 - reducing natural losses to fire, insects, disease and blow down. (page eight)
- Intensifying silviculture treatments (juvenile spacing, fertilization, etc.) in the Okanagan Timber Supply Area does not appear to offer a significant opportunity to increase the short-term timber supply while an increase in long-term timber supply could be expected. (page eight)
- The *Forest Act* requires the chief forester to consider current management practices and land-use decisions when determining an allowable annual cut. Because a number of government initiatives which may affect timber supply in the future are not yet completed, it was not possible to consider these impacts in this review. (page nine)
 - These initiatives include:
 - the Protected Areas Strategy;
 - the Forest Practices Code; and,
 - the Forest Renewal Plan.
- Increasing population levels in the Okanagan/ Shuswap area will increase the demand for clean water supplies and visually pleasing landscapes in the future.
 - Any increase in the area designated as community watersheds may reduce the short-term timber supply.
 - Visual aesthetics are important, with much of the area being visible by the many visitors and B.C. residents. Management for visual aesthetics limits the amount of timber harvesting that is possible at any one time. (page nine)
- Another review of the timber supply in the Okanagan Timber Supply Area will be completed within five years to incorporate decisions from land-use planning processes, and new information on the impact of different forest management practices.

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

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Definitions

Allowable annual cut

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

Base case forecast

The timber supply forecast that illustrates the impact of current forest management practices on the timber supply using the best information that was available when the data were prepared.

Current 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 four.)

Commission on Resources and Environment (CORE)

An independent commission established to develop and test land-use planning processes in consultation with stakeholders. Regional and sub-regional processes have been implemented by CORE in various areas of the province.

Forest cover requirements

Requirements used to reflect desired conditions for wildlife, watershed protection, visual quality and other integrated resource management objectives. Expressed as the maximum or minimum area of a certain size or age of forest cover.

Forest Practices Code

A draft *Forest Practices Code for British Columbia Act* was recently passed in the British Columbia Legislature. The final code will be proclaimed into law in late 1994.

Forest Renewal Plan

The Forest Renewal Plan is a partnership of all the forest interests, working together to invest in increasing the value of the forest and strengthening the forest sector economy.

Induced and indirect employment

Employment generated from the spending of forestry workers' income and employment from businesses which provide goods and services to the direct forestry sector within the Okanagan TSA.

Integrated resource management

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

Land and Resource Management Plan

A consensus-building process involving a cross-section of the public, interest groups and government agencies to establish resource management objectives

and strategies for a management area (usually a timber supply area).

Okanagan TSA Integrated Resource Management Guidelines for timber harvesting

Guidelines which specify management zones where certain resource values, such as water, wildlife or timber are particularly important. Within these zones, special management practices are required to ensure the particular resource values are protected.

Person-year

One person working the equivalent of one full year. If someone works full time for six months, he or she accounts for 0.50 person-years.

Protected Areas Strategy

A provincial government initiative to protect representative areas within each ecological region of the province. Within the Okanagan Timber Supply Area, there are several candidate study areas being considered for protection. Decisions on all study areas are expected before the year 2000.

Riparian area

The stream bank and floodplain adjacent to streams or water bodies.

Selection management

A silvicultural system used to maintain or create areas containing a wide range of tree ages or sizes. The time interval between harvests in such areas is fairly short (usually less than 30 years) and during these harvests, either single or scattered trees or small groups of trees are removed from across the entire area.

Timber harvesting land base

Crown forest land which is economically and environmentally feasible to access and harvest.

Timber licence

An agreement entered into with the provincial government which provides for harvesting timber from a described area of Crown land by private interests, with payment of royalties prescribed under the regulations.

Timber supply

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

Timber supply area (TSA)

An area of Crown land defined by an established pattern of wood flow from the forest to the primary timber-using industries.

Tree farm licence (TFL)

An agreement entered into with the provincial government which provides for the establishment, management and harvesting of timber by a private interest on a described area of Crown land.

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Introduction

The British Columbia Forest Service is conducting a Timber Supply Review in the 36 timber supply areas and 35 tree farm licence areas throughout the province. The objectives of this three-year review are:

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

This discussion paper summarizes the technical reports from the Timber Supply Review in the Okanagan Timber Supply Area. We encourage British Columbians to comment on these findings. Public comments will be accepted until January 28, 1995. You will find a response form at the end of this paper to help you provide input.

Background to the Timber Supply Review

For at least 20 years, governments have known that, based on current practices, British Columbia's timber supply would decline in the future—we could not keep cutting at the rate we've been going. The Timber Supply Review responds to the urgent need for up-to-date information to determine allowable annual cuts that fully reflect current practices.

A 1991 study completed by the Forest Service, *A Review of the Timber Supply Analysis Process for British Columbia*, examined the procedures which led to the determination of allowable annual cuts and confirmed the need for change. The study found that:

- existing allowable annual cuts were based on outdated information and management practices;

- procedures failed to take into account integrated resource management practices and protection of non-timber values;
- procedures were far too time consuming; and,
- analytical techniques had to be strengthened.

As a result, very few timber supply analyses had been completed since the early 1980s, with few allowable annual cut adjustments.

The Forest Service acted quickly on the study's recommendations. The Timber Supply Review was initiated to assess short- and long-term timber supplies in light of current forest practices and integrated resource management goals.

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 licence areas:

- a) the rate of timber production that may be sustained from the area taking into account:
 - the composition of the forest;
 - 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 non-timber resource management objectives; and,
 - 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;

Towards a sustainable future

British Columbians agree there is a need for sustainable resource management to ensure a strong economy, viable communities and a healthy environment—today and always. The Timber Supply Review is one of several government initiatives to achieve sustainability:

- The *Forest Renewal Plan* is a partnership of all the forest interests, working together to invest in increasing the value of the forest and strengthening the forest sector economy.
- The *Forest Practices Code* creates a single enforceable law to require better forest practices, with heavy penalties for violators.
- The *Timber Supply Review* is providing the information needed to adjust allowable annual cuts to ensure the sustainability of British Columbia's forests.
- The *Commission on Resources and Environment, Land and Resource Management Plans, the Forest Land Reserve* and the *Protected Areas Strategy* are moving to integrate all values into land-use planning in an effort to achieve land-use stability.
- The *B.C. Treaty Commission* is moving toward fair and equitable settlement of treaties which can create long-term social and economic stability for aboriginal and non-aboriginal British Columbians.

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- 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; and,
- 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. By law, the chief forester is independent of the political process and is not directed by the minister of forests in determining allowable annual cuts. Nor does the chief forester consider the advocacy efforts of lobby groups.

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:

1. Timber Supply Analysis Report
2. Socio-economic Assessment
3. Public Discussion Paper
4. Public review and input
5. Allowable annual cut determination and Rationale Statement

Each of the documents prepared during the process are released to the public.

The review process for existing tree farm licence contracts is similar, but these contracts require less emphasis on socio-economic impacts. When tree farm licence contracts are replaced, the process will be changed to conform to the Timber Supply Review format.

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. This regular review process is designed to be responsive to new information, new practices and new government policies. Implementation of major government initiatives, such as the Forest Practices Code, the

Protected Areas Strategy, and the land-use recommendations from the Commission on Resources and Environment, and Land and Resource Management Plans may have significant impacts on the timber supply in specific timber supply areas and tree farm licence areas.

The potential impacts of these processes on the timber supply are not directly addressed in this review. A current or base allowable annual cut level will be determined in this review from which the impacts of the other initiatives can be evaluated. If the impacts are significant, the allowable annual cut can be reviewed in less than five years.

Okanagan Timber Supply Area Timber Supply Review

The current review of timber supply in the Okanagan Timber Supply Area is timely, as many factors have changed in recent years. For example, the *Okanagan TSA Integrated Resource Management Timber Harvesting Guidelines* of February 1991 introduced forest cover requirements* which effectively limited the amount of timber available for harvesting. These guidelines, along with superior analytical techniques and better information, make this review of the Okanagan TSA timber supply the most comprehensive to date.

The data package used for the timber supply analysis in the Okanagan Timber Supply Area was finalized in June 1993. This data was reviewed by Forest Service staff, local timber tenure holders and local stakeholders. The Forest Service then conducted and released a short- and long-term timber supply analysis in November 1993, and a consultant completed a socio-economic assessment of timber supply forecasts. Both reports are available from the Salmon Arm, Vernon and Penticton Forest District offices, and the Kamloops Forest Region office.

In conjunction with the release of this discussion paper and the socio-economic assessment, Forest Service staff will actively solicit public input to ensure the information in the Timber Supply Review for the Okanagan Timber Supply Area is correct. Input will be accepted until January 28, 1995.

Public input will be summarized in a report to the chief forester and the minister of forests.

After weighing all of the available information, the chief forester will determine the allowable annual cut for the Okanagan Timber Supply Area during the winter of 1995. This determination and a *Rationale Statement* for the determination, will be released to the public along with a *Summary of Public Input*.

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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 Timber Supply Analysis Report; SEA is the Socio-Economic Assessment*). All reports are available from the Salmon Arm, Vernon and Penticton Forest District offices and the Kamloops Forest Region Office.

Description of the Okanagan Timber Supply Area

Location

The Okanagan Timber Supply Area is one of the largest and most ecologically complex areas in the province (see map on cover). Covering approximately 2.2 million hectares, the timber supply area is approximately 320 kilometres long and 140 kilometres wide. It stretches from the Seymour River/ Shuswap Lake in the north, to the Canada/ United States border in the south. From west to east it extends from the Okanagan Range to the Monashee Mountains.

The Okanagan Timber Supply Area is managed by three forest district offices in Salmon Arm, Vernon and Penticton.

Population

According to the 1991 census, the resident population in the timber supply area was 262,168. The Okanagan's population is expected to double by 2021, largely due to a congenial climate and lifestyle. This will place new demands on the forest resource, particularly an increased need for water for domestic consumption, most of which comes from forested watersheds. There will also be increased demands for various outdoor, forest-based recreational experiences, many of which require visually pleasing landscapes. (*SEA page two*)

First Nations

Ten First Nations bands are located in this area. Six are affiliated with the Okanagan Tribal Council, and four with the Shuswap Nation Tribal Council. The native population as of 1991 was 4,515 (based on Department of Indian and Northern Affairs information). (*SEA page two*)

The First Nations people in the Okanagan are from the Shuswap and Okanagan Tribes, which are part of the Interior Salish group of First Nations peoples.

Economy

The Okanagan Timber Supply Area has a diversified economy with major industries including tourism, agriculture, forestry and manufacturing. The major centres such as Kelowna, Penticton, Vernon and

Salmon Arm have developed sizable private and public service sectors to meet retail trade, health care, education and general service needs. (*SEA pages 2-12*)

Based on Canada Employment Centre statistics, the 1993 unemployment rate for the area was 11.2 per cent, slightly higher than the B.C. average of 9.7 per cent. This can be attributed in part to the high employment dependency on seasonal work in the agriculture, tourism and construction sectors.

Timber resources

Forest vegetation varies from the wet, interior hemlock and cedar forests in the north, to the semi-arid sage brush grasslands of the south. Almost two-thirds of the Okanagan Timber Supply Area is Crown forest land with 62 per cent of this land base having mature forests.

The wet-fir types (low elevation forests), which make up about 20 per cent of the current productive land base, have undergone the greatest amount of resource extraction, with approximately 53 per cent of these forests being immature. Balsam/spruce types (high elevation forests), approximately 28 per cent of which are immature, have had the least amount of disturbance relative to their area. (*TSAR page eight*)

Wildlife

The southern portion of the timber supply area is at the northern end of the Great Basin Desert which supports the greatest diversity of rare, threatened and endangered wildlife species in British Columbia. This is due to the limited range and relative rarity of the ecosystems of the southern Okanagan and the high level of urban development and population growth in the area.

The majority of rare, threatened and endangered species are dependent on valley bottom ecosystems for their habitat, most of which is on private land. Adjacent Crown land habitat in similar ecosystems is critical because of lack of control over activities on private land. (*SEA pages two to six*)

Other species of importance include the grizzly bear, mountain caribou, and two small mammals—the fisher and wolverine. These animals inhabit mid- and higher-elevation areas on moist and wet sites.

Fisheries

Most lakes and streams in the timber supply area are well stocked with rainbow and lake trout, kokanee and Dolly Varden. Along with salmon, these are the primary sport fishery species. The fisheries aspect of watershed management is much more pronounced in the northern portion of the area. Of the 24 identified fishery watersheds, 15 are in the Salmon Arm Forest District, eight are in the Vernon Forest District, and one is located in the Penticton Forest District (refer to

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Okanagan Integrated Resource Management Guidelines for Timber Harvesting, Appendix 1).

The Salmon Arm area contains important salmon spawning streams which support the coastal salmon fishery, native fisheries and the Shuswap sport fishery.

Timber Supply Analysis Summary

In June 1992, a data package was prepared that described the current state of forest management within the Okanagan Timber Supply Area. This publicly reviewed data was then analyzed with a computer model and the results were put in the Okanagan TSA Timber Supply Analysis Report, November 1993 (Okanagan TSAR).

Two main areas were analyzed:

- how current forest management practices affect the supply of wood available for harvesting over the next 200 years; and,
- the potential changes in the timber supply stemming from uncertainties about forest growth and management actions.

Timber harvesting land base

Figure 1 illustrates that much of the land base in the timber supply area is not suitable or available for timber harvesting. Approximately 35 per cent of the area is classified as non-Crown lands (areas not managed directly by the Forest Service, such as tree farm licences, private lands and provincial parks) or as non-forested areas (water, rock, swamp, alpine, etc). Timber harvesting is not feasible or economical on 20.3 per cent of the area, including areas that are too wet or steep, environmentally sensitive sites, and areas that contain poor quality timber. In total, 44.7 per cent of the land base (971,628 hectares) is suitable for timber harvesting using current methods. This area forms the long-term timber harvesting land base*, where harvesting can occur provided integrated resource management objectives are met (TSAR page six).

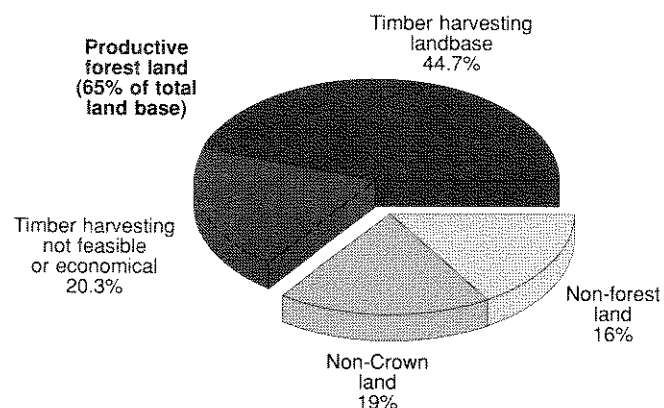


Figure 1. Okanagan Timber Supply Area land base

Current management practices

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

The current integrated forest management practices that are implemented in the timber supply area are briefly described below. The listing is not exhaustive, but reflects those key practices that were included in the timber supply analysis. (TSAR Appendix A)

- **Basic silviculture** - British Columbia laws require areas that are harvested and expected to produce timber in the future must be reforested with ecologically-acceptable species within a specified time frame. The typical silviculture practice is to harvest, then site prepare (if necessary), reforest by planting with a mix of species or by relying on natural regeneration, and control competing vegetation in plantations. It is assumed that harvested areas will be restocked within three to six years after harvesting. (TSAR page nine)
- **Minimum harvest ages** - Minimum harvest age is defined as the time it takes for trees to grow to harvestable size. The minimum harvest ages used in the timber supply analysis vary by tree species and site productivity from 80 to 113 years.
- **Forest health and unsalvaged losses** - Annual losses of timber to pest, disease, fire and wind in the Okanagan Timber Supply Area is estimated at 126,610 cubic metres per year. This is timber that cannot be salvaged or recovered.
- **Old-growth objectives** - Maintenance of biodiversity and areas of old-growth forests are goals of current forest management in the Okanagan Timber Supply Area. Current guidelines specify that five per cent of the timber harvesting land base must have trees that are more than 140 years old at any one time.
- **Protection of riparian areas** - Riparian areas* are very important to fish and wildlife and contain the highest number of species of flora and fauna. These areas were protected by deducting 15,000 hectares of productive forest area from the timber harvesting land base.
- **Protection of fish-bearing streams** - Watersheds with regionally significant fish values have restrictions on the rate of harvesting. These

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restrictions prevent damage to the stream channel which may affect spawning grounds.

Management zones

The timber harvesting land base has been divided into management zones which have unique sets of forestry practices that reflect the resource values in each zone. They also reflect the increasing public awareness and demand for more ecologically-based forest management. More information is available in the *Okanagan TSA Integrated Resource Management Timber Harvesting Guidelines**.

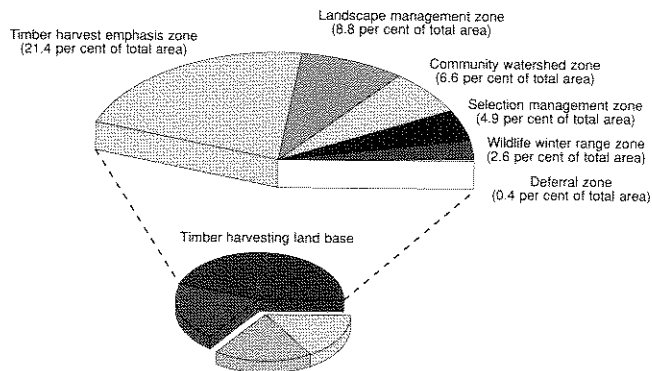


Figure 2. Area of each zone in the timber harvesting land base

The following is a brief description of each zone and the forest cover requirements:

- **Deferral zone** (0.4 per cent of total land base) - areas where timber harvesting is not permitted, as specified in Local Resource Use Plans including the Graystokes Recreation Reserve, old-growth sites in the Upper Shuswap River Integrated Resource Management Plan area, and the Greenbush Wilderness Study area. They are deferred from timber harvesting for 50 years.
- **Selection management zone** (4.9 per cent of total land base) - encompasses areas managed via selection silvicultural systems*.
- **Landscape management zone** (8.8 per cent of total land base) - areas along significant travel, recreation or residential corridors where the visual impacts of logging are to be minimized.

*Forest cover requirements** - No more than 15 per cent of the area may have forest cover below six metres tall at any one time and, to meet old-growth and biodiversity objectives, at least five per cent of the areas must have trees older than 140 years at any one time.

- **Ungulate winter range zone** (2.6 per cent of total land base) - areas where suitable winter range for

deer, sheep, and elk must be maintained with enough forest cover to reduce snow depth and provide forage, thermal and security cover for deer during the winter.

Forest cover requirements - No more than 20 per cent of the area may have forest cover less than three metres in height and at least 27 per cent of the area must have trees older than 140 years at any one time.

- **Community watershed zone** (6.6 per cent of total land base) - areas where protection of the water resource is the priority by maintaining water quality, quantity, and timing of run-off.

Forest cover requirements - No more than 26 per cent of the area may have forest cover less than six metres in height and at least five per cent of the area must have trees older than 140 years at any one time.

- **Timber harvest emphasis zone** (21.4 per cent of total land base) - areas where the emphasis is on timber harvesting provided integrated resource management objectives identified in the *Okanagan Timber Harvesting Guidelines* can be met.

Forest cover requirements - No more than 35 per cent of the area may have forest cover less than six metres in height and at least five per cent of the area must have trees older than 140 years at any one time.

Timber supply forecasts

It is important to note that the timber supply forecasts presented in the analysis report and this paper do not represent either a short-term allowable annual cut determination or a long-term strategy to adjust harvests to lower levels. These forecasts are part of the information that will be used by the chief forester to determine the allowable annual cut for the next five years.

The base case forecast* documented in the *Timber Supply Analysis Report* shows that, given the timber harvesting land base and current management practices, the present allowable annual cut of 2,615,000 cubic metres can be maintained until 2010 (figure 3). Beginning in 2011, the timber supply is projected to decrease by 10 per cent per decade until the long-term timber supply level of 2,022,000 cubic metres per year is reached by 2030. (TSAR page 13)

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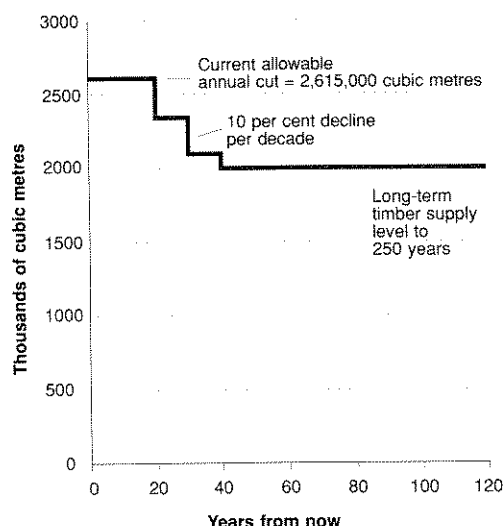


Figure 3. Base case timber supply forecast

The mountain pine beetle epidemic in the southern portion of the Okanagan Timber Supply Area resulted in a temporary allowable annual cut increase from 1987 to 1992. From 1990 to 1993 this increase was 200,000 cubic metres and in 1993 it was 189,000 cubic metres. (TSAR page 20)

Figure 4 illustrates how an elevated level of harvest for the first 10 years, to salvage mountain pine beetle-infested timber, could affect the timber supply forecast. If, to combat the mountain pine beetle, the harvest level is maintained at the maximum possible without allowing future harvest levels to drop below the long-term level, then an increase in the harvest in the first decade to 2,809,000 cubic metres per year is possible. After this, harvest levels must be reduced by 10 per cent per decade to meet the long-term level by 2020, 10 years earlier than in the base case. (TSAR page 29)

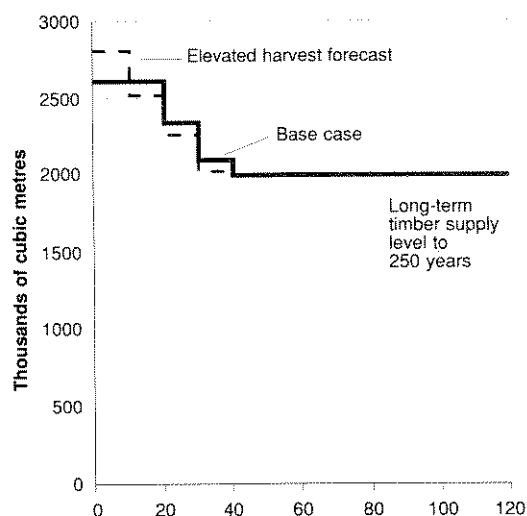


Figure 4. Impact of elevated harvest level to salvage mountain pine beetle-infested timber

Socio-Economic Assessment Summary

The purpose of the *Socio-Economic Assessment* component of the Timber Supply Review process is to provide social, economic, and environmental profiles of the various sectors in the Okanagan Timber Supply Area and to assess the potential impacts of adjustments in the allowable annual cut.

Forest sector

The forest industry in the Okanagan/Shuswap area consists of four subsectors:

- Silviculture/forestry - management and tending of the forested land base;
 - Forest harvesting - cutting and delivering logs to mills;
 - Milling - processing of logs into finished products; and,
 - Value-added industries - milling or remanufacture of primary wood products for higher value and specialty markets (SEA page three).
- **Source of timber supply** - The milling subsector uses 4,106,000 cubic metres per year, of which 63 per cent (or 2,615,000 cubic metres) comes from the Okanagan Timber Supply Area, as shown in table 1. This indicates that the milling sector within the Okanagan Timber Supply Area utilizes a significant amount of wood from other areas.

Source	Log supply (cubic metres)	(per cent)
Okanagan TSA	2,615,000	63
Okanagan TFLs	579,000	14
Non-Okanagan		
Crown forest	550,000	14
Private land	362,000	9
Total	4,106,000	100

Table 1. Sources of mill fibre supply

- **Allowable annual cut allocation** - figure 5 summarizes the current allocation of the allowable annual cut from the Okanagan Timber Supply Area.

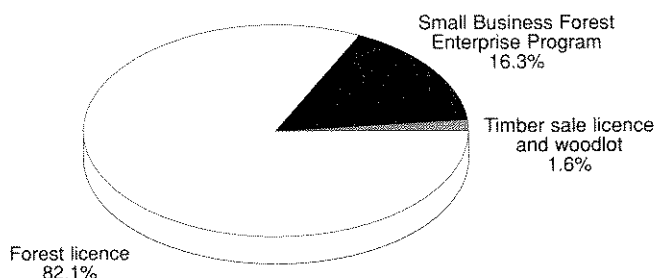


Figure 5. Allowable annual cut allocation

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There are seven forest licensees (or major licensees) operating within the Okanagan Timber Supply Area. Collectively, they are allocated 82.1 per cent of the allowable annual cut and some either purchase Small Business Forest Enterprise Program logs or do primary processing for value-added producers. It is estimated that about 94 per cent of the allowable annual cut is therefore processed by these licensees. (SEA pages three to eight)

- **Trends in volume milled** - Between 1985 and 1993, the total volume of logs that were milled has fluctuated between a high of 4,317,000 cubic metres in 1988 and a low of 3,147,000 cubic metres in 1991, with 4,106,000 cubic metres milled in 1993 (SEA pages three to seven).

Socio-economic impacts

The *Socio-Economic Assessment* attempts to document socio-economic impacts that are related to the rate of harvest. Fluctuating market conditions and forest health considerations have resulted in a significant variation in the annual rate of harvest between 1985 and 1993. Forest companies have had to adapt to these cycles and communities have had to absorb the related economic impacts.

The projected social and economic impacts of changes in the rate of harvest include:

• Employment and income

- The current rate of harvest supports 6,384 person-years* of employment (3,086 direct and 3,298 induced and indirect*). The total net employment income generated from this harvest level (excluding tax and non-cash benefits) is \$176.1 million. (SEA page eight)

If the allowable annual cut was to conform to the base case forecast (see figure 1), achieving the long-term timber supply level is projected to remove 1,449 person-years of employment (698 direct and 751 induced and indirect) and \$40 million in annual net income from the forest sector in the timber supply area by 2030.

- **Provincial level** - The current rate of harvest supports an additional 2,116 person-years of employment outside the timber supply area (314 direct and 1,802 indirect) for a total of 8,500 provincially. This generates an additional \$56.8 million in net employee income, for a total of \$231.9 million provincially.

If the allowable annual cut were to conform to the base case, the adjustment to the long-term timber supply level is estimated to remove an

additional 478 provincial person-years of employment (73 direct and 405 induced and indirect) for a total of 1,927 person-years of employment; and \$12.6 million in net annual income from the provincial forest sector for a total of \$52.6 million by 2030.

Provincial government revenues would also be reduced by \$15.6 to \$53.2 million from the current level of \$68.8 million (SEA pages three to eight). These estimates were developed before the new Forest Renewal Plan was announced and do not include the increased stumpage revenues that will be generated through this plan. While stumpage revenues are expected to increase by as much as 80 per cent, it will not be possible to accurately estimate the impact of this change until the new policy has been in place for a period of time.

- **Range** - There are 179 ranchers with forest-based range tenures in the timber supply area. This is approximately one-third of the total cattle ranchers in the area. Forestry range management is a major issue for these operations.

Harvest reductions would likely constrain the future grazing opportunities of this industry. However, the location of the harvesting is as important as the rate. The ranching industry needs spring and fall grazing which occurs on lower elevation sites. In general, the interests of this sector coincide with the maintenance of the existing harvest level. (SEA pages five to six)

- **Tourism and outdoor recreation** - This sector includes a variety of activities: touring travellers, camping, horseback riding, sport fishing, hunting and guide outfitting, skiing, snowmobiling and houseboating. Some sectors such as skiing appear more dependent on the local population while others (hunting and guide outfitting) have an international clientele.

While this is a diverse sector, all prefer the maintenance of a +natural√ looking landscape. To varying degrees, they all benefit from the road access that harvesting creates. There is a movement toward resorts providing year-round activities. Also, lodge operators noted an on-going trend towards offering more of an +urban√ setting because of the gradual disappearance of wilderness settings in the Okanagan area. Lodges in the area are no longer able to offer the kind of exclusive natural environment they could once market at a premium price. (SEA pages five to seven)

- **Environment** - Environmental concerns relate to the rate of change in natural ecosystems and the consequences of that change. The *Okanagan Timber Supply Analysis Report* assumes that older stands

Okanagan Timber Supply Area

will be harvested first, which means there will be fewer older forests in the future. As these older forests are harvested, the populations of wildlife species that depend on mature forests may decline, while the population of species dependent on younger forests may increase. In addition, increased recreational and hunting access may disrupt some wildlife populations. (SEA pages five to 10)

In general, environmental values, such as protecting fish and wildlife habitat, biodiversity, and visual aesthetics are better served by a more gradual harvesting of older-age timber and by maintaining important or representative old-growth forest areas.

- **First Nations** - Currently, the level of involvement in forestry by Tribal Councils and bands is relatively low. There is, however, a steady increase in their interest and involvement in forest resource management, and in commercial ventures. Improved opportunities for First Nations groups, to be provided through acquisition of wood supplies, is a very important long-run objective, for both economic development and social reasons. (SEA pages five to 14)
- **Communities** - Any job losses due to a harvest level reduction would likely be concentrated in a relatively small number of mills. These mills could respond with the elimination of shifts, or possibly closure if they are unable to replace the lost timber supply.

Table 2 identifies the communities where the forest sector is the dominant employment income generator. These communities appear to be the most vulnerable to reduced harvest levels in the Okanagan Timber Supply Area. (SEA pages five to 15)

Community (adjacent centres)	Population	Proportion of current AAC milled
Lumby / Lavington (Coldstream)	1,265/ 7,999	27
Armstrong (Spallumcheen/ Enderby)	3,200	16
Canoe (Salmon Arm)	12,115	15
Westbank	17,770	12

Table 2. Communities most likely to be impacted by AAC reductions

These communities are somewhat smaller and less diversified, with fewer alternative development options than larger population centres such as Vernon, Kelowna and Penticton. Opportunities do exist to offset potential future job losses within the forest sector. One promising option is to increase the number of jobs created through value-added manufacturing.

Examining critical factors

This section identifies critical factors that require special consideration during the allowable annual cut determination for the Okanagan Timber Supply Area.

When the *Timber Supply Analysis Report* was completed in 1993, the potential impact of different assumptions on the timber supply forecast was tested by changing the values for certain critical factors in the analysis. Since the analysis, local Forest Service staff have further investigated these assumptions, as well as other critical factors. Their perspectives on several options to partially offset reductions in short-term timber supply are outlined in the following discussion.

The chief forester must carefully evaluate this information to determine the allowable annual cut and identify where improved information is needed for the next Timber Supply Review.

- **Silvicultural systems** - There are two main silvicultural systems used in the Okanagan Timber Supply Area: clearcutting and seed tree. A study in the Coldstream Creek watershed in the Vernon District indicated that using alternative silvicultural systems such as shelterwood and group selection can, over a 60-year period, better satisfy forest cover requirements and therefore lessen restrictions on the rate of cut. Use of alternative silvicultural systems in areas where harvesting is heavily constrained, particularly in community watersheds or areas with high visual quality objectives, could be an effective tool to help offset timber supply shortages due to forest cover requirements.
- **Unsalvaged losses** - In the timber supply analysis, fire, insects, disease and blow down account for an estimated 126,610 cubic metres of unsalvaged timber losses per year, equivalent to approximately six per cent of the long-term timber supply level. If further salvaging could minimize this loss, or if additional protection methods could be taken, the projected short-term timber supply may be increased. (TSAR page nine)

Okanagan Timber Supply Area

- **Problem forest types** - "Problem forest types, including poor timber quality or low timber volume that cannot be economically harvested with current methods, were defined on the basis of available inventory information and existing timber utilization standards. These areas (120,013 hectares) were not included in the timber harvesting land base in this analysis, reducing this land base by 12 per cent. (TSAR page six)

An updated inventory of these specific stands may reveal forest types that could be harvested, perhaps for products that are not currently identified within the existing allowable annual cut, thus increasing current timber supply. In addition, if this harvesting occurred, it may help bring into production good growing sites that are not currently producing a commercial crop of timber thus increasing the long-term timber supply.

- **Intensive silviculture** - Intensive silviculture treatments, which include spacing, pruning, fertilization, etc., can help improve long-term timber supply levels. The Forest Renewal Plan has allocated nearly half its investment funds toward improved reforestation and tending of forests. The timber supply analysis indicated that the benefits of intensive silviculture treatments—increased timber yields from treated forests, reducing the age at which the trees can be harvested and shortening the regeneration delay period—can increase long-term timber supply levels. However, there is little direct impact on short-term levels. (TSAR page 25)

Other forest management issues and initiatives

There are several other issues and initiatives that are not included in this Timber Supply Review but that may have some impact on timber supply in the future.

- **Forest Practices Code** - Currently, 15 per cent of the timber harvesting land base in the Okanagan Timber Supply Area is managed as a community watershed zone. Under the Forest Practices Code it is estimated that this area will increase. This, combined with an increased demand for clear water, could limit the short-term timber supply. (TSAR page 27)

The *Okanagan Integrated Resource Management Timber Harvesting Guidelines* identify forest management objectives which limit harvesting operations. The Forest Practices Code, which will replace these guidelines, is expected to have both positive and negative impacts on timber supply. (TSAR page 29)

- **Protected Areas Strategy** - The goal of the Protected Areas Strategy is to protect 12 per cent of the province by the year 2000. It is estimated that, in the Okanagan Timber Supply Area, if current study areas and areas of interest became approved study areas, guidelines that prohibit harvesting would reduce the timber harvesting land base.
- **Viewscapes** - Maintaining pleasing views is important in this area as much of the area is visible by visitors and B.C. residents. Management for views limits the amount of timber harvesting that is possible at any one time. With increasing populations and tourism, there may be pressure to increase visual landscape requirements which could decrease the amount of timber available for harvesting.

Your input is needed

The allowable annual cut determination is an important decision 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 that you feel are relevant. If you prefer, additional comments or a detailed submission can be written on separate pages.

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

Please mail the completed questions and your comments to one of the Forest District managers at the addresses below. Comments will be accepted until January 28, 1995.

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.

Harry Drage	Ken Belik	John Wenger
Salmon Arm	Vernon	Penticton
Forest District	Forest District	Forest District
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V1E 4S4	V1T 8Z1	V2A 7C8

Discussion Paper Response Form

- 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, for the general region, and for the province; and,
- abnormal pest infestations in the timber on the area, and major salvage programs that are planned.

A. Economic and social objectives

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page.

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 Okanagan Timber Supply Area. Further information on the critical factors outlined on pages eight to nine in this paper would be most helpful.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Which community sector listed below best describes your interests?

- ☐ local business ☐ timber industry
- ☐ outdoor tourism ☐ environmental conservation
- ☐ general public ☐ other (please define) _____

Name (optional) _____

Address (optional) _____

Mail your comments to one of the Forest District managers below:

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