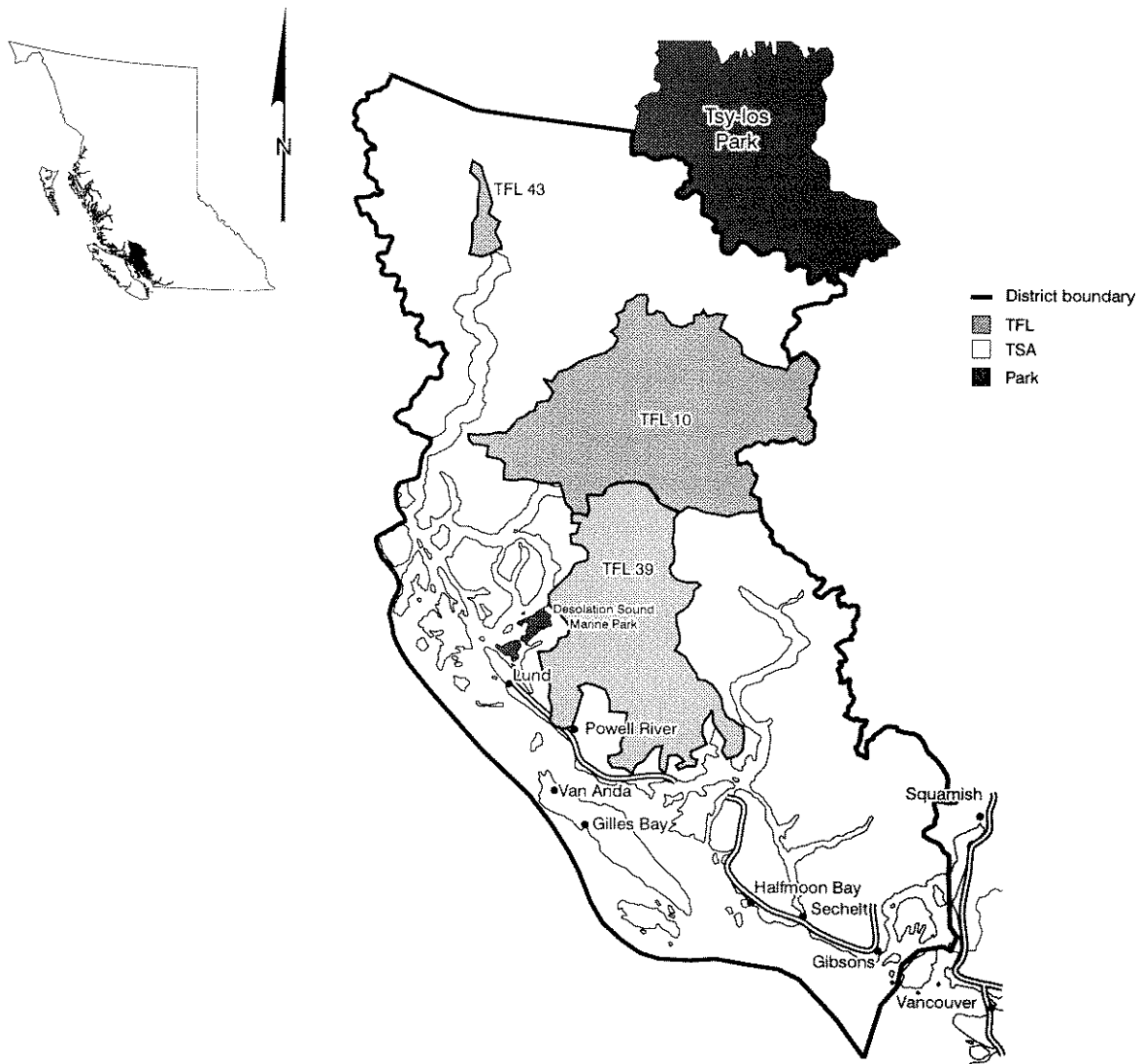




# Sunshine Coast Timber Supply Area

Timber Supply Review Discussion Paper  
October 1995





# Sunshine Coast Timber Supply Area

## Timber Supply Review Highlights

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- The British Columbia Forest Service is reviewing the timber supply in all timber supply areas\* and tree farm licence\* areas in the province. This review examines the impacts of current forest management practices\* on the timber supply\*, economy, environment and social conditions of the local area and the province. Based on the results of this review, the chief forester may decide to maintain or adjust the allowable annual cut\* for the Sunshine Coast Timber Supply Area.
- The allowable annual cut in the Sunshine Coast Timber Supply Area was reduced by 24 per cent in 1993 to 1.1 million cubic metres per year. At that time the chief forester required that the reduction be reviewed in the next few years. (page 4)
- Harvesting the current allowable annual cut from the Sunshine Coast Timber Supply Area supports approximately 623 person-years\* of forestry employment in the local area. Virtually all the timber harvested in the Sunshine Coast Timber Supply Area leaves the area to be processed elsewhere, creating an additional 698 person-years\* of forestry employment, primarily on the Lower Mainland and in coastal pulp mills. The two pulp and paper mills and five sawmills in the Sunshine Coast Timber Supply Area obtain over 95 per cent of their wood from outside the area. (page 5)
- Based on the best information available about forest management practices being implemented in 1994 when the timber supply review was initiated, the base case timber supply forecast indicates the current harvest level can be maintained for one decade, before declining 10 per cent per decade over the following 20 years to about 876,000 cubic metres per year. To avoid further timber supply shortfalls in the future, this reduced rate of harvest, which is 11 per cent below the sustainable, long-term timber supply level, is projected to be maintained for 100 years. Approximately 130 years from now, the timber supply is projected to increase to a sustainable level of 986,000 cubic metres per year. (page 7)
- Several factors suggest the short-term timber supply may be lower than initially predicted:
  - the area of mature timber deducted from the timber harvesting land base to protect non-timber resource values may be underestimated
  - non-conventional harvesting methods such as helicopters and long-reach skyline systems may not be used as much as expected (pages 8-9)
- The short-term timber supply could be either greater or less than projected because:
  - the existing mature forests may contain less or more merchantable timber than was estimated
  - minimum harvestable ages may be higher or lower than estimated
  - forest cover requirements for visually sensitive areas may be higher or lower than estimated (pages 9-10)
- Opportunities to partially offset the projected timber supply reductions include:
  - harvesting forests not currently economical or feasible to harvest
  - implementing intensive silvicultural treatments
  - developing a commercial thinning program (page 10)
- The impact of adjustments in the timber supply on communities in the Sunshine Coast Timber Supply Area is an important consideration in this review. While forestry employment in Powell River is concentrated in the timber processing sector, which largely depends on timber harvested outside the area, communities on the lower Sunshine Coast, such as Sechelt, Gibsons and Roberts Creek, depend to a greater degree on local timber harvesting jobs. A change in the rate of harvest would impact these communities more than the Powell River area. (page 11)
- 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*; these factors are listed on pages 1 and 2 of this paper.
- Factors that may influence the timber supply in the Sunshine Coast Timber Supply Area in the future include implementation of the Forest Practices Code and decisions from other government initiatives such as the Protected Areas Strategy, First Nations land claims and Land Use Plans. Another review will be completed within five years to incorporate decisions from these initiatives, as well as 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 definition section on the following page.

# Sunshine Coast Timber Supply Area

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## Definitions

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### 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 area when this review was initiated. These practices are described in this paper beginning on page 6.

### Environmentally sensitive areas

Areas identified as requiring special management to protect important recreation and scenic values, fisheries 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 better forest practices, with heavy penalties for violators. Implementation of the Code began on June 15, 1995.

### Green-up

The time required for regenerated forests to reach a desired condition (usually a specific height) after harvesting to meet integrated resource management objectives and allow harvesting to take place in adjacent areas.

### 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 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 unit.

### 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 that 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*.

# Sunshine Coast 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 three-year 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 Sunshine Coast Timber Supply Area and encourages British Columbians to comment on the findings. Public comments will be accepted until January 10, 1996. 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 British Columbia's timber supply would decline in the future—we could not keep cutting at the rate we've been going. Now there is an urgent need for up-to-date information to review the timber supply and allowable annual cuts throughout the province.

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 fully account for integrated resource management practices and protection of non-timber values
- procedures were far too time-consuming
- analytical techniques had to be strengthened

As a result of these procedural weaknesses, 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 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

## Renewing our forests, securing our future

In British Columbia today, people are wrestling with one of the most complex and compelling issues of our time—the need to protect our environment and, at the same time, sustain our economy for present and future generations.

In addition to the Timber Supply Review, the government has a number of initiatives to create positive change for British Columbia:

- Forest Renewal BC is already creating hundreds of projects across the province to restore and protect the health of British Columbia's forests, create new forest jobs, and increase economic benefits from each tree harvested.
- The Forest Practices Code is ensuring new forestry standards and better management of the resource.
- The Protected Areas Strategy is doubling British Columbia's parks and protected wilderness—expanding parks and preserving pristine wilderness for our children's future.
- Through the work of dedicated British Columbians, the Commission on Resources and Environment and regional Land and Resource Management Plan teams, long-standing land-use debates are being resolved. The government has delivered land-use plans for Vancouver Island, the Cariboo-Chilcotin and the Kootenay-Boundary, and a Land and Resource Management Plan for the Kamloops area which mark important steps towards securing British Columbia's future.

# Sunshine Coast Timber Supply Area

- 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. Figure 1 illustrates the five-step process developed for the Timber Supply Review in timber supply areas. The diagram also indicates the status of the Timber Supply Review for the Sunshine Coast Timber Supply Area and the estimated time required to complete each step in the process.

As the legal mandate for allowable annual cut determinations for tree farm licence areas is the same as for timber supply areas, the Timber Supply Review process for tree farm licences is based on similar principles, but it has been designed to reflect the management role of these licensees. In the past, tree farm licences have not included specified timelines for licensees to prepare the information needed by the chief forester to determine allowable annual cuts for these areas. To reflect changing forest management standards, replacement tree farm licences specify timelines for preparing information.

## 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 land-use decisions 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.

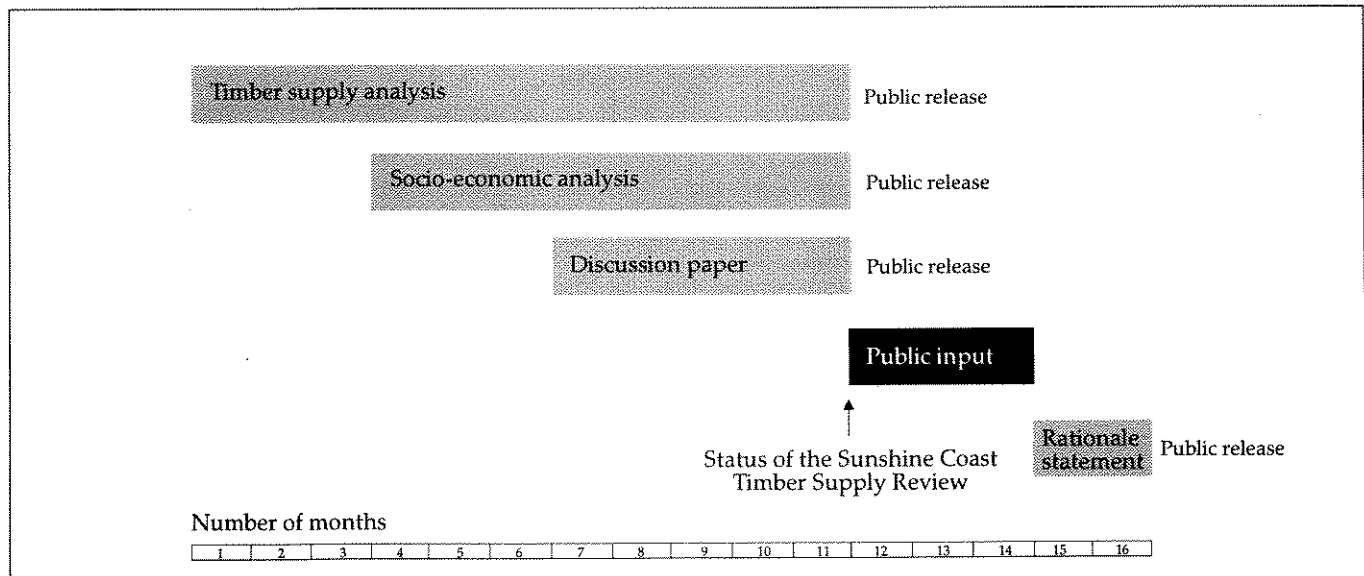


Figure 1 Steps in the Timber Supply Review process

# Sunshine Coast Timber Supply Area

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## Protected Areas Strategy and Land Use Planning

Several initiatives are underway which may influence the timber supply in the Sunshine Coast Timber Supply Area:

- **Vancouver Island Land-Use Plan**  
Cortes, Maurelle and Read Islands, which constitute 1.3 per cent of the Sunshine Coast Timber Supply Area, are included in the Vancouver Island Land-Use Plan announced by government on June 22, 1994. While several components of the Land-Use Plan have the potential to affect timber supply in the areas substantially covered by the plan, it is anticipated that the effect will be very minor in the Sunshine Coast Timber Supply Area.
- **Lower Mainland Protected Areas Strategy - Lower Mainland Region**  
On June 8, 1995 the Premier announced a Protected Areas Strategy planning process to define parks and wilderness areas in the Lower Mainland region. Several areas in the Sunshine Coast Timber Supply Area are being evaluated as candidate areas for the Protected Areas Strategy. Until final decisions are made on the designation of these areas, they are included in the land base for timber supply assessments.
- **Tetrahedron Wilderness**  
The Tetrahedron Wilderness Protected Area was announced on June 1, 1995 and designated on July 12, 1995. This area includes 0.4 per cent of the timber harvesting land base\* within the Sunshine Coast Timber Supply Area. As this decision had not been made when the Timber Supply Review was initiated, this area was included in the timber harvesting land base for the review. The chief forester will be provided information about this decision for consideration in the allowable annual cut determination.

## Forest Practices Code

The *Forest Practices Code Act for British Columbia* 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 will be changed to meet its requirements. These new practices may influence both short- and long-term timber supply.

Since the information was prepared for the Timber Supply Review, some practices have been implemented in the Sunshine Coast Timber Supply Area to meet the requirements of the Code.

Information about these practices will be provided to the chief forester for consideration in this allowable annual cut determination. It is expected that further implementation and experience with the Code will be required before all the timber supply effects of the Code can be properly assessed. Therefore, the timber supply impacts of some of the new practices will be incorporated in future allowable annual cut determinations.

## Timber Supply Review in the Sunshine Coast Timber Supply Area

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Forest Service staff in the Sunshine Coast Forest District finalized the data used for the *Sunshine Coast Timber Supply Analysis* in October, 1994. This data is available for public review at the Sunshine Coast Forest District Office in Powell River and the field office in Sechelt. The Forest Service then conducted a short- and long-term timber supply analysis (*Sunshine Coast Timber Supply Analysis*, October 1995). A consultant also completed a socio-economic analysis of the timber supply forecasts (*Sunshine Coast Timber Supply Area: Socio-Economic Analysis*, October 1995). All three reports are available from the Sunshine Coast Forest District office in Powell River, the field office in Sechelt, the Vancouver Forest Region office in Nanaimo and the Timber Supply Branch in Victoria.

This discussion paper summarizes the two analysis reports and highlights critical factors the chief forester must consider to determine the allowable annual cut for the Sunshine Coast 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 January 10, 1996, and will be summarized in a report to the chief forester and the minister of forests.

After considering all the available information, the chief forester will determine the allowable annual cut for the Sunshine Coast Timber Supply Area in 1996. This determination and a *Rationale Statement* for the determination will be released 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 *Sunshine Coast Timber Supply Analysis Report*, and SEA is the *Sunshine Coast Timber Supply Area: Socio-Economic Analysis*).

# Sunshine Coast Timber Supply Area

## Description of the Sunshine Coast Timber Supply Area

The Sunshine Coast Timber Supply Area, located in southwest British Columbia, covers approximately 1.12 million hectares. The Coast Mountains dominate the timber supply area, intersected by several coastal fjords, most notably Bute, Toba and Jervis Inlets, and their associated river systems. The climate and ecology of the area are very diverse due to the mountainous terrain and the high rainfall common in coastal areas. These conditions create a variety of ecosystems ranging from rich, moist floodplains in valley bottoms to high elevation alpine meadows.

## Forest resources

### Timber

Mountainous terrain in much of the Sunshine Coast Timber Supply Area limits the size of the timber harvesting land base\*. Most of the land base is not available for timber harvesting (see Figure 2) due either to a lack of forest cover or unsuitability for timber harvesting because of environmental sensitivity\*, rough terrain, difficult access or unmerchantable timber. Twenty per cent of the total land base (224,349 hectares) is suitable for timber harvesting using current methods and integrated resource management objectives. (TSAR page 7)

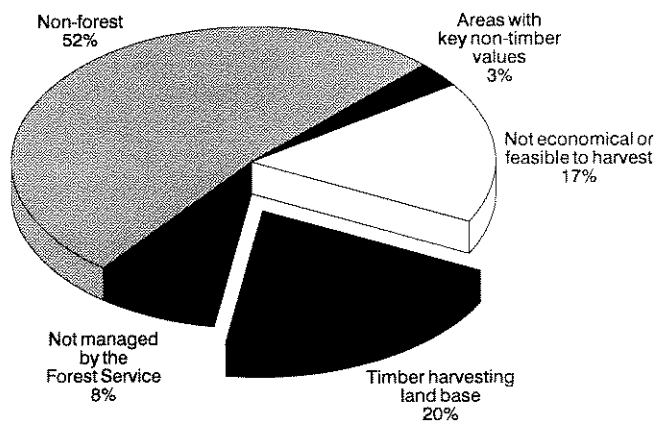


Figure 2 Classification of the land within the Sunshine Coast Timber Supply Area

Notes: Total area: 1.12 million hectares

Areas with key non-timber values include environmentally sensitive areas and riparian areas.

Study areas and areas of interest for the Protected Areas Strategy that are currently under consideration are included in the timber harvesting land base until final decisions are made on their status. As the decision had not been made on the Tetrahedron Wilderness Area when the Timber Supply Review was initiated, this area was included in the timber harvesting land base for this review.

Equal amounts of Douglas-fir and western or mountain hemlock dominate the timber harvesting land base of the Sunshine Coast Timber Supply Area, with a minor amount of western redcedar. (TSAR page 8)

Due to the long history of harvesting in the Sunshine Coast Timber Supply Area, the majority of forests in the timber harvesting land base are less than 100 years old, as illustrated in Figure 3. In the past, harvesting was concentrated on the good timber growing sites, so that the remaining mature forests generally occur on poorer sites. (TSAR page 8)

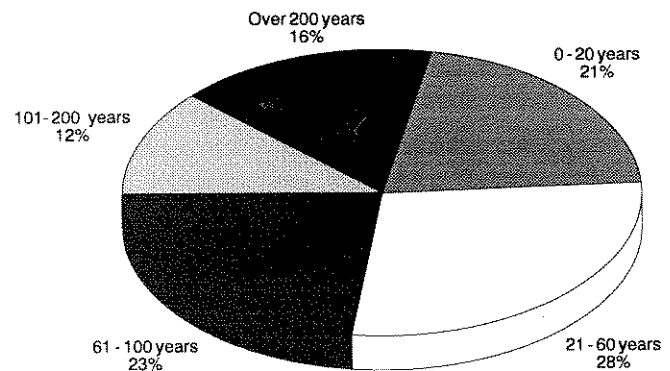


Figure 3 Forest ages in the timber harvesting land base

### Wildlife and fisheries

The Sunshine Coast Timber Supply Area contains an abundance of land and marine wildlife. The amphibians, reptiles, birds and mammals found in the area all have their own habitat requirements, and some species, such as the marbled murrelet, are highly dependent upon unique habitats of limited availability. The many rivers, streams and lakes of the area support populations of spring, coho, pink and chum salmon, steelhead trout, cutthroat trout, Dolly Varden char, rainbow trout and other fish species. (SEA page 7)

### Recreation

The diversity of landforms, climate and wildlife in the Sunshine Coast Timber Supply Area supports a variety of recreation activities. The area is used by a large number of residents and visitors for active recreation, such as mountaineering, kayaking, hiking and skiing, as well as more passive activities, such as wildlife viewing and the enjoyment of ocean and mountain landscapes. The forests provide an essential backdrop to these activities, and the management of scenic views is an important consideration, particularly along land and marine tour corridors in the vicinity of settlements, and near recreation trails and sites. (SEA page 33)

# Sunshine Coast Timber Supply Area

## Current allowable annual cut

The allowable annual cut for the Sunshine Coast Timber Supply Area was set in January, 1993, at 1.1 million cubic metres, a 24 per cent reduction from the previous level. At that time, the chief forester indicated the allowable annual cut reduction would be reviewed in 1995. (SEA page 49)

Approximately 84 per cent of the allowable annual cut is apportioned to long-term forest licences, 14 per cent to the Small Business Forest Enterprise Program administered by the Forest Service, and the remaining two per cent of the cut is currently unallocated. (SEA page 50)

## Socio-economic profile

### Population

The population within the Sunshine Coast Timber Supply Area (39,262, based on 1991 data) is almost evenly distributed between two regional districts: Powell River and Sunshine Coast. In the Powell River Regional District, Powell River is the largest municipality (13,000 people); an additional 5,400 people live in a number of smaller communities, such as Lund and Van Anda. In the Sunshine Coast Regional District, the main communities are Sechelt (6,100) and Gibsons (3,100); an additional 10,800 people live in smaller communities such as Pender Harbour and Roberts Creek.

The 1991 population represents a 12.7 per cent increase over 1986. Most of this growth has occurred in the Sunshine Coast Regional District, due to its proximity to Vancouver, while the Powell River area population has remained virtually static. (SEA page 14)

### First Nations

Four First Nations have occupied reserve lands and traditional territory in the Sunshine Coast Timber Supply Area:

- the Sechelt Indian Band has traditional territory covering all drainages flowing into Jervis and Sechelt Inlets; the majority of band members live in Sechelt
- the Sliammon Band has six reserves and traditional territory surrounding Powell River
- Homalco Indian Band members live on 11 reserves and traditional territory in and around Bute Inlet, but their main village is now in Campbell River
- the Klahoose Band's main reserve and head office is in Squirrel Cove on Cortes Island; their traditional territory extends up Toba Inlet

Together these four First Nations represent an estimated 2,150 band members (SEA page 40).

Another two groups, the Squamish Nation and the Kwakiutl District Council, have traditional territory in the timber supply area, but no permanent residences.

### Local economy

Figure 4 illustrates the percentage of employment in the Sunshine Coast Timber Supply Area that is supported by each sector of the economy.

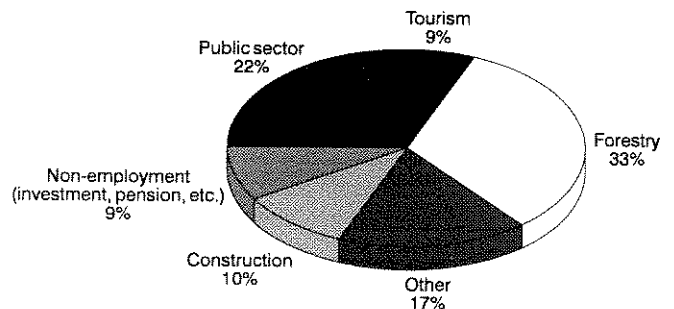


Figure 4 Employment supported by each economic sector

Forestry is the largest generator of employment in the local economy. In 1991, 33 per cent of the total employment in the timber supply area was supported by timber harvesting and processing carried out in the area. However, direct employment and income from the forest sector in the Powell River Regional District is almost twice that in the Sunshine Coast Regional District. (SEA page 16)

### Timber industry

The timber industry in the area includes timber harvesting, sawmilling and pulp and paper production. Timber harvesting is conducted by a few larger companies, and a large number of smaller operators. Virtually all of the timber is processed in sawmills located outside the Sunshine Coast Timber Supply Area in the Lower Mainland and at coastal pulp mills. In contrast, the two pulp and paper mills and five sawmills located in the Sunshine Coast Timber Supply Area obtain over 95 per cent of their wood supply from sources outside the timber supply area. (SEA page 50)

Total forestry employment generated in the timber supply area from harvesting and processing the current allowable annual cut is estimated at 623 person-years. Additional employment is generated within industries supplying the forest industry and from local spending of forest sector employees' incomes. This spin-off employment is estimated at 341 person-years, for a total forest industry related employment of 964 person-years in the timber supply area. (SEA page 54)

# Sunshine Coast Timber Supply Area

## Provincial employment and revenues

Processing of timber shipped outside the Sunshine Coast Timber Supply Area is estimated to generate 2,338 person-years of employment outside the area. This includes 698 person-years of direct forestry employment and 1,640 of spin-off employment.

Provincially, the total employment supported by harvesting and processing timber from the Sunshine Coast Timber Supply Area both within and outside the timber supply area is 3,302 person-years.

Timber harvesting in the Sunshine Coast Timber Supply Area is estimated to generate approximately \$34.5 million per year in stumpage, taxes and other government revenues (SEA page 68). This estimate includes increased stumpage revenues being generated to fund the Forest Renewal Plan.

## Current management practices

Public forest lands in British Columbia provide recreational enjoyment, fish and wildlife habitat, water supplies, timber 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 wildlife, water and parks, and shares responsibility for fisheries management with the federal Department of Fisheries and Oceans. These 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 current management practices—practices being approved and implemented in the Sunshine Coast Timber Supply Area in 1994, when the timber supply analysis was initiated. Readers are encouraged to review the *Sunshine Coast Timber Supply Analysis Report* (Pages 5-11 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 analysis of the different types of forests and the range of practices in the Sunshine Coast Timber Supply Area. The area in each zone was estimated from existing plans and the guidelines for integrated resource management in the timber supply area. Site specific practices implemented in any one area may differ from the generalized practices used in the analysis.

Figure 5 illustrates the area within each management zone.

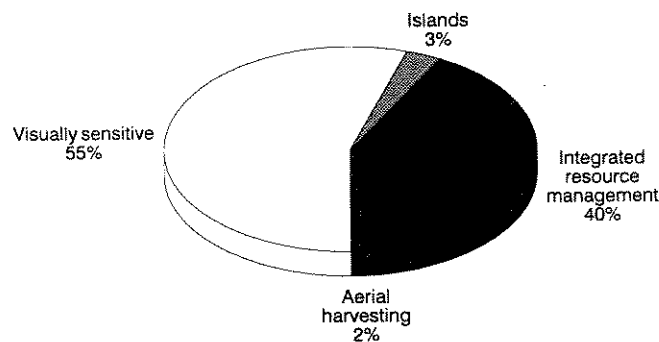


Figure 5 Area within each management zone

The information used in the analysis to describe the integrated resource management practices in each zone is outlined below:

- **Visually sensitive zones** (123,721 hectares) — areas visible from settlements, recreation areas, and highway, ferry and boating corridors. The management objective is to maintain sufficient forest cover to limit visible changes to the landscape. Three zones have been identified based on visual sensitivity and visual quality objectives:
  - most visually sensitive (retention) zone (28,699 hectares) - at least 95 per cent of the area within the timber harvesting land base must have trees at least five metres tall (approximately 18 years old) at any time.
  - moderately visually sensitive (partial retention) zone (85,480 hectares) - at least 89 per cent of the area must have trees at least five metres tall at any time.
  - less visually sensitive (modification) zone (9,542 hectares) - at least 76 per cent of the area must have trees at least five metres tall at any time.
- **Islands zone** (5,942 hectares) — a number of islands with established communities, including Maurelle, Read, Cortes, Lasqueti, Stuart and West Redonda Islands. Forestry activity is usually confined to small-scale operations and harvesting occurs in four entries so that no more than 25 per cent of the zone will have forests less than three metres tall (approximately 13 years old) at any time.
- **Integrated resource management zones** (94,686 hectares) — the remaining timber harvesting land base which is managed for integrated use, including a separate zone (4,557 hectares) where aerial harvesting is practised. Harvesting in these zones is scheduled in three entries so that at a given time, no more than one-third of the area in each zone will have forests less than three metres tall.

# Sunshine Coast Timber Supply Area

## 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 (three years was used in the analysis). The most common silvicultural practice is to clearcut harvest, allow for natural regeneration and/or plant, then brush and weed if needed.
- **Incremental silviculture** — Juvenile spacing, pruning and commercial thinning are practised on some of the most productive sites in the Sunshine Coast Timber Supply Area.
- **Protection** — Forest losses due to wildfire, insects, diseases and blowdown are minimized as much as possible and damaged timber is salvaged when feasible. Unsalvaged losses of merchantable timber are estimated to be 24,200 cubic metres per year.
- **Fish and wildlife and biodiversity** - *British Columbia Coastal Fisheries/Forestry Guidelines* guide current forest management practices and also suggest the minimum width of stream buffers required to protect fish habitat, based on the size of the stream and the types of fish using the stream. A total of 3,620 hectares were removed from the timber harvesting land base to protect streamside areas throughout the Sunshine Coast Timber Supply Area.

Forested areas that provide valuable wildlife habitat and contribute to biodiversity objectives were excluded from the timber harvesting land base, including forests dominated by deciduous trees and forests in environmentally sensitive areas. Forests deducted from the timber harvesting land base because they were not considered feasible for timber harvesting due to low timber volumes or difficult terrain also provide wildlife habitat.
- **Harvestable ages** — Minimum harvestable age is defined as the time it takes for forests to grow to harvestable size. The minimum harvestable ages used in the timber supply analysis range from 60 years on the best growing sites to 160 years on the poorest growing sites.
- **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:
  - all species older than 120 years (mature): 20-centimetre diameter at stump height, 15-centimetre top diameter;

- all species younger than 120 years (immature): 15-centimetre diameter at stump height, 10-centimetre top diameter.

- **Soil conservation** — Harvesting layout follows provincial and regional guidelines. For the timber supply analysis, 5.8 per cent of the previously harvested area (with forests up to 80 years old) was deducted for existing roads, landings and major debris piles. Future roads and landings are expected to reduce the remaining area (with forests over 80 years old) by approximately 6.1 per cent.

## Timber supply forecasts and critical factors

It is important to note 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 are part of the information that will be used 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 Sunshine Coast 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, or if this is not possible, find the maximum initial harvest level
- if the predicted long-term sustainable timber supply level is lower than the initial harvest level, reduce the timber supply within a defined range of eight to 12 per cent per decade until the long-term level is reached
- if possible, maintain the timber supply at or above the predicted long-term sustainable level at all times

If a timber supply forecast could not be generated that met all of these principles, the conditions were adjusted until a feasible forecast could be produced. Attempts to generate a forecast that met the above conditions showed that, given the best available information about management practices in place in the Sunshine Coast Timber Supply Area when the analysis was initiated in 1994, it is not possible to maintain the timber supply level at or above the predicted long-term, sustainable level at all times. As Figure 6 illustrates, the analysis indicates that, no matter what strategy is used to maintain the long-term timber supply level, a future timber supply

# Sunshine Coast Timber Supply Area

shortfall below the long-term sustainable level is inevitable. (TSAR page 20)

This shortfall results because only a relatively small amount of mature timber remains, and these forests are concentrated on poorer growing sites. The remaining mature forests cannot sustain the projected long-term timber supply level.

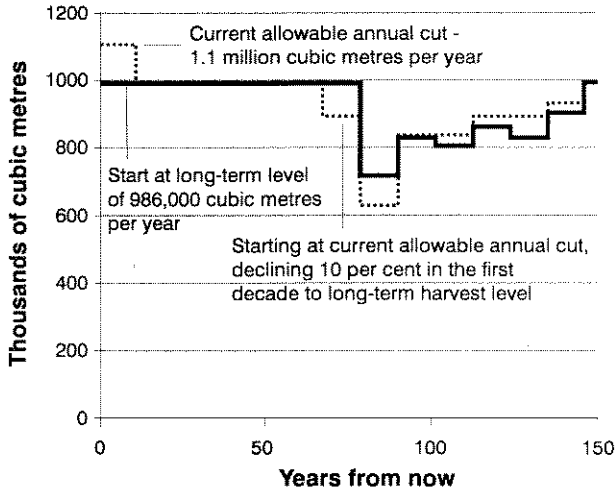


Figure 6 Initial timber supply forecasts

Based on the information from these initial forecasts, a base case timber supply forecast was developed that balanced the short- and long-term impacts of the required timber supply adjustments (Figure 7). The base case harvest forecast indicates that the current harvest level of 1.1 million cubic metres can be maintained for 10 years, followed by a decline of 10 per cent per decade over the following two decades to about 876,000 cubic metres per year, approximately 11 per cent below the projected long-term timber supply level. In 130 years from now, the timber supply is projected to increase to the long-term level of 986,000 cubic metres per year. (TSAR page 14)

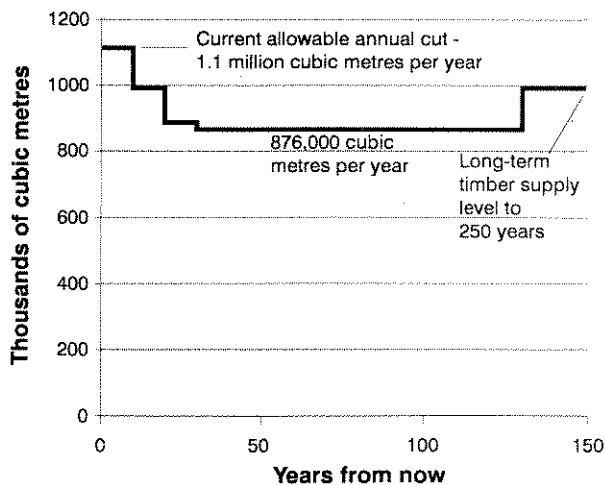


Figure 7 Base case timber supply forecast

## Examining critical factors

Since 1994 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.

The chief forester must carefully evaluate this information to determine the allowable annual cut and identify where improved information is needed for future determinations. We encourage you to do the same.

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

- **Area of mature forests**  
Several factors may decrease the amount of mature forests within the timber harvesting land base which may affect the short- and long-term timber supply:
- **practices to protect non-timber resources**  
Several of the management practices implemented to protect non-timber resources result in a reduction in the area of mature forest in the timber harvesting land base. The estimates used in the timber supply analysis to allow for the following practices are of particular concern in the Sunshine Coast Timber Supply Area:
- **riparian areas**  
Streamside riparian areas are protected and maintained under the *Coastal Fisheries/Forestry Guidelines*. Based on an estimate of riparian habitat along the major streams in the timber supply area, 3,620 hectares were subtracted from the timber harvesting land base. However, standards under the Forest Practices Code for reserves and management areas adjacent to riparian sites and lakeshores indicate a larger area may be required. A larger estimate of riparian area will necessitate further reductions to the timber harvesting land base, which may reduce the short- and long-term timber supply.
- **old growth reserves and biodiversity corridors**  
Ministry of Environment, Lands and Parks staff are stressing the need to identify and establish biodiversity and wildlife habitat corridors, including old-growth areas, to provide linkages between watersheds throughout the timber supply area. In

# Sunshine Coast Timber Supply Area

preparation for the establishment of such corridors in the Sunshine Coast Timber Supply Area, Ministry of Environment, Lands and Parks staff are currently conducting an inventory of ecosystems and habitats within the area to define these corridors.

The area deducted from the timber harvesting land base for environmentally sensitive areas, riparian areas and forests that are not feasible or economical to harvest may contribute to these biodiversity corridors. However, due to the long history of timber harvesting and associated road development in the Sunshine Coast Timber Supply Area, existing exclusions from the timber harvesting land base may not be sufficient to create an adequate corridor system. If additional area is required, this will reduce the area of mature timber in the timber harvesting land base.

- **projected use of non-conventional harvesting methods**

Information about the available timber and the requirements of various harvesting systems was used to define the land base suitable for harvesting with conventional and non-conventional harvesting methods. In the Sunshine Coast Timber Supply Area, non-conventional methods include helicopters and long-line skylines with yarding distances greater than 750 metres. Field examination indicates that the area suited for non-conventional harvesting methods may have been overestimated in the analysis. If this area is smaller than was estimated in the analysis, this may impact short- and long-term timber supply.

A test conducted as part of the timber supply analysis shows the timber supply forecast depends to a great degree on the area of mature timber, as illustrated in Figure 8. (TSAR page 24)

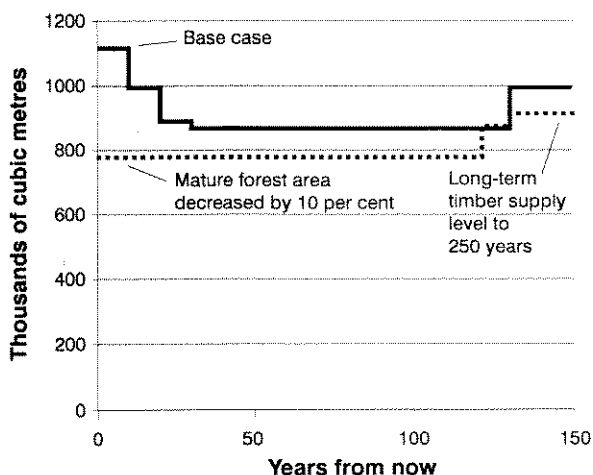


Figure 8 Impacts of changes in the area of mature forest

## Factors which may increase or decrease the short-term timber supply

- **Estimates of existing mature timber**

Figure 9 illustrates that if the amount of merchantable timber in existing mature forests is less than estimated in the analysis, the short-term timber supply is projected to be reduced. Although an increase in the estimate of merchantable timber does not increase the projected short-term timber supply, the expected decrease in timber supply below the long-term level is minimized.

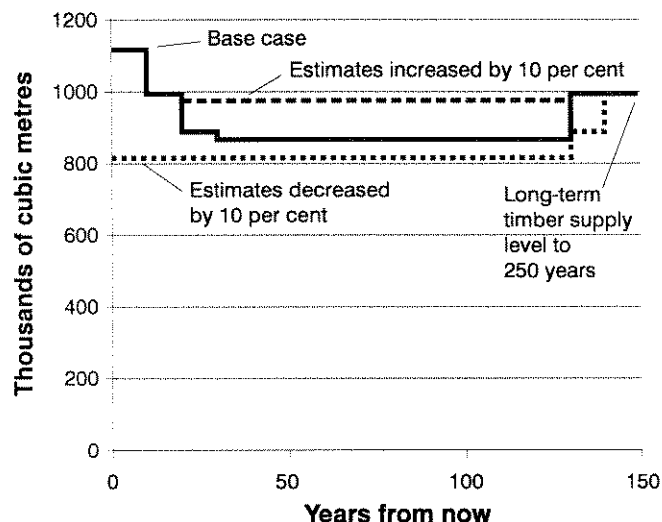


Figure 9 Impact of changing the estimates of mature timber

- **Minimum harvestable ages**

In the timber supply analysis, tree species, current practices and timber production objectives were considered in the establishment of minimum harvestable ages, which ranged from 60 to 160 years (TSAR page 23). Figure 10 illustrates the impacts of changes in the estimated minimum harvestable ages.

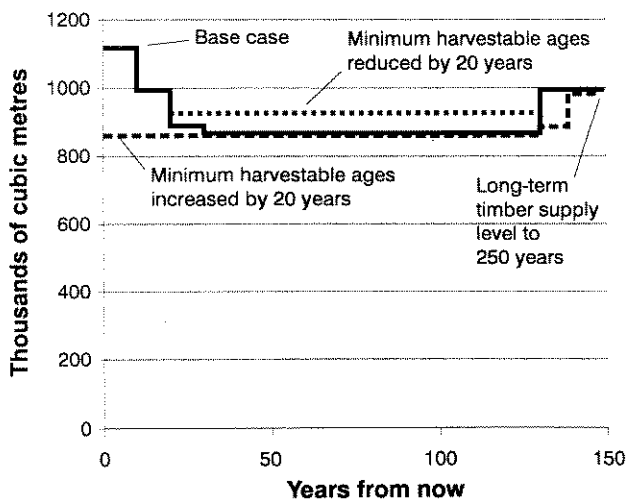


Figure 10 Impact of changes in minimum harvestable ages

# Sunshine Coast Timber Supply Area

- Practices to maintain visual quality in sensitive viewscapes**  
 Management practices for scenic areas within the Sunshine Coast Timber Supply Area are of particular concern to local residents and tourism businesses within highway, ferry and boating corridors. Approximately 55 per cent of the timber harvesting land base has been identified as sensitive viewscapes. The forest cover requirements for these areas are based on current practices and assume the continuation of clearcut harvesting.

Figure 11 illustrates that the short-term timber supply forecast depends to a large extent on forest cover requirements which strongly influence the amount of mature timber available from visually sensitive areas. (TSAR page 30)

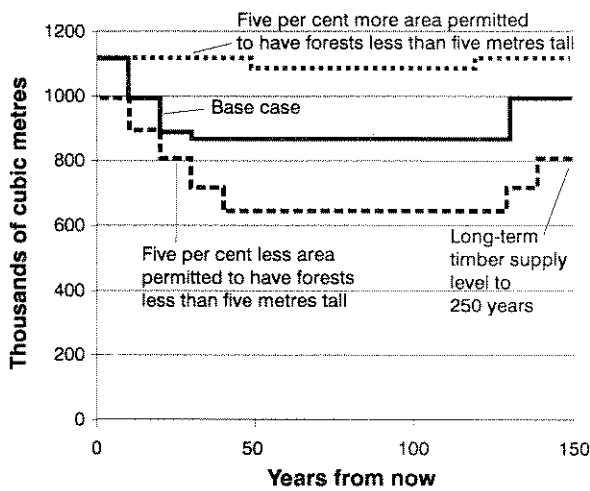


Figure 11 Impact of changes in forest cover requirements in visually sensitive areas

## Possible opportunities to offset timber supply reductions projected in the near future

- Harvesting forests currently not harvested**  
 When the data for the timber supply analysis was completed, certain forest types were not being harvested because they were not considered merchantable. It has been suggested that because wood supplies in British Columbia are shrinking, these stands are becoming more valuable and could be included in the timber harvesting land base in the future, possibly offsetting some of the projected reductions in timber supply.

In the Sunshine Coast Timber Supply Area analysis, approximately 40,000 hectares of forests with low timber volumes, non-merchantable species or low timber-growing potential were excluded from the timber harvesting land base. An opportunity may exist in the near future to include some of these areas in the timber harvesting land base if they become feasible to harvest and reforest without compromising their environmental values.

- Intensive silvicultural treatments**  
 Few regenerated stands have grown to maturity in British Columbia, making it difficult to estimate the amount of merchantable wood that can be expected from these forests. In some circumstances, intensive silvicultural treatments that increase tree growth, such as juvenile spacing and fertilization, could result in an increase in the short- and long-term timber supply.

The possible impacts of a 20 per cent increase in the growth of regenerated forests in the Sunshine Coast Timber Supply Area were examined as part of the timber supply analysis. While the increase in estimated timber yields reduced the projected decline in timber supply in the mid-term and increased the long-term forecast, it did not improve the short-term timber supply forecast. (TSAR page 27)

Intensive silviculture could also reduce the period of time it takes a regenerated forest to reach the height required to allow harvesting in adjacent areas to proceed (green-up period\*). A test which assumed a reduction of green-up periods by five years, possibly achieved through intensive brush control or the application of fertilizer, did not show an immediate timber supply impact. The projected mid- and long-term timber supply did increase, but the short-term supply remained unchanged. (TSAR page 31)

The Timber Supply Review was designed to assess the timber supply impacts of current practices. As a result, the range of intensive silvicultural treatments that might be implemented in the Sunshine Coast Timber Supply Area was not examined. Further analyses are required to examine the opportunities for potential intensive silvicultural treatments and the implications of those treatments on timber supply and other resources.

- Commercial thinning**  
 Due to the long history of timber harvesting in the Sunshine Coast Timber Supply Area, 49 per cent of the timber harvesting land base has second-growth, immature forests. This makes it possible to implement a commercial thinning program that might partially offset the projected future reduction in timber supply. The potential impacts of commercial thinning on short- and long-term timber supply were not examined in this timber supply analysis. However, limited commercial thinning operations conducted in the area to date indicate a potential for harvesting timber from immature stands. Under the Forest Renewal Program it may be possible to increase commercial thinning operations. Further study is required to examine the feasibility of commercial thinning in candidate forests and to assess the impact on the projected short- and long-term timber supply.

# Sunshine Coast Timber Supply Area

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## Environmental and socio-economic implications

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### Environmental concerns

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Staff of the Ministry of Environment, Lands and Parks and the federal Department of Fisheries and Oceans both review harvesting development plans and support many of the current practices used in the Sunshine Coast Timber Supply Area to protect fish and wildlife habitat. Implementation of the Forest Practices Code should address remaining concerns about fish and wildlife habitat management.

The timber supply analysis indicates that many of the forests older than the minimum harvestable ages and available for timber harvesting are over 200 years old (TSAR page 14). In the base case, over the next 50 years, the area of these older stands will be significantly reduced and this may be detrimental to the biodiversity in the area. There is concern about fragmentation of wildlife habitats and loss of critical habitats for old-growth dependent species such as grizzly bears and marbled murrelet (SEA page 63). However, 50 per cent of the forested land in the timber supply area (223,156 hectares) was not included in the timber harvesting land base for the timber supply analysis. These areas provide protection for biodiversity, old-growth, water, fish and wildlife habitat, and scenic and recreational values.

The establishment of road access into previously unroaded areas is also a concern. Increased hunting and angling pressure on wildlife and fish populations is anticipated with improved access. (SEA page 63)

### First Nations implications

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For many members of First Nations resident within the Sunshine Coast Timber Supply Area, forestry-related activities are important for improving current employment and income levels. A reduction in harvest levels can reasonably be expected to cause job loss among those band members who derive employment from timber harvested within the timber supply area.

At the same time, First Nations in the area are concerned about impacts of forest management activities on resource values such as wildlife, fisheries and cultural and historical sites. A reduction in harvest levels would, in their view, allow greater options for conservation of these values. It is expected that treaty negotiations will clarify the role of first Nations in the management and use of lands within the timber supply area. (SEA page 60)

## Community implications

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Total timber supply area employment that is supported by the current allowable annual cut is estimated at 963 person-years, with an associated after tax employment income of approximately \$28.5 million annually. In the *Socio-Economic Analysis* it was assumed that a change in timber supply would create economic impacts directly related to the size of the reduction or increase (i.e., a 10 per cent increase in timber supply would result in a 10 per cent increase in forestry employment). As a result, if the chief forester were to follow the base case forecast, which projects that the current allowable annual cut can be maintained for one decade, no immediate economic impacts are anticipated. The projected reduction in timber supply over the next 20 years is estimated to result in the loss of 183 person-years of employment, with 119 from the forest sector.

Powell River is a forest dependent community, but its dependence on timber harvested in the Sunshine Coast Timber Supply Area is minor compared to its reliance on wood from other sources, such as tree farm licences and other coastal areas. In contrast, the communities on the lower Sunshine Coast, including Sechelt, Gibsons and Roberts Creek, are generally more diversified and depend less on the forest sector. Forest sector jobs in this area, however, are more closely associated with harvesting trees from the timber supply area. Therefore, any harvest reductions in the Sunshine Coast Timber Supply Area would likely be more noticeable in the Sechelt/Gibsons area than in Powell River.

It is estimated that, due to in-migration, reductions in the allowable annual cut would have relatively minor effects on population numbers as a whole in the short term. In the long term, the tourism industry's potential, as well as opportunities generated through the Forest Renewal Plan to intensify silvicultural treatments and to pursue the establishment of value-added wood businesses, will contribute to stabilizing the population in spite of possible job losses associated with timber supply reductions.

### Provincial implications

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The total provincial employment supported by the current allowable annual cut in the Sunshine Coast Timber Supply Area is about 3,302 person-years, with associated employment income of approximately \$89.4 million annually. No impacts would be anticipated in the short term if the base case forecast was followed. If the timber supply were reduced over the next 20 years as projected in the base case forecast, it is estimated that a total of 627 person-years of employment would be lost provincially, including 251 person-years of forestry employment.





