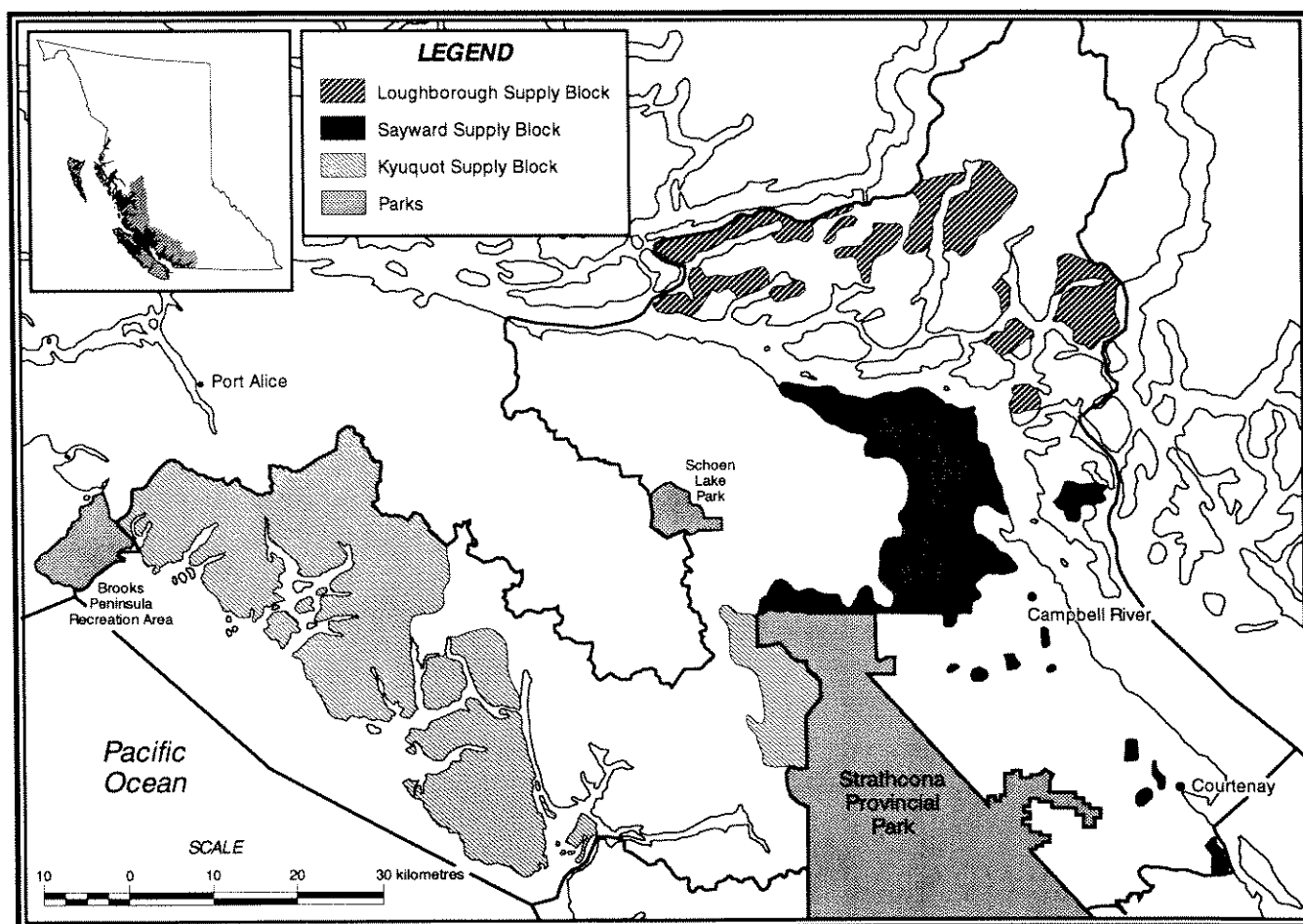




MINISTRY OF FORESTS

Strathcona Timber Supply Area

Timber Supply Review Discussion Paper
January 1995



Province of
British Columbia
Ministry
of Forests

**WE ENCOURAGE YOU
TO PROVIDE US WITH YOUR
INPUT. PLEASE NOTE THAT
THE DEADLINE FOR PUBLIC
COMMENT HAS BEEN
CHANGED TO APRIL 30, 1995.**

Strathcona Timber Supply Area

Timber Supply Review Highlights

The Timber Supply Review for the Strathcona Timber Supply Area began in 1993. The Vancouver Island Land-Use Plan, which was announced in June, 1994, could not be taken into account in this review. It is anticipated that the timber supply impacts of the Land-Use Plan in the Strathcona Timber Supply Area can be assessed well before the maximum five year period required by the *Forest Act*.

- 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 adjust the allowable annual cut* for the Strathcona Timber Supply Area.
- The current allowable annual cut in the Strathcona Timber Supply Area was set in 1986 at approximately 1.7 million cubic metres per year. In 1993 it was temporarily reduced by 188 000 cubic metres when harvesting was officially deferred within three large proposed protected areas. (page 5)
- Approximately 72 per cent of the timber harvested from the Strathcona Timber Supply Area is shipped to southern British Columbia for processing. (page 6).
- It is estimated that a total of 5 530 person-years of employment are supported by harvesting and processing timber from the Strathcona Timber Supply Area; approximately 900 are direct person-years of forestry employment within the area. (page 6)
- The base case* timber supply forecast indicates that, based on current forest management practices, the harvest level should be reduced immediately by about 12 per cent to 1.45 million cubic metres per year, in order to avoid major future disruptions in timber supply. The timber supply is then projected to decline about 12 per cent every 10 years for the next 30 years, to a low of about 940 000 cubic metres per year, 13 per cent below the long-term timber supply level. In about 110 years, when timber harvesting will be taking place in predominantly second-growth stands, the timber supply is projected to increase to the long-term sustainable level of about 1.1 million cubic metres per year. (page 8)
- The most significant reason for the projected reduction in timber supply is that the extensive mature forests which historically permitted harvest rates well above the long-term level no longer exist. Harvest rates must now decline towards the long-term sustainable level to avoid serious timber supply shortfalls in the future. (page 8)
- There may be opportunities to partially offset projected short-term reductions in timber supply by using partial cutting* rather than clearcutting to harvest the timber in some areas. (page 9)
- Other potential opportunities to offset the projected timber supply reductions such as increasing the size of the timber harvesting land base, increased intensive silviculture treatments or expanded commercial thinning do not appear to be feasible in the Strathcona Timber Supply Area. (page 10)
- Several factors indicate that the short-term timber supply may be even lower than predicted:
 - practices required to maintain water quality, quantity and flow patterns may not have been fully incorporated in the timber supply analysis
 - the concentration of the remaining mature forests in this timber supply area, combined with requirements for dispersed harvesting to protect non-timber resources, may make it impossible to achieve the projected harvest levels
 - the integrated resource management practices needed to meet the objectives for non-timber resources may restrict timber supply more than predicted (page 10)
- Provincially, the total immediate employment loss resulting from the base case timber supply forecast is projected to be 637 person-years, with an estimated 30 per cent of this loss coming from within the timber supply area. (page 12)
- Within the timber supply area, 65 per cent of the estimated job losses could occur in the eastern portion of the area where current economic growth and diversification are expected to minimize the effect of these job losses. Communities in the western Strathcona area are more dependent on the forest industry and will require time to plan for reductions in timber supply. (page 12)

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- Several alternatives exist for the chief forester to adjust the short-term allowable annual cut as part of a strategy to achieve the long-term sustainable timber supply level. (page 13)

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

Definitions

Allowable annual cut

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

Base case forecast

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

Commission on Resources and Environment (CORE)

An independent commission established to develop and test land-use planning processes in consultation with stakeholders.

Community Resource Advisory Board

A group of local people representing various community perspectives who will provide local advice to government regarding resource management planning.

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 six.

Environmentally sensitive areas

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

Forest Practices Code

A law which requires better forest practices, with heavy penalties for violators. Present plans call for implementation of the Code in the coming months.

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

One person working the equivalent of one full year. If someone works full time for six months, he or she 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 long-term timber harvesting. Harvesting must meet integrated resource management objectives.

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 by an established pattern of wood flow from the forest to the primary timber-using industries.

Tree farm licence

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

Strathcona 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 Strathcona Timber Supply Area and encourages British Columbians to comment on the findings. Public comments will be accepted until April 23, 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 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 take into account 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

Towards a sustainable future

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

- The *Forest Renewal Plan* is a partnership of all the forest interests, working together to invest in increasing the value of the forests 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*, the *Protected Areas Strategy*, and *Land and Resource Management Plans* are moving to integrate all values into land-use planning in an effort to end confrontation and valley-by-valley battles.
- The *B.C. Treaty Commission* is moving us toward fair and equitable settlements of treaties which can create long-term social and economic stability for aboriginal and non-aboriginal British Columbians.

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- constraints on the amount of timber produced from the area due to use of the forest for purposes other than timber production
 - any other information which relates to the capability of the area to produce timber
- b) the short- and long-term implications to the province of alternative rates of timber harvesting from the area
- c) the nature, production capabilities, and timber requirements of established and proposed processing facilities
- d) the economic and social objectives of the Crown for the area, the region and the province, as expressed by the minister of forests
- e) abnormal insect or disease infestations and major salvage programs planned for the timber on the area

Some of these factors can be measured and analyzed; others cannot. Ultimately, the chief forester's determination is an independent, professional judgment based on the best information that is available. By law, the chief forester is independent of the political process and is not directed by the minister of forests when determining allowable annual cuts. In these determinations the chief forester considers relevant information from any source, including interest groups. However, these determinations cannot be inappropriately influenced by the advocacy efforts of any group.

Timber Supply Review process

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

reports and this discussion paper, and to accommodate new information, techniques and ideas. Figure 1 illustrates the five-step process that has been developed for the Timber Supply Review in timber supply areas. The diagram also indicates the estimated time required to complete each step in the process and the status of the Timber Supply Review for the Strathcona Timber Supply Area.

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.

A commitment to incorporate change

Other government initiatives are currently ongoing and may impact the timber supply in specific areas, necessitating further adjustments to the allowable annual cut.

Vancouver Island Land-Use Plan

On June 22, 1994, the government announced a Land-Use Plan for Vancouver Island. Several components of this plan have the potential to affect the timber supply in the Strathcona Timber Supply Area, with economic, social, and environmental impacts:

- several new parks are being created
- areas are being established for low-intensity, general, and high-intensity forest management
- a new *Forest Land Reserve Act* and a Forest Land Commission will secure the commercial forest land base
- a new Forest Jobs Commissioner is stabilizing forest industry employment

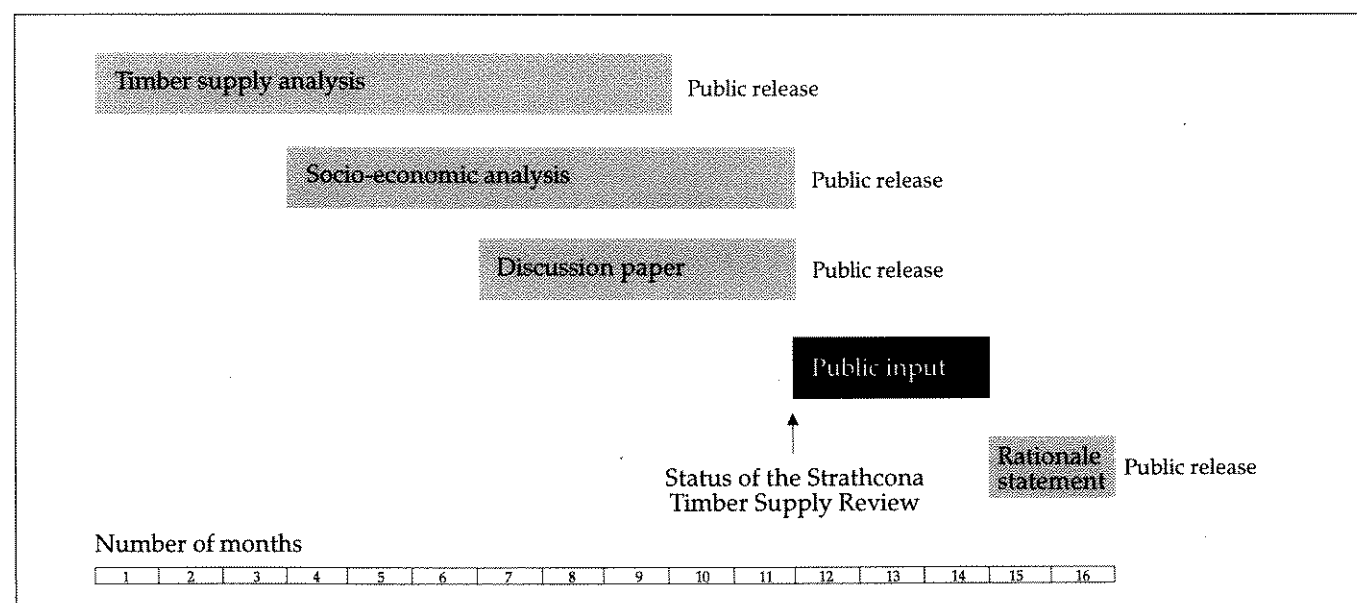


Figure 1 Steps in the Timber Supply Review process

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- a new Vancouver Island Jobs Strategy will more than offset the employment impacts of the Land-Use Plan including increased spending on silviculture and environmental rehabilitation.

Until this Plan is fully implemented and practices are adjusted in the field, the actual timber supply impacts of the Plan cannot be measured. This Timber Supply Review will be used as the basis for determining the impacts of the Land-Use Plan once it is implemented. The next Timber Supply Review will be based on actual experience with the Land-Use Plan gained during the implementation period.

Implementation of the Land-Use Plan has already started. If it becomes apparent that the Land-Use Plan has modified the timber supply so that the allowable annual cut is no longer consistent with the Plan, the chief forester is prepared to reassess the timber supply and to redetermine the allowable annual cut based on Section 7 of the *Forest Act*. The chief forester is also prepared to investigate the possibility of implementing other procedures under the *Forest Act* to adjust the allowable annual cut if necessary.

Forest Practices Code

The *Forest Practices Code of British Columbia Act* was passed in the Legislature in July, 1994. This law requires better forest practices throughout the province and establishes heavy penalties for violators. When the Code is fully 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 Strathcona Timber Supply Area based on current understanding of the intentions of the Code. Information about these practices will be provided to the chief forester for consideration in this allowable annual cut determination. In most cases however, further implementation and experience with the Code will be required before the timber supply effects of new practices can be properly assessed, making it necessary to incorporate these factors in future allowable annual cut determinations.

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 new government policies. Where major government initiatives prompt changes in land-use designations or forest management practices which significantly impact the timber supply, the chief forester may decide to

determine the allowable annual cut more frequently than every five years. It is anticipated that it will be necessary to assess the timber supply impacts of the Vancouver Island Land-Use Plan in the Strathcona Timber Supply Area well before five years.

Timber Supply Review in the Strathcona Timber Supply Area

The information used for the Timber Supply Review in the Strathcona Timber Supply Area was finalized in January, 1994 and reviewed by Forest Service staff, staff from Fish and Wildlife Branch of the Ministry of Environment, Lands and Parks, and local timber tenure holders. The Forest Service conducted and released a short- and long-term timber supply analysis (*Strathcona Timber Supply Analysis Report*, April, 1994). A consultant also completed a socio-economic analysis of the timber supply forecasts (*Strathcona Timber Supply Area Socio-Economic Analysis*, January, 1995). Both reports are available from the Campbell River Forest District office and the Vancouver Forest Region office in Nanaimo.

As the Vancouver Island Land-Use Plan and the Forest Practices Code were not available when preparation for the timber supply analysis for the Strathcona Timber Supply Area began in 1993, the *Timber Supply Analysis Report* and the *Socio-Economic Analysis* do NOT include the land-use decisions and changes in forest practices resulting from these initiatives. Where possible, the changes in practices resulting from these initiatives are identified in this *Discussion Paper*.

This discussion paper summarizes these two reports and highlights critical factors that the chief forester must consider to determine the allowable annual cut for the Strathcona Timber Supply Area. In conjunction with the release of this *Discussion Paper* and the *Socio-Economic Analysis*, Forest Service staff will actively solicit public input to ensure the information in the Timber Supply Review for the Strathcona Timber Supply Area is correct and complete. Input will be accepted until April 23, 1995, and will be summarized in a report to the chief forester and the minister of forests.

After considering all of the available information, the chief forester will determine the allowable annual cut for the Strathcona Timber Supply Area during the summer of 1995. The 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 Analysis*). Both reports are available from the Campbell River Forest District office and the Vancouver Forest Region office in Nanaimo.

Description of the Strathcona Timber Supply Area

The Strathcona Timber Supply Area covers 430 000 hectares of central Vancouver Island, from the south end of Strathcona Park to the Brooks Peninsula in the north. It also includes several of the islands in the Georgia Strait and portions of the mainland to the east (see map on the cover page).

Forest resources

Timber

Figure 2 illustrates that approximately 36 per cent of the land base was considered to be available for timber harvesting when the timber supply analysis was completed. Areas that were not included within the timber harvesting land base* are water or non-Crown land, non-forested areas, and areas that are not feasible or economical to harvest. The latter includes highly environmentally sensitive areas* such as sensitive soils, streamside buffers, deer and elk winter ranges, and important recreation features. New parks that were created by the Vancouver Island Land-Use Plan were not deducted from the timber harvesting land base for the timber supply analysis. (TSAR pages 6-7)

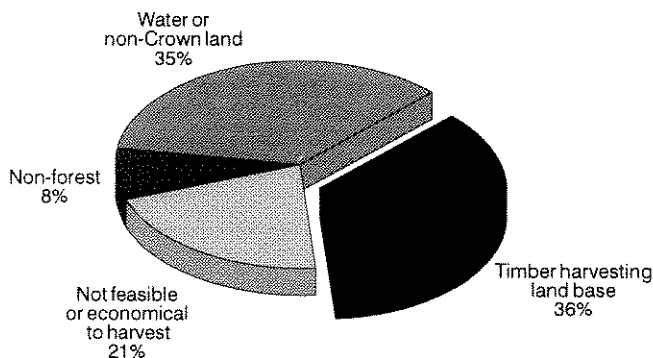


Figure 2 Classification of land within the Strathcona Timber Supply Area

Note: Total area including water bodies is 659 089 hectares. Total area of land is 430 000 hectares

(excluding provincial parks such as Strathcona or Brooks, ecological reserves or tree farm licence areas)

The majority of the Strathcona Timber Supply Area is dominated by forests of hemlock, balsam, Douglas-fir and western redcedar (TSAR page 7). Due to the long history of timber harvesting activity in the Strathcona Timber Supply Area, and a large wildfire that occurred in 1938 in the eastern portion of the timber supply area, the timber harvesting land base includes a large proportion of younger, regenerated forests that are almost old enough to be harvested a second time (Figure 3). These forests are concentrated in the eastern portion of the timber supply area while the older forests are concentrated in the western portion. (TSAR page 15)

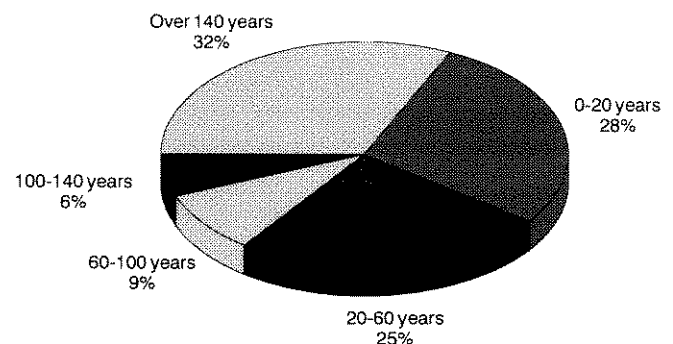


Figure 3 Current forest ages within the timber harvesting land base

In the past, harvesting was concentrated in the better quality stands, either at lower elevations or on better growing sites. As a result, most of the existing mature forests are growing on poorer sites which are not expected to produce as much timber as the better growing sites in the timber supply area. This will impact the short-term timber supply.

In addition to timber harvesting, the harvesting of botanical forest products such as cedar boughs, salal, ferns, mosses, yew bark and mushrooms has increased in this timber supply area.

Wildlife

Despite the extent of resource use activities, the Strathcona Timber Supply Area still contains one of the richest and most diverse arrays of wildlife in Canada. More than 300 species of migratory and resident birds, 45 species of mammals, and 13 species of amphibians and reptiles range throughout the area. (SEA page 25)

Native mammals in the Strathcona Timber Supply Area include important species such as the black-tail deer, Roosevelt elk, black bear, grizzly bear, mountain

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goat, wolf, beaver, pine marten, wolverine, short-tailed weasel, and other fur-bearing species. Black-tail deer management in the eastern area of the island, known as the Sayward Forest, is particularly important.

Native and migratory birds in the forests of the area include species of management concern such as marbled murrelets, Queen Charlotte Island goshawks, great blue herons, and pileated woodpeckers. Adjacent marine habitats and estuary habitats support populations of notable species such as Peale's peregrine falcons, bald eagles, trumpeter swans and harlequin ducks.

Fisheries

The rivers, streams and lakes of the Strathcona Timber Supply Area are inhabited by at least 87 species of resident, semi-resident and migratory finfish and shellfish. The rivers and tributaries are spawning and rearing grounds and migration corridors for recreationally and commercially valuable Chinook, chum, coho, pink and sockeye salmon. Winter and summer-run steelhead trout are the focus of a renowned fishery. Cutthroat trout and Dolly Varden char are important recreational fish. The large number of lakes in the Sayward Forest provide a wide variety of angling opportunities. (SEA page 30)

Tourism and recreation

Tourism and recreation are also important in the Strathcona Timber Supply Area. This area provides easily accessible forest recreation opportunities to population centres in the Lower Mainland and southern Vancouver Island as well as to local residents. The scenic quality of the forest landscape is important, especially along several highway and marine corridors within the area. (SEA page 36)

The Strathcona Timber Supply Area contains some outstanding outdoor recreation and environmental amenities within its boundaries. World famous Strathcona Park straddles Highway 28, the principal east-west road link within the timber supply area. Marine-based outdoor recreation and fresh and salt water sport fishing are leading attractions in the area.

Current allowable annual cut

The current allowable annual cut for the Strathcona Timber Supply Area was set in 1986 at 1 693 745 cubic metres per year. In April, 1993, the allowable annual cut was temporarily reduced by 188 000 cubic metres per year when harvesting was officially deferred within three large proposed protected areas.

Approximately 81 per cent of the allowable annual cut is allocated to nine long-term tenure holders. A further 18 per cent is harvested through the Small Business Forest Enterprise Program administered by the B.C. Forest Service. Woodlots account for less than one per cent of the harvest. (SEA page 45)

Socio-economic profile

Communities

The Strathcona Timber Supply Area includes most of the Comox-Strathcona Regional District, located in the central part of Vancouver Island. The Regional District's 1992 population was estimated at 85 574. The district has experienced very strong rates of population growth over the past five years, and this is expected to continue. (SEA page 3)

This population growth is not uniform throughout the entire area but is concentrated in the region's major population centres of Campbell River, Courtenay and the Comox Valley, where 94 per cent of the current residents live. The situation is very different for some of the smaller communities that are struggling to retain their population base. These include Gold River, Tahsis, Zeballos and Kyuquot (in the western Strathcona area) and Cumberland and Sayward (in the eastern Strathcona area).

The economies of the larger population centres in the eastern Strathcona area are relatively diversified. The major resource sectors of forestry, commercial fishing and mining remain very significant components of the local economies, although they have experienced some shrinkage and instability in recent years. Sectors that are strongly expanding include tourism and outdoor recreation, the retail and service sector, and the public sector. Much of this expansion is fuelled by high rates of population growth. While the official unemployment rate in this area has decreased in recent years, a more broadly-based unemployment problem appears to persist. (SEA page 6)

In contrast to eastern communities, Gold River, Tahsis and Zeballos (three of the larger communities of the western Strathcona area) are essentially single industry communities. The forest sector directly provides approximately 60 per cent of local employment (SEA pages 11-16). Kyuquot is largely dependent on non-timber resources, specifically fish and the natural environment, upon which a growing eco-tourism industry is based. Western Strathcona communities have a permanent population of just under 5 000 people.

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First Nations

Ten First Nations have traditional territories within the Strathcona Timber Supply Area. Each band belongs to one of three tribal organizations and together they represent 3 163 band members. This does not include non-status or aboriginal peoples from other areas currently living in the timber supply area.

Aboriginal treaty negotiations may become a significant factor in the Strathcona Timber Supply Area.

Timber harvesting and processing sector

Nine major timber companies have timber harvesting rights in the Strathcona Timber Supply Area, along with the Small Business Forest Enterprise Program and some small operators. Eight of the nine companies send most of the timber they harvest outside the Strathcona Timber Supply Area for processing or to trade through the Lower Mainland coastal log market. The result is that 72 per cent (1.2 million cubic metres) of the harvest leaves the timber supply area.

Two major processing facilities within the western Strathcona area are heavily dependent on harvesting from the Strathcona and other timber supply areas, as well as from Tree Farm Licence 19. It is estimated that 250 person-years* of employment at these mills is created by processing timber harvested from the Strathcona Timber Supply Area. The newsprint mill in Gold River was closed for an indefinite period in December, 1993 because of economic factors, resulting in the layoff of 178 people. Many of the individuals who were laid-off have remained in Gold River in expectation of the mill re-opening, even though there are no immediate plans to do so.

In the eastern Strathcona area, major processing facilities include a pulp mill at Elk Falls, two large sawmills in Campbell River, and one large sawmill in Courtenay. With the exception of one of the Campbell River sawmills, these mills depend to a very limited extent on wood harvested from the Strathcona Timber Supply Area. The sawmill in Campbell River that does depend on timber from the timber supply area secures much of its supply from harvesting carried out through the Small Business Forest Enterprise Program.

Approximately 900 person-years of direct employment are created in the area by harvesting and processing timber from the Strathcona Timber Supply area. Figure 4 illustrates the types of direct employment created both within and outside the timber supply area.

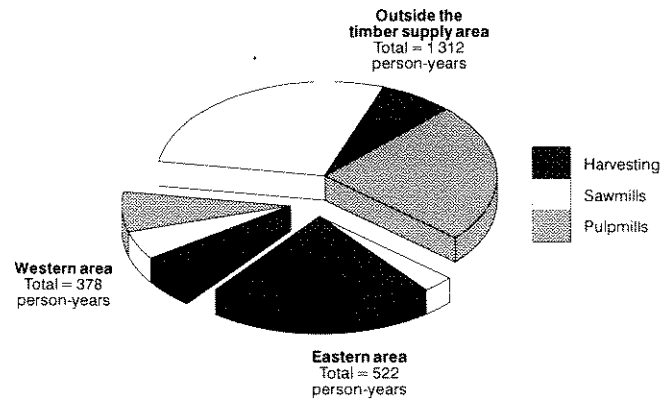


Figure 4 Direct employment generated by harvesting and processing timber from the Strathcona Timber Supply Area

Note: A relatively small amount of employment is also created in silviculture activities and marine transportation.

It is estimated that for every person-year of direct forestry employment, an additional 0.61 person-years of employment are generated through forest company and employee spending elsewhere in the timber supply area, for a total of 1 448 person-years.

Provincial economy and revenues

Provincially (including the timber supply area), a total of 5 530 person-years of employment are generated by wood harvested from the Strathcona Timber Supply Area. This includes direct employment in areas such as harvesting, transportation and processing (2 212 person-years), as well as additional employment created by the provision of goods and services to the forest sector and by the spending of its employees (3 318 person-years). This estimate is based on the assumption that each direct person-year of employment creates 1.5 person-years of spin-off employment both within and outside the area. (SEA Section 7)

It is estimated that approximately \$52.1 million in provincial government revenues are generated annually by timber harvesting in the Strathcona Timber Supply Area. This figure is based on fees of \$23.4 million for harvesting public timber in the area, estimated personal income taxes of \$18.9 million, plus other tax revenues of \$9.8 million. These estimates were developed before the new Forest Renewal Plan was announced and do not include the increased stumpage revenues that are being 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.

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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 management of wildlife and water resources and shares responsibility for fisheries resources 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 the existing land-use designations and current management practices that were approved and implemented in the Strathcona Timber Supply Area when the information for the timber supply analysis was prepared in January, 1994. These practices are briefly described below. Readers are encouraged to read the *Timber Supply Analysis Report* page 8 and Appendix A-3 and A-4 for more details.

- **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 (TSAR page 49). The typical silvicultural practices are to harvest, then site prepare if necessary, reforest by planting a mix of species or by relying on natural regeneration, and control of competing vegetation where needed. It is assumed that areas will be restocked within two to five years of harvesting.
- **Forest health and unsalvaged losses** - Forest losses due to wildfire, insects, diseases and wind damage are minimized as much as possible. Annual losses of timber to fire and wind damage are estimated to be 31 750 cubic metres. This is timber that cannot be salvaged or recovered. No significant loss of timber has been identified as a result of either forest insects or disease.
- **Timber utilization** - Within areas being harvested, all coniferous trees greater than 17.5 centimetres in diameter at chest height are considered merchantable and must be used.
- **Harvest ages** - Minimum harvest age is defined as the time it takes for forests to grow to harvestable size. The minimum harvest ages used in the timber supply analysis vary by tree species and site productivity. Minimum harvest ages for existing mature forests range from 70 to 110 years while 50 to 110 years was used for regenerated forests. (TSAR page 52)
- **Soil conservation** - Many areas in the Strathcona Timber Supply Area have sensitive soils that are likely to erode if disturbed by logging. Regional guidelines are followed to minimize negative soil impacts. A total of 11 902 hectares of highly sensitive soils were deducted from the timber harvesting land base for the timber supply analysis.

An area of 6 665 hectares (five per cent) was deducted from the timber harvesting land base for existing roads and landings that will not produce timber in the future. To account for future roads and landings, the remaining timber harvesting land base was reduced by 6 397 hectares (seven per cent).
- **Recreation** - The Strathcona Timber Supply Area has many high value recreation features, including world-class caves, camping areas and high value fishing corridors along rivers. Careful timber harvesting is considered compatible with the management of some recreation features, and not with others. Approximately 6 505 hectares were deducted from the timber harvesting land base for management of key recreational features.
- **Viewscapes** - Maintenance of scenic landscapes is a recreation and tourism management priority, particularly for viewscapes near major population centres and along several major highway and marine corridors within the timber supply area. Road construction and logging are planned and implemented to minimize visual impacts. Recent studies have shown that trees on harvested areas must reach a height of at least five metres before they appear "greened up" to the average person.

Thirty-seven per cent of the timber harvesting land base has been classified into one of three levels of visual sensitivity, each with a corresponding forest cover requirement:

 - highly sensitive areas (11 816 hectares) - generally no more than five per cent of the forested viewcape can have trees less than five metres tall at any time
 - moderately sensitive areas (54 353 hectares) - generally no more than 10 per cent of the forested viewcape can have trees less than five metres tall at any time and,
 - low sensitivity areas (21 269 hectares) - generally no more than 20 per cent of the forested viewcape can have trees less than five metres tall at any time
- **Fish and wildlife** - Streamside riparian areas* are protected and maintained under the Coastal Fisheries/Forestry Guidelines. About 3 092 hectares were deducted from the timber land base to account for these practices.

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Suitable deer and elk winter range must have enough forest cover to reduce snow depth and provide thermal and security cover for deer and elk during the winter. Approximately 7 450 hectares of productive forest were deducted from the timber harvesting land base for protection of deer and elk winter range. In addition, other important deer and elk habitats have greater forest cover requirements: at least 50 per cent of specific habitat areas must have trees over five metres tall, and at most, 25 per cent may have forests under three metres tall, at any time.

- **Integrated resource management areas -** Harvesting is dispersed to create a diversity of forest ages and to limit the area that is clearcut at any one time. A given area cannot be harvested until the regenerated forest on adjacent, previously harvested areas is at least three metres tall. To approximate current practices limiting the amount of area harvested at one time, in the timber supply analysis a maximum of 25 per cent of the timber harvesting land base was permitted to be covered with trees less than three metres tall at any time.

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 to sustainable 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 timber supply forecast

To complete the timber supply analysis for this review, a computer model was used to generate a base case timber supply forecast for the Strathcona Timber Supply Area which meets each of the following conditions:

- the current allowable annual cut is maintained as long as possible or, if this is not possible, the maximum harvest rate is found, then
- the timber supply is reduced within a defined range, usually eight to 12 percent per decade, until the long-term level is reached, and
- the timber supply level is maintained at or above the predicted long-term, sustainable level at all times.

If a timber supply forecast could not be generated that met all these conditions, the analyst adjusted the conditions until a feasible forecast could be produced. Several of these conditions had to be adjusted to create a base case timber supply forecast for the Strathcona Timber Supply Area, given current management practices and the best available information at the time.

Initial attempts to generate a forecast that met the above conditions showed that it is not possible to maintain the allowable annual cut for even ten years - there is not enough mature timber to maintain the current harvest level. As Figure 5 illustrates, the analysis indicates that, no matter what strategy is used to phase in the long-term timber supply level, the timber supply in the next 20 years is inevitably limited. In one forecast, the timber supply was reduced by two per cent below the current level for 10 years, which resulted in a 28 per cent decline in timber supply for the next ten years. In another case, an eight per cent initial decline was followed by a 19 per cent decline after 10 years. (TSAR pages 19-21)

Because both of these forecasts showed the timber supply dropping below the long-term level in 40 years, another analysis was completed to examine the impacts of immediately dropping the timber supply to the long-term level. Figure 5 illustrates that even with a drastic, immediate timber supply reduction, this timber supply shortfall cannot be avoided. (TSAR pages 18-21)

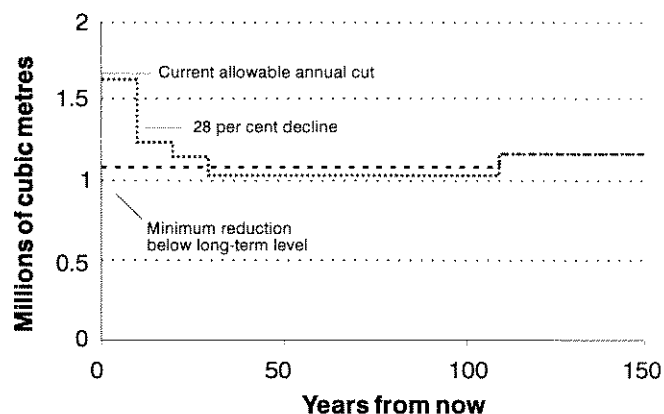


Figure 5 Initial timber supply forecasts

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 6). The base case forecast indicates that the current harvest level must be reduced immediately by about 12 per cent or 210 000 cubic metres per year to 1.45 million cubic metres per year. This is followed by 12 per cent reductions every 10 years for 30 years,

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to a low of approximately 940 000 cubic metres per year—approximately 13 per cent below the long-term timber supply level. In 110 years, the timber supply is projected to increase to the long-term level of about 1.1 million cubic metres per year.

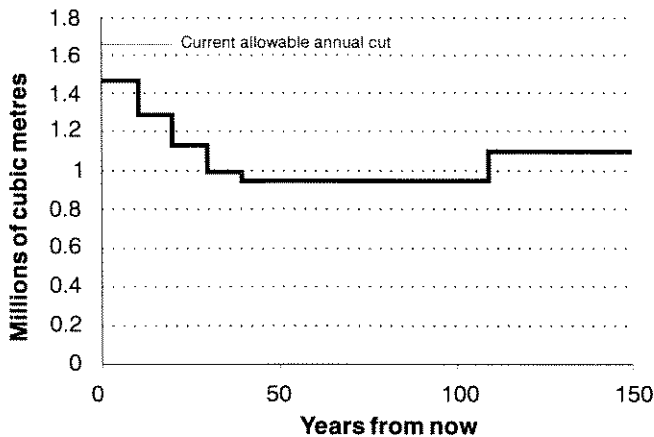


Figure 6 Base case timber supply forecast

In order for the projected transition to the long-term sustainable timber supply level to occur, harvesting must shift significantly between the western area and the remainder of the timber supply area. As Figure 7 illustrates, harvesting must be reduced immediately in the west coast portion of the timber supply area from the recent level of 1 100 000 cubic metres per year to 800 000 cubic metres per year. A corresponding increase in harvesting must occur in the eastern portion of the area, and the mainland.

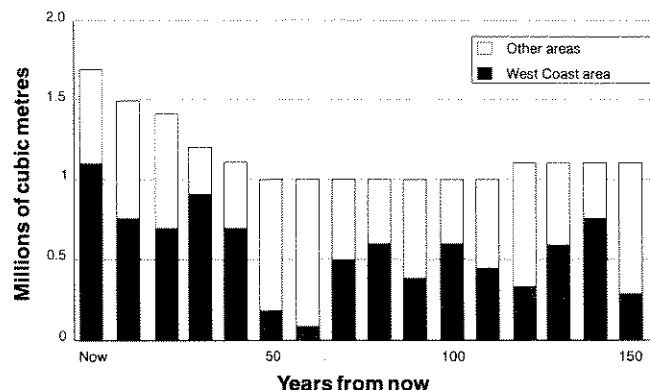


Figure 7 Projected harvesting distribution

The reasons for this timber supply forecast are:

- the original abundance of mature forest which historically allowed harvest rates well above the long-term level no longer exists. Harvest rates must decline towards the long-term level immediately to avoid serious timber supply shortfalls in the future

- integrated resource management practices for non-timber resources such as wildlife and scenic values restrict the availability of mature timber by limiting the amount that can be harvested at any time. However, it is important to note that even if these practices were changed, the timber supply forecast would still predict a decline in the harvest level in the near future because most of the original mature forest has been already harvested

Examining critical factors

When the Timber Supply Analysis Report was completed in 1994, 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 are outlined in the following discussion. Other factors in the analysis were tested and are discussed in the Timber Supply Analysis Report (see TSAR pages 15-33) but were not considered critical to this review and therefore are not included in this discussion paper.

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

Potential opportunities to partially offset reductions in short-term timber supply

Harvesting with partial-cuts

Much of the timber in the Strathcona Timber Supply Area is harvested through clear-cutting. Many of the restrictions on rate of harvest to manage wildlife habitat, biodiversity and scenic values are designed to limit the impact of clear-cuts.

There may be opportunities to harvest more timber in some areas by using partial cutting systems where individual or patches of trees are removed at one time, rather than removing all the trees at once. A combination of partial cutting and clear-cutting systems may also be possible. This may partially offset short-term timber supply shortages while still managing for the values that need protection.

Increasing the area that is economically feasible to harvest and reforest

The timber harvesting land base includes sites where it is environmentally feasible to harvest

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using current harvesting methods and technology and where the cost of harvesting and reforestation is less than the value of the timber extracted. In the Strathcona Timber Supply Area, there are approximately 86 000 hectares of forests that currently are not considered economical or feasible to harvest and that were deducted from the timber harvesting land base. (TSAR page 28)

The timber industry has suggested that, with alternative harvesting systems and a possible increase in timber values as wood supplies become limited, more lower quality timber and timber on mountainous terrain will be economical to harvest than is currently estimated. This may lead to an increase in the timber harvesting land base and possibly an increase in the short- and long-term timber supply.

It should be noted however, that of the 86 000 hectares classed as not feasible or economic to harvest, approximately 35 000 hectares are classified as having highly sensitive soils and harvesting would not be permitted with existing techniques. The remaining 50 000 hectares tend to be sites with low timber volume, poor quality timber and high operating costs.

- **Intensive silviculture treatments**

In some circumstances, intensive silviculture treatments (i.e. juvenile spacing, fertilization, etc.) that increase tree growth and the long-term timber supply can also increase the short-term timber supply. However, a test of the possible impacts of intensive silviculture in the Strathcona Timber Supply Area that assumed a 20 per cent increase in growth of regenerated stands did not show this result. The long-term supply increased but the short-term timber supply did not. (TSAR page 27)

- **Increased commercial thinning**

In some circumstances, commercial thinning can increase the short-term timber supply by harvesting some of the merchantable timber in a forest before it is mature. Approximately 50 000 cubic metres per year are currently harvested in commercial thinnings in the Strathcona Timber Supply Area. Ongoing assessments have not identified additional opportunities to increase the amount of commercial thinning above this level.

Factors indicating a possible further reduction in the short-term timber supply

- **Water management practices**

The timber supply analysis did not specifically assess the timber supply impacts of forest

management practices that are required to maintain water quality and quantity, and adequate timing and magnitude of peak flows for fish and domestic use. While some of these practices are duplicated by the management requirements that were included in the analysis for other resources such as riparian zones, wildlife, biodiversity and visually sensitive areas, all of the practices may not have been accounted for.

- **Harvesting distribution**

The historic pattern of harvesting has left distinct concentrations of mature forests within the timber supply area. Many of the management practices that are designed for wildlife, scenic values and biodiversity require that harvesting be dispersed so that the impacts in a single area are minimized. The timber supply impacts of dispersing harvesting within the relatively small areas where mature timber is concentrated may not have been fully reflected by the base case timber supply forecast.

- **Integrated resource management practices**

It is also possible that the forest management practices that were included in the timber supply analysis may not be adequate to meet the resource management objectives for the non-timber resource values. The timber supply analysis indicated that changes in these practices may have significant timber supply impacts. As Figure 8 illustrates, a five-year increase in the time it takes for a three-metre tall forest to become established on harvested areas is expected to reduce the projected timber supply by approximately 33 per cent below the base case forecast, or 42 per cent below the current allowable annual cut. A five per cent reduction in the amount of area that is permitted to have trees below three metres tall has a similar impact on the projected timber supply.

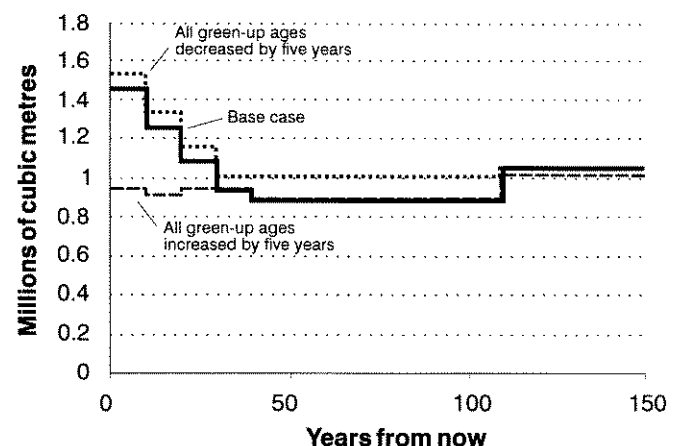


Figure 8 Impacts of changes in forest management practices

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It is the opinion of local Forest Service staff that current integrated resource management practices will likely have more of an impact on the short-term timber supply than is shown in the base case. However, the impacts are not expected to be as substantial as indicated in Figure 8.

Vancouver Island Land-Use Plan and the Forest Practices Code

It is expected that implementation of the Vancouver Island Land-Use Plan and the Forest Practices Code will impact the timber supply in the Strathcona Timber Supply Area through:

- reductions in the timber harvesting land base for parks and other protected areas
- reduced harvesting to meet management objectives for important non-timber values
- establishing networks of forest ecosystems where harvesting is restricted to provide old-growth habitats throughout the area
- increased streamside buffers to protect fish habitat and water quality
- maintaining trees within cutblocks to provide wildlife habitat
- requiring a balance of forest ages within watersheds to maintain water flow

Employment reductions resulting from these changes are expected to be offset by more labor intensive harvesting practices and Forest Renewal programs including environmental restoration, value-added manufacturing and increased silviculture programs.

Environmental and socio-economic impacts

Environmental concerns

Thirty-six per cent of the forested land in the timber supply area (134 921 hectares) was not included in the timber harvesting land base for the timber supply analysis. Of this, 29 949 hectares was reserved for protection of specific environmentally sensitive areas such as sensitive soils, and high wildlife, recreation and fisheries values. The remainder was not included because it is infeasible or uneconomical to harvest with current methods. However, these areas provide biodiversity, old-growth, wildlife and fisheries habitat, water, and scenic and recreational values.

Each of the timber supply forecasts in the timber supply analysis incorporated identical information regarding the area that was excluded from the timber harvesting land base and the management practices

for the area within the timber harvesting land base. The key difference among these forecasts in terms of environmental impact, is when these impacts will occur. A large, immediate reduction in the allowable annual cut would allow old-growth values (including habitat for old-growth dependent wildlife species) to be maintained within the timber harvesting land base for a longer period than a lower initial reduction would. (SEA page 87)

Ministry of Environment, Lands and Parks and the Forest Service have not been able to identify other differences in environmental impacts between the alternatives for adjusting the allowable annual cut. This does not mean that differences do not exist. Both agencies advocate more research on this issue prior to the next timber supply review.

First Nations impacts

For most of the First Nations living within the Strathcona Timber Supply Area, the identifiable impacts of a reduced allowable annual cut are relatively minor:

- The six First Nations affiliated with the Kwakiutl and Alliance Tribal Councils appear to have limited direct involvement with the forestry sector. No impacts have been identified for them, except that they may benefit from a reduced allowable annual cut in a very general way, such as through fewer negative impacts on fisheries habitat. (SEA pages 22-23, 86)
- The Ehatesaht First Nation has a 50 per cent profit sharing arrangement in a company that has timber harvesting rights in the Strathcona Timber Supply Area. Any reduction in the allowable annual cut will directly impact band revenues. Direct employment in the forest sector is also generated through silviculture and stream clean-up. (SEA pages 20, 86)
- Approximately 10 Mowachaht-Muchalaht First Nation members are employed in harvesting operations in the Gold River area. An additional 20 band members are employed in silviculture and stream clean-up. Reductions in allowable annual cuts may result in decreased employment for these people. (SEA pages 19, 86)
- Several members of the Kyuquot First Nation work in the silviculture industry, but a reduction in allowable annual cut would likely have little impact on their employment. This Nation also maintains a high level of traditional, forest-based activities. For this reason, band members strongly advocate a reduction in the allowable annual cut. (SEA pages 20-21, 86)

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- The Nuchatlaht First Nation engages in small scale and subsistence level fishing and forestry activities. No direct impact has been identified from possible allowable annual cut reductions. (SEA pages 21-22, 86)

Many aboriginal communities are seeking access to a secure wood supply to provide employment and economic development opportunities. Any reduction in the timber supply may reduce the timber available for these initiatives.

Community impacts

The ability of the communities in the area to adapt to changes in the timber supply is one of the factors considered by the chief forester in the allowable annual cut determination.

To calculate the economic impacts of timber supply adjustments, it was assumed in the *Socio-Economic Analysis* that a change in the timber supply would create economic impacts directly related to the size of the timber supply reduction or increase (i.e. a 10 per cent change in the timber supply would result in a 10 per cent change in employment). Based on this assumption, it is estimated that if the chief forester adjusted the allowable annual cut to conform to the base case timber supply forecast, the initial 12 per cent reduction could result in an immediate reduction of 108 person-years of direct employment within the timber supply area. Of this, 45 person-years are estimated to be jobs held by residents in the western Strathcona area.

Although the *Socio-Economic Analysis* predicts employment impacts that are directly related to timber supply changes, impacts may be greater or less as industrial adjustments such as changes in the number shifts in a mill, or closure of an operation occur. The timber supply 'thresholds' that prompt these changes are difficult to predict because of the many factors that influence these business decisions.

Employment impacts in the forest-industry dependent towns in the western Strathcona area were closely examined:

- **Tahsis**

The log supply level that would prompt the sawmill in Tahsis to shut down is not known, particularly since factors other than log supply can affect the operational decisions a company makes. It has been estimated that eliminating one shift would result in the loss of 75 jobs. Combined with logging job losses, this could result in the out-migration of about 20 per cent of the existing population of Tahsis. This could have serious implications for the remaining residents of the

community, particularly with regard to community services dependent on the municipal tax base and provincial grants and services based on population. (SEA pages 78-80)

- **Gold River**

The impact of an allowable annual cut reduction on this community may be relatively minor if alternative sources of fibre can be found for the pulp mill. However, many other coastal pulp mills are also experiencing fibre supply shortages, making the search for fibre very competitive. Of greater immediate concern are the 100 to 150 mill employees that were laid off when the newsprint mill was closed at the end of 1993. Many are anticipating re-employment, even though there are no immediate plans to reopen the mill. If these individuals are not rehired, Gold River may face a renewed exodus of people. (SEA pages 79-80)

- **Zeballos**

The impact of a reduced allowable annual cut on this community may be the loss of four person-years of employment in the short term and about 16 over the next 50 years. These job loss estimates assume that the Zeballos logging division remains economically viable with a reduced timber supply. Given the small population base of this community, this lost employment and the out-migration which may result could have significant consequences for the community. (SEA page 80)

Significant economic diversification opportunities exist within the western Strathcona area but these will take time to be realized. In particular, the areas surrounding Nootka Sound and Kyuquot Sound offer attractive outdoor recreation potential which may be capitalized upon by these communities. Sufficient lead time, infrastructure improvements and investor interest will be required to bring about diversification in this area. (SEA page 80)

While most communities in the Strathcona Timber Supply Area are largely reliant on the timber harvesting and processing industry, many diversification opportunities depend upon the fish, water, landscape, recreation and ecological values that may be compromised by a slow transition to the long-term timber supply level. The town of Kyuquot is very economically reliant on non-timber resources in the timber supply area, notably the fisheries and landscapes that are essential for a growing eco-tourism industry. The economy of Kyuquot may depend on a more rapid transition to the long-term timber supply level. (SEA page 81)

Although 65 per cent of the job losses are predicted to occur in communities in the eastern Strathcona area if the allowable annual cut is reduced by 12 per cent, the economic survival of these communities would not be threatened due to their larger

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populations, economic diversification and growth rate. Direct job losses in the short term are estimated to be 63 person-years with an additional 52 person-years of employment lost in the supplier, retail and service sectors. Approximately half of these job losses are estimated to occur in the Campbell River area. (SEA page 82)

These estimates of employment losses do not take into account jobs that may be created through the Forest Jobs Commissioner or the Vancouver Island Jobs Strategy.

In the Strathcona Timber Supply Area there is a delicate balance between minimizing immediate impacts to provide time to diversify local economies while not compromising the environmental values upon which this diversification must be based.

Existing government initiatives may serve to mitigate the impacts of reduced timber supply:

- The new land-use designations to be established by the *Vancouver Island Land-Use Plan* will result in new opportunities for employment. In the Low Intensity Areas, it is likely that timber harvesting will be more labor-intensive than at present. In the High Intensity Areas more labor-intensive management will be required to produce higher value and volumes of commercial timber.
- The *Forest Renewal Plan* will create employment opportunities in silviculture and environmental clean-up, and by encouraging value-added manufacturing in high employment milling operations.

In addition, governments and communities are working towards the establishment of Community Resource Advisory Boards* within the western and eastern Strathcona areas to ensure that communication between communities, government, industry and stakeholders encourages linkage of economic development opportunities with strategies such as the Forest Renewal Plan, Skills Now and the Forest Jobs Commissioner.

Provincial impacts

On the provincial level, total direct and indirect employment losses resulting from the base case timber supply forecast are projected to be 637 person-years immediately (based on the estimate that 1.5 person years of additional employment are created in the province for each direct person-year). This estimate includes employment within and outside the timber supply area. Over the long term, as the timber supply level declines to the projected long-term level, a total of 1 875 person-years of employment may be lost. (SEA page 72)

Outside the timber supply area, these impacts would be felt most strongly on southern Vancouver Island and the Lower Mainland because mills in these areas rely on wood from the Strathcona Timber Supply Area. Although the predicted reduction in the timber supply is equivalent to the supply for one sawmill, the impacts of this reduction may be dispersed among a number of mills. (SEA page 84)

It should be noted that these estimates do not account for the restabilization of employment through other sources of income or income support programs, or through new job creation. These impacts would also not all occur at the same time.

Provincial government revenues, including stumpage and taxes, are projected to decline by \$6.2 million per year for the first 10 years and by \$17.7 million annually when the long-term timber supply level is reached. These estimates do not include expected increased stumpage revenues from the recently announced Forest Renewal Plan.

Chief forester's determination

The base case timber supply forecast is not the only way the chief forester could chose to adjust the short-term allowable annual cut as part of a strategy to achieve the long-term timber supply level. Several alternatives exist:

- the allowable annual cut could be maintained at the present level, requiring severe declines in about eight years
- a consistent level of reduction could occur over the next 50 years
- small reductions could be made now with larger reductions in the future, or,
- larger reductions could be made now, with smaller declines in the future

Your input is needed

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

Feedback is welcomed on any aspects of this *Discussion Paper*, the *Timber Supply Analysis Report* and the *Socio-economic Analysis Report* and other topics related to the timber supply in the Strathcona Timber Supply Area. Forest Service staff would be pleased to

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discuss questions or concerns that would help you prepare your response.

Please mail the completed questions and your comments to the forest district manager at the address below. Your comments will be accepted until April 23, 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 when the chief forester's allowable annual cut determination is announced.

For more information contact:

Donald R. Sluggett
District manager
Campbell River Forest District
370 South Dogwood Street
Campbell River, British Columbia
V9W 6Y7
Phone: (604) 286-9300

Discussion Paper Response Form

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

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 Strathcona Timber Supply Area. Further information on the critical factors outlined on pages eight to 11 in this paper would be most helpful.

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

Address (optional)

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