

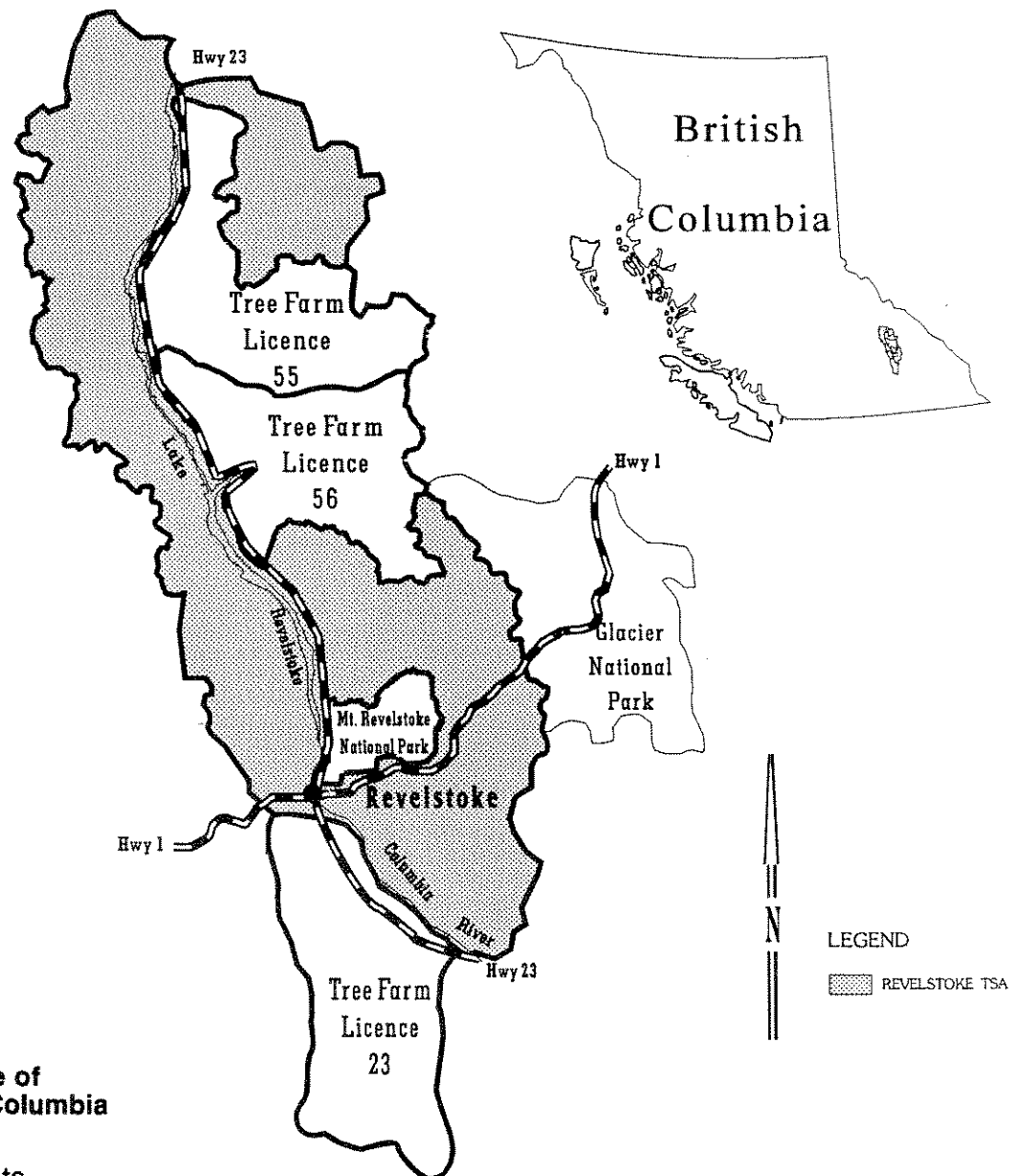


MINISTRY OF FORESTS

Timber Supply Review Discussion Paper

Revelstoke Timber Supply Area

February 1994



Province of
British Columbia
Ministry
of Forests

Revelstoke Timber Supply Area

Timber Supply Review Highlights

- This review examines the impacts of current integrated resource management* practices in the Revelstoke Timber Supply Area (TSA)* on the timber supply, environment and economy of the Revelstoke area. The allowable annual cut (AAC)* may be adjusted based on the results of this review.

Integrated resource management objectives and current practices in the Revelstoke TSA will be reassessed in a Land and Resource Management Planning (LRMP)* process that will begin sometime after this review is completed. The AAC will be re-evaluated within 5 years to reflect the choices made in the LRMP. (p. 1-2)

- The current AAC of 269,000 cubic metres per year in the Revelstoke TSA provides approximately 48 per cent of the wood supply for five local mills and supports 12 to 15 per cent of total area employment. The AACs for three local Tree Farm Licenses (TFLs)* and adjacent TSAs, which provide the remaining wood to local mills, are also being examined in the provincial timber supply review. (p. 3)
 - A total of 290 additional jobs are created provincially from the current harvest, illustrating the high interdependence between the basic forestry sector and the rest of the provincial economy. (p. 3)
 - The current AAC cannot be maintained in the long term with current integrated resource management practices. The large amount of very old timber in the TSA allows for a long transition period. However, over the next 60 years, the timber supply is projected to decline to a sustainable level of 98,000 cubic metres per year. (p. 5)
 - There are many different ways to reduce the AAC to the sustainable level:
 - the AAC could be maintained at the present level, possibly requiring severe declines in the future;
 - small reductions could be implemented now, with larger declines in the future;
 - a consistent level of decline could occur throughout the transition period; or
 - large reductions could occur now, with smaller declines in the future.What the short-term AAC should be as part of the strategy to achieve this long-term reduction is the decision B.C.'s chief forester must make. (p. 5)
 - Additional factors suggest that the short-term timber supply may be even lower than initially predicted because:
 - there may be less merchantable wood in the older forests than predicted in the inventory data (p. 6);
 - the combined impacts of practices implemented to protect non-timber resource values such as viewscapes in backcountry recreation areas, water-flow patterns, wildlife habitat and old-growth forests to maintain biodiversity may be greater than expected (p. 7); and,
 - there may be a need to protect additional wildlife habitat in wet, riparian* areas, and at high elevations for a vulnerable mountain caribou herd. (pp. 7-8)
 - There may be opportunities to partially offset reductions in the short-term timber supply by:
 - using alternative harvesting systems to log steep slopes and other areas that are currently inaccessible (p. 8);
 - harvesting forest types that are not currently considered merchantable such as some very old hemlock and balsam stands, and deciduous areas (p. 8); and,
 - reducing losses to fire, insects, disease and blow down. (p. 8)
 - Intensifying silviculture treatments (i.e. juvenile spacing, fertilization, etc.) in the Revelstoke TSA will not likely increase the short-term timber supply. A test completed during the review indicated that an increase in timber supply could be expected over the long term, but that short-term supply was not projected to change. (p. 8)
 - The impact of adjustments in timber supply on the local community is an important consideration in this review. In recent years the community has experienced a solid turnaround, overcoming downturns after the completion of major construction projects. Their focus is now on creating a sustainable future for the area.

Opportunities exist in the forestry sector to reduce the employment impacts of adjustments in the timber supply. The challenge for the community is to develop a strategy to minimize the impacts of this new transition. (p. 8)
- * Throughout this document, an asterisk at the end of a phrase indicates that the phrase is defined in the definitions at the end of this paper.

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Introduction

The B.C. Forest Service is completing a three-year Timber Supply Review to examine the current allowable annual cut (AAC)* in all timber supply areas (TSAs)* in the province, including the Revelstoke TSA. This Timber Supply Review will assess the effects of current management practices* on the timber supply to determine the degree to which the present AAC is sustainable, and to provide information to make adjustments if necessary.

The province's chief forester determines the AAC for each public forest management unit based on the best available information at the time of the decision. Public input is an important factor in the chief forester's decisions.

This discussion paper has been prepared to summarize the technical reports from the Timber Supply Review in the Revelstoke TSA, and to encourage the public to comment on the findings.

Public comments will be accepted until May 24, 1994. Input will be compiled, sent to the chief forester and the minister of forests, and made available in a public document.

The chief forester's decision on the AAC is expected during the summer of 1994 and will be explained in a public AAC rationale report.

The AACs for public forest land in B.C. are not set through mathematical calculations. These decisions are based on the best available information about the condition of the forest and the impacts of different harvest levels on the environment, economy and social conditions in the local area.

Well-informed, thoughtful input from the public is required to make these decisions. You are encouraged to read this discussion paper and provide your comments; you will find a response form at the end of this paper to assist you to provide input.

Background to the Timber Supply Review

In recent years, British Columbians have voiced their wishes for sustainable forest resource management on public forest lands in B.C. Determining the level of the AAC is an important decision that effects the sustainability of forest management. The AAC

impacts the economy and the environment of the local area, and the province, now and in the future.

In 1981, the timber supply for each TSA was assessed and an AAC was set. At that time it was clear that a future reduction in AAC would be required as harvesting shifted from the existing mature forests with high timber volumes to young, second-growth forests with lower volumes.

A study completed by the B.C. Forest Service in 1991 found that existing harvest levels were outdated. They failed to take into account recent changes in forest management objectives and practices, such as integrated resource management* and protection of non-timber values.

To provide a clearer picture of the current timber supply situation, the B.C. Forest Service implemented a three-year Timber Supply Review (TSR). Its purpose is to:

- define how current management practices affect the short- and long-term timber supply, and identify the environmental, economic and social consequences of continuing with current management practices;
- identify where improved information is required to complete future analyses; and,
- adjust the AAC if necessary.

The Timber Supply Review was designed to ensure that the provincial chief forester has the information he needs to review the AAC for each management unit. Section 7 of the *Forest Act* requires that this review be completed by December, 1995 for all TSAs and tree farm licenses (TFLs)*. Following this review, the AAC for each TSA and TFL must be reassessed at least every five years.

Factors the chief forester will consider when setting the AAC (as prescribed in the *Forest Act*) include:

- the rate of timber production that may be sustained;
- the short- and long-term implications to the province;
- the nature, production capabilities and timber requirements of timber processing facilities;
- the economic and social objectives of the Crown; and,
- abnormal insect or disease infestations or damage of timber in the area.

The data package for the Timber Supply Review of the Revelstoke TSA was finalized by Revelstoke Forest District staff in March, 1993. This package was reviewed by the local timber tenure holders. Two reports were then prepared. The B.C. Forest Service conducted a short- and long-term timber supply

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analysis (*Revelstoke Timber Supply Analysis*, June, 1993) which included a timber supply forecast. A consultant then completed a socio-economic assessment of this timber supply forecast (*Revelstoke TSA Socio-Economic Assessment*, November, 1993).

This discussion paper summarizes these reports and highlights critical factors that require your input. Page numbers from the reports are provided so that you can refer to them for additional information (TSAR is the *Timber Supply Analysis Report*; SEA is the *Socio-Economic Assessment*). The data package and both reports are available from the Revelstoke Forest District office.

Other government initiatives on forest management such as the Commission on Resources and Environment (C.O.R.E.)*, Protected Areas Strategy*, and the Forest Practices Code* are currently underway. Land and Resource Management Plans (LRMP)* will also be initiated in the Nelson Forest Region sometime after the TSR is completed.

The Timber Supply Review does not conflict with these initiatives. It provides a much needed snapshot in time illustrating the timber supply, environmental, economic and social impacts of continuing with current land use and management practices.

Decisions from these other processes are not expected until after the TSR for the Revelstoke TSA is completed. If these decisions require changes to land-use or forest management practices that significantly impact the timber supply in the Revelstoke TSA, these impacts will be considered in the next AAC review.

Description of the Revelstoke Timber Supply Area

Forest resources

The Revelstoke TSA is located in the southeastern portion of B.C. (see cover) in the interior wet belt of the province. Spectacular mountains create varied climates and growing conditions, leading to diverse forests. Valley bottoms are cloaked in cedar-hemlock forests with Engelmann spruce – subalpine fir (balsam) on the higher-elevation slopes. Mountains are capped by vast alpine areas and glaciers.

Mountainous terrain and a cold, wet climate limit harvestable timber in the Revelstoke TSA. Figure 1 illustrates that most of the land base is not suitable for timber harvesting either due to lack of forest cover (56 per cent) or inoperability (wet riparian* areas, too steep, poor quality timber or avalanche chutes). Twelve per cent of the land base (58,342

hectares) is suitable for timber harvesting using current methods. (TSAR pp.46–49)

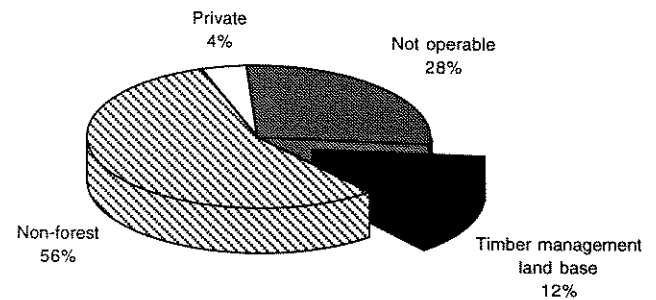


Figure 1: Area summary for the Revelstoke TSA

Notes: Total area: 503,984 hectares (does not include TFLs in the Revelstoke area – see cover)

The Greeley Creek watershed and Mount MacKenzie ski hill development area have been subtracted from the database for this analysis.

Study areas for the Protected Area Strategy in other locations within the TSA have not been subtracted for this analysis. (TSAR p. 48).

Cedar, hemlock and spruce are the main tree species. Much of the forest in the timber management land base is very old (49 per cent is older than 200 years) because of the lack of natural disturbances and a relatively short development history. As a result of harvesting and fire, 26 per cent of the land base is now occupied by stands less than 20 years old (Figure 2).

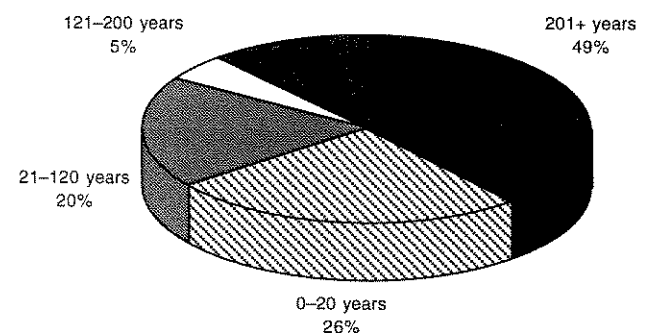


Figure 2: Forest age in the Revelstoke TSA

A wide range of wildlife species including moose, elk, deer, mountain goat, grizzly bear, small mammals and other species inhabit these diverse forests. A herd of mountain caribou, a vulnerable species that is dependent on old-growth forests, frequents portions of the TSA. Other old-growth-dependent species such as cavity-nesting birds are also present. The abundance of many wildlife species is limited by the long, cold winters and high snowfall that are common in this area. (SEA pp. 2–11/13)

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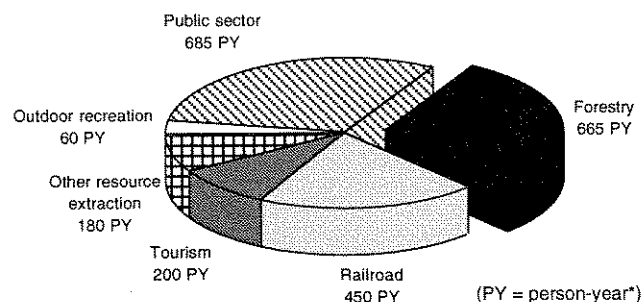
The spectacular scenery in this area leads to high recreational use of these forests. Local residents enjoy hiking, camping, hunting, snowmobiling and skiing. World class heli-skiing and hiking operations have developed in recent years. The location of the TSA along the Trans-Canada Highway and beside the Rocky Mountain national parks prompts high use of the area by tourists (SEA pp. 2-6/10).

Current AAC

The AAC for the Revelstoke TSA is currently set at 269,000 cubic metres per year. Approximately 72 per cent of the harvest is allocated to four licensees, 24 per cent is harvested through the Small Business Forest Enterprise Program administered by the B.C. Forest Service and four per cent is held in a Forest Service Reserve.

Socio-economic profile

The Revelstoke TSA is thinly populated, with approximately 8,400 residents. Over 90 per cent reside in the city of Revelstoke. Economic development has been driven by natural resources and the community's position on national east-west transportation routes. Compared to other small B.C. towns, the economic base of the community is relatively diversified with five sectors as illustrated in Figure 3 (SEA pp. 2-1/3).



Note: Tourism employment is estimated based on 700 individuals employed during the peak summer months.

Figure 3: Major employment sectors in the Revelstoke area

Additional employment is created in service industries (food, retail, equipment, etc.) as income from the basic industries is spent in the community.

Tourism is the fastest growing sector in the local economy, aided by the proximity of national and provincial parks, spectacular mountain scenery, and the presence of highway and rail transportation. The area is growing in popularity for both summer and winter backcountry recreation.

The timber industry in Revelstoke includes three sawmills, two cedar shake and shingle mills and a pole yard. Approximately 48 per cent of the wood supply for these mills comes from the Revelstoke TSA, accounting for approximately 288 person-years (PYs)* of direct employment.

This translates into an additional 225 PYs of indirect employment based on the estimate that for every direct forestry job an additional 0.78 jobs are generated elsewhere in the Revelstoke economy.

Additional wood is secured from nearby TSAs, TFLs within the Revelstoke area, and private lands. (SEA pp. 2-4/5 and 3-6/10)

There are three TFLs within the Revelstoke district with a total harvest level that is almost equal to the TSA. Most of the harvesting from these TFLs is done by loggers from the Revelstoke area but much of the wood is processed elsewhere.

Provincial economy and revenues

It is estimated that 20 per cent of the timber harvested in the Revelstoke TSA is shipped as logs or chips to pulp mills outside the TSA, and approximately 30 per cent of the lumber produced in area mills is remanufactured elsewhere. This economic activity, and employment generated by spending outside the Revelstoke area, creates a total of 290 PYs of employment in the province. This illustrates the high level of interdependence between the basic forestry sector and the provincial economy (SEA pp. 4-6/7).

In addition, approximately \$6.45 million in provincial revenues are generated annually by timber harvesting in the Revelstoke TSA. This figure is based on the average total fees for harvesting public timber in the area (\$10.62 per cubic metre based on 1992/93 information), estimated personal income taxes, plus other tax revenues of \$5.80 per cubic metre.

Note: Similar estimates for the other basic industries were not prepared during the SEA.

Current management practices

Public forest lands in B.C. provide recreational enjoyment, wildlife habitat, water supplies, timber resources and many other benefits. B.C. laws require the Forest Service to manage the timber, range and recreation resources on public lands through integrated resource management, taking all resources into account.

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The timber supply analysis was based on current management practices – the practices that were actually being approved and implemented in the TSA when the data package was created. Future changes in practices resulting from initiatives such as C.O.R.E., the Forest Practices Code or Land and Resource Management Plans will be included in the next reassessment of the timber supply.

Management zones

To assess the timber supply impacts of current practices, the TSA was divided into four management zones. Each zone has a unique set of forestry practices. The area of the timber management land base* in each zone is shown in Figure 4.

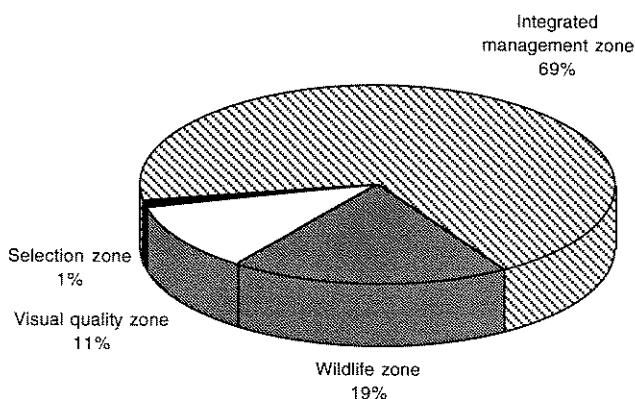


Figure 4: Area in each management zone

Selection zone – Includes the area around Begbie Falls where special management is designed to mitigate visual impacts and manage for wildlife values, and the Dolan Creek watershed where domestic watershed values must be protected. (1% equals 499 hectares)

Visual quality zone – Includes important views from the City of Revelstoke, areas viewed from Highways 1 and 23 South and principal tourist corridors where scenic landscapes are to be protected. (11% equals 6,769 hectares)

Wildlife zone – Designated to protect critical early winter habitat for mountain caribou at elevations less than 900 metres in the area north of Highway 1 and west of Lake Revelstoke. (19% equals 11,903 hectares)

Integrated resource management zone – The remaining timber management land base not assigned to another zone where integrated resource management is practiced. (69% equals 43,554 hectares)

Note: In the TSAR this zone is called the Timber Zone because this is where the majority of timber harvesting occurs.

Current practices

The current forest management practices that are approved and implemented in each zone are briefly described below. Readers are encouraged to read the *Timber Supply Analysis Report* (p. 9 and Appendix A) or review the data package for more detailed information.

All zones

- **Wildlife/biodiversity** – Wet riparian areas are preserved. Migration corridors are reserved in critical habitat areas. Machines are not permitted adjacent to watercourses.
- **Watersheds** – Harvesting is severely restricted in watersheds used to supply domestic water. Domestic intakes are identified and protected.
- **Basic silviculture** – By law all harvested areas in B.C. must be reforested with ecologically acceptable species within a specified timeframe. The typical silviculture regime is to clearcut harvest, broadcast burn if needed, plant with a mix of species, and brush manually (or with herbicides in selected cases).
- **Minimum harvest ages** (the youngest age that a forest may be harvested) – 120 years for existing stands; 100–140 years for regenerated stands depending on their growth potential.
- **Cutblock layout** – Maximum cutblock size is 30 hectares (current average is 20 hectares). Unharvested strips between cutblocks are usually at least 300 metres wide; narrower strips proportional to block size are permitted between small blocks.
- **Timber utilization** – All pieces with greater than a 10 centimeter top and 17.5 centimetre bottom must be removed. High-elevation blocks are harvested when snowpacks are at a minimum to reduce stump height.
- **Soil conservation** – Harvesting layout follows provincial guidelines. Eleven per cent of the area that has already been logged was deducted from the database for roads, trails and landings that have become non-productive through harvesting. During the analysis 11 per cent of the area remaining in the database was deducted to account for future roads, trails and landings.
- **Views** – Buffers are normally maintained around trails and recreation sites. Landscape planning is used around ski runs and backcountry lodges.

Selection zone

- Only small cleared patches or single-tree selection are permitted.

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Visual quality zone

- Maintenance of scenic landscapes is a management priority. Road construction and logging is planned and implemented to minimize visual impacts.
- Recent studies have shown that, after harvesting, regenerated trees that are five metres tall create acceptable views. Based on this information, no more than 18 per cent of this zone is permitted to be less than five metres tall (estimated to be at 25 years old) at any one time.

Wildlife zone

- In this zone it is important that forest cover is maintained to reduce snow depth for caribou during the winter. Trees in cutover areas are required to be 10 metres tall (estimated to be at 40 years old) before adjacent timber can be harvested, and at least 75 per cent of the area must be over 10 metres tall at all times.

Integrated management zone

- To meet reforestation standards and wildlife hiding cover requirements, no more than 33 per cent of this zone is permitted to be below three metres tall (estimated to be at 18 years old) at any one time.

Timber supply outlook and impacts

Timber supply outlook

To complete a timber supply analysis for this review the analyst used a computer program to attempt to produce a forecast that would meet each of the following conditions:

- maintain the current AAC as long as possible;
- minimize reductions within a defined range, usually eight to twelve per cent per decade, until the long-run sustainable level is reached; and,
- maintain harvest levels at or above the predicted long-run sustainable level.

If a timber supply forecast could not be generated that would meet all these conditions, the analyst then adjusted the conditions until a feasible outlook could be produced. Several of these conditions had to be adjusted to create a base case* timber supply outlook for the Revelstoke TSA, given current management practices and the best available information at the time (i.e. March, 1993).

As Figure 5 illustrates, the present AAC cannot be maintained in the Revelstoke TSA with current integrated resource management practices. Although the large amount of very old timber in the TSA allows for a long transition period, an initial decline by 5.6 per cent from the current AAC and a 12 per

cent reduction per decade was needed to reach the projected long-term sustainable level of 98,000 cubic metres per year (36 per cent of the current AAC). A slight reduction below the projected sustainable level was also accepted in the tenth decade to avoid a larger reduction in the short term (TSAR p. 14).

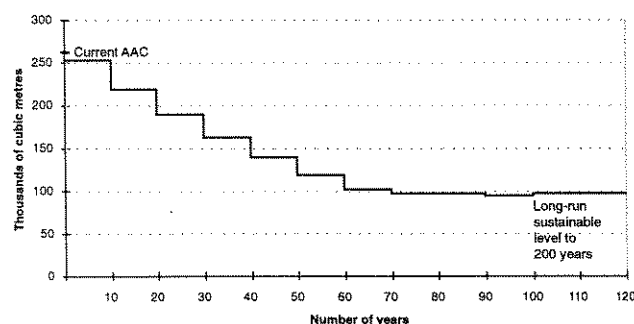


Figure 5: Base case timber supply forecast

This is not the only pattern that can be chosen to reduce the timber supply in the Revelstoke TSA. It is possible to maintain the AAC at the current level and experience more severe declines in the future, or to implement a more severe reduction now, with lesser reductions in the future. What the short-term AAC should be as part of the strategy to phase in this adjustment is the difficult decision the chief forester must make.

Environmental impacts

BC Environment staff support current management practices that are used in the Revelstoke TSA to protect wildlife habitat. However, they are concerned that the following practices were not completely reflected in the base case analysis:

- adequate protection of low-elevation mountain caribou habitat has been included in the base case, but high-elevation late winter caribou habitat needs have not been included. The amount of high elevation late winter habitat that is needed continues to be debated (SEA p. 2-11 and 4-4);
- significant portions of deer winter range and habitats in riparian areas have also been protected; additional special practices in some areas are recommended by BC Environment staff;
- some old-growth habitats would be maintained in the short term due to the amount of inoperable and environmentally sensitive area, and current management practices in each zone. Over the long term, sufficient old growth may not be maintained to protect ecological values within the timber management land base. The amount of

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additional old growth that is required, particularly at lower elevations, is under debate (SEA p. 2-11 and 4-4); and,

- the long-term impact of the rate of harvest on the quality and quantity of water from the timber management land base has not been specifically included in the database. To some extent, this may be accounted for in the current practices for other resources (e.g. wildlife habitat).

Community impacts

If the chief forester adjusted the AAC to conform to the base case analysis, the initial 5.6 per cent reduction may result in a loss of 29 jobs locally (based on an estimate of 1.12 direct jobs lost per 1,000 cubic metres of timber that is removed from the AAC) (SEA p. 4-5). While it is very difficult to forecast how employment would change far into the future, using the same estimate, a total of 326 jobs may be lost as the harvest level declined to the projected long-term sustainable level.

The impact of these job losses on the community would depend to a large degree on the alternative economic strategies that were adopted. One promising option is to increase the number of jobs created in processing each cubic metre of wood through value-added manufacturing.

The impact of this base case harvest forecast on tourism is uncertain. Harvesting at this rate may reduce the potential of the area for backcountry adventure tourism, a growing industry (SEA p. 4-3).

Provincial impacts

It is estimated that an additional 16 jobs may be lost provincially in the first decade if an AAC adjustment were made consistent with the base case. A total of 184 jobs may be lost as the harvest level further declined to the projected long-run sustainable level.

Provincial government revenues are projected to be reduced by \$360,000 each year during the first decade, and \$4.1 million annually in the long term if current taxation procedures are maintained.

Examining critical factors

When the data package was created in March, 1993, there were concerns that some of the information that was available at the time might not be accurate. The potential impacts of inaccuracies on

the timber supply forecast were tested by assuming a range of values for these factors in the timber supply analysis. Some of the factors greatly influenced the base case forecast, particularly in the short term (next decade). These factors require special consideration during the AAC decision.

Since the analysis, district staff have further investigated these **critical factors**. Their perspectives are outlined in the following discussion. Other factors in the data package were tested and are discussed in the TSAR but were not considered critical to this review and therefore are not included in this discussion paper.

The community's ability to adapt to reduced harvest levels, an important consideration in this review, is also included in this section. Factors that are best assessed during the Land and Resource Management Plan for the Revelstoke TSA are listed in the final section of this discussion paper.

The chief forester must carefully evaluate this information when reassessing the AAC and identifying where improved information is needed. We encourage you to do the same.

A. Critical factors that indicate a reduction in short-term timber supply from the base case

1. Amount of merchantable wood in the existing mature forest

Most of the timber in the Revelstoke TSA is cedar, hemlock and spruce that is over 200 years old. Many of the trees in these stands are decayed and unmerchantable.

Reports from timber companies operating in the Revelstoke TSA indicate that the volumes used in the base case analysis for these stands may be optimistic. Revelstoke Forest District staff agree that merchantable volumes may be overestimated.

This factor has a significant impact on short-term timber supply. As an example, Figure 6 illustrates that a 10 per cent decrease in merchantable wood from existing mature stands would result in a 16 per cent reduction in timber supply in the first decade, compared to the base case, with corresponding economic impacts (TSAR p. 26).

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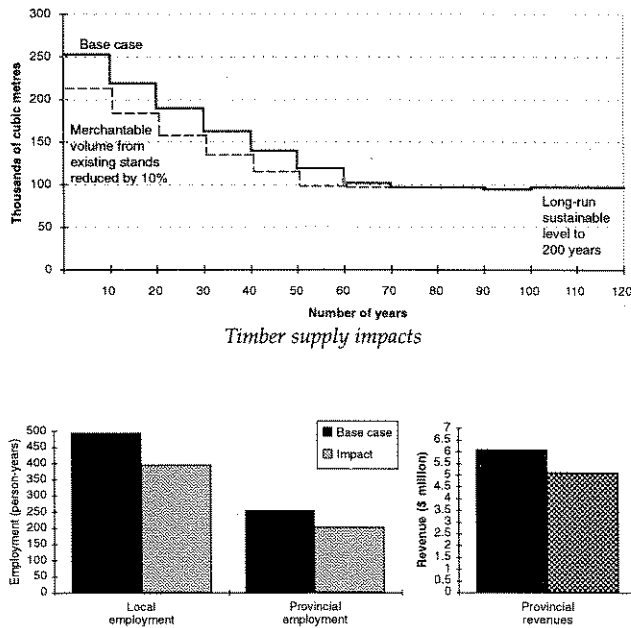


Figure 6: Impacts of changes in the estimate of merchantable wood in the existing mature forest

2. Combined impacts of practices to protect non-timber resources

Several harvesting guidelines are followed in the Revelstoke TSA to protect non-timber resources such as wildlife, water, and recreation. The existing guidelines were translated into modelling rules for the timber supply analysis based on the current understanding of the interactions of these guidelines when the data package was prepared.

In recent plans for some areas in the Integrated Management Zone, Revelstoke District staff and timber companies have found it difficult to define harvest patterns that meet the description that was included in the base case analysis.

As harvesting continues, existing guidelines designed to protect the following values may further limit the short-term timber supply:

- maintaining visual quality for backcountry recreationists within the Integrated Management Zone;
- maintaining adequate old-growth forest to protect biodiversity;
- minimizing the wildlife impacts of large areas of recent clearcuts on private land adjacent to the TSA; and,
- maintaining water flow patterns.

The impacts of alternative descriptions of these guidelines were tested in the timber supply analysis. Figure 7 shows the description that most closely resembles recently completed integrated resource management plans, with the projected economic impacts (TSAR p. 33).

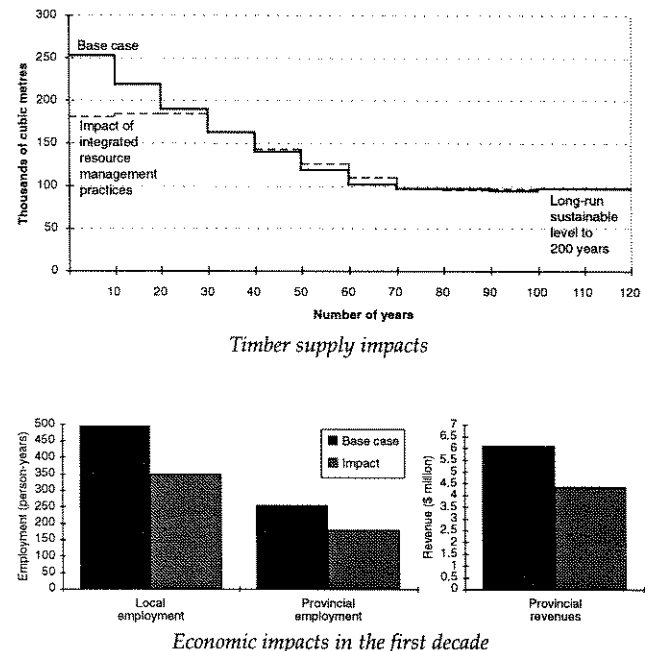


Figure 7: Combined impacts of integrated resource management practices

This test indicates that the combined impacts of the many guidelines in the Integrated Management Zone may result in as much as a 28 per cent reduction in short-term timber supply from the base case, with equivalent economic impacts. District staff believe the actual impact lies somewhere between the base case and this test.

If a lower AAC is selected based on this information, there will be less harvesting of old-growth in the short term which may reduce impacts on wildlife species. Viewscapes desired by backcountry recreation users may also be maintained (SEA p. 5-2/3).

3. Managing for mountain caribou

The Wildlife Zone was specifically defined to protect low-elevation winter habitat for mountain caribou. Management practices for this zone were designed to ensure adequate cover under older-aged trees. BC Environment

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staff believe additional high-elevation habitat must be managed. An increase in the size of the Wildlife Zone or changes in guidelines to protect high-elevation habitat will likely reduce the short-term timber supply (*SEA* p. 4–4).

4. Protecting riparian habitats

In this analysis it was estimated that two per cent of the land base is occupied by riparian areas – streams, swamps and other wetlands that provide important wildlife habitats. This area was subtracted from the timber management land base to depict protection of these areas. BC Environment staff are concerned that this estimate may be low. A higher estimate of riparian area may lead to a reduction in the timber supply.

B. Possible opportunities to partially offset reductions in short-term timber supply

1. 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. A test of the possible impacts of intensive silviculture in the Revelstoke TSA (growth of regenerated stands was increased by 20 per cent and minimum harvest ages were reduced) did not show this result. The long-term supply did increase but the short-term timber supply did not. One of the reasons for this was that the integrated resource management objectives limited the available timber in the short term (*TSAR* pp. 27–28).

2. Increasing the area that is economically feasible to harvest and reforest

One of the first steps in a timber supply analysis is to define the area that is economically feasible to harvest and reforest – the timber management land base. The timber management land base includes sites where the cost of harvesting and reforesting is less than the value of the timber extracted.

In the Revelstoke TSA several types of sites have been removed from the timber management land base for this analysis, including steep 'V' shaped valleys with difficult access and high-elevation areas that are difficult to regenerate (*TSAR* p. 46).

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

3. Harvesting forest types that currently are not harvested

Under current management practices, deciduous forest types, some very old pure hemlock and balsam stands and other forest types are not harvested because they are not merchantable. Approximately 8,200 hectares of these types have been removed from the database for this analysis (*TSAR* p. 47).

It has been suggested that as wood supplies are reduced these stands will become more valuable and included in the timber management land base, possibly leading to an increase in wood supply. Another short-term alternative is to define a separate harvest level for these forest types in addition to the AAC for the TSA, to encourage operators to harvest these stands.

In the long term it may also be possible to secure funding to rehabilitate some of these areas to improve timber production so they can be added to the timber management land base.

4. Reducing losses to fire, insects, disease and blowdown.

In the base case analysis 29,820 cubic metres per year are expected to be lost from the timber supply due to fire, insects, disease and blowdown (trees that are blown over by wind) (*TSAR* p. 51). While this is a small percentage of the current AAC, it is 30 per cent of the long-term timber supply. Reducing these losses would increase the timber supply. Also, improved road access in the future will increase the possibility of harvesting damaged timber.

C. The community's ability to adapt

The timber supply analysis indicates that the current AAC for the Revelstoke TSA cannot be maintained in the long term with current management practices. The rate and timing of an AAC reduction is in part dependent on the ability of the community to adapt to this change.

Revelstoke Timber Supply Area

It is important to recall that half of the wood supply for the local mills comes from the TSA. The remainder comes from adjacent TSAs and local TFLs, where similar timber supply reviews are being completed. The likelihood of any of these sources meeting supply shortages from the Revelstoke TSA is highly remote.

There is also significant employment generated in the Revelstoke area by logging wood on local TFLs that is shipped to mills outside the Revelstoke TSA. Timber supply adjustments are likely to impact this employment as well.

Revelstoke has undergone transitions in the past as major construction projects were completed. In recent years, the community has experienced a solid turnaround, with a focus on creating a sustainable future. Revelstoke also has a unique interest in forest management through their community-owned forest corporation.

There is an understanding within the community of the need to meter out the existing mature forest while waiting for the newly regenerated stands to grow to merchantable size. Opportunities exist within the forestry sector to reduce employment losses by encouraging value-added manufacturing in high employment milling operations and through harvesting stands that are not currently considered merchantable. (SEA p. v). The challenge for the community is to develop a strategy to minimize the impacts of this new transition.

Factors to be examined in the LRMP process

In TSAs within the Nelson Forest Region, the LRMP process will be implemented sometime after this Timber Supply Review is completed. The LRMP provides an opportunity for the public and interest groups to work with government agencies to make choices about future management objectives and practices for public forest land in B.C.

The impact of current management practices on the AAC are being assessed in this TSR, possibly leading to an adjustment of the AAC; new management practices will be assessed and approved through the LRMP process. The AAC will be re-evaluated within five years to include the timber supply impacts of changes in practices.

The factors listed below were raised during the TSR but they are best decided during the LRMP process. They are included here to provide a per-

spective on factors that may influence the timber supply in the future.

- clearly defined and measurable **management objectives** are required for each resource as a foundation for integrated resource management. In the Revelstoke TSA specific concerns have been raised about management objectives for maintaining old-growth forests and protecting the viewscapes seen from the city and highways;
- the projected long-term timber supply is closely related to the **growth estimates for second-growth stands**. Because few second-growth stands have grown to maturity in the Revelstoke TSA, and throughout the interior of B.C., it is difficult to estimate how quickly future forests will mature; and,
- in this analysis, it was estimated that after harvesting 11 per cent of the timber management land base will become **unproductive land due to roads, landings and skidroads**. This estimate may change as more low-impact harvesting practices are used.

Your input is needed

The AAC is an important decision requiring well-informed and thoughtful public input. We ask you to answer the questions on the enclosed Response Form by placing your answers to each question in the box indicated and adding an explanation for your answer.

Additional comments and detailed submissions are encouraged on separate pages, referring to each question by number if you prefer. Feedback is welcomed on any aspects of this *Discussion Paper*, the *Timber Supply Analysis Report*, the *Socio-Economic Assessment* and other topics related to the timber supply in the Revelstoke TSA. The district would be pleased to discuss questions or concerns that you may have that would help you prepare your response.

Please mail the completed questions and your comments to the district manager at the address below. Your comments will be accepted until May 24, 1994. Responses may be made public as required under the Access to Information legislation. A summary of public comments will be available from the district manager.

David Raven
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Revelstoke Forest District
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Revelstoke, BC V0E 2S0
Phone: (604) 837-7611

Revelstoke Timber Supply Area

Definitions

Allowable annual cut (AAC)

The allowable rate of timber harvest from a specified area of land.

Base Case

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

Commission on Resources and Environment (C.O.R.E.)

A regional and sub-regional land-use planning process implemented by C.O.R.E. in the Kootenay area of B.C. including the Revelstoke TSA. The current target date for completion of this process is March, 1994, with the timing for implementation of decisions undefined.

Current management practices

Forest practices that were being approved and implemented in the TSA when this review was initiated. These practices are described in this paper starting on page 3.

Forest Practices Code

A draft Forest Practices Code for BC was recently released for discussion and review. The final code is currently planned for implementation in late 1994.

Integrated resource management

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

Land and Resource Management Plan (LRMP)

A consensus-building process involving a cross section of the public, interest groups and govern-

ment agencies over one or two years to establish resource management objectives and strategies for a management unit.

Person-Year (PY)

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

Protected Areas Strategy

The Protected Areas Strategy is being coordinated with the C.O.R.E. process in the Kootenays to define areas that should be protected. Within the Revelstoke area there are several candidate study areas being considered for protection. Decisions on study areas are expected in 1994.

Riparian

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

Timber management land base

The portion of the total area of a TSA that is available to produce timber to contribute to long-term timber supply. This land base is defined by subtracting area from the total land base according to specified management assumptions.

Timber Supply Area (TSA)

An integrated resource management unit established in accordance with Section 6 of the *Forest Act*; defined by an established pattern of wood flow from management units to the primary timber-using industries.

Tree Farm License (TFL)

An agreement entered into under Part 3, Division 5 of the *Forest Act* which provides for the establishment, management and harvesting of timber in a described area.

Revelstoke Timber Supply Area

Timber Supply Review Discussion Paper Response Form

1. With this information, what do you feel the allowable annual cut (AAC) decision should be?

☐ Increase the AAC now ☐ Maintain the AAC at present level ☐ Reduce the AAC now

Why? _____

2. If the AAC was to be reduced, how should the reduction be phased in over time?

☐ Larger reduction now, smaller reductions in the future

☐ Equal reductions now and in the future

- Smaller reduction now, larger reductions in the future

Why? _____

3. Several critical factors indicating a reduction in the short-term timber supply are discussed in this paper. As we are not certain about the exact impacts of each factor, how should each of them be considered in determining the AAC? Please explain the reasons for your response.

- amount of merchantable wood in the existing forest
 - ☐ Not important in determining the AAC now
 - ☐ Reduce the AAC now

• practices to protect non-timber resources

☐ Not important in determining the AAC now

☐ Reduce the AAC now

.....

- managing for mountain caribou

☐ Not important in determining the AAC now
☐ Reduce the AAC now

.....

Revelstoke Timber Supply Area

- protecting riparian habitats

- ☐ Not important in determining the AAC now
- ☐ Reduce the AAC now

Please list and explain additional factors which indicate the short-term timber supply should be reduced.

4. The critical factors that create possible opportunities to partially offset reductions in short-term timber supply require changes in current practices by license holders (i.e. increasing the area that is economically feasible to harvest, harvesting forest types that currently are not harvested) or additional information (i.e. reducing losses). In the past, existing practices and available information has been used to determine the AAC.

- should license holders demonstrate their ability to harvest currently uneconomical timber before this potential source of wood supply is included in the AAC?

☐ Yes ☐ No Why?

- is additional information needed before the current estimate of losses is reduced?

☐ Yes ☐ No Why?

Please list and explain other opportunities to offset reductions in the short-term timber supply.

5. The ability of the Revelstoke economy and social community to adapt to changes in the timber supply and AAC is a factor that must be considered in determining the AAC for the Revelstoke TSA. How important do you feel this factor is in this decision?

☐ Very important ☐ Somewhat important ☐ Not important

Why?

