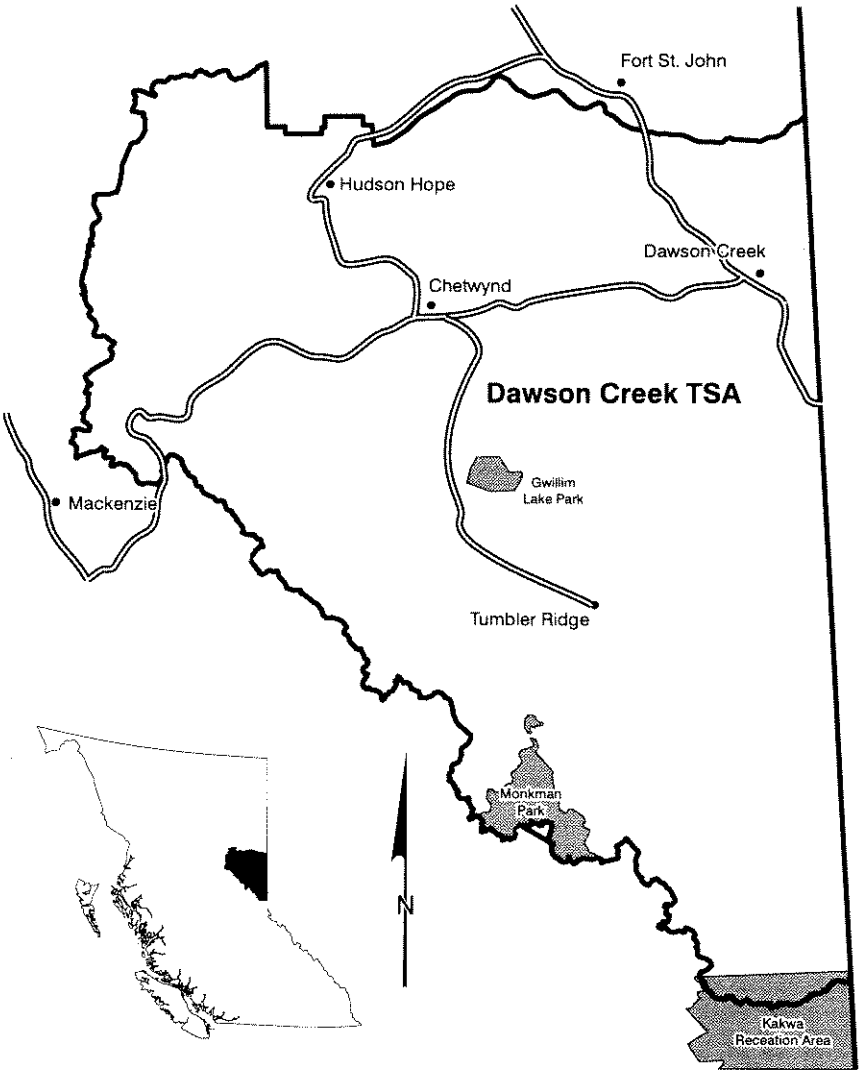
MINISTRY OF FORESTS

Dawson Creek Timber Supply Area

Timber Supply Review Discussion Paper
June 1996



BRITISH COLUMBIA
Ministry of Forests

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Timber Supply Review Highlights

- The British Columbia Forest Service is reviewing the timber supply for all timber supply areas* and tree farm license* areas in the province. The review examines the impacts of current integrated resource management* practices on the timber supply*, economy, and environment of the local area and the province. Based on the results of this review, the chief forester may decide to maintain or adjust the allowable annual cut* of the Dawson Creek Timber Supply Area.
- The current coniferous allowable annual cut in the Dawson Creek Timber Supply Area is 841,323 cubic metres per year, 691,323 of which is allocated for harvesting. The coniferous harvest supports a total of 629 person-years of direct employment, 75 per cent of which is in communities in the timber supply area. (pages 5 and 6)
- Deciduous timber harvesting is authorized for 985,000 cubic metres per year from the Dawson Creek Timber Supply Area. The majority of this wood is processed in two mills where approximately 760 people are employed, over 95 per cent of which are from the local area. Because there is no requirement for this timber to be harvested on an annual basis, and the deciduous mills currently depend to a large degree on other sources of fibre, it is not possible to assess the employment generated from deciduous harvesting in the timber supply area. (pages 5 and 6)
- The revised coniferous base case timber supply forecast indicates that, based on information available about forest management practices being implemented when the analysis was initiated, the timber supply is sufficient to support a long-term sustainable harvest level of 972,000 cubic metres per year which is 16 per cent above the current AAC. (page 9)
- One factor indicates the coniferous timber supply may be higher than predicted in the base case forecast:
  - a recent inventory audit suggests mature timber volumes may be underestimated
- Two factors may either increase or decrease the coniferous timber supply:
  - the coniferous timber harvesting land base varies dependent on how much area can reasonably be expected to be developed (pages 10-11)
  - the uncertainty in projecting annual unsalvaged losses may over or underestimate actual losses. (page 11)
- Three factors indicate the coniferous timber supply may be lower than predicted:
  - development of caribou habitat requirements may reduce the coniferous timber supply (page 11)
  - limited vegetation management success may change the reforestation estimates (page 11)
  - grizzly bear management requirements may reduce the timber supply. (page 11)
- The revised deciduous base case timber supply forecast indicates an immediate reduction to an initial harvest level of 886,500 cubic metres per year — 10 per cent below the current allocation. This is followed by 22 per cent reductions per decade over 30 years to a long-term level of 480,000 cubic metres per year. (pages 11-12)
- The recent inventory audit suggests the deciduous timber volume may underestimate the actual timber volume and consequently, the size of the deciduous timber harvest land base. This suggests the timber supply may be greater than projected in the base case forecast. (pages 12-13)
- One factor indicates the deciduous timber supply may be lower than forecast:
  - unsalvaged deciduous timber loss were not accounted for in the analysis (page 12)
- Two factors indicate both the coniferous and deciduous timber supply may be higher or lower than predicted:
  - forest management objectives may change the existing proportions of coniferous and deciduous stands (page 13)
  - integrated resource management objectives for harvesting of adjacent stands may change the amount of timber available for harvest. (page 13)
- Three factors indicate both the coniferous and deciduous timber supply may be lower than predicted:
  - oil and gas activities may reduce the size of the timber harvesting land base more than estimated (page 13)
  - biodiversity management may require the retention of mature and old forests which was not explicity accounted for in the analysis
  - management practices in riparian areas may reduce the timber harvesting land base more than estimated. (page 14)
- The impacts of adjustments in timber supply on local communities is an important consideration in this review. Opportunities exist in the forest sector to reduce the employment impacts of adjustments in timber supply. The challenge for the communities is to develop strategies to minimize the impacts of any changes. (page 14)
- The timber supply in the Dawson Creek Timber Supply Area will be affected in the future through decisions from other government initiatives such as the Protected Areas Strategy*, Land and

Resource Management Plans*, and First Nations treaty negotiations, none of which are accounted for in this timber supply review.

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

*** 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 harvest forecast that illustrates the effects of current forest management practices on the timber supply using the best information.

Current management practices
Forest practices that were being approved and implemented in the timber supply area when this review was initiated. These practices are described in this paper starting on page 8.

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. Implementation of the Code began on June 15, 1995.

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

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

Land and Resource Management Plan
A consensus-building process involving a cross section of the public, interest groups and government agencies, to establish resource management objectives and strategies for a management unit.

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

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

Pulpwood Agreement
An agreement between a private interest and the provincial government which permits harvesting of specified forest types in special circumstances when it is necessary to supplement wood supplies.

Riparian area
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.

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

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

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

Dawson Creek Timber Supply Area

Introduction

The British Columbia Forest Service is conducting a Timber Supply Review in the 36 timber supply areas and 34 tree farm licence areas throughout the province. The objectives of this review are to:

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

This discussion paper summarizes the technical reports from the Timber Supply Review in the Dawson Creek Timber Supply Area and encourages British Columbians to comment on the findings. Public comments will be accepted until September 27, 1996. You will find a response form at the end of this paper to help you provide input.

Background to the Timber Supply Review

For at least 20 years, governments have known that British Columbia's timber supply would decline in the future — we could not keep cutting at the rate we've been going. Now there is an urgent need for up-to-date information to review the timber supply and allowable annual cuts throughout the province.

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

The study found that:

- existing allowable annual cuts were based on outdated information and management practices
- procedures failed to fully account for integrated resource management practices and protection of non-timber values
- the procedures were far too time consuming
- analytical techniques had to be strengthened.

As a result of these procedural weaknesses, very few 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 his most important responsibilities since it affects the local 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
   - silviculture treatments, including reforestation
   - standards of timber utilization
   - constraints on the amount of timber produced from the area due to the use of the forest for purposes other than timber production

Renewing our forests, securing our future

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

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

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

- 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 for 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 judgement 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 in determining allowable annual cuts. In these determinations, the chief forester considers relevant information from any source, including interest groups. However, these determinations cannot be inappropriately influenced by the advocacy efforts of any group.

Timber Supply Review process

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

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

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

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

A commitment to incorporate change

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

Forest Practices Code

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

Since the information was prepared for this Timber Supply Review, some practices have been implemented in the Dawson Creek Timber Supply Area based on current understanding of the intentions of the Code. However, further implementation and experience with the Code will be required before the effect of new practices on the timber supply can be fully assessed, making it necessary to incorporate these factors in future allowable annual cut determinations. Whenever possible the chief forester's AAC determination will examine the implications of the Forest Practices Code.

Land and Resource Management Plans

The development of a Land and Resource Management Plan is currently underway in the Dawson Creek Timber Supply Area. A working group, formed in 1993, consists of local citizens, licensees, and government agencies and represents various resource interests and community perspectives. The working group will develop recommendations on land use, including the Protected Areas Strategy, and develop new resource management objectives and strategies that balance social, economic and environmental values. Once these recommendations are approved by government, current forest management practices will be revised so they are consistent with these objectives.

Dawson Creek Timber Supply Area

Timber Supply Review in the Dawson Creek Timber Supply Area

Forest Service staff in the Dawson Creek Forest District finalized the data used for the Dawson Creek Timber Supply Area timber supply analysis in June 1994. This information was made available to stakeholders, interest groups and the general public for review and comments.

The Forest Service then conducted and released a short- and long-term timber supply analysis (*Dawson Creek Timber Supply Analysis*, September 1994).

Since the publication of the *Dawson Creek TSA Timber Supply Analysis* in September 1994, a significant difference in the deciduous forest timber harvesting land base was discovered. The management assumptions originally used for the deciduous timber harvesting land base do not accurately reflect current management in the area. In addition, the 1994 analysis report described the deciduous land base in terms of "deciduous usage areas" reflecting two pulpwood use agreements rather than the entire TSA. Therefore, the original analysis does not provide the appropriate information for projecting deciduous harvest level for the entire TSA. Susequent analysis has shown that the effect of including all deciduous areas significantly increases the deciduous timber harvesting land base (23 per cent) and slightly decrease the coniferous timber harvesting land base (0.5 per cent).

The original analysis of the coniferous land base included predominately deciduous stands having a coniferous component of at least 120 cubic metres per hectare. These stands are in the deciduous land base in the revised analysis resulting in the 0.5 per cent decrease to the coniferous timber harvesting land base.

In addition, a forest inventory audit has been completed that indicates the timber volumes used in the analysis may underestimate the actual volumes. In order to best facilitate discussions about alternative timber harvest levels in the Dawson Creek TSA the effects of the change in the timber harvesting land base were assessed. This assessment is in the attached document *Dawson Creek TSA Timber Supply Analysis Addendum* (June 1996) and is being released with this discussion paper. This addendum also, includes an assessment of the timber supply sensitivity relative to the results of the inventory audit.

All figures shown in this discussion paper reflect the results of the change in the timber harvesting land base as shown in the *Dawson Creek TSA Timber Supply Analysis Addendum* (June 1996).

All reports are available from the Dawson Creek Forest District office, the Prince George Forest Region office and the Timber Supply Branch in Victoria.

This discussion paper summarizes these three reports and highlights critical factors that the chief forester must consider to determine the allowable annual cut for the Dawson Creek Timber Supply Area. In conjunction with the release of this discussion paper and the *Socio-Economic and Environment Analysis*, Forest Service staff will actively solicit public input to ensure the information used in the Timber Supply Review for the Dawson Creek Timber Supply Area is correct. Input will be accepted until September 27, 1996 and will be summarized in a report to the chief forester and the minister of forests.

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

Throughout this discussion paper, the page numbers from the technical reports are provided so that you can refer to them for additional information (*TSAR* is the *Timber Supply Analysis Report and* its *Addendum; SEA* is the *Socio-Economic Analysis).*

Description of the Dawson Creek Timber Supply Area

The Dawson Creek Timber Supply Area is located in the northeast interior of the province. The timber supply area stretches from the Peace River in the north to the Kakwa Recreation Area in the south. It extends from the Alberta border in the east to the continental divide along the Rocky Mountains to the west.

The area is characterized by gently rolling prairie near Dawson Creek, eastern foothills near Chetwynd and Tumbler Ridge, and the rugged terrain of the Rocky Mountains around Monkman Park. The climate is severe throughout the area with long, cold winters and short growing seasons.

Forest resources

The Dawson Creek Timber Supply Area encompasses approximately 2.28 million hectares within the Dawson Creek Forest District. The timber supply area does not include private lands, ecological reserves or provincial parks such as Monkman and Gwillim Lake.

Timber

Figure 1 illustrates that most of the land base in the timber supply area is not suitable or available for

timber harvesting because it is classified as non-Crown land or non-forested area, or is too wet or steep, or is comprised of areas with site sensitivities or poor quality timber.

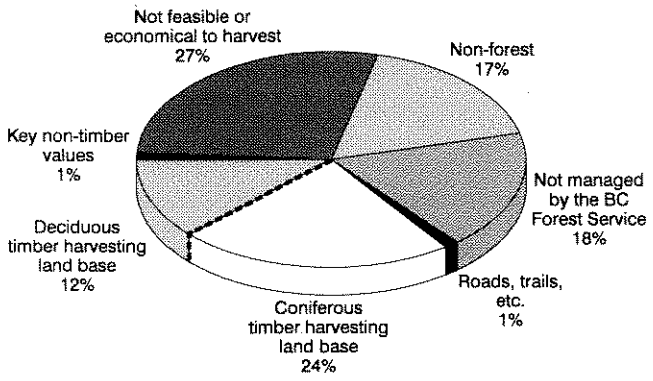

Figure 1. Classification of productive Crown forest in the Dawson Creek Timber Supply Area

Notes: Areas with key non-timber values that were deducted from the timber harvesting land base for the timber supply analysis include the Wapiti Lake recreation area, the Peace River Corridor, Pine Pass visually sensitive corridor and critical ungulate habitat.

Proposed study areas under the Protected Areas Strategy have not been directly subtracted from the timber harvesting land base for this analysis because these areas are still subject to public review and comment and possibly revision of boundaries and areas.

Based on current forest management practices, approximately 36 per cent of the land base (811,662 hectares) is suitable for commercial timber harvesting, (*Addendum* page 2). Of this total, 539,773 hectares are occupied by coniferous forests and 271,889 hectares are covered by deciduous forests. These areas form the timber harvesting land base where harvesting can occur, provided integrated resource management objectives are met.

It should be noted that the land base for coniferous and deciduous has changed since the previous analysis in 1989 mainly due to the application of more accurate inventory information than previously used. The area of the coniferous timber harvesting land base has increased from the last analysis and now includes mature small diameter pine forests that previously were not considered harvestable. Conversely, the area of the deciduous timber harvesting land base has decreased since the last analysis by nine per cent, even with all the deciduous forests in the timber supply area included rather than only the areas that were previously considered in the 1989 analysis.

As illustrated in Figure 2, the coniferous timber harvesting land base in the Dawson Creek Timber Supply Area is dominated by spruce and lodgepole pine. A portion of the pine forests have relatively small diameter stems that were not considered merchantable in the past. While these forests have had limited harvesting activity in the past, recently there has been harvesting by forest companies in these stands.

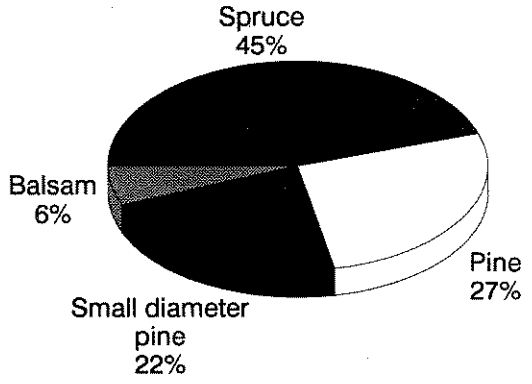

Figure 2. Area of coniferous tree species in the coniferous timber harvesting land base

The deciduous timber harvesting land base is dominated by trembling aspen, while cottonwood makes up about 18 per cent. Deciduous forests are located primarily in the lower elevation Kiskatinaw plateau and Peace River lowland areas of the timber supply area.

Currently, 75 per cent of the coniferous forests and 50 per cent of the deciduous forests are mature. This can be attributed to the limited historical timber harvesting activity and the lack of any large natural disturbance events such as insect and disease infestation, windthrow, or fires within the timber supply area.

Wildlife and fisheries

The Dawson Creek Timber Supply Area is home to a wide variety and abundance of wildlife species. Native mammals include woodland caribou, moose, elk, mule and whitetail deer, black bear, grizzly bear, mountain goat, stone and bighorn sheep. Wolves and other fur bearers such as coyote, beaver, pine marten, muskrat and mink inhabit the area as well. The timber supply area contains approximately 230 species of non-game birds and provides habitat for species of birds (notably warblers) identified as rare or extremely rare. Studies are currently being conducted by the Ministry of Environment, Lands and Parks to identify bird and animal species and populations living in deciduous forests within the timber supply area and to monitor potential harvesting impacts over time.

The rivers, streams and lakes within the Dawson Creek Timber Supply Area are inhabited by bull trout, mountain whitefish, Arctic grayling, rainbow trout, walleye, pike and burbot. Within the Kiskatinaw River system, regionally significant populations of non-sport fish species such as the northern redbelly dace and the pearl dace exist (*SEA* pages 19-23).

Recreation and tourism

A broad spectrum of recreation opportunities are available within the Dawson Creek Timber Supply Area. Hunting, camping, fishing and snowmobiling are popular. Accessible recreation opportunities are vast due to increased development of resource roads and seismic lines for oil and gas exploration. Forest Service recreation sites such as Heart Lake, Stony Lake, Moose Lake and Moberly Lake offer good fishing, boating and camping opportunities.

There is an abundance of tourism opportunities in the Dawson Creek TSA however, most of the tourism activity relates to drive-through touring by people en route to Alaska. This makes the visual quality of the forest landscape an important consideration, especially along several major highway corridors that transect the area. Opportunities for growth in tourism exist. (*SEA* pages 12 and 21)

Range

Crown lands within the timber supply area provide significant range opportunities for domestic livestock. For about four to five months each year, approximately 225 ranch operations are highly dependent on Crown land forage (*SEA* page 12). The demand for forage by wildlife and domestic livestock is increasing by about five per cent per year.

Current allowable annual cut

The current allowable annual cut for the Dawson Creek Timber Supply Area, determined in 1990, is 1,860,173 cubic metres per year including allowable harvests from woodlots which account for 33,850 cubic metres. As this timber supply analysis does not address allowable harvests from woodlots, the allowable annual cut used in the analysis is 1,826,323 cubic metres per year. The current allowable annual cut is allocated into coniferous and deciduous components.

- **Coniferous**
  The current allowable annual cut for the coniferous component, set in 1989, is 841,323 cubic metres per year. Approximately 60 per cent of this cut is allocated to long-term replaceable licences, 21 per cent is allocated to the Small Business Forest Enterprise Program administered by the Forest Service and approximately two per cent is held in reserve.

  The remaining 17 per cent, or 150,000 cubic metres, is for small diameter lodgepole pine; however, due to uncertainty in the availability of these forests for harvesting there have been no licences allocated harvesting this timber. Many of these stands are in caribou habitat areas, and harvesting has been deferred pending development of special management guidelines for the caribou habitat areas. As a result, the current allocated harvest level is 691,323 cubic metres.

- **Deciduous**
  The current allocation for deciduous harvesting is 985,000 cubic metres per year. Approximately 92 per cent is allocated to pulpwood agreements*, while eight per cent is harvested through the Small Business Forest Enterprise Program.

  Pulpwood agreements permit timber harvesting in special circumstances when it is necessary to supplement other sources of wood fibre. Unlike a forest licence or tree farm licence, a pulpwood agreement does not require the licensee to harvest a specific volume of timber within a five year period. This allows the deciduous licensee to obtain wood from alternate sources — primarily wood from private land. This is reflected in the amount of timber which has been harvested from private land compared to that harvested from Crown land in recent years.

  Figure 3 shows the breakdown of actual volumes of deciduous timber harvested from the timber supply area versus that harvested from private sources in the last eight years.

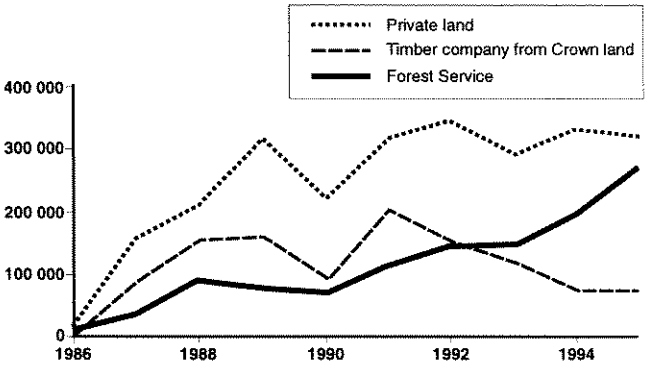

Figure 3. Sources of deciduous wood supply from 1986 - 1995, Dawson Creek Timber Supply Area.

* Forest Service includes Small Business, licence to cut, Agriculture lease, right-of-way, and other licences.

Socio-economic profile

Population

The population of the Dawson Creek Timber Supply Area, as reported in the 1991 census, is widely dispersed and estimated at 28,880, with 63 per cent residing in the communities of Dawson Creek, Tumbler Ridge and Chetwynd. Other communities in the timber supply area include Hudson's Hope, Pouce Coupe, Moberly Lake, and Kelly Lake (*SEA* page 5).

Dawson Creek Timber Supply Area

First Nations

A number of First Nation communities are within this timber supply area. The Saulteau and West Moberly Lake bands represent 335 members. Both bands are affiliated with the Treaty 8 Tribal Association. The Saulteau community's labour force is involved in silviculture, gravel excavation, cattle ranching, and farming, while the Moberly Lake community's labour force is involved in logging, backhoe contracting and trapping.

Kelly Lake is a Metis community with a population of approximately 350. The major employment sector for the community is seasonal involvement in the logging, as well as the oil and gas industries. Kelly Lake is currently in the process of becoming a member of the Treaty 8 Tribal Association (*SEA* pages 7 to 9).

Local economy

Originally the economy of the Dawson Creek Timber Supply Area was based on agriculture, but in the 1960s forestry became of major importance to the economy. However since the development of coal deposits near Tumbler Ridge in 1981, mining has become the largest basic component of the economy. As the northeast region is the only part of the province with productive oil and natural gas wells, exploration and production activities are also significant in the Dawson Creek Timber Supply Area

Figure 4 illustrates the total employment dependant on each income source in the Dawson Creek Timber Supply Area (*SEA* pages 9 and 10).

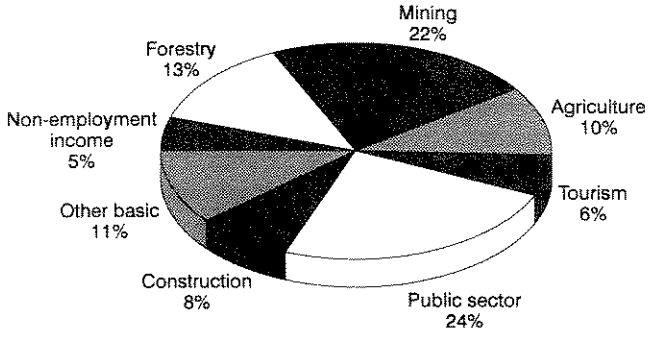

Figure 4. Total employment dependant on income sources

Timber industry

- **Coniferous harvest**
  Two major coniferous licensees operate processing facilities within the Dawson Creek Timber Supply Area. The timber supply area has several smaller processing operations as well.

Harvesting and processing the current apportioned allowable annual cut — 691,323 cubic metres — from the Dawson Creek Timber Supply Area generates an estimated 470 person-years of direct employment and 710 total person-years of employment within the area (*SEA* page 38).

The coniferous licensee's wood supplies are not solely obtained from Crown land within the timber supply area. Other sources of wood are Tree Farm Licence 48 within the Dawson Creek Forest District and private land within B.C. and Alberta. Based on 1993 figures, approximately 41 per cent of the wood supplied to these mills was obtained from the timber supply area. (*SEA* page 29)

- **Deciduous harvest**
  The deciduous timber supply for the processing facilities in the Dawson Creek Timber Supply Area is largely obtained from sources other than Crown land, particularly from private land in B.C. and Alberta.

The deciduous timber volume harvested from the timber supply area is highly variable, depending primarily on the availability of private timber. Therefore, estimating the employment generated from the deciduous harvest was based on how much deciduous timber is required from all sources to support the two deciduous processing facilities which rely on deciduous timber. For the purposes of this review, a harvest level of 955,000 cubic metres, three per cent below the allocated harvesting level, was used. (*SEA* page 48)

Harvesting and processing 955,000 cubic metres of aspen and cottonwood from all sources generates an estimated 745 person-years of direct employment and 1,098 total person-years of indirect employment in the Dawson Creek Timber Supply Area. (*SEA* page 49)

Provincial economy and revenues

- **Coniferous harvest**
  In total, harvesting and processing the allocated coniferous allowable annual cut of 691,323 cubic metres in the Dawson Creek Timber Supply Area is estimated to generate 1,576 person-years of direct and indirect employment in the province, 41 per cent of which is created within the timber supply area. (*SEA* page 38)

Approximately $17.4 million in provincial revenues are generated annually by coniferous timber harvested in the Dawson Creek Timber Supply Area. This figure is based on fees of $9.7 million for harvesting public timber in the area, estimated income taxes of $4.2 million, plus other tax revenues of $2.8 million. These estimates

include the increased stumpage revenues being generated to fund Forest Renewal BC (*SEA* page 40)

- **Deciduous harvest**
  In total, harvesting and processing 955,000 cubic metres of deciduous timber is estimated to generate 1,910 person-years of direct and indirect employment, 58 per cent of which is created within the forest district. (*SEA* page 49)

  There's no requirement for the deciduous timber to be harvested on an annual basis, and the deciduous mills currently depend to a large degree on other sources of fibre. However, if all the deciduous timber was harvested from the Dawson Creek TSA approximately $11.9 million in provincial revenues would be generated annually. This figure is based on fees of $1.7 million for harvesting public timber in the area, estimated personal income taxes of $4.9 million, plus other tax revenues of $3.8 million. (*SEA* page 50)

Management practices

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

The timber supply analysis addendum was based on the existing land-use designations and current management practices — practices that had been approved and implemented in the Dawson Creek Timber Supply Area when this analysis was initiated. Readers are encouraged to read the *Timber Supply Analysis Report* (pages 13-16 and Appendices), and the *Addendum to the Dawson Creek Timber Supply Analysis Report* for more detailed information.

Management zones and integrated resource management practices

For the timber supply analysis, Forest Service staff divided the timber harvesting land base into management zones by grouping areas where similar integrated resource management practices are implemented. This approach permits analysis of the range of practices, in the different types of forests throughout the Dawson Creek Timber Supply Area. However, the site specific practices implemented in any one area may differ from the generalized practices used in the analysis.

In the Dawson Creek Timber Supply Area, the coniferous timber harvesting land base occupies 66 per cent of the total timber harvesting land base, with the deciduous timber harvesting land base occupying the remainder. Figure 5 illustrates the per cent of area within each management zone in both land bases.

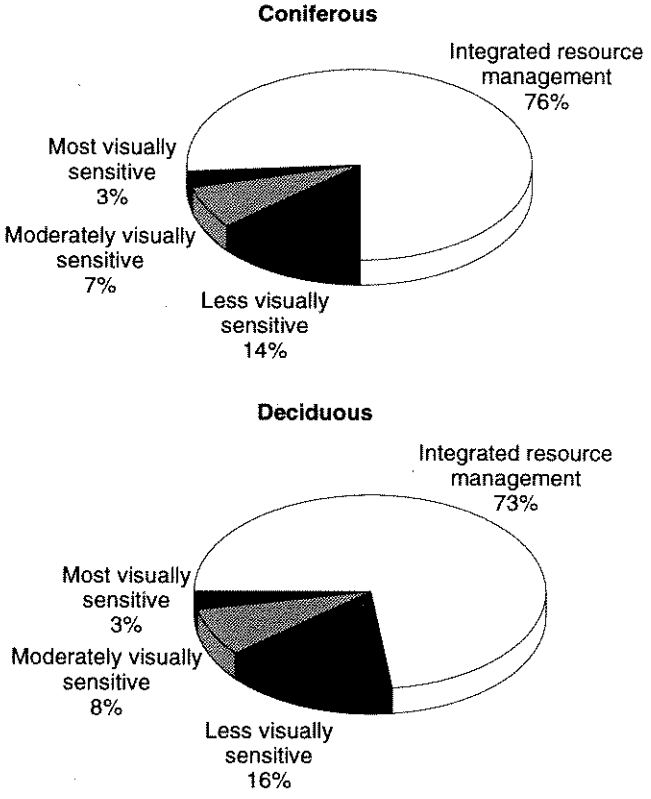

Figure 5. Area in each management zone in the coniferous and deciduous timber harvesting land base

The information used in the analysis to account for the integrated resource management practices in each zone is described below.

- **Integrated resource management zone** (682,966 hectares) - Includes all areas not within a visually sensitive zone. To maintain biological diversity and meet other forest management objectives in this zone, timber harvesting is not permitted to become overly concentrated in one area at any time. Timber adjacent to previously harvested areas cannot be harvested until the regenerated forest on the adjacent, previously harvested area is at least three metres tall. Also, at any one time, no more than 33 per cent of the timber harvesting land base in a specific area can be harvested and regenerated with forests less than three metres tall.

- **Visually sensitive zones** (93,668 hectares) - includes viewscapes surrounding rivers, recreational lakes and along several road and highway corridors where visual quality is particularly important. Throughout these areas, 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 create acceptable viewscapes.

  Three levels of visually sensitive areas were identified in both the coniferous and deciduous land base:

  - **Coniferous timber harvesting land base**
    - most visually sensitive (retention) zone (14,478 hectares) - no more than six per cent of the area can have trees less than five metres tall at any time.
    - moderately visually sensitive (partial retention) zone (40,512 hectares) - no more than 13 per cent of the area can have trees less than five metres tall at any time.
    - less visually sensitive (modification) zone (73,936 hectares) - no more than 24 per cent of the area can have trees less than five metres tall at any time.

  - **Deciduous timber harvesting land base**
    - most visually sensitive (retention) zone (9,062 hectares) - no more than eight per cent of the area can have trees less than five metres tall at any time.
    - moderately visually sensitive (partial retention) zone (20,699 hectares) - no more than 14 per cent of the area can have trees less than five metres tall at any time.
    - less visually sensitive (modification) zone (43,151 hectares) - no more than 29 per cent of the area can have trees less than five metres tall at any time.

Current practices

The integrated forest management practices that were approved and implemented throughout the timber harvesting land base when the timber supply analysis was initiated are briefly described below. This listing is not inclusive, but reflects those key practices that were included in the timber supply analysis.

- **Basic silviculture** - British Columbia laws require that areas harvested and that are expected to produce timber in the future, must be reforested with ecologically acceptable species within a specified time frame. The typical silvicultural practice following clearcut harvesting is to prepare the site for planting; reforest by planting with a mix of species, or by relying on natural regeneration (primarily for deciduous species and some lodgepole pine stands); and if needed, control competing vegetation. It is assumed that the majority of the harvested areas will be restocked within four years of harvesting. In some situations, such as high elevation sites, restocking may take from five to seven years.

- **Timber utilization** - Timber that meets or exceeds the following size limits and is suitable for the manufacture of lumber or pulp, or in particular areas engineered, or wood products such as oriented strand board within particular areas, must be utilized.
  - diameter at chest height:
    - lodgepole pine, aspen and cottonwood: 12.5 centimetres
    - spruce, true fir (balsam) and larch: 17.5 centimetres
  - diameter at top: 10 centimetres for all species

  Utilization standards for deciduous species also vary between pulpwood agreements. The maximum diameter that is currently utilized is 66 centimetres in both Pulpwood Agreement 13, which supplies the Chetwynd pulpmill, and Pulpwood Agreement 10, for the Dawson Creek oriented strand board plant.

- **Forest health and unsalvaged losses** - Timber losses due to wildfires, insects, diseases and blowdown are minimized as much as possible and damaged timber is harvested where feasible. Unsalvaged annual losses of coniferous timber to insects, disease, fire, and wind damage are estimated to be 44,000 cubic metres. Recent outbreaks of spruce bark beetle have led to focused harvesting activities in accessible, high infestation areas. Harvesting has also been focused on spruce forests in the Kiskatinaw plateau where root rot infestation is high. The estimated losses may not adequately account for these situations.

  No significant information on forest health and unsalvaged losses for the deciduous species was available at the time of this timber supply review.

- **Harvestable ages** - Minimum harvestable age is defined as the time it takes for forests to grow to harvestable size which varies by tree species and site productivity. For deciduous species, the minimum ages vary from 60 years for aspen on good growing sites to 80 years for aspen and cottonwood on poor growing sites. For coniferous species, the minimum ages vary from 60 years for lodgepole pine on good growing sites to 150 years for spruce on poor growing sites.

- **Fisheries, wildlife and biodiversity** - Sensitive wildlife habitats and critical wildlife habitat areas which include black spruce, larch, and some of the lodgepole pine forests, were excluded from the timber harvesting land base for the timber supply analysis. Deciduous trees in mainly coniferous forests are occasionally left standing after

harvesting to contribute to the biodiversity of the site. However, there is no direct accounting for biodiversity strategies in the timber supply analysis.

Timber supply forecasts and critical factors

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

To complete the timber supply analysis for the Dawson Creek Timber Supply Area, a computer model was used to produce base case* timber supply forecasts for the coniferous and deciduous components of the timber harvesting land base. These forecasts were required to meet each of the following conditions:

- maintain the current allowable annual cut as long as possible without compromising future timber supply
- if the current allowable annual cut could be achieved for the forecast period of 250 years, timber supply levels were increased until future shortfalls occurred in some decades.

In addition to the base case forecasts, tests were completed during the timber supply analyses to identify which factors had the greatest effect on the timber supply forecasts. Also, since early 1994 when the data was finalized for the timber supply analysis, Forest Service staff have continued to collect information for some of the factors in the analysis, resulting in possible improvements. These critical factors are discussed in this section for both the coniferous and deciduous components. Other factors were tested and are discussed in the *Dawson Creek Timber Supply Analysis Report* (pages 23 to 40) and the *Addendum Report* 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.

Coniferous timber supply

Base case forecast

The coniferous base case forecast, produced using the best information available about forest practices when the analysis was initiated in 1994, the corrected land base, and which meets the conditions described above, indicates there is a substantial timber supply available above the current allowable annual cut (Figure 6). The base case forecast indicates a short-and long-term timber supply level of 972,000 cubic metres per year, which is 16 per cent above the current allowable annual cut (*TSAR Addendum* page 3).

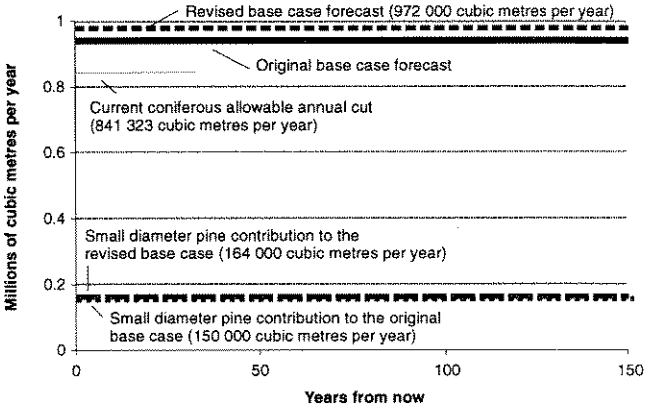

Figure 6. Revised coniferous base case timber supply forecast.

This projected significant increase in the timber supply is due mainly to the addition of the large area of small diameter lodgepole pine to the coniferous timber harvesting land base. This area contributes approximately 164,000 cubic metres of timber supply annually to the short- and long-term forecast. Also, the timber volume estimates for regenerated forests that were used in the analysis reflect new data and are projected to be higher than those used in the 1989 analysis which also contributes to this increased forecast.

Examining critical factors

Factors indicating the timber supply may be higher than predicted in the base case

- **Inventory audit trends**
  Resource Inventory Branch of the B.C. Forest Service has recently completed a forest inventory audit of the Dawson Creek TSA. These audits are designed to give an indication of the quality of the inventory information by comparing timber volume estimates predicted from existing inventory information to actual timber volumes found in the mature portion of the forests.

For the Dawson Creek TSA, the inventory audit shows that there is a statistically significant difference in the volume estimates for existing mature stands. Overall for the entire TSA (deciduous and coniferous species) the audit indicates the actual timber volumes may be 27 per cent higher than those predicted from the inventory file. However, the inventory audit does not produce results that are statistically reliable for specific areas or tree species. Therefore, the results cannot justifiably be used to make specific adjustments to growth and yield and other information used in timber supply analysis. The audit provides a general assessment of the uncertainty associated with mature timber volumes. The sensitivity analysis in the addendum is only meant to illustrate the possible impact of this uncertainty.

There are not enough samples in either deciduous or coniferous stands, when separated, to measure if there is a statistical difference in those specific volume estimates. However, it is possible to see general trends. The samples suggest that the volumes predicted using inventory information may underestimate actual volumes by about 33 per cent in the mature coniferous stands and about nine per cent in the mature deciduous stands.

Figure 7 illustrates the projected timber supply with a 35 per cent increase in the timber volume estimates. However, as noted above, because of the small number of samples, the audit results cannot be used to make specific adjustments.

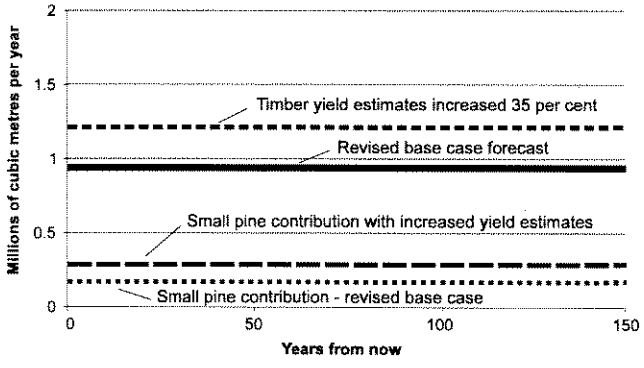

Figure 7. Effects of increasing the estimated mature coniferous timber volumes

Factors that may either increase or decrease the coniferous timber supply

- **Size of the coniferous timber harvesting land base**
  Several factors indicate the coniferous timber harvesting land base may be larger or smaller than was estimated in the timber supply analysis:

- **increased reforestation**
  Harvesting and natural disturbances from fires that occurred before 1982 have created an estimated 50,000 hectares of not-satisfactorily restocked forest lands in the Dawson Creek Timber Supply Area. Approximately 19,200 hectares of this area would be economically and physically feasible to harvest if reforested. This could increase the projected coniferous timber harvesting land base by about 3.5 per cent.

  A recent proposal to Forest Renewal BC has suggested that a portion of this not satifactorily restocked (NSR) area could be restocked and successfully reforested within 10 and 20 years. The first part of this project (calls for a survey of 20,000 hectares of NSR to be followed by reforestation on suitable areas.

- **rehabilitating non-commercial brush sites**
  Rehabilitation and reforestation of areas that are classified in the timber inventory as non-commercial brush was practiced in the Dawson Creek Timber Supply Area until 1993. Approximately 44,000 hectares of non-commercial brush sites are potentially available for rehabilitation. Rehabilitation of these areas would increase the area of the coniferous timber harvesting land base. However, it is unlikely that the entire area could be rehabilitated, as these sites provide resource values such as wildlife habitat and biodiversity.

- **harvesting lower volume forests**
  Conventional timber harvesting is currently estimated, in the analysis, to be uneconomical in forests that contain less than 120 cubic metres of merchantable timber per hectare. However, past harvesting and current operational timber harvesting plans show examples which included limited amounts of timber below this level. Although the extent of this shift is currently limited, changes in markets and timber supply are expected to make lower volume forests more economical to harvest, which would increase the size of the timber harvesting land base in the future.

- **utilizing small diameter pine**
  The revised base case forecast projects harvesting of 164,000 cubic metres of timber annually from small diameter pine forests previously considered uneconomical to harvest. If portions of these forests prove to be unmerchantable, the size of the timber harvesting land base would be reduced.

Figure 8 illustrates the timber supply effects of changes in the size of the timber harvesting land base.

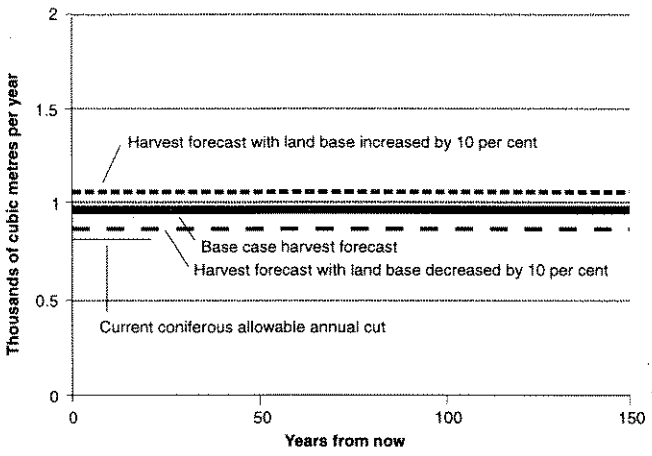

Figure 8. Effect of changes in the size of the coniferous timber harvesting land base

- **Unsalvaged losses**
  The unsalvaged losses that have been accounted for in the timber supply analysis include wildfire, windthrow and insect damage. Losses due to root diseases, such as tomentosus root rot which affects spruce forests, have not been fully accounted for. Also, unsalvaged losses due to spruce beetles may increase if the current beetle infestations spread and extensive salvaging is not operationally feasible.

  Increases in the amount of unsalvaged losses may reduce the projected timber supply. Conversely, harvesting strategies which could reduce the estimated unsalvaged losses may increase the timber supply.

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

- **Caribou habitat requirements**
  The Ministry of Environment, Lands and Parks is identifying low-elevation winter habitat areas for woodland caribou. Management practices are being designed for these areas to maintain adequate cover of older forests. The forests within this area are predominantly mature small diameter lodgepole pine which have been included in the coniferous timber harvesting land base in this review. As management practices for caribou habitat had not been finalized or approved when the timber supply analysis was initiated, specific practices were not included in this review. It is expected that these practices could reduce the projected timber supply.

- **Grizzly bear habitat requirements**
  The BC Grizzly Bear Conservation Strategy outlines the planning and management practices the Ministry of Environment, Lands and Parks will implement for grizzly bears. Since management requirements for grizzly bear habitat had not been identified when the timber supply analysis was initiated, grizzly management practices were not explicity assessed in this review. Management for grizzly bear habitat in high elevation forests and low elevation riparian areas may reduce the projected timber supply.

- **Vegetation management success**
  A substantial portion of the coniferous timber harvesting land base in the Dawson Creek Timber Supply Area requires silvicultural treatments to manage competing vegetation. In some areas, chemical herbicides are used. Aerial application of herbicides is presently used in the Dawson Creek TSA however, as a result of local concerns the use of herbicides is becoming limited in some areas. This could reduce regeneration success on some sites. Limited vegetation management success leads to changes in timber species composition and longer regeneration delays which influences the projected timber supply, often causing a reduction in the timber supply.

Deciduous timber supply

Base case forecast

The deciduous base case timber supply forecast for the Dawson Creek Timber Supply Area is based on forest practices being implemented when the analysis was initiated in 1994, the corrected land base, and which meets the requirements outlined earlier for the analysis. It indicates the current allowable annual cut for the deciduous component cannot be maintained without severe timber supply shortfalls in the future. As Figure 9 illustrates, the base case timber supply forecast indicates an initial harvest level of 886,500 cubic metres per year, 10 per cent below the current allocation. The forecast then drops 22 per cent per decade to 480,000 cubic metres per year 31 years from now, which is 51 per cent below the current deciduous allowable annual cut. (*TSAR* Addendum page 4)

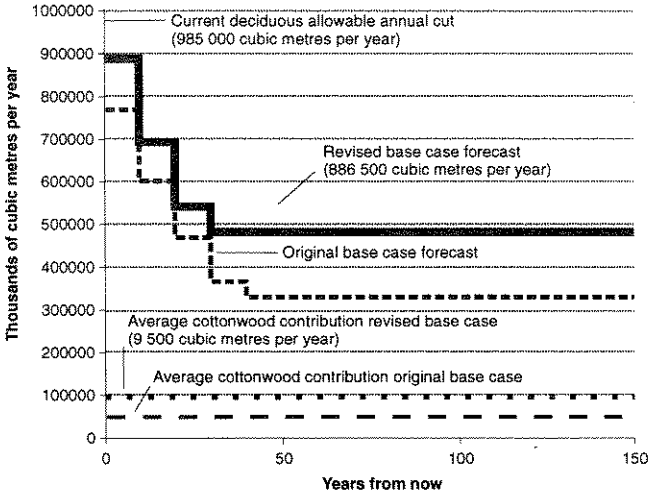

Figure 9. Revised deciduous base case timber supply forecast

Two significant factors have interacted to create this timber supply forecast:

- **size of the deciduous timber harvesting land base**
  The original timber supply analysis only included the portion of the deciduous timber harvesting land base where deciduous harvesting had been occurring within the pulpwood agreement areas. The revised analysis reported in the *Addendum* is based on the entire deciduous timber harvesting land base within the timber supply area, resulting in a substantial increase in the projected timber supply compared to the original report.

Examining critical factors

Factors indicating the timber supply may be higher than predicted in the base case

- **Inventory audit trends**
  As noted above, the Resource Inventory Branch of the B.C. Forest Service is has recently completed a forest inventory audit of the Dawson Creek TSA. The audit is designed to give an indication of the quality of the inventory information by comparing timber volume estimates predicted from inventory information to actual timber volumes found in the mature portion of the forests.

The inventory audit does not produce results that are statistically reliable for specific areas or tree species. Therefore, the results cannot justifiably be used to make specific adjustments to growth and yield and other information used in timber supply analysis. However, the audit does provide a general assessment of the uncertainty associated with mature timber volumes. The sensitivity analysis in the addendum is only meant to illustrate the possible impact of this uncertainty.

For the Dawson Creek TSA, there are not enough samples in deciduous stands to measure if there is a statistical difference in volume estimates. However, the samples suggest that the volumes predicted using inventory information may underestimate actual volumes by about nine per cent in the mature deciduous stands.

Figure 10 illustrates the effects of a 10 per cent increase in the deciduous timber volume estimates. This factor indicates may be possible to maintain the current allowable annual cut of 985,000 cubic metres per year for 10 years followed by declines of 22 per cent per decade over 30 years.

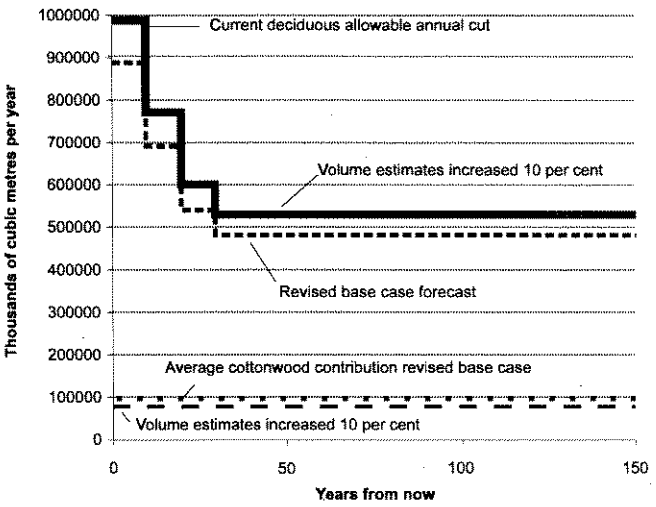

Figure 10. Effects of increased deciduous timber volume estimates

Because the area within the deciduous timber harvesting land base is based to a large degree on the projected amount of timber volume on particular sites, an underestimation of timber volumes may also lead to an underestimation of the size of the deciduous timber harvesting land base. Figure 12 shows the effects of increases in the projected deciduous timber volumes and the size of the deciduous timber harvesting land base on the deciduous timber supply.

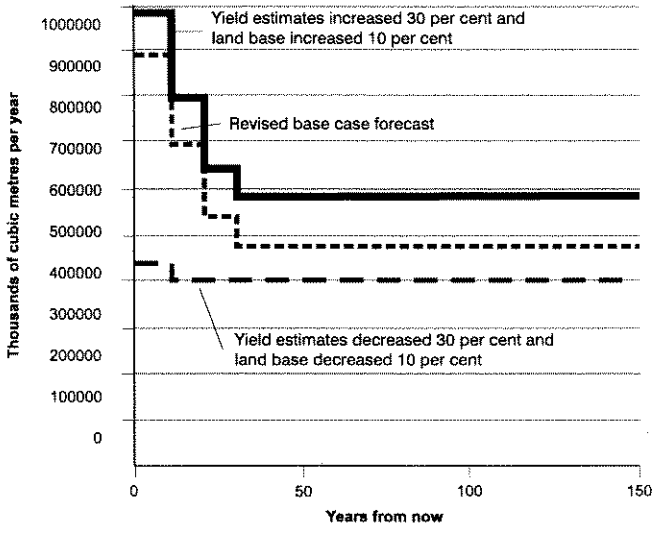

Figure 11. Effects of increased and decreased deciduous timber volume estimates and timber harvesting land base

Factors indicating the timber supply may be lower than predicted in the base case forecast

- **Unsalvaged losses**
  When the timber supply analysis was initiated, information was not available regarding unsalvaged deciduous timber losses. Consequently,

unsalvaged deciduous losses were not included in the analysis. There are likely deciduous timber losses such as stem rot, particularly in older trees, which are not salvaged and would reduce the projected timber supply.

Critical factors affecting the coniferous and deciduous timber supply

Factors that may either increase or decrease the timber supply

- **Size of the timber harvesting land base**
  The timber supply analysis is based on the current proportions of deciduous and coniferous stands. The analyses assume that this proportion will remain in perpetuity. However, forest management objectives, from the biodiversity guidelines, in particular the landscape unit planning and the mature and old forest retention requirements, may result in a shift in the existing proportions. Other forest management objectives such as visual quality objectives, wildlife and fisheries objectives, vegetation management success and riparian area requirements could also change the proportion of coniferous and deciduous stands in the Dawson Creek TSA. If there is a change in the proportions of deciduous and coniferous stands in the TSA, an increase or decrease in timber supply could result.

Figure 12 shows the timber supply impacts of changes in the size of the deciduous timber harvesting land base. (*TSAR Addendum* page 12). See Figure 9 in this discussion paper for the effects of changing the size of the coniferous timber harvesting land base.

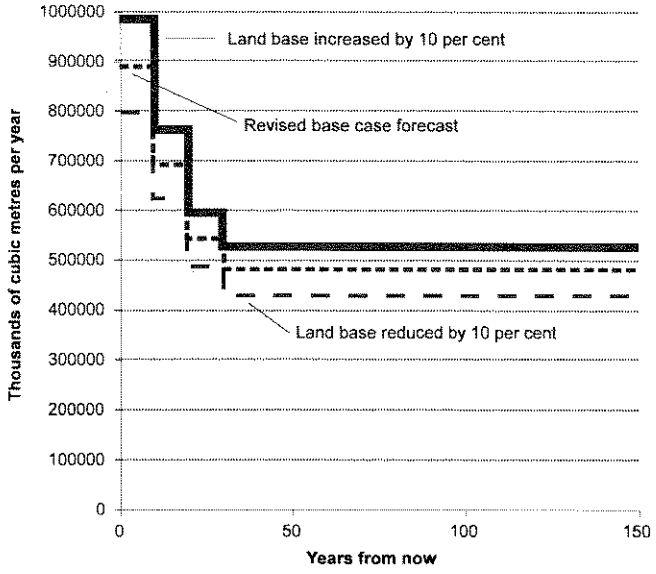

Figure 12. Effects of changes in the size of the deciduous timber harvesting land base

- **Forest cover requirements**
  The revised base case forecasts include an assumption that the timber can be harvested from both the deciduous and coniferous timber harvesting land base in three passes, with approximately 33 per cent of the mature timber removed in each pass. It is possible that in some areas, integrated resource management objectives will require less harvesting at any one time. The potential timber supply implications of requiring a four pass system, with a maximum of 25 per cent of an area harvested at one time on the deciduous timber harvesting land base is illustrated in Figure 13 (*TSAR Addendum* page 13). There is no change to the base case harvest forecast for the coniferous land base when the forest cover requirements are changed to require a four pass system.

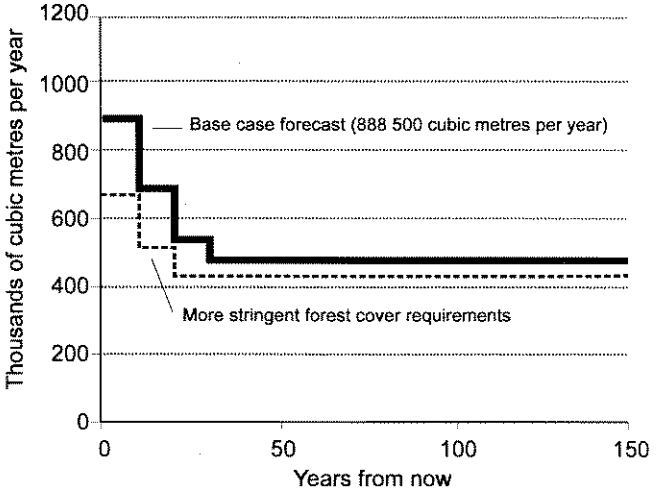

Figure 13. Effects of more stringent forest cover requirements on the deciduous timber supply land base

In addition, the coniferous and deciduous land bases were analyzed on a completely separate basis. In fact, many of the stands are side by side and the harvesting of a coniferous stand could impact the timing of harvesting of the deciduous stands or vice versa because of adjacency requirements. However, it is not clear at this point where and how often this problem may occur. This could result in an increased or decreased harvest level on either the coniferous or deciduous timber harvesting land base.

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

- **Oil and gas activities**
  The development of seismic lines, wellsites, pipelines and connecting road networks has been increasing in recent years. Information collected from 1987 to 1992 shows that approximately 700 hectares of forest land within the timber supply area is impacted by these activities annually. The

Forest Service estimates that 50 per cent of this area is within the timber harvesting land base.

A reduction of approximately five per cent of the timber harvesting land base was applied in the timber supply analysis for future roads and development activities. If the predicted increase in oil and gas activities occurs, reductions to the timber harvesting land base beyond this estimate are expected.

- **Maintaining older forests**
  Biodiversity management requires that portions of the land base be occupied by mature and old forests. Mature and old forest retention requirements were not included in the timber supply analysis. Retaining greater representation of mature and old forest characteristics could have a downward effect on the timber supply.

- **Managing riparian areas**
  In the timber supply analysis approximately one per cent (11,000 hectares) was deducted from the timber harvesting land base to account for riparian areas which currently are excluded from timber harvesting. Ministry of Environment, Lands and Parks staff are concerned that this estimate may be low based on comparisons with other areas where studies have shown that riparian areas amount to more of the timber harvesting land base. Local studies are currently underway to refine this estimate. A higher estimate of riparian area may lead to a reduction in the projected timber supply.

Environmental and socio-economic implications

Environmental concerns

In addition to the environmental considerations accounted for in the timber supply analysis, the following environmental issues and concerns in the Dawson Creek Timber Supply Area must be recognized:

- properly managed increased road access and increased conservation measures may be required to minimize negative impacts on wildlife habitat and populations, particularly grizzly bears, caribou, mountain goats, and fish species such as bull trout. Sensitive habitats such as riparian areas can also be adversely effected by extensive access if not carefully managed. (*SEA* page 54)

- Maintenance of wildlife habitat, particularly for moose and song birds, may require harvesting and silvicultural prescriptions that maintain important vegetation, such as willow and other deciduous species. (*SEA* page 55)

First Nations implications

Treaty 8 First Nations people from Saulteau and West Moberly Lake are concerned that timber harvesting and timber management practices are reducing wildlife habitat and populations, particularly for moose and furbearers upon which they are dependant for their traditional way of life. They are also concerned about the impacts harvesting has on cultural sites.

All First Nations are interested in accessing a portion of the allowable annual cut and participating in forest resource management activities.

Community impacts

In the *Socio-Economic Analysis* it was assumed that a change in timber supply would create economic impacts in direct proportion to the reduction or increase in timber supply (i.e., a 10 per cent increase in timber supply would result in a 10 per cent increase in forestry employment).

If the coniferous allowable annual cut is increased to the revised base case harvest level, an increase of 280,677 cubic metres a year, it is estimated that a total of 264 person-years of direct and indirect employment would be gained within the timber supply area. This increase would remain constant as the revised base case forecast is unchanged over the short- and long-term. (*SEA* page 37)

Because the majority of the deciduous timber is harvested through pulpwood agreements, which do not include a requirement for a specified amount of timber to be harvested annually, and the deciduous processors currently depend to a large degree on other sources of fibre, it is not possible to assess the economic implications of changes in the deciduous timber available from the timber supply area.

Since most of the employment outside the processing plants is contractual, there is flexibility for these individuals to relocate to coniferous or private land activities to replace their income. However, employees of the deciduous processing plants lack this mobility. The deciduous processors are concerned that if employment declines they could lose their skilled tradespeople and other key employees. As the labour force associated with the deciduous processing is concentrated in Dawson Creek and Chetwynd, these communities would experience impacts from employment changes at these plants. (*SEA* page 52)

Opportunities exist within the forestry sector to provide alternate employment by encouraging value-added manufacturing in high employment milling operations. Additional opportunities are being created through the Forest Renewal Plan. The challenge for

these communities is to develop economic strategies to take advantage of local opportunities.

Provincial impacts

An increase in the coniferous allowable annual cut to conform to the revised base case is estimated to create a total of 641 person-years of direct and indirect employment. This employment level would remain constant in the short- and long-term, consistent with the base harvest forecast.

Chief forester's determination

The chief forester must determine an allowable annual cut as part of a strategy to achieve the projected long-term sustainable timber supply level. The base case forecasts provide alternatives, but the chief forester may select other harvest levels based on his consideration of the factors required under Section 7 of the *Forest Act*, which are listed on page 1 and 2 of this paper.

Your input is needed

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

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

Please mail the completed questions and your comments to the forest district manager at the address below. Your comment will be accepted until September 27, 1996.

You may identify yourself on your response if you wish. If you do, you are reminded that responses will be subject to the *Freedom of Information and Protection of Privacy Act* and may be made public. If the responses are requested, personal identifiers will be removed before the responses are released.

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

For more information contact:

Terry Dyer
District Manager
Dawson Creek Forest District
9000-17 Street
Dawson Creek, BC
V1G 4A4

Phone: (604) 784-1200

Dawson Creek Timber Supply Area
Timber Supply Review

Discussion Paper Response Form

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

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

The technical reports that have been prepared for the Timber Supply Review of the Dawson Creek Timber Supply Area provide information on these factors. We welcome further input from the public to ensure the best available information is used in the allowable annual cut determination. Please provide your comments on this form, or in another format by September 27, 1996.

A. Economic and social objectives

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

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

Please use the space below to provide any information which you believe may assist the chief forester in considering the technical factors to determine the allowable annual cut for the Dawson Creek Timber Supply Area. Further information on the critical factors outlined on pages 12-14 in this paper would be most helpful.

Which community sector listed below best describes your interests?

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

Name (optional) _____

Address (optional) _____

Mail your comments to:

Terry Dyer
District Manager
Dawson Creek
Forest District
9000-17 Street
Dawson Creek, BC
V1G 4A4

Phone: (604) 784-1200