

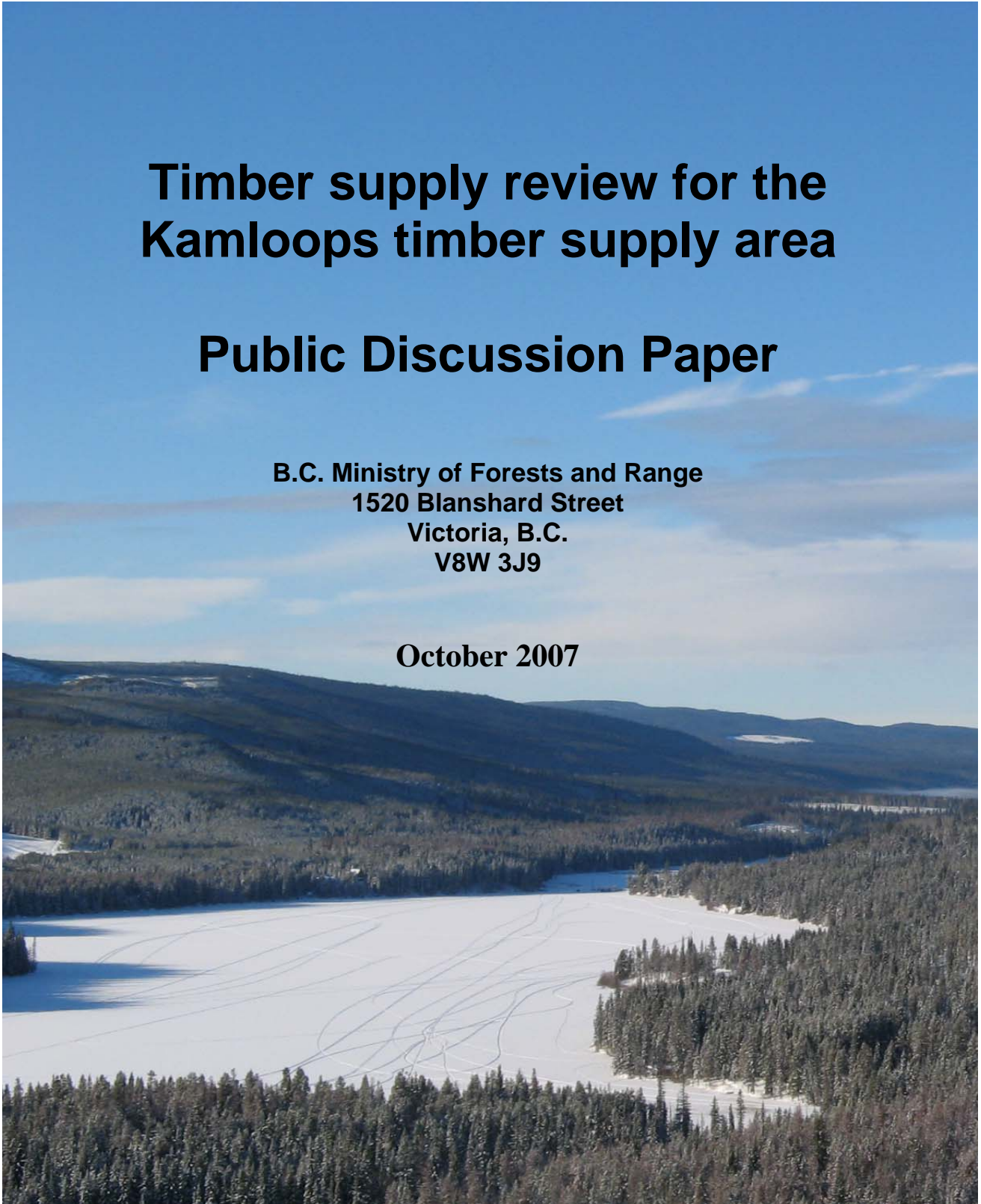


Timber supply review for the Kamloops timber supply area

Public Discussion Paper

**B.C. Ministry of Forests and Range
1520 Blanshard Street
Victoria, B.C.
V8W 3J9**

October 2007



Public Discussion Paper

Introduction

Determining the allowable annual cuts (AACs) for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses, first nations and public input, as well as government's social and economic objectives.

The British Columbia Ministry of Forests and Range (MFR) regularly reviews the timber supply* for all 37 timber supply areas (TSA)* and 33 tree farm licences (TFL)* in the province. This review, the fourth for the Kamloops TSA, examines the impacts of current forest management practices on the timber supply, economy, environment and social conditions of the local area and the province. Based on this review, the chief forester will determine a new allowable annual cut (AAC) for the Kamloops TSA.

By law, the chief forester must review and set new AACs for all of the TSAs and TFLs that are within the Province of British Columbia at least once every five years. The chief

forester can postpone a timber supply review for up to five more years if the AAC is not expected to change significantly.

The chief forester may also set a new harvest level earlier than five years to deal with abnormal situations such as damage from severe wildfires or catastrophic insect infestations.

The objectives of the timber supply review are to:

- Examine relevant forest management practices, public input, and economic, environmental and social factors;
- Set a new AAC for the next five years; and
- Identify information to be improved for future timber supply reviews.

Timber supply review in the Kamloops TSA

Mountain pine beetles (MPBs) are the most damaging insect that attack lodgepole pine in Western Canada. Beetles attack pine trees by laying eggs under the bark. When the eggs hatch, the larvae mine the

phloem area beneath the bark and eventually cut off the tree's supply of nutrients.

The beetles also carry a fungus that causes dehydration and inhibits a tree's natural defenses against beetle attacks. The fungus stains the wood blue or grey. Despite the discoloration, the wood remains structurally sound and can still be used for high quality products such as sawlogs for a number of years after the tree has been killed.

Forests of mature lodgepole pine are prime habitat for the MPB which thrives under warm weather conditions. The Interior of British Columbia has an abundance of mature lodgepole pine*, and has experienced several consecutive mild winters and drought like summers. As a result, MPB populations have reached an unprecedented level in British Columbia's recorded history.

**Throughout this document, an asterisk after a word or phrase indicates that it is defined in a box at the foot of the page.*

Timber supply

The amount of timber that is forecast to be available for harvesting over a specified time period, under a particular management regime.

Timber supply area (TSA)

An integrated resource management unit established in accordance with Section 7 of the Forest Act.

Tree farm licence (TFL)

Provides rights to harvest timber and outlines responsibilities for forest management in a particular area.

Mature lodgepole pine

In this report, mature has been defined as 60 or more years old.

Public Discussion Paper

Based on the 1999 to 2006 aerial overview of forest health and the Provincial Level Mountain Pine Beetle Model (BCMPB v4), it is estimated that the cumulative pine mortality (red- and grey-attack*) for the entire province is approximately 530 million cubic metres in 2007. This represents approximately 40% of the merchantable pine volume (1.35 billion cubic metres) and 12% of the total provincial merchantable volume on the timber harvesting land base* (4.6 billion cubic metres).

If the infestation continues to behave as it has over the past 8 years, it is projected that 78% of the provincial pine volume, or 23% of the total volume on the provincial timber harvesting land base, will be killed by 2015. By this time, the infestation will have largely subsided and only an additional one percent may be killed by 2019.

The 2005 aerial survey data indicate that more than 55% of pine-leading stands were affected by some level of MPB attack. Despite aggressive management strategies the

infested area has expanded from 337 677 hectares in 2005 to 478 489 hectares in 2006.

Lodgepole pine is a major component in 30% of the forest stands in the Kamloops TSA, comprising about 51 million cubic metres of the total volume within the timber harvesting land base.

Projections from the provincial MPB model, indicate that the infestation in the Kamloops TSA is near its peak. The model projects MPB spread into the future based on 8 years of forest health survey data. However, given this is a projection model, the actual intensity and/or duration of the beetle infestation may not exactly follow the projection. This uncertainty is one reason the chief forester is conducting a review of the timber supply and allowable annual cut (AAC)* in the TSA.

The objectives of this document are to provide British Columbians with an overview of the timber supply review process and harvest level forecasts for the Kamloops TSA, and to encourage them to provide comments.

Before setting a new AAC, the chief forester will review all relevant reports and input from the public and First Nations. The chief forester will outline his determination in a rationale statement that will be publicly available upon release. Following the release of the AAC determination by the chief forester, the Minister of Forests and Range will apportion the AAC to the various licences and programs.

Description of the Kamloops timber supply area

Description of the TSA

The Kamloops TSA, as shown in Figure 1, is located in south central B.C. and covers approximately 2.77 million hectares of the Southern Interior Forest Region.

Ranging from Logan Lake in the south to Wells Gray Park and TFL 18 in the north-west, the TSA includes the Blue River area and surrounds TFL 35. The TSA is bounded by the Columbia mountains to the east and the Cariboo area to the west.

Red-attack and grey-attack

Red-attack and grey-attack are stages of infestation. Trees turn red after the first year of attack. The red-attack trees are easily observed and mapped. In the following year, the trees generally turn grey.

Timber harvesting land base

The portion of the total land area of a management unit considered to contribute to, and be available for, long-term timber supply. The timber harvesting land base is defined by deducting non-contributing areas from the total land base according to specified management assumptions.

Allowable annual cut (AAC)

The allowable rate of timber harvest from a specified area of land. The chief forester sets AACs for timber supply areas (TSAs) and tree farm licences (TFLs) in accordance with Section 8 of the Forest Act.

Public Discussion Paper

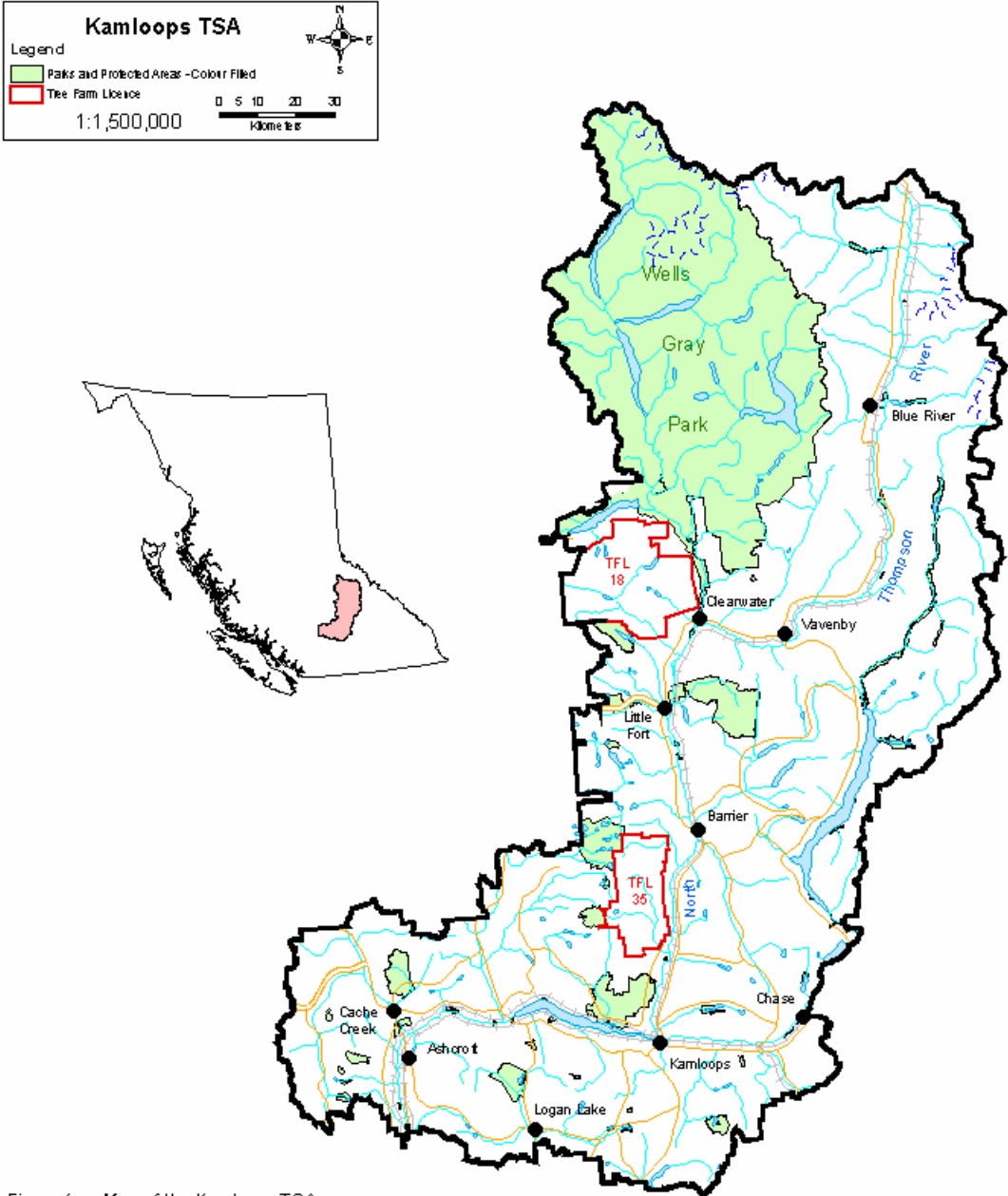


Figure 1. Map of the Kamloops TSA

Public Discussion Paper

The forest and range resources of the TSA are administered by the Kamloops and Headwaters forest districts. The topography of the Kamloops TSA is diverse ranging from hot, dry grasslands in the valley bottoms in the south to wet rugged mountains in the north. The TSA is bisected by the North Thompson River which joins the South Thompson River at Kamloops.

The major population centres are Kamloops, Clearwater, Logan Lake, Chase, Barriere, Cache Creek and Ashcroft. Smaller communities include Vavenby, Little Fort and Blue River.

Land use planning

The Kamloops Land and Resource Management Plan (LRMP), originally designated a higher level plan in January 31, 1996, provides legal land use direction to the Kamloops TSA. The Kamloops LRMP Monitoring Table continues to meet annually and provides ongoing public involvement in the implementation of the plan. The TSR process reflects land use planning decisions that affect forest practices, including not harvesting from

government approved protected areas and parks.

Forest and range management within the TSA is guided in part by two important planning processes, the Kamloops Land and Resource Management Plan (LRMP) and the Sustainable Forestry Management (SFM) Plan. All forest tenure holders are required to prepare landscape level plans that are legally binding and reference the 26 objectives of the LRMP.

Forest tenure holders, who currently retain or are seeking environmental certification by the Canadian Standards Association (CSA) of their management practices, participate in the SFM plan. The SFM plan sets performance values, objectives, indicators and targets that address environmental, social and economic aspects of forest management in the TSA. The SFM plan is monitored by the SFM advisory group which is made up of a cross-section of local interest groups. Participants in the plan reported annually to the public.

Natural resources

Numerous natural resources are associated with the forest land in the Kamloops TSA. These include forest products, forage, minerals, fish, wildlife, and recreation and tourism opportunities. Extensive grassland and forested areas provide important forage for both livestock and wildlife. Ranching continues to play an important role in the TSA. The range program administered by the MFR remains the second largest in the province and has a significant impact on the local economy.

Excluding Wells Gray Park, the timber harvesting land base makes up about 45% of the Kamloops TSA. The species composition of the forests that comprise the timber harvesting land base is depicted in Figure 2. Apart from lodgepole pine stands, which occupy about 30% of the timber harvesting land base, other commonly found tree species within the TSA include Douglas-fir, spruce, ponderosa pine, western red cedar, western hemlock, trembling aspen and subalpine fir.

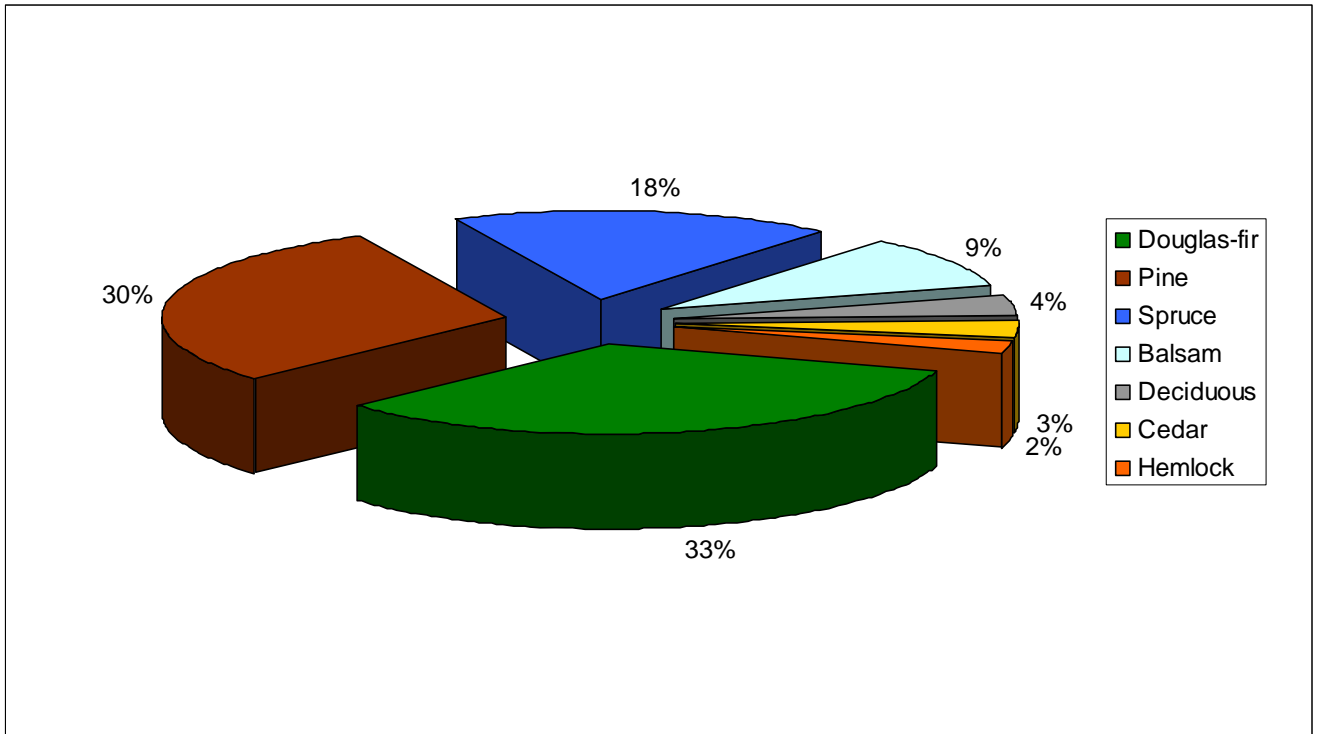


Figure 2. Species composition of forests that comprise the timber harvesting land base.

The diverse landscapes of the Kamloops TSA provide a variety of wildlife habitats, including grasslands, lakes and wetlands, forested slopes, and alpine areas. Grizzly bear, black bear, mule deer, moose, bighorn sheep and many smaller furbearers, as well as many species of birds and amphibians, are common. In addition, the TSA includes portions of the range of three herds of mountain caribou.

B.C.'s forest practices legislation includes a process for identifying species at risk that require special

management. The current list of identified wildlife management species, as updated from time to time, includes 17 species in the Kamloops TSA which warrant special management consideration.

Water is a primary and fundamental resource of the Kamloops TSA. Numerous rivers, lakes and streams support many species of fish, such as rainbow trout, kokanee, steelhead, brook trout and white fish. Significant demands are also placed on water resources for domestic and agricultural

purposes. There are currently 16 community watersheds within the Kamloops TSA.

Parks, recreation sites and trails, in addition to roaded and non-roaded areas, provide opportunities for numerous outdoor activities. Residents and tourists enjoy recreation activities such as hiking, camping, hunting, fishing, wildlife viewing, boating, mountain-biking, snowmobiling, downhill and cross country skiing, and ski touring. The TSA includes a number of parks and popular recreation areas.

Public Discussion Paper

Current annual cut

The current AAC for the Kamloops TSA is 4 352 770 cubic metres. The chief forester determined this AAC in December 2003 in response to a request for a temporary increase in the AAC to address abnormal infestations from the mountain pine beetle and the devastation from the 2003 wildfires in the Kamloops TSA.

The current AAC is partitioned and includes 1 000 000 cubic metres per year to reduce the spread and losses from the MPB infestation, as well as 670 000 cubic metres per year to salvage fire-damaged timber. The current AAC also includes partitions for a conventional harvest level of 2 361 900 cubic metres per year; a cedar/hemlock harvest level of 200 000 cubic metres per year;

a Pulpwood Agreement 16 (PA 16) harvest level of 86 000, and for deciduous stands outside of the PA 16 boundary, a partition of 20 000 cubic metres per year.

The current AAC also includes a harvest level of 14 870 cubic metres per year for innovative practices and activities within the Adams Lake Innovative Forest Practices Agreement (IFPA) area. This increase was granted under an IFPA which is not part of this timber supply review. An IFPA allows the holder of a replaceable licence to request an increase in the allowable annual cut associated with its licence.

Regional economy

The economy of the Kamloops TSA is well diversified. The City of Kamloops with an

extensive local economy based on trade, administration, services and manufacturing, dominates the economy of the TSA. The public sector, forestry and tourism are the major employment sectors, with agriculture, construction and mining also contributing to the local economy.

The forest sector supports numerous other jobs in the area through companies and employees purchasing goods and services from local businesses. Employment associated with the forest industry is estimated to be 1.41 jobs per year per 1000 cubic metres of timber harvested. The personal incomes average \$75,350 per 1000 cubic metres harvested while government revenues are \$36,250 per 1000 cubic metres harvested.

Public Discussion Paper

Timber supply analysis and forecasts

For his AAC determination, the chief forester reviews many sources of information including a timber supply analysis that models the development of the forest through time and its response to harvesting while respecting government's many timber and non-timber objectives. This section of the public discussion paper highlights some of the important findings from that timber supply analysis.

The timber supply analysis discussed in this section built upon and refined work completed for another project entitled "Kamloops TSA Mountain Pine Beetle Horizontal Initiatives Project". This project was funded by the Ministry of Forests and Range "Forests for Tomorrow" program of the Southern Interior Forest Region. Like the aforementioned project the timber supply analysis presented in this report was completed by Timberline Natural Resource Group.

The forecasts presented in this discussion paper attempt to illustrate the ramifications to timber supply of four forest management options:

1. current forest management;
2. maximize salvage;
3. abandon salvage; and
4. implement the November 2006 draft Mountain Caribou Recovery Strategy.

In combination these four forecasts seek to describe the range of possible forecasts for the TSA based on our current understanding of the MPB epidemic and illustrate where

current forest management resides within that range.

All four forecasts share the following common set of assumptions.

Initial harvest level

As previously mentioned, the 2004 AAC decision included a partition of 670 000 cubic metres per year for three years to salvage the timber damaged in the wildfires of 2003. That timber has since been salvaged and by 2006 about 500 000 cubic metres per year of that partition had been redeployed into salvaging MPB-impacted stands. This resulted in an annual harvest in 2006 of approximately 4 200 000 cubic metres. Based on this information, an initial harvest level of 4 200 000 cubic metres was used as a starting point for each forecast presented in this report.

Projection of the bark beetle epidemic

The forecasts presented in this public discussion paper assume the MPB epidemic will continue unabated for the foreseeable future. Seventy-two percent of the pine considered old enough to host a MPB brood over the winter is projected to die within the next five years. Like all provincial modelling to date, that age was assumed to be 60 years old or greater.

For this analysis, the progression of the epidemic in the Kamloops TSA was projected using an earlier version of the computer model (BCMPB v3) developed by scientists in the Ministry of Forests and Range, the Canadian Forest Service and consultants. The computer

model was calibrated using provincial infestation maps from 1999 to 2005. Its 2006 prediction of red-attack was largely consistent with the observed 2006 MPB infestation for the TSA. When the timber supply model was being built for the Kamloops timber supply review, BCMPB v4 was not yet available.

Shelf-life

A major assumption impacting the efficacy of any salvage program is the shelf-life of the dead lodgepole pine, or the length of time it will remain commercially viable. After that period the dead pine is considered a non-recovered loss (NRL). In this analysis the commercially viable product of concern is sawlog. The NRLs may still be useable for chips or other non-sawlog uses.

Shelf-life depends on the moisture content of the log when it arrives at the mill, technology at the mill, and other factors. Despite the research studies underway in this province, there is no single "correct" number for sawlog shelf-life available. In this analysis, it was assumed that once dead, trees would only be useful for sawlogs for two years. This number was based on discussions with licensees within the TSA last fall. However, licensees local knowledge regarding the processing of this dead resource continues to improve. Licensees now suggest their initial assumption may have been unduly pessimistic and report shelf-life is highly dependent on milling technology.

Public Discussion Paper

Current management

Forest cover constraints required to manage for wildlife habitat, old growth and area specific management objectives were respected in this analysis. The exception was visual requirements during the assumed salvage period (the first 10 years in the model); they were ignored for severely and very severely impacted MPB stands. Assumptions regarding forest cover constraints are documented in

the Kamloops TSA data package. Similarly, assumptions regarding roads, the timber harvesting land base, silviculture and harvest practices are documented in the Kamloops TSA data package.

Analysis Results

The base case

The “base case” forecast reflects both the best information sources and current forest management assumptions. It forms the basis

for comparison when assessing the effects of uncertainty on timber supply. The base case is not an AAC recommendation, but rather one of many sources of information the chief forester will consider when setting the AAC. The base case forecast is presented in this report for discussion and comparison. The AAC determined by the chief forester may be greater or less than the level forecasted in the base case.

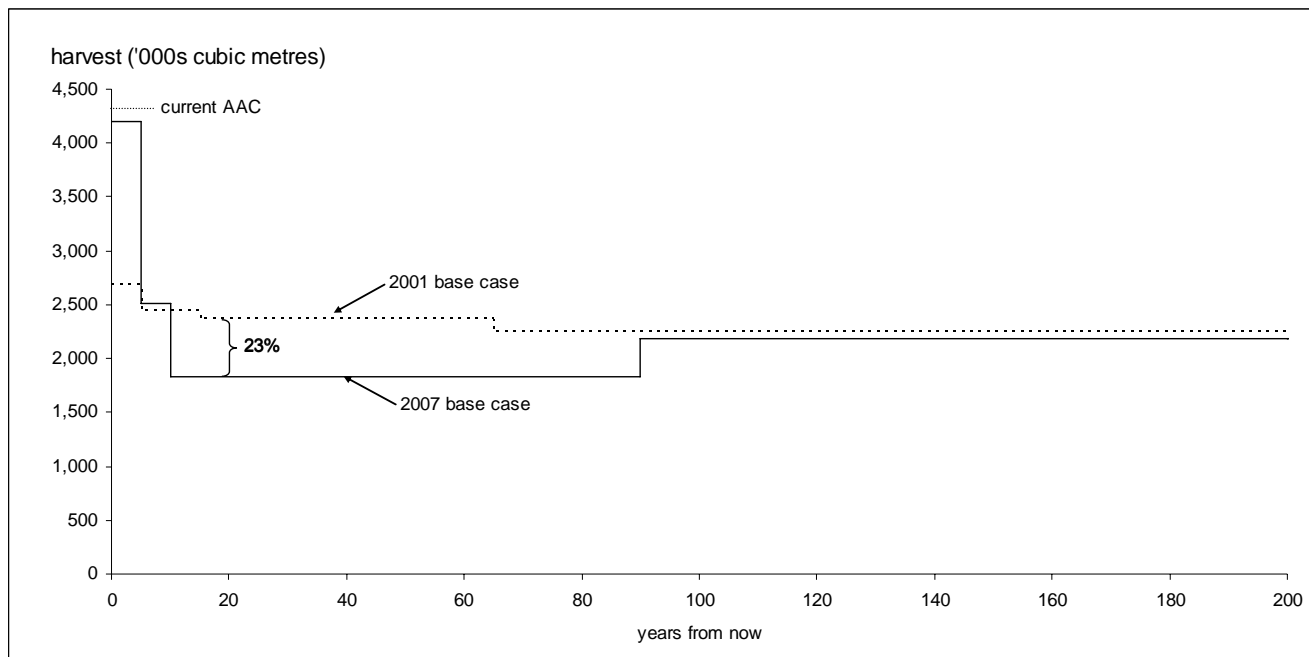


Figure 3. Base case harvest forecast for the Kamloops TSA, 2007.

Figure 3 portrays both the base case forecast for this current timber supply review and the base case forecast for the 2001 timber supply review. The current base case starts at 4.2 million cubic metres per year. This is actually slightly lower than the current AAC but reflects 2006 actual harvest levels. The initial harvest level can be maintained for 5 years, then declines by 40% to

approximately 2.51 million cubic metres per year for the subsequent five years. This harvest level declines a further 16% in 2016 to a mid-term harvest level of approximately 1.83 million cubic metres per year.

The 2001 forecast, which supported the chief forester’s January, 2003 AAC determination is presented to remind the reader that the 2006

harvest level of 4.2 million cubic metres is a result of the chief forester’s January 2004 determination, which contained two uplifts, one to salvage timber killed by the 2003 fires and the other to deal with the current MPB epidemic. Neither uplift were meant to be sustainable for prolonged lengths of time. The 2001 forecast assumed no losses due to MPB.

Public Discussion Paper

While the mid-term portrayed in the 2007 base case is 56% less than 2006 harvest levels, it is 23% less than what was assumed in 2001 to be a sustainable mid-term. This 23% percent difference in mid-term harvest level is essentially proportional to the expected percentage loss of mature timber by 2016 due to MPB.

In September 2007, the Ministry of Forests and Range released a provincial scale MPB analysis entitled “Timber Supply and the mountain pine beetle infestation in British Columbia 2007 update”. The provincial analysis portrayed a somewhat lower mid-term timber supply for the Kamloops TSA than is reported in this public discussion paper. Although the assumptions and models differed, both analyses suggest the projected reduction to the mid-term timber supply will be roughly proportional to the expected loss of mature pine volume due to the epidemic.

The current base case presented in Figure 3 is dependent on a number of specific assumptions:

- Based on 2006 harvest statistics, the harvest of 1.4 million cubic metres per year of non-pine was modelled over the next 10 years (the salvage period);
- Existing cedar/hemlock, deciduous and pulpwood partitions (320 870 cubic metres per year) are

included in this 1.4 million cubic metres of harvest;

- The salvage harvest targets those pine-leading stands with less than 50% red- or grey-attack first before salvaging stands with greater than 50% red- or grey-attack; and,
- Within each partition, salvage and non-salvage category, stands with the highest volume are targeted for harvest first.

These assumptions resulted in a forecast in which 60% of salvaged pine-leading stands had less than 50% red- or grey-attack with the remaining 40% in stands with greater than 50% red- or grey-attack. An assessment of salvage operations between summer 2004 and summer 2006 indicated salvage of stands with over 50% red- and grey-attack only accounted for 12% of the harvest during that period. Unless salvage practices have significantly changed, the salvage scenario presented in the 2007 base case is most likely optimistic with regard to the amount of heavily impacted stands salvaged.

As previously mentioned, licensees understanding of shelf-life has evolved during this timber supply review and suggest the shelf-life assumption used in this analysis may be pessimistic. The impact of a longer shelf-life would not affect the mid-term portrayed in Figure 3 but would mean the initial harvest level could likely be extended (at

least partially) into the second five year period.

Finally, the base case presented in this public discussion paper reflects a more than 50% increase in pine salvage relative to what was required by the chief forester in his January 2004 AAC determination.

Alternate harvest scenarios

As previously mentioned, two alternate harvest scenarios are presented with respect to salvaging pine:

1. maximize salvage; and
2. abandon salvage.

In the first case, the existing cedar/hemlock, deciduous and pulpwood partitions are maintained during the salvage period (the first ten years) but the rest of the harvest is deployed into stands with 50% or greater red- or grey-attack. In the second case, again the cedar/hemlock, deciduous and pulpwood partitions are maintained but stands with 50% or greater red- or grey-attack were avoided completely and no attempt is made to limit the non-pine harvest to 1.4 million cubic metres per year.

In both scenarios, like the base case, within each targeted group, stands with the highest volumes are harvested first. Like the 2007 base case, the initial harvest level for both alternate salvage scenarios was 4.2 million cubic metres per year. The forecasts for these two alternate salvage scenarios are portrayed in Figure 4.

Public Discussion Paper

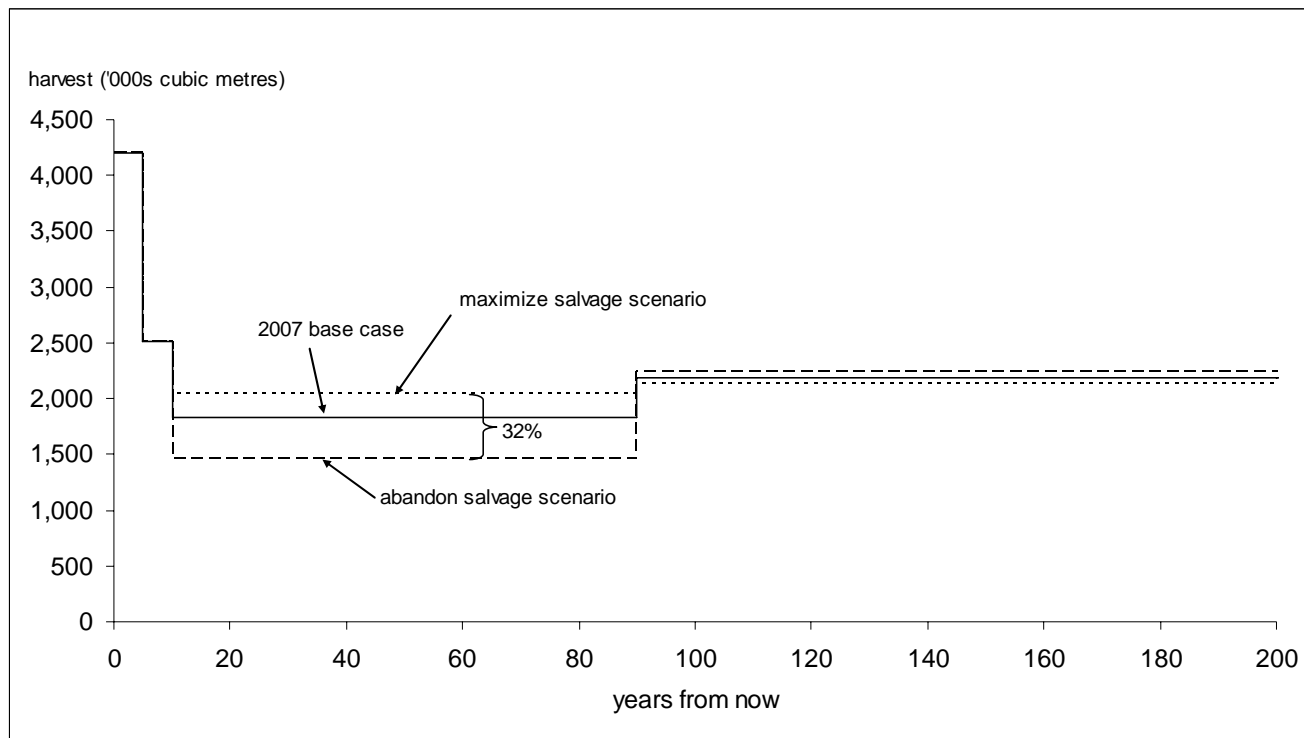


Figure 4. The impact of harvest deployment on mid- and long-term timber supply.

Figure 4 illustrates mid-term harvest levels that vary by 32% despite the same initial harvest level. The reason becomes apparent if the pine content of stands harvested under each scenario is examined (see Table 1).

An assessment of salvage operations between summer 2004 and summer 2006 indicated stands with 70% or greater pine comprised 32% of the total harvest, not 43% as in the base case. Again, unless the preference for such pine

stands have significantly changed, the base case is most likely optimistic with regard to the amount of heavily pine dominated stands harvested.

Table 1. The pine content of stands harvested during the first 5 years under the 2007 base case and the two alternate harvest scenarios.

Pine content of harvested stands	Contribution to harvest		
	2007 base case	Maximize salvage	Abandon current salvage efforts
0-49%	38%	3%	94%
50-69%	19%	16%	2%
70-100%	43%	81%	5%

Public Discussion Paper

The maximize salvage scenario resulted in 81% of the harvest coming from stands with at least 70% pine during the first five years. Unfortunately due to limitations with the software used to model this very complex problem, harvest targets for the cedar/hemlock, deciduous and pulpwood partitions were not completely met under this scenario. If completely met, this would likely change the results for the maximize salvage scenario in Table 1 by up to 4%. The abandon salvage scenario resulted in 94% of the harvest during the first 5 years coming from stands with less than 50% pine.

Given 72% of the mature pine is projected to die in the next 5 years, Figure 4 and Table 1 illustrate that targeting stands with high pine content—the maximize salvage scenario—preserves as much non-pine growing stock as possible for subsequent harvest in the mid-term. If the harvest of pine-leading stands ceased today—the abandon salvage scenario—future generations would not only be penalised by the loss of pine growing stock but also by the earlier harvest

of non-pine mature growing stock.

Clearly, deployment of the harvest in the short term is significant. While the targeting of heavily impacted stands—the maximize salvage scenario—may not be economically feasible (due to customer preferences and market conditions) totally avoiding pine stands—the abandon salvage scenario—has serious implications for mid-term timber supply.

Species at risk harvest scenario

Mountain caribou occupy a range stretching from the United States border to north of Prince George. Portions of three individual herds have their home range within the Kamloops TSA. The provincial government is very concerned about current and future population levels of this species, therefore, these caribou have been identified as a species at risk. Currently, the provincial government is working to prepare a final strategy to recover mountain caribou, lead by the Species at Risk Coordination Office

(SaRCO). A draft Mountain Caribou Recovery Strategy (November, 2006) was made available for public comment. This timber supply analysis scenario models the draft strategy only and compares it to the base case scenario.

The 2007 base case modelled retention requirements for caribou winter habitat and corridors as per the guidelines in the Kamloops Land and Resource Management Plan (LRMP), Appendix 10. Figure 5 illustrates the implications to timber supply of implementing the draft strategy to recover the North Thompson area caribou. Relative to the 2007 base case, the mid-term harvest forecast for the draft recovery proposal is 13% (240 000 cubic metres per year) lower in the mid-term period from year 10 to 90. The long-term period, from year 90 to the end of the forecast, is 10% lower (210 000 cubic metres per year). The reduction is a result of immediately removing approximately 98 700 hectares from the base case timber harvesting land base.

Public Discussion Paper

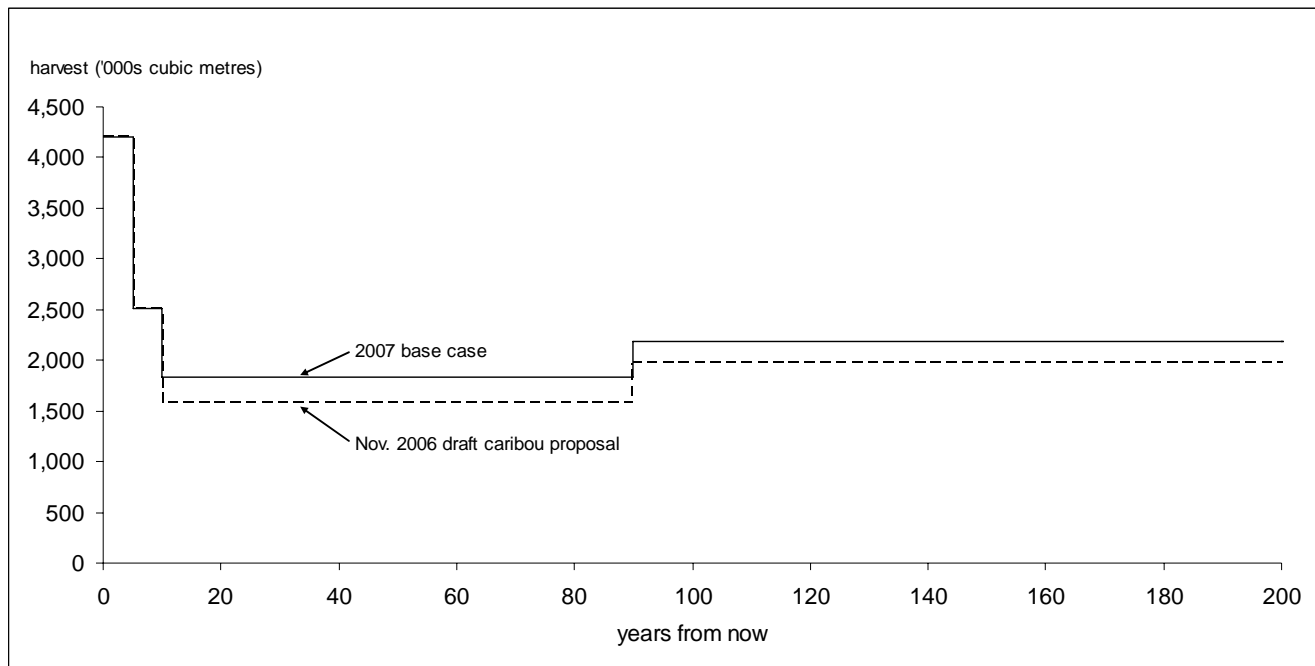


Figure 5. Impact on timber supply of implementing the November 2006 draft Mountain Caribou Recovery Strategy.

Mountain pine beetle considerations

It is estimated that the volume of mature (greater than 60 years old) pine timber in the Kamloops TSA is approximately 51 million cubic metres on 308 596 hectares of the timber harvesting land base. Forest health surveys in 2006 identified 478 489 hectares of the Kamloops TSA are currently affected by the pine beetle which indicates that a significant portion of the non-timber harvesting land base stands are also infected. It now appears that all pine-leading stands within the Kamloops TSA have some level of pine beetle infestation. Harvesting will not recover all of the mature lodgepole pine stands in the TSA due to the area and volume of pine affected and its

expected relatively short shelf-life.

An immediate halt to the beetle infestation is not likely. Provincial forest health specialists only expect the beetle population will be halted if a) there is a sufficiently long period of cold weather (-25°C in the early fall or late spring, or sustained winter temperatures of less than -40°C), or b) The population collapses due to a shortage of mature pine. Since the recent trend of warm winters in British Columbia is expected to continue, further significant mortality of pine within the TSA is projected. The forecast released in the British Columbia Mountain Pine Beetle Action Plan 2006 – 2011 anticipates that by 2013, 80% of the mature pine in British Columbia may be affected.

Figure 6 shows the extent of the beetle infestation in the Kamloops TSA as observed from overview flights in 2006.

Proposed objectives and strategy to deal with the beetle infestation

The TSA strategy to deal with the epidemic is to harvest areas of recent attack in an attempt to slow the population expansion and to salvage as much timber as possible before it becomes uneconomic to harvest. The strategy also ensures that values other than timber are carefully considered. The strategy also directs the harvest to pine beetle infested areas with the highest productivity stands in an attempt to capture the highest value stands for timber.

Public Discussion Paper

Mountain pine beetle populations within the Kamloops TSA in 2006 currently range from trace to very severe levels of infestation, depending on the location surveyed. The infestation severity tends to be greater in the southern portion of the TSA, the Kamloops area, and lower in the northern portion of the TSA, north of Clearwater. The Kamloops TSA has a diverse landscape in terms of the elevation and species mix that ensures the management of the MPB remains dispersed over a significant portion of the TSA.

Thus, the Kamloops TSA objectives in responding to this infestation include:

- Limiting further damage to forest and environment.
- Reducing the threat to immature lodgepole pine stands (< 60 years old), which are the future harvestable stands of the TSA.
- Recovering the highest value from infested timber and minimizing non-recovered losses.
- Enhancing First Nations opportunities in conjunction with Forest and Range Agreements and the awarding of

non-replaceable forest licences.

- Planning the harvest of the AAC and potential uplift volumes, in conjunction with other planning processes such as the pine beetle strategy and the sustainable forestry management plan, to high-priority mountain pine beetle infested stands.
- Developing new tenure opportunities to harvest MPB affected stands. Consideration will be given to further develop strategies to increase the salvage of dead wood in the TSA.

Mountain pine beetle attack in immature pine

The most visible impact of the MPB infestation is in mature pine-leading stands. However the beetles are also attacking pine trees younger than 60 years down to trees as small as 10 cm in diameter.

Within the Kamloops TSA, significant attacks by pine beetle of immature pine have been reported since 2003 and continue to the present day. The severity and intensity of these attacks is increasing and is expected to continue until the current outbreak ends. Current predictions indicate the MPB

population within the TSA will crash in approximately 2013. Ongoing research by forest health staff in the Ministry of Forests and Range Southern Interior Regional office has indicated that the level of attack in immature pine is currently low but may be expected to reach 35% mortality of all immature pine trees greater than 10 cm diameter over the next 3 years in the Kamloops TSA.

The potential impact of immature pine mortality on the timber supply was modelled as an additional scenario. The results of that scenario (although not presented as a graph) indicate a possible 4% reduction in the mid-term which begins 10 years from now.

The majority of these immature pine stands (70%) are under management whereby there is a legal obligation to ensure a free-growing stand is achieved. If a stand is determined to no longer be meeting the minimum requirements then silviculture activities, such as fill planting, may be undertaken. The other 30% of the stands are anticipated to regenerate naturally or some may be eligible for special funding for reforestation by the Forests for Tomorrow program.

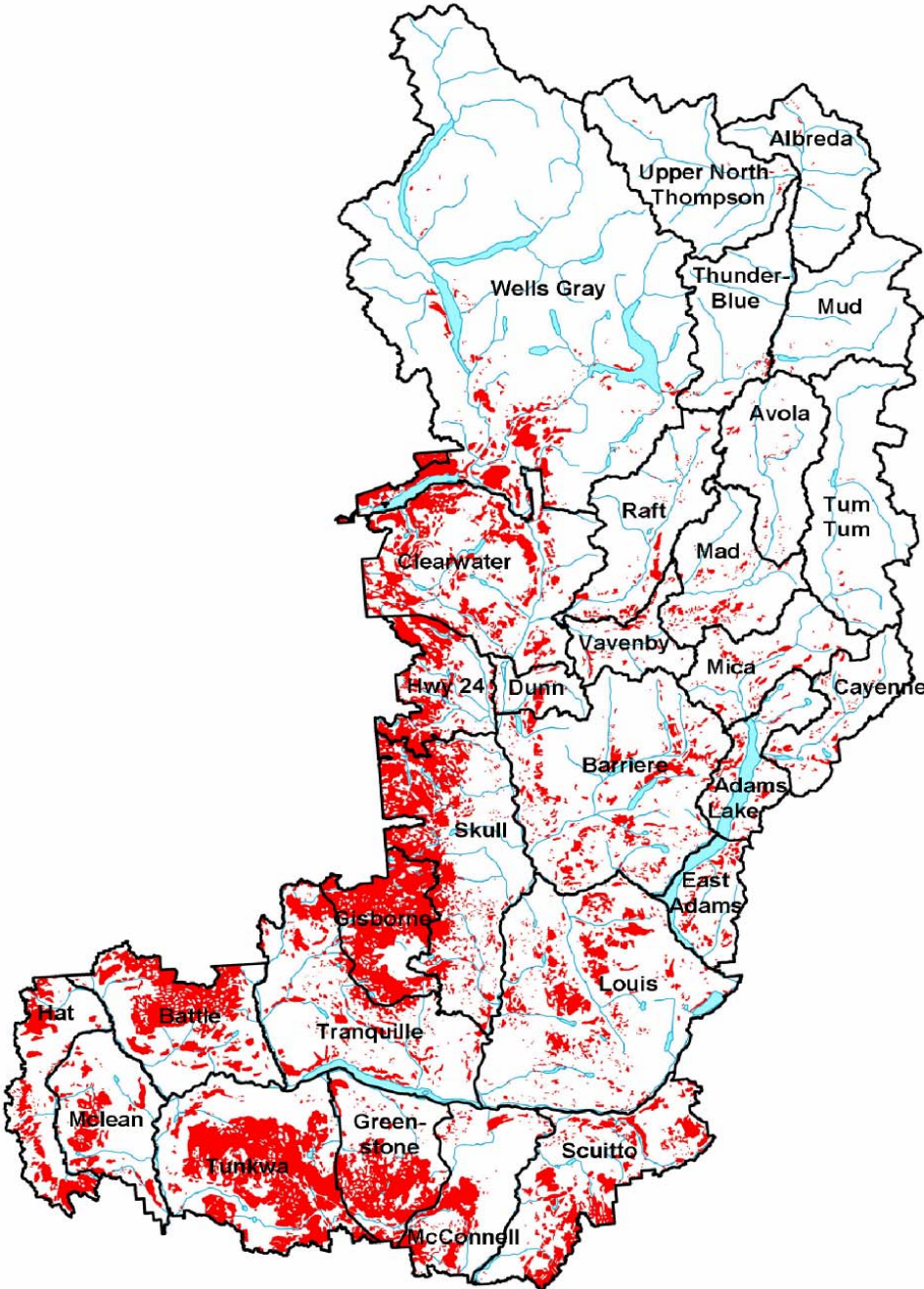


Figure 6. 2006 detected mountain pine beetle infestations in the Kamloops TSA. (Source: 2006 Southern Interior Forest Region Aerial Overview Survey).

Public Discussion Paper

During 2006 the area affected by beetles in the Kamloops TSA increased by 142%. The management practices employed within the TSA have been unable to control the rate of spread of beetles during the current outbreak.

Implications of changes in the AAC

Environmental implications

The impacts of the current MPB infestation in the Kamloops TSA will inevitably affect forest values such as wildlife habitat, stream hydrology and visual quality. While some species will lose habitat, dead trees will provide habitat for other animals. Trees affect stream flow mainly through evapo-transpiration, shading and interception. Beetle-killed trees cease transpiration and are less effective in providing shade and interception. Thus we need to consider hydrological impacts as well when planning harvesting in watersheds impacted by the beetle epidemic.

The Kamloops and Headwaters Forest Districts, in collaboration with forest licensees and the British Columbia Timber Sales program, are revising forest management strategies where necessary to consider values related to First Nations, watershed hydrology, old-growth management areas, visual quality objectives,

harvesting priorities, retention of species not susceptible to MPB, and wildlife trees.

Regardless of the AAC determined by the chief forester, the districts will monitor the beetle epidemic, effectiveness of management strategies, and licensee responsiveness to the epidemic, and report the findings periodically to the chief forester.

First Nations implications

There are five First Nations that have asserted their traditional territories within the Kamloops TSA: the Secwepemc, Nlaka'pamux, St'at'imc, Okanagan and South Carrier. Currently, nine First Nations communities are located in the TSA with a combined population of about 5200 people. These communities include the Adams Lake, Bonaparte, Kamloops, Neskonlith, Simpcw, Skeetchestn, Whispering Pines, Little Shuswap, Ashcroft and Oregon jack. Other First Nations communities located outside the TSA have reserves and traditional interests within the TSA. These include High Bar, Spallumchen, Lower Nicola, Upper Nicola, Xaxl'ip (Fountain), Ts'kw'aylaxw (Pavillion), Cook's Ferry, Lheidli T'enneh Nation and Canim Lake.

First Nations have expressed concerns regarding possible harvesting impacts on their values including ethno-botanical forest

resources, areas of cultural, medicinal and spiritual importance, as well as fisheries and wildlife resources. These concerns need to be considered in the planning process.

An archaeological overview assessment (AOA) process was established in 1995 as a component of the LRMP process. The LRMP directs that areas rated in the AOA as high and medium archaeological potential are to have archaeological impact assessments completed for operational planning.

Some First Nations have expressed concerns on the impact of timber harvesting on water, fishery resources, traditional use areas and cultural heritage values.

Several First Nations have expressed interest in securing wood supply and several are actively participating in the forest industry having been awarded non-replaceable forest licences. There have been 14 non-replaceable forest licences awarded within the TSA to First Nations. In addition the First Nations within the Kamloops TSA have signed 10 Interim Agreements on Forest and Range Opportunities.

The Ministry of Forests and Range has already initiated consultation with First Nations with respect to this timber supply review and intends to fulfill its legal obligation to consult with First Nations in conjunction with the release of this public discussion paper.

Public Discussion Paper

Community implications

The implication of changes in the AAC for local communities is an important consideration in the timber supply review. The base case harvest forecast for the Kamloops TSA suggests a harvest level of at least 4.2 million cubic metres could be maintained over the next several years in response to the MPB infestation. However, the forecast projections for the mid- and long-term suggest that a harvest rate closer to 1.8 million cubic metres would be sustainable.

Your input is needed

Public input is a vital part of establishing the allowable annual cut. Feedback is welcomed on any aspect of this discussion paper or any other issues related to the timber

supply review for the Kamloops TSA. Ministry staff would be pleased to answer questions to help you prepare your response. Please send your comments to either of the forest district managers at the addresses below.

Your comments will be accepted until December 10, 2007.

You may identify yourself on the 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 made public, personal identifiers will be removed before the responses are released.

For more information contact and/or mail your

comments to:

District Manager
B.C. Ministry of Forests and Range
Kamloops Forest District
1265 Dalhousie drive
Kamloops, B.C. V2C 5Z5
Phone: (250) 371-6500
Fax: (250) 828-4627

District Manager
B.C. Ministry of Forests and Range
Headwaters Forest District
Box 4501 RR #2
Clearwater, B.C. V0E 1N0
Phone: (250) 587-6700
Fax: (250) 587-6790

Or electronically mail to
john.mcqueen@gov.bc.ca

Visit our website at
<http://www.for.gov.bc.ca/hts/>

Public Discussion Paper

Background information regarding TSR

The chief forester's responsibility

Determining the allowable annual cuts (AACs) for public forest lands in British Columbia is the responsibility of the province's chief forester. In this lengthy and complex process, the chief forester considers technical reports, analyses, First Nations and public input, as well as government's social and economic objectives.

This responsibility is required by legislation in the *Forest Act*, Section 8. It states that the chief forester shall specifically consider the following factors:

1. The rate of timber production that may be sustained on the area, taking into account:
 - the composition of the forest and its expected rate of growth on the area;
 - the expected time that it will take the forest to become re-established;

- silviculture treatments, including reforestation;
- standards of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area;
- constraints on the amount of timber that may be produced due to use of the forest for purposes other than timber production;
- Any other information that, in the chief forester's opinion, relates to the capacity of the area to produce timber.

2. The short- and long-term implications to the province of alternative rates of timber harvesting from the area.
3. The economic and social objectives of the government, as expressed by the minister, for the area, region and province.
4. Abnormal infestations in and devastations of, and major salvage programs planned for the timber on the area.

Some of these factors can be measured and analyzed while others cannot. Ultimately, the chief forester's determination is an independent professional judgment based on the best available information. By law, the chief forester is independent of the political process, and is not directed by the minister of forests when determining an AAC. In a determination, the chief forester considers relevant information from all sources.