

**BRITISH COLUMBIA
MINISTRY OF FORESTS, LANDS AND
NATURAL RESOURCE OPERATIONS**

Tree Farm Licence 30

held by

Canadian Forest Products Ltd (Canfor)

Rationale for Allowable Annual Cut (AAC) Determination

Effective February 6, 2014

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Objective of this document

This document provides an accounting of the factors I have considered, and the rationale I have employed in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for TFL 30. This document also identifies where new or better information is needed for incorporation in future determinations.

Statutory framework

Section 8 of the *Forest Act* requires the chief forester to consider a number of specified factors in determining AACs for timber supply areas (TSAs) and Tree Farm Licences (TFLs). Section 8 of the *Act* is reproduced in full as Appendix 1 of this document.

Description of the TFL

TFL 30 is held by Canadian Forest Products Ltd (Canfor) and is administered by the Ministry of Forests, Lands, and Natural Resource Operations (FLNR) Prince George Natural Resource District Office located in Prince George. The TFL is situated about 50 kilometres northeast of the community of Prince George and covers a total area of 180 347 hectares, with a productive forest land base of 152 921 hectares. The current timber harvesting land base (THLB) is 122 516 hectares (68 percent of the total TFL area).

The TFL is located in the western foothills of the Rocky Mountains and experiences heavy snowfall through the winter and substantial summer rain. It is dominated by the very wet and wet-cool variants of the Sub Boreal Spruce (SBS) biogeoclimatic (BEC) zones. Minor components of Interior Cedar Hemlock (ICH) and Engelmann Spruce Sub-Alpine Fir (ESSF) BEC zones also exist. The most common tree species in the TFL include spruce, and subalpine fir. Other coniferous tree species in the TFL include lodgepole pine, Douglas-fir, western redcedar, and western hemlock. Deciduous species include aspen, birch, and cottonwood.

The three First Nations with traditional territory covering all or part of TFL 30 include the Lheidli T'enneh First Nation, McLeod Lake Indian Band, and West Moberly First Nations.

History of the AAC

The most recent AAC was determined in 2003 at 330 000 cubic metres. On March 16, 2006 the Minister reduced the ACC available to the licence holder to 201 312 cubic metres under Section 61 of the *Forest Act* for the period of January 1, 2003 to December 31, 2008. Section 61 allows for the Minister to reduce the AAC with the consent of the licensee. Canfor requested the reduction so they could concentrate their wood purchase and milling capacity on mountain pine beetle-killed timber from the Prince George TSA. On October 30, 2007 the deputy chief forester postponed the AAC determination to July 1, 2013 under Section 8(3.1) of the *Forest Act*. The temporary reduction to the AAC available to the licence holder expired on December 31, 2008 and the AAC remains at 330 000 cubic metres.

New AAC determination

Effective February 6, 2014 the new AAC for TFL 30 is 412 500 cubic metres. This AAC will remain in effect until a new AAC is determined, which must take place within 10 years of this determination.

Information sources used in the AAC determination

The information sources considered in determining this AAC for TFL 30 include the following:

- Natural Stand Yields, accepted by Forest Analysis and Inventory Branch on December 18, 2012;
- Managed Stand Yields, accepted by Forest Analysis and Inventory Branch on February 5, 2013;
- *Potential Site Index Estimates for the Major Commercial Tree Species on TFL 30*, J.S. Thrower and Associates Ltd., March 31, 2000;
- *Tree Farm License # 30, Management Plan # 10 – Vegetation Resource Inventory, Inventory Analysis*. ECORA Resource Group Ltd., April, 2013;
- *Tree Farm Licence # 30, Management Plan # 10, Timber Supply Analysis Data Package*, dated July 2012, accepted by Forest Analysis and Inventory Branch on March 4, 2013;
- *Tree Farm Licence # 30, Management Plan # 10, Timber Supply Analysis, Analysis Report*, dated July, 2013, accepted by Forest Analysis and Inventory Branch on January 20, 2014;
- *Management Plan 10, Tree Farm Licence 30*, submitted to Forest Analysis and Inventory Branch on January 22, 2014;
- *CSA-SFM, Sustainable Forest Management Plan, Canadian Forest Products Ltd. Prince George Operations and BC Timber Sales Prince George Business Area*, TFL 30 DFA, 2006;
- *The White Pine Weevil: Biology, Damage and Management*, FRDA Report 226, Alfaro, Kiss and Fraser, November 1994;
- *The effects of overstory shading on white pine weevil damage to white spruce and its effects on spruce growth rates*, Taylor, S.P., Alfaro, R.I., DeLong, C., Rankin, L., Canadian Journal of Forest Research 26, 1996;
- *Relationships between white spruce vulnerability of the white pine weevil and ecological site conditions in the interior of British Columbia*, Taylor, S.P., 1997;
- *Watershed Assessment and Sediment Source Survey for TFL 30*, Beaudry and Associates, July 1998;
- Ungulate Winter Range Order U-7-003, Ministry of Environment, B.C.;
- *Order Establishing Provincial Non-Spatial Old Growth Objectives*, June 30, 2004;
- *Order Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area*, October 20, 2004;
- *Prince George Land and Resource Management Plan (LRMP)*, Government of B.C., March 1999;
- *Summary of dead potential volume estimates for management units within the Northern and Southern Interior Forest Regions*, Ministry of Forests and Range, March 2006;
- Letter from the Minister of Forests to the chief forester stating the Crown's economic and social objectives for the province, July 4, 2006;
- Letter from the Minister of Forests and Range to the Chief Forester stating the economic and social objectives of the Crown regarding mid-term timber supply in areas affected by the mountain pine beetle, October 27, 2010;

- *Tree Farm Licence 30 – Rationale for Allowable Annual Cut Determination*, June 12, 2003;
- *Landscape Unit Planning Guide*, Forest Practice Code of British Columbia British Columbia Ministry of Forests and Ministry of Environment, Lands and Parks. 2000;
- *Forest Practices Code of British Columbia Act*, current to January 29, 2014, and regulations and guidebooks;
- *Ministry of Forests and Range Act*, current to January 29, 2014;
- *Forest Act* and regulations, current to January 29, 2014;
- *Forest and Range Practices Act* and regulations, current to January 29, 2014;
- *Land Act*, current to January 29, 2014;
- *Heritage Conservation Act*, current to January 29, 2014;
- *Tree Farm Licence Management Plan Regulation*, with amendments to January 30, 2013;
- *Updated Procedures for Meeting Legal Obligations When Consulting First Nations: Interim*, May 7, 2010;
- *First Nations Consultation Summary – TFL 30 Allowable Annual Cut Determination*, Prince George Resource District, September, 2013;
- Meeting with the licensee and tour of the TFL on September 26, 2013;
- Technical review and evaluation of current operating conditions on TFL 30 through comprehensive discussions with staff from the Ministry of Forests, Lands and Natural Resource Operations, including the AAC determination meeting held in Prince George, B.C. on September 27, 2013.

Role and limitations of the technical information used

Section 8 of the *Forest Act* requires the chief forester, in determining AACs, to consider biophysical, social and economic information. Most of the technical information used in determinations is in the form of a timber supply analysis and its inputs of inventory and growth and yield data. These are concerned primarily with biophysical factors – such as the rate of timber growth and the definition of the land base considered available for timber harvesting – and with management practices.

The analytical techniques used to assess timber supply necessarily are simplifications of the real world. Many of the factors used as inputs to timber supply analysis have differing levels of uncertainty associated with them, due in part to variation in physical, biological and social conditions. Ongoing scientific studies of ecological dynamics will help reduce some of this uncertainty.

Furthermore, computer models cannot incorporate all of the social, cultural and economic factors that are relevant when making forest management decisions. Technical information and analysis; therefore, do not necessarily provide the complete answers or solutions to forest management decisions such as AAC determinations. Such information does provide valuable insight into potential impacts of different resource-use assumptions and actions, and thus forms an important component of the information I must consider in AAC determinations.

In determining this AAC for TFL 30, I have considered known limitations of the technical information provided. I am satisfied that the information provides a suitable basis for my determination.

Guiding principles for AAC determinations

Section 8 of the *Forest Act* requires the chief forester to consider particular factors in determining the AACs for timber supply areas and tree farm licences.

Given the large number of periodic AAC determinations required for British Columbia's many forest management units, administrative fairness requires a reasonable degree of consistency of approach in addressing relevant factors associated with AAC determinations. In order to make our approach in these matters explicit, we, the chief forester and deputy chief foresters, jointly established the following body of guiding principles. However, in any specific circumstance in a determination where we consider it necessary to deviate from these principles, we will explain our reasoning in detail.

When considering the factors required under Section 8, we are also mindful of our obligation as stewards of the forests of British Columbia, of the mandate of the Ministry of Forests, Lands and Natural Resource Operations as set out in Section 4 of the *Ministry of Forests and Range Act*, and of our responsibilities under the *Forest Act* and *Forest and Range Practices Act (FRPA)*.

Integrated decision making

One of the key objectives of the Ministry of Forests, Lands and Natural Resource Operations is to take an integrated approach to all resource management decisions that considers all resource values. In considering the factors outlined in Section 8 of the *Forest Act*, we will continue to consider all available information on timber and non-timber resources in the management unit, and all available information on the interactions of the management of those resources on timber supply.

Information uncertainty

Given the complex and dynamic nature of forest ecosystems coupled with changes in resource use patterns and social priorities there is always a degree of uncertainty in the information used in AAC determinations.

Two important ways of dealing with this uncertainty are:

- (i) managing risks by evaluating the significance of specific uncertainties associated with the current information and assessing the various potential current and future, social, economic and environmental risks associated with a range of possible AACs; and
- (ii) re-determining AACs frequently, in cases where projections of short-term timber supply are not stable, to ensure they incorporate current information and knowledge.

In considering the various factors that Section 8 of the *Forest Act* requires the chief forester to take into account in determining AACs, it is important to reflect those factors, as closely as possible, that are a reasonable extrapolation of current practices. It is not appropriate to base decisions on proposed or potential practices that could affect the timber supply but are not substantiated by demonstrated performance or are beyond current legal requirements.

In many areas, the timber supply implications of some legislative provisions remain uncertain, particularly when considered in combination with other factors. In each AAC determination, this uncertainty is taken into account to the extent possible in the context of the best available information.

It is not appropriate to speculate on timber supply impacts that may eventually result from land-use decisions not yet finalized by government. However, where specific protected areas, conservancies, or similar areas have been designated by legislation or by order in council, these areas are deducted from the timber harvesting land base (THLB) and are not considered to contribute any harvestable volume to the timber supply in AAC determinations, although they may contribute indirectly by providing forest cover to help in meeting resource management objectives such as for biodiversity.

In some cases, even when government has made a formal land-use decision, it is not necessarily possible to fully analyse and account for the consequent timber supply impacts in a current AAC determination. Many government land-use decisions must be followed by detailed implementation decisions requiring, for instance, further detailed planning or legal designations such as those provided for under the *Land Act* and FRPA. In cases where there is a clear intent by government to implement these decisions that have not yet been finalized, we will consider information that is relevant to the decision in a manner that is appropriate to the circumstance. The requirement for regular AAC reviews will ensure that future determinations address ongoing plan implementation decisions.

Where appropriate, information will be considered regarding the types and extent of planned and implemented silviculture practices as well as relevant scientific, empirical and analytical evidence on the likely magnitude and timing of their timber supply effects.

We acknowledge the perspective that alternate strategies for dealing with information uncertainty are to delay AAC determinations or to generally reduce AACs in the interest of caution. However, given that there will always be uncertainty in information, and due to the significant impacts that AAC determinations can have on communities, we believe that no responsible AAC determination can be made solely on the basis of a response to uncertainty.

Nevertheless, in making a determination, allowances may need to be made to address risks that arise because of uncertainty by applying judgement to the available information. Where appropriate, the social and economic interests of the government, as articulated by the Minister of Forests, Lands and Natural Resource Operations, can assist in evaluating this uncertainty.

Climate change

One key area of uncertainty relates to climate change. While some controversy appears to remain on the causes of climate change, there is substantial scientific agreement that climate is changing, that the changes will affect forest ecosystems, and that forest management practices will need to be adapted. Nevertheless, the potential rate, amount, and specific characteristics of climate change in different parts of the province are uncertain. As research provides more definitive information on climate change, we will consider the findings in AAC determinations. Where forest practices are implemented to mitigate or adapt to the potential effects of climate change on forest resources, we will consider related information in our determinations.

In addition, vulnerability assessments can provide information on the potential risks associated with climate change, and could be useful in defining how to consider climate change in different AAC determinations. Such assessments could also highlight key topics in need of research that could improve climate change considerations for future determinations.

We note, however, that even with better information on climate change there will be a range of reasonable management responses. Considerations of how to respond in anticipation of uncertain, potential future impacts and risks differ from those related to responding to known or ongoing processes such as the recent MPB infestation. For example, it is not clear if either increases or decreases to current harvest levels would be appropriate in addressing potential future increases in natural disturbance due to climate change. Conversely, the present forest conditions resulting from the MPB infestation provide a clearer circumstance to which to respond.

To some extent, decisions on the preferred management responses to potential future risks, including potential changes to allowable timber harvests, are appropriately informed by broad discussion among interested parties. We will monitor such discussions and consider them insofar as they are relevant to AAC determinations. In general, the requirement for regular AAC reviews will allow for the incorporation of new information on climate change and its effects on forests and timber supply as it emerges.

First Nations

The Crown has a legal obligation to consult with First Nations regarding their asserted rights and title (aboriginal interests) in a manner proportional to the strength of their aboriginal interests and the degree to which the decision may impact these interests. In this regard, full consideration will be given to:

- (i) the information provided to First Nations to explain the timber supply review process;
- (ii) any information brought forward respecting First Nations' aboriginal interests, including how these interests may be impacted; and
- (iii) any operational plans and/or other information that describe how First Nations' interests are addressed through specific actions and forest practices.

Aboriginal interests that may be impacted by AAC decisions will be addressed consistent with the scope of authority granted to the chief forester under Section 8 of the *Forest Act*. When information is brought forward that is outside of the chief forester's jurisdiction, this information will be forwarded to the appropriate decision makers for their consideration. Specific considerations identified by First Nations in relation to their aboriginal interests and the AAC determination are addressed in the various sections of this rationale.

AAC determinations should not be construed as limiting the Crown's obligations under court decisions in any way, and in this respect it should be noted that the determinations do not prescribe a particular plan of harvesting activity within the management units. They are also independent of any decisions by the Minister of Forests, Lands and Natural Resource Operations with respect to subsequent allocation of wood supply.

The role of the base case

In considering the factors required under Section 8 of the *Forest Act* to be addressed in AAC determinations, I am assisted by timber supply forecasts provided to me through the work of the Timber Supply Review Program (TSR) for TSAs and TFLs.

For most AAC determinations, a timber supply analysis is carried out using an information package including data and information from three categories: land base inventory, timber growth and yield, and management practices. Using this set of data and a computer model, a series of

timber supply forecasts can be produced to reflect different starting harvest levels, rates of decline or increase, and potential tradeoffs between short- and long-term harvest levels.

From a range of possible forecasts, one is chosen in which an attempt is made to avoid both excessive changes from decade to decade and significant timber shortages in the future, while ensuring the long-term productivity of forest lands. This is known as the “base case” forecast and forms the basis for comparison when assessing the effects of uncertainty on timber supply. The base case is designed to reflect current management practices.

Because it represents only one in a number of theoretical forecasts, and because it incorporates information about which there may be some uncertainty, the base case forecast is not an AAC recommendation. Rather, it is one possible forecast of timber supply, whose validity – as with all the other forecasts provided – depends on the validity of the data and assumptions incorporated into the computer model used to generate it.

Therefore, much of what follows in the considerations outlined below is an examination of the degree to which all the assumptions made in generating the base case forecast are realistic and current, and the degree to which resulting predictions of timber supply must be adjusted to more properly reflect the current and foreseeable situation.

These adjustments are made on the basis of informed judgment using currently available information about forest management, and that information may well have changed since the original information package was assembled. Forest management data are particularly subject to change during periods of legislative or regulatory change, or during the implementation of new policies, procedures, guidelines or plans.

Thus, in reviewing the considerations that lead to the AAC determination, it is important to remember that the AAC determination itself is not simply a calculation. Even though the timber supply analysis I am provided is integral to those considerations, the AAC determination is a synthesis of judgment and analysis in which numerous risks and uncertainties are weighed. Depending upon the outcome of these considerations, the AAC determined may or may not coincide with the base case forecast. Judgements that in part may be based on uncertain information are essentially qualitative in nature and, as such, are subject to an element of risk. Consequently, once an AAC has been determined, no additional precision or validation would be gained by attempting a computer analysis of the combined considerations.

Timber supply analysis

The timber supply analysis for TFL 30 was prepared for Canfor by Ecora Resource Group Ltd. The Timber Supply Analysis Data Package was submitted to Forest Analysis and Inventory Branch (FAIB) in July, 2012 and accepted by FAIB staff on March 4, 2013. The final version of the analysis was submitted to FAIB in July of 2013 and accepted on January 14, 2014.

The analysis was completed using the model Patchworks by Spatial Planning Systems. Patchworks is a spatially-explicit optimization model that examines the overall impact of harvest scheduling decisions across all periods and can evaluate tradeoffs based on their effect on the overall harvest level. It can also be used to develop spatially explicit harvest schedules. These were produced for the first 10 years of the analysis and according to the licensee, they seem to be generally operationally feasible. The forecasts in the analysis were reviewed by FAIB staff, who advised me about the function of the model, and any associated implications with the harvest projections.

Based on the review by FLNR staff, as well as my own experience reviewing results from similar models, I am satisfied that Patchworks is capable of providing an appropriate projection of timber supply.

In the base case provided in the analysis an initial harvest level of 412 500 cubic metres per year could be maintained for approximately 45 years, before increasing to the long-term harvest level of 537 000 cubic metres per year. The initial harvest level is approximately 25 percent higher than the AAC that was in effect immediately before this determination. Canfor's request for a reduction of the allowable annual cut under Section 61 of the *Forest Act* from 2003 to 2008 so that they could concentrate on using timber killed by the mountain pine beetle in the adjacent Prince George TSA was a significant contributing factor to this increase.

The base case provided in the version of the analysis that was made available for public review and First Nations consultation on March 13, 2013 included assumptions about old-growth management that are consistent with the Order Establishing Provincial Non-Spatial Old Growth Objectives. In the order old growth is defined for some ecosystems to be older than 250 years, and such stands are naturally rare in these ecosystems. Following discussions with Omineca Region, Prince George Natural Resource District and licensee staff about the appropriate definition of old growth in the ecosystems that are prevalent in TFL 30, the licensee provided the revised analysis described above dated July, 2013 in which the assumptions regarding the definition of old growth were changed. In the new base case of the July, 2013 analysis old growth was assumed to be stands greater than 140 years of age. I accepted this forecast as the base case for the purposes of this determination and I will discuss my consideration of this factor further under 'landscape-level biodiversity'.

In the timber supply analysis, various sensitivity analyses were conducted to assess the potential implications and risk to timber supply arising from uncertainty in data assumptions. These analyses have also assisted me in considering the factors leading to my determination. As discussed and quantified throughout this rationale, and in consideration of the items described above, I am satisfied the information presented to me provides an adequate basis from which I can assess the current timber supply for TFL 30 for this determination.

Consideration of factors as required by Section 8 (8) of the *Forest Act*

I have reviewed the information for all of the factors required to be considered under Section 8 of the *Forest Act*. Where I have concluded that the modelling of a factor in the base case appropriately represents current management or the best available information, and uncertainties about the factor have little influence on the timber supply projected in the base case, no discussion is included in this rationale. These factors are listed in Table 1.

Table 1. List of accepted factors

Forest Act section and description	Factors accepted as modelled
8(8)(a)(i) Composition of the forest and its expected rate of growth	<ul style="list-style-type: none"> • Non-forest and non-productive forest • Non-commercial cover • Existing unmapped landings • Unclassified lands • Parks and protected areas • Terrain stability • Areas with high recreation value • Archeological sites • Riparian management areas • Special riparian areas • Difficult regeneration • Non-merchantable stands • Low productivity – immature • Roads, trails, and landings • Physical operability • Site productivity assignments • Aggregation procedures • Managed stand yields • Minimum harvest ages
8(8)(a)(ii) Expected time that it will take the forest to become re-established following denudation	<ul style="list-style-type: none"> • Regeneration delays • Not sufficiently restocked
8(8)(a)(iii) Silvicultural treatments to be applied	<ul style="list-style-type: none"> • Silvicultural systems • Regeneration
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste, and breakage	<ul style="list-style-type: none"> • Utilization standards • Decay, waste, and breakage
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for purposes other than timber production	<ul style="list-style-type: none"> • Adjacency (patch size distribution) • Mountain caribou • Grizzly bear, marten, and moose habitat • Wildlife habitat areas • Visual quality management • Watershed objectives • Disturbing the non-THLB

<i>Forest Act section and description</i>	<i>Factors accepted as modelled</i>
8(8)(a)(vi) Any other information	<ul style="list-style-type: none"> • Harvest performance
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	<ul style="list-style-type: none"> • Unsalvaged losses • Mountain pine beetle impacts • White pine weevil • Dothistroma needle blight

For other factors, where more uncertainty exists, or where public or First Nations' input indicates contention regarding the information used, modelling, or some other aspect under consideration, this rationale incorporates an explanation of how I considered the essential issues raised and the reasoning leading to my conclusions.

Factors requiring additional explanatory consideration

Section 8 (8)

In determining an allowable annual cut under this section the chief forester, despite anything to the contrary in an agreement listed in section 12, must consider

(a) the rate of timber production that may be sustained on the area, taking into account

(i) the composition of the forest and its expected rate of growth on the area

Factors considered under Section 8(8)(a)(i)

In addition to the factors listed under this section in Table 1, I have also considered the following factors requiring comment or discussion.

- inventory

Phase I of the Vegetation Resource Inventory (VRI) for TFL 30 was completed in 2000. It was adjusted using 215 Phase II VRI plots established between 1997 and 2011. The inventory was updated for harvesting disturbances to December 1, 2012 and for growth to January 1, 2013. This inventory was used in the base case.

The Phase II adjustment decreased the total Phase I inventory volume by 3.1 percent. Following completion of the analysis, Forest Analysis and Inventory Branch staff conducted a detailed review of the data and procedures used for the Phase II adjustment and found errors in the approach taken in the original calculations. They provided the Canfor's analyst with corrected adjustments, and using these the analyst found the total inventory volume used in the base case was 4.7 percent lower than the total inventory volume derived using the corrected adjustments.

The licensee provided a sensitivity analysis in which it showed the effect on timber supply if natural stand yields are increased and decreased by 10 percent compared to the yields assumed in the base case. With natural stand yields increased by 10 percent, the short-term harvest level increased by eight percent compared to the base case.

I have considered this information and I find that, given the results of the sensitivity analysis, a 4.7 percent increase in the total inventory volume will result in an increase in short-term timber supply in the order of about 3.8 percent (i.e., 80 percent of 4.7 percent). For this determination, I consider the inventory assumptions applied in the base case likely to represent an underestimate of about 3.8 percent in short-term timber supply and I will discuss this further in '**Reasons for Decision**'.

- deciduous

Consistent with current practice, deciduous-leading stands without a harvest history and deciduous-leading stands with a harvest history and not considered stocked with conifer were excluded from the THLB. In addition, the deciduous component of conifer-leading stands was excluded from contributing to yield projections. A total area of 4653 hectares of deciduous-leading stands were excluded.

On September 26, 2013 I met with the licensee. During this meeting licensee staff provided me with updated information about deciduous-leading stands on TFL 30. Staff indicated that they had visited several stands classified as deciduous-leading and found them to be stocked with conifer. The licensee contends that as many as 3300 hectares of deciduous-leading stands may in fact be stocked with conifer, and this amounts to a maximum underestimate of the THLB of 2.7 percent.

I accept that some of the deciduous-leading stands excluded from the THLB are in fact stocked with conifers and I encourage the licensee to survey these areas so their contribution to timber supply can be more accurately reflected in the next timber supply review. For this determination, I consider the assumptions related to deciduous-leading stands applied in the base case to represent a small underestimate of timber supply around the time of the transition from the mid-to long-term and in the long term. I will discuss this further in '**Reasons for Decision**'.

- log grades

On April 1, 2006, new log grades were implemented for the BC Interior and these apply to TFL 30. All grades now count against the AAC, regardless of whether the logs were alive or dead at time of harvest. The inventory and base case yield tables excluded dead logs that could potentially be used as sawlogs.

The only source of data about dead potential volumes in TFL 30 is the inventory audit conducted for TFL 30 in 2000. Data from the audit indicate that dead potential volume is about 3.3 percent of the green volume for the forests over 60 years of age in this TFL. This represents the maximum amount of dead timber that could be harvested in addition to the live volume projected in the base case.

At present there is no easy way to track the harvest of dead potential volume for TFL 30. If recovered, this volume is charged to the AAC in the same manner as green wood. No estimate was provided by Canfor of the amount, if any, that is being harvested.

Having considered the available information, I find it reasonable that no accounting for these dead potential volumes was made in the base case. If any of the dead potential volume is utilized, it will provide a slightly more robust timber supply. I will discuss this further in '**Reasons for Decision**'.

- operational adjustment factors

In this analysis all stands with a harvest history regenerated after 1977 were considered to be managed stands. For these stands volume estimates were based on FLNR's Table Interpolation Program for Stand Yields (TIPSY) model. Operational adjustment factors (OAF) are used when projecting managed stand yields to adjust the yields generated by growth and yield models calibrated using permanent sample plot data to yields attained under natural conditions. OAF1 accounts for factors such as small stand openings, uneven tree distribution, and endemic pests and diseases that affect yield curves across all ages, whereas OAF2 accounts for factors whose impacts increase over time, such as decay, waste, and breakage. The standard provincial operational adjustment factors are 15 percent for OAF1 and five percent for OAF2.

In the base case the licensee assumed a default OAF1 of 7.5 percent and for each analysis unit added the percentage of the THLB occupied by non-productive site series from the Terrestrial Ecosystem Mapping available for TFL 30.

The OAF1 applied for each managed stand analysis unit (AU) ranged from 7.5 percent to 76.7 percent and the area weighted average OAF1 applied was 11 percent.

The standard OAF2 value of five percent was used for this analysis.

A sensitivity analysis was performed to test the impact on timber supply with the default OAFs applied. Because OAF1 values only affect managed stand yields that will become available for harvest later in the forecast period, short-term timber supply was reduced by only a small amount while long-term timber supply was reduced by five percent.

While I find the method used to account for non-productive site series acceptable, I question how the 7.5 percent default OAF1 was derived. No explanation was provided to me to justify this approach. Nevertheless, for this determination I consider the assumed OAF1 to be adequate given that there are other factors that suggest timber supply may be underestimated in the base case and changes in OAFs affect the longer term. I encourage the licensee to work with FLNR staff to develop a better estimate of OAF1 for TFL 30 for the next determination, as noted below in '**Implementation**'.

Section 8 (8) (a) (ii) time for re-establishment:

Table 1 above lists each of the factors I have considered under this section for which I have agreed with the representation in already published information respecting current practice and with the modelling as incorporated in the analysis. No factors considered under this section require additional comment.

Section 8 (8) (a) (iii) silvicultural treatments to be applied to the area:

No factors considered under this section require additional comment.

Section 8 (8) (a) (iv) the standard of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area:

No factors considered under this section require additional comment.

Section 8 (8) (a) (v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production:

Factors considered under Section 8(8) (a)(v)

In addition to the factors listed under this section in Table 1 above, I have also considered the following factors, which require additional comment.

- wildlife tree patches

Canfor's FSP commits to ensuring that at least seven percent of the total area of cutblocks harvested over a 12-month period, and at least 3.5 percent of each individual cutblock, will be covered by wildlife trees. Existing wildlife tree patches (WTP) represent 2830 hectares within the TFL and have been excluded from the THLB. Since 1995, an average of 7.8 percent of the productive forest area has been retained as WTP on TFL 30.

According to the licensee, future WTP areas will be focused in existing non-THLB areas. The licensee provided information about the area yet to be harvested on the TFL and, according to that information, 21 percent of the area is non-contributing. The licensee also expects management for old forest objectives, visual quality and other habitat requirements to provide for stand-level retention and to contribute to meeting WTP requirements without removing additional areas from the THLB. Canfor asserts that, given the considerable overlap between these factors and the stand-level retention objectives, there are no additional reductions required to the THLB to account for future WTPs.

District staff are concerned that using non-contributing forest to attain prescribed percent retention requirements for WTPs may not adequately meet the intent that WTP's should provide habitat for wildlife. Staff would like to see implementation of the seven percent target, including within-block WTP's, to accommodate wildlife values. They expressed concern that the quality of wildlife habitat is deteriorating on the TFL, in particular grizzly denning and marten habitat. Staff believe maintaining the seven percent target would assist in meeting the habitat needs for grizzly bear, marten and moose on TFL 30.

The licensee conducted a sensitivity analysis to test the impact on timber supply if additional WTP reductions were applied. When an additional 3.5 percent is excluded for WTPs, the initial harvest level is reduced by three percent and the long-term harvest level is reduced by two percent.

Having considered this information, I note that the assumptions applied in the base case reflect current practice. I understand discussion is ongoing to better accommodate wildlife, and the establishment of old-growth management areas (OGMA), which I will discuss below under 'landscape-level biodiversity', will help in this regard. In my view, given that this TFL will eventually be in a highly managed state, the risk to wildlife on TFL 30 is in the longer term, and we have the opportunity now to address habitat issues. I encourage Canfor to work with district staff to develop a strategy to provide for suitable habitat, including appropriate location of WTPs, as noted below in '**Implementation**'. Other factors I have described in this rationale that suggest the timber supply in the base case was underestimated will serve to mitigate any effects of increased habitat retention resulting from this strategy.

For this determination, I consider the accounting for WTPs to be adequate.

- *landscape-level biodiversity*

Requirements for old-growth management on TFL 30 are specified in the Order Establishing Provincial Non-Spatial Old Growth Objectives (provincial old-growth order). This order contains a provision that the minister may specify that draft spatially identified old-growth management areas (OGMA) meet the intent of this order. There are currently no OGMAs identified on TFL 30.

This order includes a provision that, in order to address impacts on timber supply, the old forest retention requirements in landscape units with a lower biodiversity emphasis may be reduced by up to two-thirds. The three landscape units covering TFL 30 are assigned a lower biodiversity emphasis option. The licensee applied the reduced requirements in the timber supply analysis submitted in March, 2013. The base case initial harvest level in that analysis was 420 000 cubic metres per year, an increase of 27 percent above the AAC that was in effect immediately before this determination.

Further, the provincial order defines old forest in the Interior Cedar Hemlock (ICH) and Engelmann Spruce Sub-alpine Fir (ESSF) biogeoclimatic zones to be at least 250 years old. The licensee applied this assumption in the base case of the March 2013 version of the analysis.

Following the submission of the March 2013 analysis report, FLNR and licensee staff discussed whether it is appropriate to reduce the old-growth requirement when a management unit is facing an increase in timber supply. During the discussions it was noted that in the adjacent Prince George Timber Supply Area (TSA) forests in the ESSF and ICH are considered to have the characteristics and quality to meet old objectives if they are older than 140 years. Further, the *Order Establishing Landscape Biodiversity Objectives for the Prince George Timber Supply Area* (Prince George old-growth order) does not allow for draw down of old forest targets in the first two rotations but requires targets to be met immediately.

As a result of these discussions, the licensee provided a harvest forecast for TFL 30 in which old forest targets from the provincial old-growth order were required to be met immediately (i.e., they were not reduced by two-thirds) and old forest was assumed to be greater than 140 years old in the ICH and ESSF biogeoclimatic zones. All other forest management assumptions remained the same as in the March, 2013 base case. The initial harvest level in this analysis was 412 558 cubic metres per year and the long-term harvest level was 537 054 cubic metres per year. With the support of Prince George Natural Resource District and Omineca Region staff, the licensee revised its timber supply analysis by replacing the March 2013 base case with this new harvest forecast. The revised analysis was submitted in July, 2013 and accepted by FAIB staff on January 14, 2014.

Subsequent to the submission of the revised analysis, Canfor committed to identifying OGMAs in the field that conform to the revised landscape-level biodiversity objectives (i.e., meet target percentages for old growth with no reduction and assume old growth in the ICH and ESSF is greater than 140 years old). Canfor has amended its Forest Stewardship Plan to reflect this commitment and the amendments were approved by the district manager on February 6, 2014.

The amendments are consistent with current thinking and science related to old-growth management in the ecosystems found in TFL 30. Establishing OGMAs will also assist in addressing wildlife habitat needs as discussed under 'wildlife tree patches'. I therefore agree with the licensee and district and regional staff that this is a better approach to addressing biodiversity on the TFL and commend Canfor for making these commitments.

Since this commitment is established in an approved Forest Stewardship Plan, I have accepted the base case provided in the July, 2013 timber supply analysis (i.e., the revised base case) as the basis for this determination.

Section 8 (8) (a) (vi) any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber

- Factors considered under Section 8(8) (a)(vi)

In addition to the factors listed under this section in Table 1 above, I have also considered the following factors, which require additional comment.

First Nations considerations

The Crown has a duty to consult with, and accommodate if necessary, those First Nations for whom it has knowledge of asserted aboriginal rights and title (aboriginal interests) that may be impacted by a decision, including strategic-level decisions such as AAC determinations. I must therefore consider information arising from the consultation process with First Nations respecting aboriginal interests that may be affected by my AAC determination. As well, I will consider other relevant information available to the ministry regarding aboriginal interests, including information gathered during other consultation processes.

Three First Nations have asserted traditional territory overlapping TFL 30, the Lheidli T'enneh First Nation, the McLeod Lake Indian Band, and the West Moberly First Nations.

The Lheidli T'enneh First Nation holds a Forest Consultation and Revenue Sharing Agreement (FCRSA). In April 2007, Lheidli T'enneh initiated a Final Agreement under the BC Treaty Commission that went to the community for a vote. The agreement was rejected. A community engagement process is underway, supported by the BC Treaty Commission. A second vote on the treaty is one of the possible outcomes from this process, however, the timeline for implementation is unknown.

The McLeod Lake Indian Band, under Treaty 8, is presently in negotiation with the Provincial government for an Economic Benefits Agreement and consultation matrix. West Moberly First Nations, also under Treaty 8, currently hold an Amended Economic Benefits Agreement. West Moberly First Nations are involved in litigation with the province regarding the disputed western boundary of the Treaty 8 area. Proceedings were expected to begin in 2009 but the case has been postponed.

As part of the consultation process, preliminary assessments were undertaken by district staff for which they considered existing information and information provided by First Nations regarding the strength of aboriginal interests and the potential impact this AAC determination may have on these interests. Based on these assessments, the consultation undertaken for all the affected First Nations was at the normal level.

Sources of information used in the preliminary assessments included known interests identified through previous consultations in this area, ongoing or previous litigation/affidavit information, archaeological overview assessments, the Remote Access to Archaeological Data (RAAD) database, Traditional Use Studies (TUS), wildlife studies or assessments, information about the existence and status of Treaty Land Entitlement Claims, and distance from development area to First Nation Reserves.

The result of the preliminary assessment for the Lheidli T'enneh First Nation indicated a strong *prima facie* claim to aboriginal rights to fish, gather, hunt, and trap on most of TFL 30. Ethno-historic and archaeological evidence suggests TFL 30 is within the territory used by ancestors of the Lheidli T'enneh First Nation at the time of contact. According to the initial assessment, the strength of the Lheidli T'enneh First Nation's claimed aboriginal title is a weak *prima facie* claim in TFL 30 as ethno-historic and archaeological evidence suggests the area in question was not an area of physical occupation (village site) or of regular and intensive use at 1846. No site specific interests are known and general interests include protecting riparian areas for fish habitat, general environmental protection, and protection of archaeological sites. In accordance with the FCRSA, Omineca Region staff consider the appropriate level of consultation with the Lheidli T'enneh First Nation to be normal.

For the preliminary assessment for the West Moberly First Nations FLNR staff considered that the portion of TFL 30 that falls within the community's territory is disputed by the province. Rights are considered 'asserted treaty rights' in this area. West Moberly First Nations' specific interests include caribou and habitat, while general interests include protecting riparian areas for fish habitat, general environmental protection, and protection of archaeological sites. I note that mountain caribou is protected on TFL 30 through Ungulate Winter Range Order U-7-003, and the management requirements of this order were accounted for in the base case to my satisfaction.

A small area of TFL 30 falls within McLeod Lake Indian Band's territory. No site specific interests for McLeod Lake Indian Band are known. General interests include protecting riparian areas for fish habitat, general environmental protection, and the protection of archaeological sites.

There are known archaeological sites within TFL 30 and site specific assessment will occur during development, as per commitments in Canfor's FSP.

Omineca Region staff conducted the consultation process for TFL 30 while Canfor conducted information sharing with the three First Nations. Those activities occurred for the information package and the draft management plan, which includes the analysis report. During consultation and information sharing activities, First Nations did have general questions about harvesting activities within riparian areas on the TFL, the modelling of biodiversity emphasis on the three landscape units within TFL 30, management for wildlife habitat, stream classification, and management for caribou and wildlife. FLNR staff, as well as representatives from Canfor, were able to answer questions and provide information to satisfy First Nations.

Region staff considers the level of consultation to have been consistent with the signed agreements held by the affected First Nations and government consultation policy as described in the "Updated Procedures for Meeting Legal Obligations When Consulting First Nations" (May 7, 2010). Government consultation policy is based on the consultation principles set out in the Supreme Court of Canada Haida decision (2004) as amended or modified through subsequent court decisions. Staff indicate that at this time, there is no information available to suggest that the proposed Management Plan 10 for TFL 30 or the AAC determination will result in any unjustified infringement of asserted aboriginal rights and interests or treaty rights.

Based on my review of the information sharing and consultation processes followed, the aboriginal interest information available to FLNR staff, and the potential impact my determination may have on these interests, I believe that FLNR has engaged in consultation at an appropriate level on the consultation spectrum as outlined in government consultation policy as described above. Furthermore, I note that district staff will continue to be available to meet and consult with First Nations on issues at the operational planning level.

Opportunities were provided to all First Nations to share their concerns related to specific aboriginal interests that may be impacted by this decision. If new information regarding First Nations' aboriginal interests becomes available that significantly varies from the information that was available for this determination and that may affect timber supply, a new TSR can be initiated leading to a determination sooner than the maximum 10 years allowed by legislation.

Section 8(8) (b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area;

Factors considered under Section 8(8) (b)

- alternative rates of harvest

In addition to the base case, the licensee provided three alternative harvest flows. All the assumptions used for these harvest forecasts, other than harvest flow assumptions, were the same as those used in the base case.

The first alternative forecast showed that the highest sustainable, even-flow harvest level, with stable growing stock levels by the end of the forecast period, was 409 000 cubic metres per year.

The second alternative forecast showed that the initial harvest level that could be increased to 459 000 cubic metres per. The forecast then declined gradually to a mid-term low of 368 000 cubic metres per year in about 30 years and then increased to a long-term harvest level of about 527 000 cubic metres per year.

In the third alternative the licensee tested whether the non-declining initial harvest level in the base case could be increased if the long-term harvest level were lowered, in this case to about 500 000 cubic metres per year, and found it was not possible.

In my determination I have been mindful of the viability of these projections in relation to the AAC I have determined.

Section 8(8) (c) repealed [2003-31-2 (B.C. Reg. 401/2003)]

This section of the *Forest Act* has been repealed [2003-31-2 (B.C. Reg. 401/2003)].

Section 8(8) (d) the economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia;

Factors considered under Section 8(8) (d)

- Minister's letter

The Minister of Forests and Range (now the Minister of Forests, Lands and Natural Resource Operations) expressed the economic and social objectives of the Crown for the province in a letter to the chief forester, dated July 4, 2006. Two of the government's stated goals are to create more jobs per capita than anywhere else in Canada, and to lead the world in sustainable environmental management. The Minister asked for consideration, during AAC determinations, of the importance of a stable timber supply in maintaining a competitive and sustainable forest

industry while being mindful of other forest values. In respect of this, in the base case projection described above, a primary objective in the harvest flow was to attain a stable, long-term harvest level where the growing stock also stabilizes. I have also considered with care the adequacy of the provisions made both in current practice, and assumed in the analyses, for maintaining a range of forest values.

The Minister also requested that the chief forester consider the local social and economic objectives expressed by the public, and relevant information received from First Nations.

Seeking public input, the licensee advertised in two newspapers in Prince George, inviting comments on the Information Package and draft Management Plan (including the timber supply analysis). Letters were sent to the list of stakeholders and agencies that Canfor maintains for Forest Stewardship Plan referrals and information sharing under their Canadian Standards Association (CSA) certification and their Public Advisory Group. Aside from the comments received from First Nations described above under '*First Nations considerations*', only one letter was received from an individual providing general comments on the assumptions in the Data Package. These comments were discussed during field visit to TFL 30. No specific issues were raised that could be accounted for in this determination.

- employment and community dependence

In context of the Minister's letter, I have noted that the harvest volumes from TFL 30 provide part of the volumes utilized in a number of Canfor mills in the surrounding area. Employment is also provided in logging and forest management. The current level of harvest is creating a desirable level of economic and socially beneficial activity.

From all of these considerations, I am satisfied that this AAC determination is made in consistency with the objectives of government as expressed by the Minister.

Section 8(8)(e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

Factors considered under Section 8(8) (e)

- Mountain pine beetle epidemic

Pine represents only a small proportion of the species profile of TFL 30. Small outbreaks of mountain pine beetle have occurred in the western portion of the TFL and have been promptly harvested. Trees killed by the mountain pine beetle epidemic were accounted for in the base case in the assumptions for unsalvaged losses. I am satisfied that this factor was appropriately accounted for in the base case.

Reasons for Decision

In reaching my AAC determination for TFL 30, I have considered all of the factors required to be considered under Section 8 of the *Forest Act* and have reasoned as follows.

In the base case the initial harvest rate of 412 500 cubic metres per year was projected to be sustainable for 45 years before increasing to the long-term harvest level of 537 000 cubic metres per year.

In determining an AAC for TFL 30, I have identified a number of factors, which, if considered separately, indicate reasons why the timber supply may be greater or less than that projected in the base case. Some of these factors can be quantified and their impact on the harvest level assessed with reliability. Others may influence timber supply by adding an element of risk or uncertainty to the decision, but cannot be reliably quantified at this time.

In my considerations I have identified the following factors as reasons why the timber supply projected in the base case may have been underestimated:

- Inventory –Forest Analysis and Inventory Branch staff conducted a detailed review of the data and procedures used for the Phase II adjustment and concluded natural stand yields were underestimated in the base case and this may increase timber supply up to 3.8 percent in the short term relative to the base case.
- Deciduous-leading stands – I concluded that about 3300 hectares of deciduous-leading stands are likely stocked with conifer and will contribute to timber supply. Their exclusion from the THLB represents a small underestimate of timber supply around the time of the transition from the mid- to long-term and in the long term.
- Log grades – an inventory audit indicated that dead potential volume on TFL 30 is approximately 3.3 percent of the green volume for stands over 60 years of age. It is unknown how much of this is being utilized. I concluded if any of the dead potential volume is utilized, it will provide a slightly more robust timber supply.

I have identified no factors in my considerations that indicate the timber supply projected in the base case was overestimated. I identified the following factors which I found were subject to uncertainty:

- Operational adjustment factors – I concluded the accounting for OAFs in the base case was adequate, however the method used to derive the 7.5 percent default OAF1 was subject to uncertainty. The OAF1 of 11 percent applied in the base case is lower than the Provincial standard OAF1 of 15 percent.
- Wildlife tree patches – I concluded the accounting for WTPs in the base case was adequate, however locating WTPs to better address habitat needs may require using THLB to a greater extent than was modelled in the base case.

Having considered the information above, I reason as follows:

I find the timber supply on TFL 30 to be quite robust and I expect that the combined increases in timber supply associated with my conclusions about the inventory audit and harvesting of dead trees is likely to add to the stability of the TFL 30 timber supply. I did not make any specific adjustments for the factors that were subject to uncertainty, but note that the increased timber supply resulting from the results of the review of the inventory audit and log grades will mitigate the risk associated with these factors.

I note that the licensee has proposed an AAC of 412 500 cubic metres and in support of this recommendation has highlighted the conservative nature of some of the factors applied in the base case such as natural stand yield estimates and the exclusion of deciduous stands that are likely stocked with conifers. I agree this approach is somewhat conservative, but given that the base case represents a 25 percent increase from the AAC that was in effect immediately before this determination, and the consideration of the other factors, I am satisfied that the short-term harvest level attained in the base case provides a solid basis for this determination.

Considering all these factors together, I determine an appropriate harvest level for TFL 30 at this time is 412 500 cubic metres.

Determination

I have considered and reviewed all the factors as documented above, including the risks and uncertainties of the information provided. It is my determination that a timber harvest level that accommodates objectives for all forest resources during the next 10 years and that reflects current management practices as well as the socio-economic objectives of the Crown, can be best achieved on TFL 30 by establishing an AAC of 412 500 cubic metres.

This determination is effective on February 6, 2014 and will remain in effect until a new AAC is determined, which must take place within 10 years after the date of this determination.

If additional significant new information is made available to me, or major changes occur in the management assumptions upon which I have predicated this decision, then a new TSR can be initiated leading to a determination sooner than in the maximum 10 years allowed by legislation.

Implementation

In the period following this determination and leading to the subsequent determination, I encourage FLNR staff and Canfor to undertake the tasks and investigations noted below that I have also mentioned in the appropriate sections of this rationale document. This work will be important to help reduce the risk and uncertainty associated with key factors that affect timber supply on TFL 30. I encourage Canfor to:

- work with FLNR district staff to develop a strategy to provide for suitable habitat, including appropriate location of WTPs, to better accommodate wildlife needs; and
- work with staff at FAIB to develop a better estimate of OAF1 for the next AAC determination.

Jim Sutherland, RPF
Deputy Chief Forester



February 6, 2014

Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (consolidated to January 29, 2014), reads as follows:

Allowable annual cut

8 (1) The chief forester must determine an allowable annual cut at least once every 10 years after the date of the last determination, for

- (a) the Crown land in each timber supply area, excluding tree farm licence areas, community forest agreement areas and woodlot licence areas, and
- (b) each tree farm licence area.

(2) If the minister

- (a) makes an order under section 7 (b) respecting a timber supply area, or
- (b) amends or enters into a tree farm licence to accomplish a result set out under section 39 (2) or (3),

the chief forester must make an allowable annual cut determination under subsection (1) for the timber supply area or tree farm licence area

- (c) within 10 years after the order under paragraph (a) or the amendment or entering into under paragraph (b), and
- (d) after the determination under paragraph (c), at least once every 10 years after the date of the last determination.

(3) If

- (a) the allowable annual cut for the tree farm licence area is reduced under section 9 (3), and
- (b) the chief forester subsequently determines, under subsection (1) of this section, the allowable annual cut for the tree farm licence area,

the chief forester must determine an allowable annual cut at least once every 10 years from the date the allowable annual cut under subsection (1) of this section is effective under section 9 (6).

(3.1) If, in respect of the allowable annual cut for a timber supply area or tree farm licence area, the chief forester considers that the allowable annual cut that was determined under subsection (1) is not likely to be changed significantly with a new determination, then, despite subsections (1) to (3), the chief forester

- (a) by written order may postpone the next determination under subsection (1) to a date that is up to 15 years after the date of the relevant last determination, and
- (b) must give written reasons for the postponement.

(3.2) If the chief forester, having made an order under subsection (3.1), considers that because of changed circumstances the allowable annual cut that was determined under subsection (1) for a timber supply area or tree farm licence area is likely to be changed significantly with a new determination, he or she

- (a) by written order may rescind the order made under subsection (3.1) and set an earlier date for the next determination under subsection (1), and
- (b) must give written reasons for setting the earlier date.

(4) If the allowable annual cut for the tree farm licence area is reduced under section 9 (3), the chief forester is not required to make the determination under

subsection (1) of this section at the times set out in subsection (1) or (2) (c) or (d), but must make that determination within one year after the chief forester determines that the holder is in compliance with section 9 (2).

(5) In determining an allowable annual cut under subsection (1) the chief forester may specify that portions of the allowable annual cut are attributable to one or more of the following:

(a) different types of timber or terrain in different parts of Crown land within a timber supply area or tree farm licence area;

(a.1) different areas of Crown land within a timber supply area or tree farm licence area;

(b) different types of timber or terrain in different parts of private land within a tree farm licence area.

(c) [Repealed 1999-10-1.]

(6) The regional manager or district manager must determine an allowable annual cut for each woodlot licence area, according to the licence.

(7) The regional manager or the regional manager's designate must determine an allowable annual cut for each community forest agreement area, in accordance with

(a) the community forest agreement, and

(b) any directions of the chief forester.

(8) In determining an allowable annual cut under subsection (1) the chief forester, despite anything to the contrary in an agreement listed in section 12, must consider

(a) the rate of timber production that may be sustained on the area, taking into account

(i) the composition of the forest and its expected rate of growth on the area,

(ii) the expected time that it will take the forest to become re-established on the area following denudation,

(iii) silviculture treatments to be applied to the area,

(iv) the standard of timber utilization and the allowance for decay, waste and breakage expected to be applied with respect to timber harvesting on the area,

(v) the constraints on the amount of timber produced from the area that reasonably can be expected by use of the area for purposes other than timber production, and

(vi) any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber,

(b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area,

(c) [Repealed 2003-31-2.]

(d) the economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia, and

(e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.

(9) Subsections (1) to (4) of this section do not apply in respect of the management area, as defined in section 1 (1) of the *Haida Gwaii Reconciliation Act*.

(10) Within one year after the chief forester receives notice under section 5 (4) (a) of the *Haida Gwaii Reconciliation Act*, the chief forester must determine, in accordance with this section, the allowable annual cut for

(a) the Crown land in each timber supply area, except the areas excluded under subsection (1) (a) of this section, and

(b) each tree farm licence area

in the management area, as defined in section 1 (1) of the *Haida Gwaii Reconciliation Act*.

(11) The aggregate of the allowable annual cuts determined under subsections (6), (7) and (10) that apply in the management area, as defined in section 1 (1) of the *Haida Gwaii Reconciliation Act*, must not exceed the amount set out in a notice to the chief forester under section 5 (4) (a) of that Act.

Appendix 2: Section 4 of the *Ministry of Forests and Range Act*

Section 4 of the *Ministry of Forests and Range Act* (consolidated to January 29, 2014) reads as follows:

Purposes and functions of ministry

- 4 The purposes and functions of the ministry are, under the direction of the minister, to do the following:
 - (a) encourage maximum productivity of the forest and range resources in British Columbia;
 - (b) manage, protect and conserve the forest and range resources of the government, having regard to the immediate and long term economic and social benefits they may confer on British Columbia;
 - (c) plan the use of the forest and range resources of the government, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are coordinated and integrated, in consultation and cooperation with other ministries and agencies of the government and with the private sector;
 - (d) encourage a vigorous, efficient and world competitive
 - (i) timber processing industry, and
 - (ii) ranching sectorin British Columbia;
 - (e) assert the financial interest of the government in its forest and range resources in a systematic and equitable manner.

Appendix 3: Minister's letter of July 4, 2006



JUL 04 2006

Jim Snetsinger
Chief Forester
Ministry of Forests and Range
3rd Floor, 1520 Blanshard Street
Victoria, British Columbia
V8W 3C8

Dear Jim:

Re: Economic and Social Objectives of the Crown

The *Forest Act* gives you the responsibility for determining Allowable Annual Cuts—decisions with significant implications for the province's economy, communities and environment. This letter outlines the economic and social objectives of the Crown you should consider in determining Allowable Annual Cuts, as required by Section 8 of the *Forest Act*. This letter replaces the July 28, 1994 letter expressing the economic and social objectives of the Crown, and the February 26, 1996 letter expressing the Crown's economic and social objectives for visual resources. The government's objective for visual quality is now stated in the *Forest Practices and Planning Regulation of the Forest and Range Practices Act*.

Two of this government's goals are to create more jobs per capita than anywhere in Canada and to lead the world in sustainable environmental management. The Ministry of Forests and Range supports these objectives through its own goals of sustainable forest and range resources and benefits. In making Allowable Annual Cut determinations, I ask that you consider the importance of a stable timber supply in maintaining a competitive and sustainable forest industry, while being mindful of other forest values.

The interior of British Columbia is in the midst of an unprecedented mountain pine beetle outbreak. Government's objectives for management of the infestation are contained in British Columbia's Mountain Pine Beetle Action Plan. Of particular relevance to Allowable Annual Cut determinations are the objectives of encouraging long-term economic sustainability for communities affected by the epidemic; recovering the greatest value from dead timber before it burns or decays, while respecting other forest values; and conserving the long-term forest values identified in land use plans.

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Minister of
Forests and Range
and Minister Responsible
for Housing

Office of the
Minister

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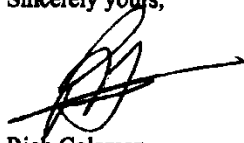
Jim Snetsinger

To assist the province and affected communities in planning their responses to the beetle infestation, it would be best to have realistic assessments of timber volumes that can be utilized economically. Therefore, in determining the best rate of harvest to capture the economic value from beetle-killed timber, I ask that you examine factors that affect the demand for such timber and products manufactured from it, the time period over which it can be utilized, and consider ways to maintain or enhance the mid-term timber supply.

The coast of British Columbia is experiencing a period of significant change and transition. In making Allowable Annual Cut determinations I urge you to consider the nature of timber supply that can contribute to a sustainable coast forest industry, while reflecting decisions made in land and resource management plans.

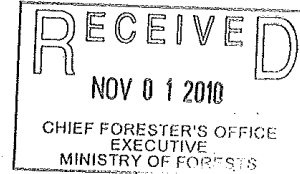
You should also consider important local social and economic objectives expressed by the public during the Timber Supply Review process, where these are consistent with the government's broader objectives as well as any relevant information received from First Nations.

Sincerely yours,

A handwritten signature in black ink, appearing to be 'Rich Coleman', with a long horizontal stroke extending to the right.

Rich Coleman
Minister

Appendix 4: Minister's letter of October 27, 2010



File: 280-30/MPB
Ref: 126097

OCT 27 2010

Jim Snetsinger, Chief Forester
ADM Forest Resource Stewardship Division
Ministry of Forests and Range
3rd Floor, 1520 Blanshard Street
Victoria, British Columbia
V8W 3C8

Dear Mr. Snetsinger:

Re: Economic and Social Objectives of the Crown Regarding Mid-Term Timber Supply in Areas Affected by the Mountain Pine Beetle

On July 4, 2006, Rich Coleman, former Minister of Forests and Range, wrote to you outlining the social and economic objectives of the Crown for AAC determination (in accordance with Section 8 of the *Forest Act*) with respect to issues associated with the Mountain Pine Beetle (MPB) epidemic. The aforementioned letter articulated the Crown's objectives of ensuring long-term economic sustainability for communities affected by the epidemic; recovering the greatest value from dead timber before it burns or decays, while respecting other forest values; and conserving the long-term forest values identified in land use plans. I am writing to you regarding the Crown's objectives with respect to mid-term timber supply in areas affected by the mountain pine beetle.

The MPB infestation has had a profound impact on the timber supply outlook for the interior of the province. In particular, forecasts of timber supply in the mid-term—the period between the ending of the economic shelf life of killed pine and the time when the forest has re-grown and again become merchantable—are now significantly lower than prior to the infestation. These shortages threaten the wellbeing of forest-dependent cities and towns. The

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Ministry of Forests and Range and
Minister Responsible for Integrated
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Jim Snetsinger, Chief Forester

Government of British Columbia is working closely with beetle action committees, municipalities, and the private sector to diversify economies. However, for many forestry-dependent towns mid-term timber supply shortages could still have significant socio-economic impacts.

During this challenging time it will be necessary to reassess management objectives and administrative approaches that were developed when forest conditions in the province's interior were very different than now exist. In this reassessment it will be important to enhance the understanding of how best to balance objectives for non-timber forest values with objectives for timber supply to achieve a range of socio-economic benefits. It will also be important to assess how innovative practices and incremental silviculture could mitigate mid-term timber supply shortfalls in MPB affected areas, and if flexibilities can be found in timber supply administration.

During the Timber Supply Review process, in addition to the considerations included in the July 2006 letter, I would like you to undertake analysis that can provide information on how changes to current management practices and administration could increase mid-term timber availability in MPB-affected areas. This information should be shared with Ministry of Forest and Range Executive and used to inform discussions among interested parties, and considered by appropriate land use and management decision makers. If formal changes are made to management objectives and administration, you will be in a position to incorporate those changes in Timber Supply Reviews and AAC determinations.

Sincerely,



Pat Bell
Minister

pc: Dana Hayden, Deputy Minister