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

Tree Farm Licence 33

Held by Federated Co-operatives Limited

Rationale for Allowable Annual Cut (AAC) Determination

Effective March 31, 2011

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Chief Forester

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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 as chief forester of British Columbia in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for Tree Farm Licence (TFL) 33. This document also identifies where new or better information is needed for incorporation in future determinations.

Overview of the TFL

TFL 33 is held by Federated Co-operatives Limited ('the licensee") and is administered by the Ministry of Forests, Lands and Natural Resource Operations (FLNR), Okanagan Shuswap Resource District. The TFL occupies 8366 hectares of Crown land north of Sicamous along the eastern shore of Shuswap Lake. The area is in the Columbia wetbelt on the western slopes of the Shuswap Mountains, ranging in elevation from 347 metres to 1700 metres.

Activities on TFL 33 are certified under the Sustainable Forestry Initiative® (SFI®) program and ISO 14001. The TFL is accessed from the Solsqua – Cambie Road north of Sicamous. The licensee has a log dump located at Wilson Creek where logs are bundled, weigh scaled and then dumped into Shuswap Lake. The licensee operates a tug that collects the log bundles into booms and transports the booms to the conversion plants located in Canoe.

The most recent determination was a postponement order in 2005, which maintained the AAC at 21 000 cubic metres.

New AAC determination

Effective March 31, 2011 the new AAC for TFL 33 will be 21 000 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

Data and information used for this AAC determination include references listed in the analysis report completed in the year 2000 plus the following:

- *Federated Co-operatives Limited, Sicamous Tree Farm Licence 33, Timber Supply Analysis Information Package*, accepted by Forest Analysis and Inventory Branch, July 26, 1999;
- Existing Stand Yields, accepted by Forest Analysis and Inventory Branch, June 15, 1999;
- Managed Stand Yields/Site Index, accepted by Forest Analysis and Inventory Branch, March 7, 2000;
- *Federated Co-operatives Limited, Sicamous Tree Farm Licence 33, Timber Supply Analysis*, accepted by Forest Analysis and Inventory Branch, March 7, 2000;
- *Supplemental timber supply analysis, Federated Co-operatives Limited*, submitted April 25, 2000;

- *Tree Farm Licence 33 Rationale for Allowable Annual Cut Determination;* Effective December 21, 2000;
- Management Plan 9 for TFL 33, Federated Co-operatives Limited, June 30, 2005;
- *Chief Forester Order Respecting an AAC Determination for Tree Farm Licence 33* (postponement), December 16, 2005;
- Letter from the Minister of Forests and Range (now the Minister of Forests, Lands and Natural Resource Operations) to the Chief Forester, stating the economic and social objectives of the Crown, July 4, 2006;
- *Summary of District's Initial Review on TFL 33 Timber Supply Issues*, May 21, 2010;
- *Summary of New Information Review between the Okanagan Shuswap Resource District and the Licensee (Federated Co-operatives Limited),* June 24, 2010;
- *Summary of dead potential volume estimates for management units within the Northern and Southern Interior Forest Regions,* Ministry of Forests, Lands and Natural Resource Operations, March 2006;
- Map and Area Summary of Deer Winter Range, Caribou Habitat and Old Growth Management Area of TFL 33, Federated Co-operatives Limited, October 7, 2010;
- *Information Related to an AAC Determination for TFL #33*, Federated Co-operatives Limited, January 10th, 2010;
- *Order Establishing Objectives Set by Government in the Area Covered by the Okanagan-Shuswap Land and Resource Management Plan in the Okanagan Shuswap Forest District,* Minister of Forests, Lands and Natural Resource Operations, February 6, 2007;
- *Identified Wildlife Management Strategy. Accounts and measures for managing identified wildlife: Southern Interior Forest Region. Version 2004. Province of BC*;
- *Order – Ungulate Winter Range #U-8-001-Okanagan TSA*, October 1, 2006;
- *Order – Mountain Caribou # U-3-005, Okanagan TSA,* December 17, 2009, amended September 12, 2010;
- *Forest and Range Practices Act – Regulations and amendments,* 2009;
- *Consultation Summary – Timber Supply Review/AAC Determination for TFL 33,* Ministry of Forests, Lands and Natural Resource Operations, March 25, 2011;
- Land Traditions of the Neskonlith and Adams Lake Shuswap – Preliminary Draft Report, Prepared by Adams Lake and Neskonlith Secwepemc, March 30, 1999, and
- Technical review and evaluation of current operating conditions on TFL 33 through comprehensive discussions with Okanagan Shuswap Resource District staff, including the AAC determination meeting held in Victoria, BC on January 19, 2011.

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 are uncertain, 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 33, 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

Rapid changes in social values and in the understanding and management of complex forest ecosystems mean there is always uncertainty in the information used in AAC determinations. In making the large number of periodic determinations required for British Columbia's many forest management units, administrative fairness requires a reasonable degree of consistency of approach in incorporating these changes and uncertainties. To make my approach in these matters explicit, I have set out the following body of guiding principles. In any specific circumstance where I may consider it necessary to deviate from these principles, I will explain my reasoning in detail.

Two important ways of dealing with uncertainty are:

(i) minimizing risk, in respect of which in making AAC determinations I consider particular uncertainties associated with the information before me and attempt to assess and address the various potential current and future, social, economic and environmental risks associated with a range of possible AACs; and
(ii) redetermining 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, I intend to reflect, as closely as possible, those forest management factors that are a reasonable extrapolation from current practices. It is not appropriate to base my decision on unsupported speculation with respect to factors that could affect the timber supply that 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 I take this uncertainty into account to the extent possible in context of the best available information.

It is my practice not 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 the *Forest and Range Practices Act*. In cases where there is a clear intent by government to implement these decisions that have not yet been finalized, I 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 I will consider information on 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.

Some persons have suggested that, given the large uncertainties present with respect to much of the data in AAC determinations, any adjustments in AAC should wait until better data are available. I agree that some data are incomplete, but this will always be true where information is constantly evolving and management issues are changing. The requirement for regular AAC reviews will ensure that future determinations incorporate improved information.

Others have suggested that, in view of data uncertainties, I should immediately reduce some AACs in the interest of caution. However, any AAC determination I make must be the result of applying my judgement to the available information, taking any uncertainties into account. Given the large impacts that AAC determinations can have on communities, no responsible AAC determination can be made solely on the basis of a response to uncertainty. Nevertheless, in making my determination, I may need to make allowances for risks that arise because of uncertainty.

With respect to First Nations' issues, I am aware of the Crown's legal obligation resulting from recent court decisions to consult with First Nations regarding 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, I will consider the information provided to First Nations to explain the timber supply review process and any information brought forward respecting First Nations' aboriginal interests including how these interests may be impacted, and any operational plans and actions that describe forest practices to address First Nations' interests, before I make my decision. As I am able, within the scope of my authority under Section 8 of the *Forest*

Act, where appropriate I will seek to address aboriginal interests that will be impacted by my decision. When aboriginal interests are raised that are outside my jurisdiction, I will endeavour to forward these interests for consideration by appropriate decision makers. Specific concerns identified by First Nations in relation to their aboriginal interests within the TFL are addressed in various sections of this rationale.

The AAC that I determine 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 my determination does not prescribe a particular plan of harvesting activity within TFL 33. It is also independent of any decisions by the Minister of Forests, Lands and Natural Resource Operations with respect to subsequent allocation of wood supply.

Overall, in making AAC determinations, I am mindful of my obligation as steward of the forested land 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 my responsibilities under the *Forest and Range Practices Act*.

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 (TSR) program for Timber Supply Areas (TSAs) and Tree Farm Licences (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 simulation model, a series of timber supply forecasts can be produced, reflecting different starting harvest levels, rates of decline or increase, and potential trade-offs 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 the base case 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 for a TSA 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 simulation 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 any adjustments to its predictions of timber supply must be made, if necessary, to more properly reflect the current situation.

Such adjustments are made on the basis of informed judgement using current, available information about forest management that may well have changed since the original information package was assembled. Forest management data are particularly subject to revision during periods of legislative or regulatory change, or during the implementation of new policies, procedures, guidelines or plans. Thus it is important to remember that while the timber supply analysis with which I am provided is integral to the considerations leading to the AAC determination, the AAC is not determined by calculation but by a synthesis of judgement and analysis in which numerous risks and uncertainties must be weighed. Depending upon the outcome of these considerations, the resulting AAC may or may not coincide with the base case forecast. Moreover, because some of the risks and uncertainties considered are qualitative in nature, once an AAC has been determined, further computer analysis of the combined considerations may not confirm or add precision to the AAC.

Timber supply analysis for TFL 33

The timber supply analysis for TFL 33 was completed in the year 2000 using Timberline Forest Inventory Consultants Limited's proprietary model Continuous Area Simulation of Harvesting and Forest Management (CASH6.2) under the direction of licensee staff. The harvest forecasts from this timber supply model were reviewed by Ministry of Forests, Lands and Natural Resource Operations staff, who advised me about any associated implications for the harvest projections.

For the purposes of this determination, I am mindful that the timber supply analysis was completed in 2000. In the analysis, sets of harvest forecasts for two management options were provided. The term "base case" in the analysis refers to a set of assumptions that pre-dated the Okanagan Shuswap Land and Resource Management Plan (OSLRMP). The second option provided was the "LRMP Base Option", and it was based on assumptions that followed the guidelines from the draft OSLRMP.

FLNR staff reviewed the information and assumptions used in the 2000 timber supply analysis as well as current information provided by district staff and the licensee about the analysis and current practices on TFL 33. Staff advise the LRMP Base Option provided in the timber supply analysis still reflects current biophysical information about the TFL area as well as current practice. Having considered this information and discussed it in detail with staff, I conclude that the licensee's 2000 timber supply analysis, in particular the LRMP Base Option with the updates provided to me regarding the assumptions used in the LRMP Base Option, provides a suitable basis from which to consider the timber supply for TFL 33 for this determination.

Since the OSLRMP is now in place and guiding the management of the TFL, I consider the "LRMP Base Option" to be the base case for this timber supply review. In this rationale document, all further references to "base case" are references to the "LRMP Base Option" in the 2000 analysis.

In my considerations that follow, I am also mindful that the starting point of the harvest forecasts provided in the 2000 analysis was January 1, 1999. Therefore this determination takes place about two years after the end of the first decade of the harvest forecasts provided in the analysis.

The base case forecasts that, starting in 1999, a harvest rate of 22 500 cubic metres per year could be maintained for 10 years followed by 10 percent reductions in the next two decades. From the perspective of the year 2011, the harvest projection suggests an initial harvest level of 20 250 cubic metres per year starting in 2009 followed by a reduction to 18 100 cubic metres per year in 2019 and a small increase to 18 750 cubic metres per year in 2079.

In the timber supply analysis, various sensitivity analyses were conducted to assess the potential implications for timber supply arising from uncertainty in data assumptions and estimates. 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 that the timber supply analysis information presented to me provides an adequate basis from which I can assess the timber supply for TFL 33 for this determination.

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

I have reviewed the information for all of the factors required 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 factors for which base case modelling assumptions have been accepted

***Forest Act* section and description**	**Factors accepted as modelled**
8(8)(a)(i) Composition of the forest and expected rate of growth	Inventory Initial distribution by species group Non-forest, non-productive reductions Non-commercial brush Inoperable reductions Existing roads, trails and landings Future roads, trails and landings Low productivity reduction Deciduous reduction ESA (soils) reductions Analysis units aggregation procedures Existing stand yields Regenerated stand yields Minimum harvestable ages
8(8)(a)(ii) Expected time for the forest to be re-established following denudation	Regeneration delay Not sufficiently restocked (NSR) Impediments to prompt regeneration

***Forest Act* section and description**	**Factors accepted as modelled**
8(8)(a)(iii) Silvicultural treatments to be applied	Regeneration Fertilization Juvenile spacing Silvicultural systems Commercial thinning
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste and breakage	Utilization standards Decay, waste and breakage
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for other purposes	Recreation considerations Identified wildlife species Riparian considerations Watershed considerations Adjacency/green-up considerations Stand level biodiversity (wildlife tree patches)
8(8)(a)(vi) Other information	Planning issues, Protected Area Strategy
8(8)(b) Short and long-term implications of alternative rates of timber harvesting from the area	
8(8)(d) Economic and social objectives of the government	Community dependence
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	Specific disease/pest problems Non-recoverable losses

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, I have stated below how I considered the information or issue raised in making my determination.

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

<u>Composition of the forest and expected rate of growth</u>

- *general comments on land base contributing to timber harvest*

For the timber supply analysis, the total area of the TFL is estimated to be 8366 hectares. Of this area, 7678 hectares (92 percent) is considered to be productive forest land.

As part of the process used to define the land base available for timber harvesting, a series of deductions were applied to the productive forest land base. These deductions account for the factors that effectively reduce the area available or suitable for timber harvesting due to ecological, economic or other reasons. In the base case for TFL 33, the

deductions resulted in a long-term timber harvesting land base of 6768 hectares. This area is 88 percent of the productive forest land base and 81 percent of the total TFL area.

In reviewing these deductions, I am aware that some areas may have more than one classification. To ensure accuracy in defining the timber harvesting land base, care has been taken to avoid any double-counting associated with overlapping objectives. Hence, a specific deduction for a given factor reported in the analysis or the AAC rationale does not necessarily reflect the total area with that classification; some portion of it may have been deducted earlier under another classification.

I accept the approach used in the analysis to estimate the land base contributing to the timber harvest. I note that while 721 hectares (10 percent) of the productive forest is unavailable for timber harvesting for a variety of reasons, these areas may contribute to alleviating forest cover constraints.

- *site productivity – site index*

The productivity of a site largely determines how quickly trees grow. Site productivity is quantified in forest inventory data in terms of site index which is based on tree height at reference age 50 years.

In the December 2000 AAC Rationale for TFL 33, the chief forester encouraged the licensee to obtain better site productivity information as he anticipated that, given TFL 33's productive forests in the ICH biogeoclimatic zone, localized information could indicate that site productivity is underestimated, which could serve to increase or stabilize projected timber supply.

In 2003, the licensee completed a localized Site Index Adjustment (SIA) study to improve site productivity and growth and yield estimates. In 2006, a Change Monitoring Inventory (CMI) confirmed the findings of the SIA study. Overall, the site indices for post-harvest regenerated stands was found to be about 30 percent higher than indicated for natural stands in the inventory.

Higher site productivity in post-harvest regenerated stands benefit timber supply in three ways:

- Increasing growth and yield of post-harvest stands;
- Reducing minimum harvestable age of post-harvest stands; and
- Shortening time needed for stands to reach green-up height and thus freeing mature stands for harvesting sooner.

The SIA results were not available for the 2000 analysis, but at the time, a series of sensitivity analyses were provided that explored the impacts on timber supply of variations in managed stand yields (increased/decreased by 10 percent) and minimum harvest age (increased/decreased by 10 years). Another sensitivity analysis was provided that explored the impact of reduced green-up height requirements which is comparable to shortening the time needed to reach green-up. Reviewing these sensitivity analyses, I note that in TFL 33, higher site productivity for post-harvest regenerated stands will have minimal impact on short-term timber supply but a positive impact on mid- and long-term timber supply.

Since there has not been a new timber supply analysis that incorporates the new site indices for post-harvest regenerated stands, the timber supply impact has not been quantified. However, the scientific rigour of the SIA and the CMI gives me confidence that future timber supply is greater than forecasted in the base case.

I conclude for this determination that timber supply in the mid- and long-term has been underestimated by an amount that is currently unquantified. I will take this into account as discussed under '**Reasons for Decision**'.

- *operational adjustment factors*

In the base case, all existing stands age 33 or less are assumed to be managed stands. For these stands, volume estimates were based on the ministry's Table Interpolation Program for Stand Yields version 4 (TIPSY).

TIPSY projections are initially based on ideal conditions, assuming full site occupancy and the absence of pests, diseases and significant brush competition. Two operational adjustment factors (OAFs) are applied to the TIPSY projections to approximate natural conditions: OAF 1 accounts for factors such as small stand openings, uneven tree distribution, and other factors that adversely affect yield curves across all ages; and, OAF 2 accounts for factors whose impacts increase over time such as decay, waste and breakage. The standard provincial OAF 1 of 15 percent and OAF 2 of five percent were applied in the base case.

In 2001, the licensee completed an OAF 1 survey to obtain a localized estimate of TFL 33's OAF 1. While not statistically sound, the samples indicated a much lower OAF 1 than the 15 percent value used in the 2000 analysis. The survey report recommended conducting statistically valid sampling on TFL 33. Subsequent sampling has not occurred but the licensee points out that the initial survey does point towards the possibility that OAF 1 could be lower than 15 percent and asserts that OAF 1 does not need to be higher than 15 percent.

The 2010 data package for the adjacent Okanagan Timber Supply Area recognizes that there continues to be much discussion regarding the potential impacts of root rot in fir-leading stands. In order to account for root-rot-related volume losses in the Okanagan TSA, an OAF 2 of 10 percent for fir-leading stands was assumed in the data package. TFL 33 has root-rot disease in its fir stands but there is no specific information that quantifies the problem or that supports a comparison with the Okanagan TSA. If TFL 33's OAF 2 was increased to 10 percent for fir-leading stands, I would expect a small decrease in the mid- and long-term timber supply.

I accept the OAF assumptions used in the base case as the best currently available information. However, the assumptions come with significant uncertainty that carries a risk of an overestimation of the mid- and long-term timber supply. I account for this uncertainty in '**Reasons for Decision**'.

I encourage the licensee to continue work on localized OAFs to quantify on-the-ground values as well as the risk of root-rot disease. A better understanding of these values and risks will support better modelling in the next timber supply analysis.

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

I accept the base case modelling assumptions for the factors considered under this section, as noted in Table 1.

(iii) silvicultural treatments to be applied to the area:

Silvicultural treatments

- *genetic improvement*

Genetically improved stock is currently being planted on the TFL and the licensee has committed to continue the practice. I have been informed by Tree Improvement Branch staff that genetic gains for the trees planted on TFL 33 are higher than assumed in the base case. Also, genetically improved seed is becoming more available than previously forecast. Higher genetic gains mean that the base case has underestimated timber volumes in the mid- and long-term. However the impact of the updated genetic gains on harvest levels will need to be determined in the next timber supply analysis, and it should incorporate the combined effect of all new information.

For this determination, I have accounted for an underestimation of an unquantified amount in the mid- and long-term timber supply due to genetic gains, as noted in '**Reasons for Decision**'.

(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:

- *log grades*

On April 1, 2006, a new log grade system was implemented for the BC Interior. Grades are now based on a log's size and quality without regard to whether it was alive or dead at harvest. Logs from dead trees that were previously considered grade 3 or grade 5 will now be charged to the AAC for cut control purposes.

Estimates of timber volume in the base case did not include these dead logs (dead potential). Data from inventory audit plots for TFL 33 indicate that dead potential volume increases the volume of stands by 6.6 percent. The licensee believes this estimate may be reasonable; however no harvest performance information is available to verify the 6.6 percent figure.

I am mindful that dead potential volume is now being charged to cut control and that therefore a reasonable adjustment is necessary in this AAC determination. Inventory audit results are often the best available information when adjusting the inventory for the log grade change in AAC determinations and for TFL 33 this is also the case. Therefore, I conclude that the short- and mid-term timber supply is underestimated by 6.6 percent due to the new log grades and I account for this in '**Reasons for Decision**'.

(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:

Constraints on the amount of timber

- *archaeological sites*

In the timber supply analysis no specific reductions were applied to account for cultural heritage sites. Reduction factors applied for wildlife tree patches and riparian management areas typically provide some accounting for cultural heritage resources. District staff are satisfied that the analysis assumptions were appropriate given that no sites have yet been identified on TFL 33. Staff indicate that some archaeological sites exist along the shoreline of Shuswap Lake but they are outside the TFL boundary.

Should any sites be identified on the TFL 33 area in the future, they can be explicitly accounted for in future analyses. For this determination, I am satisfied that the analysis assumptions were based on the best available information regarding cultural resources, and make no adjustments on this account.

- *deer winter range*

In the base case completed in 2000, deer winter range occupied 2755 hectares of the timber harvesting land base, predominantly in areas constrained by visual quality objectives (VQO). Twenty-six percent of the deer winter range was in the VQO-retention zone and 74 percent in the VQO-partial retention zone. The analysis showed that deer winter range was not constraining timber supply under the then-current management practices due to the more constraining requirements of the overlapping visual quality objectives.

As of 2006, the area identified in TFL 33 as deer winter range was reduced to 725 hectares, but more intense management requirements are applied to that smaller area. A government action regulation (GAR) order for deer winter range provides clarity on how the area needs to be managed. However, there is uncertainty about the impact of the changes on timber supply. On their own, the new management requirements could reduce the short- and mid-term timber supply. However, given the reduced size of the winter range and the fact that it is still within the VQO area, I expect that any impact will be minor and in the mid-term.

I conclude that the changes in deer winter range assumptions represent uncertainty with a risk of a minor overestimation in the base case mid-term timber supply as noted in '**Reasons for Decision**'.

- *caribou winter range*

Caribou habitat requirements were modelled in the 2000 base case. Over 1600 hectares of caribou winter habitat were mapped in the THLB. Sixty-five percent was outside of identified VQO zones and so represented a significant constraint on harvesting. To meet early and late winter caribou cover constraints, 265 and 200 hectares of THLB were modelled as being permanently reserved.

Subsequent to the 2000 determination, new direction from the Species at Risk Coordination Office and a new study to identify critical habitat has resulted in caribou winter range within TFL 33 of only 150 hectares. Approximately 70 hectares of this overlaps old growth management areas (OGMA) which are excluded from the THLB as discussed below. The constraints associated with managing 80 hectares of caribou winter range outside of OGMAs are dramatically less than what was modelled in the 2000 base case. A sensitivity analysis provided at that time projected that timber supply can increase by 10 percent to 20 percent in the short- and mid-term when caribou winter range requirements are completely removed. Caribou habitat must still be managed appropriately but the habitat is now mostly located within the excluded OGMAs.

I conclude that the base case short- and mid-term timber supply has been underestimated in the range of 10 to 20 percent due to changes in the way caribou winter range habitat requirements are managed. I have accounted for this in '**Reasons for Decision**'.

- *grizzly bear habitat*

The base case did not identify special management zones for grizzly bear habitat. Despite the absence of modelling provisions, I note that there are local grizzly bear considerations that the licensee is managing on an operational level. I am satisfied that there is enough flexibility and buffer in timber supply to continue operational management of grizzly bear forage requirements without making adjustments in this AAC determination.

- *visual quality considerations*

TFL 33 is located adjacent to and upslope of Shuswap Lake where visual quality is an important resource value. A majority of the TFL land base is considered visually sensitive. In the base case, LRMP Visual Quality Objectives (VQOs) were modelled to take into account operational activities that impact visual quality such as cutblock size, silvicultural system, visual absorption capability and viewing distance.

In the December 16, 2005 Chief Forester Order (AAC determination postponement) for TFL 33, the deputy chief forester acknowledged that the licensee was completing an integrated visual design project for TFL 33. The deputy chief forester expected this information to be incorporated into the timber supply analysis for the next AAC determination and that as a result, a more reliable estimate of timber supply on TFL 33 would be available for the decision maker's consideration.

District staff have confirmed that the licensee continues to manage visual quality as prescribed by the LRMP and is implementing small-block harvesting. I note that the licensee has completed the integrated visual design project on TFL 33. According to the project, future visual impacts associated with forest harvesting can be managed in a four-pass harvest plan with visual design applied to first- and second-pass blocks. The licensee intends to use the project as a guide for operational planning and implementation. While the integrated visual design project does not directly assess harvest flow projections, I am encouraged that in the project it was possible to lay out blocks over 40 to 50 years (1st and 2nd passes) that in theory meet visual quality objectives.

I have reviewed the information and procedures used in the analysis regarding the impact of visual quality considerations, and I have considered the success of current practices in meeting visual quality objectives. I accept that in the short- and mid-term, the base case provides appropriate consideration for visual quality under current management practices.

- *landscape-level biodiversity – OGMAs*

Achieving landscape-level biodiversity objectives involves maintaining forests with a variety of patch sizes, seral stages and forest stand attributes and structures, across a variety of ecosystems and landscapes. A major consideration in managing for biodiversity at the landscape level is leaving sufficient and reasonably located patches of old-growth forests for species that are dependent on or are strongly associated with old-growth forests.

In the base case, old-growth constraints were modelled by applying forest cover requirements for old-seral forest in an aspatial manner. In October 2004, draft Old Growth Management Areas (OGMAs) were approved, spatially identifying old-seral forests that needed to be retained. Although technically draft, I note that the licensee has committed in its Forest Stewardship Plan to use the approved draft OGMA coverage to locate OGMAs within its forest development units. Using these spatial OGMAs to replace the base case's aspatial old-growth requirements may have some impact on timber supply, but the impact, if present, should be minor. I am satisfied that the aspatial representation in the base case approximates the spatial OGMAs.

I find that the information used and methodologies followed in the base case are appropriate for assessing the impact of landscape-level biodiversity.

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

Other considerations

- *First Nations considerations*

The Crown has a duty to consult with, and accommodate if necessary, those First Nations for whom it has knowledge of the potential existence of aboriginal interests that may be impacted by a proposed 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 and treaty rights 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.

TFL 33 overlaps with the asserted traditional territories of the Adams Lake Indian Band (ALIB), Little Shuswap Indian Band (LSIB), Neskonlith Indian Band (NIB) and Splatsin First Nation (SpFN). All of these First Nations are members of the Lakes Division of the Shuswap Nation. The Lakes Division combined asserted traditional territories are located around Shuswap Lake. TFL 33 is not immediately adjacent to Shuswap Lake because it is separated from the shoreline by marine parks and private land; however it is still within the asserted traditional territories of the above First Nations.

Of the four First Nations listed above, all but the LSIB have a Forest and Range Agreement (FRA) or a Forest and Range Opportunities (FRO) agreement in place. These agreements provide for revenue sharing and forest tenure opportunities and contain provisions for consultation on administrative decisions including AAC determinations. These consultation provisions were followed by Thompson Okanagan Regional staff for this determination. LSIB's Forest and Range Agreement expired on March 31, 2010, and the agreements for the remaining three First Nations will expire within the next two years. The Province recently introduced a new Forestry Consultation and Revenue Sharing Agreement (FCRSA) to replace expired FROs and FRAs. At the time of this AAC determination, the FLNR is in negotiations regarding the new FCRSAs with First Nations who have expired agreements.

These four First Nations are not involved in the B.C. Treaty Commission process.

Available information on First Nations' aboriginal interests, including the traditional use study, Land Traditions of the Neskonlith and Adams Lake Shuswap, were reviewed. From this information, several areas of interest and archaeological sites were identified in the vicinity of TFL 33, however only three of these sites overlap the TFL. These areas of overlap are small and include a berry picking area and a sacred site. An abandoned village site is within 10 kilometres of the TFL. Since these areas of interest have small overlap with TFL 33, they do not affect timber supply and therefore I have made no adjustments to timber supply on that account. The remaining areas of interest identified in the traditional use study are located in the provincial marine park or on private land found between TFL 33 and the shores of Amnesty Arm of Shuswap Lake. Based on this review of available aboriginal interest information and an analysis of the potential impacts the AAC decision might have on those interests, the Thompson Okanagan Regional staff undertook consultation at the normal level of the consultation spectrum as outlined in the *Haida* decision.

Consultation with the four First Nations on this timber supply review for TFL 33 was initiated by the Thompson Okanagan Regional staff on January 10, 2011 and concluded on March 25, 2011. The consultation process also included information sharing by the licensee, who provided a letter with general information about the analysis and offered access to the report, *Information Related to an AAC Determination for TFL #33*. The details of these processes follow.

Thompson Okanagan Regional staff sent a letter to the above-mentioned First Nations to initiate consultation on January 10, 2011. In the letter regional staff asked the First Nations to provide information about their aboriginal interests that may be affected by this AAC decision and offered to meet with the First Nations. Following, on January 31, 2011, the licensee sent the report, "*Information related to an AAC determination for TFL 33*" to the First Nations along with a letter requesting their review and input by March 25, 2011. Subsequently, on February 8, 2011, Thompson Okanagan Regional staff sent follow-up letters to the First Nations to remind them of this process.

As a result of previous consultation on operational decisions, I am aware of First Nations having raised concerns about aboriginal rights such as hunting and cultural gathering in TFL 33. First Nations have also requested to overlay the traditional use study of Neskonlith and Adams Lake on operational plans for TFL 33 and to be informed on

proposed operational decisions. Thompson Okanagan Regional staff also informed me that, because this information is sensitive, the licensee has not been informed of the aboriginal interest areas including archaeological features, a berry picking area, and a sacred site. In addition to these concerns, during the information sharing process, the Splatsin First Nation indicated to the licensee that it would like greater involvement in operational planning for TFL 33. I encourage the licensee to work with the Splatsin First Nation and the other three First Nations to ensure their involvement in operational planning and that their aboriginal interest information is incorporated. Regarding the area used for berry picking, I encourage the licensee to work with First Nations to ensure they have continued access to this resource.

As part of the licensee's Forest Stewardship Plan (FSP) a commitment was made by the licensee to meet with First Nations annually about operational planning on TFL 33. I encourage the licensee to ensure these meetings take place and that any aboriginal interests identified be recognized in the licensee's FSP and its operational activities. Should any additional measures be necessary to accommodate these interests, they can be accounted for in future determinations.

No specific information was presented to me that quantifies the amount of wildlife or wildlife habitat that is needed to address First Nations' hunting needs, however deer winter range, old growth management areas and areas managed for caribou on TFL 33 serve to address this interest to some extent.

From my review of the consultation summary, I conclude that reasonable efforts were made by Thompson Okanagan Regional staff and the licensee to inform First Nations about the timber supply review and engage them in consultation regarding their aboriginal interests and how these interests may be affected by this AAC determination. Based on the review of aboriginal interest information and an assessment of potential impacts my AAC decision may have on those interests, I am satisfied that the level of consultation has been adequate. Furthermore, I note that FLNR regional and district staff continue to be available to meet and consult with First Nations on specific issues that can be addressed at the operational planning level. I am satisfied that a process is in place to address concerns related to forestry operations that may affect aboriginal interests. 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, I am prepared to revisit this determination sooner than the 10 years required by legislation.

- *cut control performance*

The cut control statement for TFL 33 for the period ending December 31, 2009 indicates that the sum of the AACs available to the licensee for the period was 97 750 cubic metres and the volume of timber harvested by the licensee was 17 078 cubic metres, resulting in an undercut of 80 672 cubic metres. I understand that the Thompson/Okanagan Region has initiated a process to potentially sell 80 000 cubic metres of this undercut from TFL 33.

By virtue of starting this timber supply review after the first decade of the base case, I have already accounted for the full volume harvest of the AAC during that period,

whether by the licensee or a third party harvesting the undercut. If the undercut is not sold, the unharvested volume will be accounted for in the forest inventory used in the next timber supply review.

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

Alternative rates of harvest

The nature of the transition from harvesting old-growth forests to harvesting second-growth forests is a major consideration in determining AACs in many parts of the province. In the short term, the presence of large timber volumes in older forests often permits harvesting above long-term levels without jeopardizing future timber supply. In keeping with the objectives of good forest stewardship, AACs in British Columbia have been and continue to be determined to ensure that current and mid-term harvest levels will be compatible with a smooth transition toward usually (but not always) the lower long-term harvest level. Thus, timber supply should remain sufficiently stable so that there will be no inordinately adverse impacts on current or future generations. To achieve this, the AAC determined must not be so high as to cause later disruptive shortfalls in supply nor so low as to cause immediate social and economic impacts that are not required to maintain forest productivity and future harvest stability.

No alternative flows for the base case were provided in the 2000 timber supply analysis. Examining the shape of the base case, I observe that an even-flow over the forecast period of 19 000 cubic metres per year can be achieved; and any increase over the 2000 base case initial harvest level (i.e., 22 500 cubic metres per year) would exacerbate mid-term falldown. This leads me to conclude that any unsupported increase in the short term will have a negative impact on the mid-term and I have considered this in my determination.

(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;

Economic and social objectives

- *Minister's letter*

The Minister of Forests and Range (now the Minister of Forests, Lands and Natural Resource Operations) has expressed the economic and social objectives of the Crown for the province in a letter to the chief forester, dated July 4, 2006 (attached as Appendix 3). The letter stresses the importance of a stable timber supply to maintain a competitive and sustainable forest industry while being mindful of other forest values. In respect of this, in the base case projection with which I have been provided for reference in this determination and in consideration of alternative rates of harvest, a primary objective in the harvest flow has been to attain a stable, long-term harvest level where the growing stock also stabilizes. In my determination, I have been mindful of the need for the allowable harvest in the short term to remain consistent with maintaining the integrity of the timber supply projection throughout the planning horizon. 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's letter of July 4, 2006, also asks that I 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.

Local objectives for land and resource use in TFL 33 are captured in the *Order Establishing Objectives Set by Government in the Area Covered by the Okanagan-Shuswap Land and Resource Management Plan* and in orders under the *Government Actions Regulation* of the *Forest and Range Practices Act*. My considerations in this determination reflected the directions as provided by these orders. The consultation process for First Nations, and the feedback received, is addressed above under First Nations considerations'. In addition, the licensee engaged in a public review process. No input was received.

I am satisfied that this determination accords with the objectives of government as expressed by the Minister.

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

I accept the base case modelling assumptions for the factors considered under this section, as noted in Table 1.

Reasons for Decision

In reaching my AAC determination for TFL 33, I have considered all of the factors required under Section 8 of the *Forest Act* and I have reasoned as follows.

The AAC in effect prior to this AAC determination was 21 000 cubic metres. In the base case for this timber supply review, starting from the point representing the year 2011, a harvest of 20 250 cubic metres per year (four percent less compared to 21 000) is maintained for 10 years before declining by 10 percent to 18 100 cubic metres per year in the third to seventh decades.

I am satisfied that the assumptions applied in the base case forecast for the majority of the factors applicable to TFL 33 are appropriate. Following is my consideration of those factors for which I find it necessary to adjust the base case forecast or take into account uncertainties and other implications.

In determining an AAC for TFL 33, I have identified a number of factors which, considered separately, indicate that the timber supply may be either greater or less than that projected in the base case (i.e. 20 250 cubic metres per year for the next 10 years). Some of these factors have been quantified and their impact on the harvest level assessed with reliability. Others cannot be reliably quantified at this time but influence timber supply by adding an element of risk or uncertainty.

I have identified the following factors in my considerations as indicating that the timber supply projected in the base case is underestimated:

- *log grade*: Due to changes to the interior log grades, dead but potentially useful volume that exists in a stand is now charged to the AAC. As this dead potential volume was not accounted for in the forest inventory nor in the model used to

estimate stand volume, the projected base case timber supply is underestimated by 6.6 percent in the short- and mid-term.

- *site productivity*: Studies in 2003 and 2006 support localized site indices for post-harvest regenerated stands that are significantly higher than indicated for natural stands in the inventory. In the absence of a new timber supply analysis, the impact on the harvest forecast has not been quantified. For this determination, the new information on site productivity indicates that the mid- and long-term timber supply is underestimated by an unquantified but potentially significant amount.
- *genetic improvement:* Genetic gains are expected to be higher than assumed in the base case. As a result mid- and long-term timber supply is underestimated by an unquantified amount.
- *caribou winter range:* Recent reductions in the amount of caribou habitat identified on TFL 33 have removed significant constraints from timber harvesting. I conclude that the short- and mid-term timber supply is underestimated by 10 percent to 20 percent.

I have identified the following factor in my considerations as indicating that the timber supply projected in the base case may be overestimated:

- *deer winter range:* In 2006, the area identified as deer winter range was reduced but more intense management was required resulting in a risk of an unquantified but minor overestimation in the mid-term timber supply.

One factor introduces additional uncertainty to the base case harvest forecast:

- *operational adjustment factors:* While I accept that the OAF assumptions used in the base case are currently the best available, significant uncertainty is demonstrated by the licensee's survey suggesting the assumed OAF 1 may be high, and the emerging science about the impact of root disease suggesting the assumed OAF 2 may be low. I view the risk associated with OAF 2 as significant as it could result in an overestimation of the mid- and long-term timber supply.

From reviewing all of my considerations above, including the preceding list of factors identifying the under- and overestimations in the projected timber supply, I have reasoned and concluded as follows.

I have identified two factors that suggest short-term timber supply may be significantly underestimated in the base case; log grade changes (6.6 percent) and caribou winter range assumptions (10 to 20 percent).

In considering the mid- to long-term, I note that the unquantified but significant underestimation in timber supply due to underestimates in site productivity and genetic improvement is somewhat moderated by the overestimation of timber supply associated with the assumptions applied for deer winter range and operational adjustment factors. When comparing the order of magnitude of the under and overestimations of timber supply resulting from these factors, I conclude that, on balance, mid-term timber supply is improved to the extent that the decline in harvest level forecasted in the base case may not materialize.

The cumulative impact of the factors I have identified in this section indicates sufficient additional timber supply is available to allow for a higher initial harvest level than was projected in the base case. While I am encouraged that higher harvest rates are possible in the short- and mid-term, I am mindful that the effect on timber supply from the changes in these factors is not precisely quantified for this determination. I am also mindful of sensitivity analyses that indicate that projected harvest levels can be very sensitive to changes in some of the assumptions, such as those for visually sensitive areas.

Therefore, after carefully examining each of the relevant factors under Section 8 of the *Forest Act* for TFL 33, the assumptions made in deriving the base case harvest projection in the timber supply analysis, and factors that may have led to an over- or underestimated timber supply in the short-, mid- and long-term, I find it appropriate to maintain the AAC for TFL 33 at 21 000 cubic metres at this time.

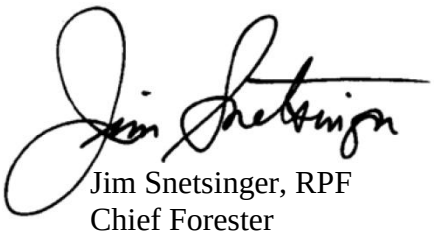
Determination

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 economic and social objectives of the Crown, can be best achieved in TFL 33 by establishing an AAC of 21 000 cubic metres.

This determination is effective March 31, 2011, and will remain in effect until a new AAC is determined, which must take place within 10 years of the effective 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 I am prepared to revisit this determination sooner than the 10 years required by legislation.

I note that an updated timber supply analysis that incorporates new information about the factors I have discussed in this rationale has potential for improving the short-term timber supply and therefore might provide the impetus for the licensee to undertake a timber supply analysis sooner than in 10 years. I am prepared to consider a new AAC determination based on such an analysis, but I expect that all assumptions in the new analysis would be based on the best available information, including a better understanding of the impact and risks of root disease and other components of the operational adjustment factors.



Jim Snetsinger, RPF
Chief Forester

March 31, 2011

Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (consolidated to March 16, 2011), 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 March 16, 2011) 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 sector

in 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

BRITISH COLUMBIA

JUL 0 4 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.

Minister of Forests and Range and Minister Responsible for Housing

Office of the Minister

Mailing Address:
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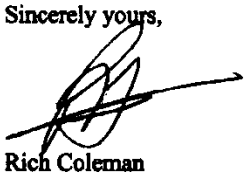
Jim Snetsinger

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,



Rich Coleman
Minister