BRITISH COLUMBIA
MINISTRY OF FORESTS, MINES AND LANDS

Tree Farm Licence 23

held by

International Forest Products Ltd.

Rationale for Allowable Annual Cut (AAC) Determination

Effective November 30, 2010

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Deputy 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 deputy chief forester in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for Tree Farm License 23. This document also identifies where new or better information is needed for incorporation into 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 is reproduced in full as Appendix 1 of this document.

In accordance with Section 23(3) of the *Interpretation Act*, the deputy chief forester is expressly authorized to carry out the functions of the chief forester, which include those required under Section 8 of the *Forest Act.*

Description of TFL 23

TFL 23 is located in the Southern Interior Forest Region, in the southeast corner of the province adjacent to the Arrow Lakes. The TFL is situated south of Glacier National Park, and extends from Valhalla Provincial Park in the east to Monashee Provincial Park in the west. The TFL has been held by International Forest Products Ltd. (Interfor) since May 2008 and is administered by the Arrow-Boundary Forest District.

Located within the interior wet-belt, TFL 23 includes the biogeoclimatic zones of ICH (interior cedar-hemlock, IDF (interior Douglas-fir), and ESSF (Engelmann spruce-subalpine fir). Commercial tree species include Douglas-fir, western hemlock, Engelmann and white spruce, lodgepole pine, sub-alpine fir (balsam), western larch and western redcedar.

The total area within the TFL boundary is 551 471 hectares, of which 261 701 hectares are considered productive forest. The most recent determination was a postponement order in 2007, which maintained the AAC at 680 000 cubic metres and includes a partition of 56 000 cubic metres for 'aerial' operable areas.

New AAC determination

Effective November 30, 2010, the new AAC for TFL 23 will be 626 503 cubic metres, which includes 176 503 cubic metres assigned to British Columbia Timber Sales (BCTS) operating areas. This AAC also includes a partition of 25 000 cubic metres attributable to the 'aerial' operability areas.

When the BCTS operating area has been deleted, the AAC for TFL 23 will be reduced to 450 000 cubic metres under the *Allowable Annual Cut Administration Regulation*, and will continue to include 25 000 cubic metres attributable to the 'aerial' operability areas.

This AAC will remain in effect until a new AAC is determined, which must take place within ten years of this determination.

Information sources used in the AAC determination

- Natural stand yield tables for TFL 23, accepted by *former Ministry of Forests and Range (MFR) Forest Analysis and Inventory Branch, March 26, 2009;
- Managed stand yield tables for TFL 23, accepted by MFR Research Branch, March 25, 2009;
- Demonstrating growth and yield adjustments (TIPSY OAFs) for Armillaria root disease in a timber supply analysis, Stearns-Smith et al, 2004;
- Timber Supply Analysis Information Package – TFL 23, prepared by Timberline Natural Resource Group Ltd., accepted by MFR Forest Analysis and Inventory Branch, March 31, 2009;

- *Timber Supply Analysis Report – TFL 23*, prepared by Timberline Natural Resource Group Ltd., accepted by MFR Forest Analysis and Inventory Branch, August 11, 2009;
- Vegetation Resources Inventory Strategic Inventory Plan (VSIP) for Tree Farm Licence 23, Rural Forestry International Ltd., 2007;
- TFL 23 Inventory Audit, Ministry of Forest and Range (MFR), 1996;
- TFL 23 Vegetation Resources Inventory Attribute Adjustment, Sterling Wood Group Inc., 2002;
- Summary of dead potential volume estimates for management units within the Northern and Southern Interior Forest Regions, MFR, 2006;
- Report on Public Sharing and First Nations Referrals, Interfor, August 6, 2009;
- Consultation Summary – TFL 23 TSR 3 Allowable Annual Cut Determination – International Forest Products Ltd., Arrow Boundary Forest District, September 14, 2009;
- Demonstrating growth and yield adjustments (TIPSY OAFs) for Armillaria root disease in a timber supply analysis, Stearns-Smith et al, 2004;
- Visual Quality Objectives established under GAR Section 7(1) dated December 23, 2005;
- *Order – Ungulate Winter Range #U4-014 Mountain Caribou – Central Kootenay Planning Unit*, Ministry of Environment, December 19, 2008;
- Mountain Caribou Recovery Implementation Plan – Update to the Mountain Caribou Progress Board, Ministry of Environment, February 2009;
- *Forest Practices Code of British Columbia Act* current to March 17, 2010, and regulations, amendments, and guidebooks;
- *Forest and Range Practices Act and regulations*, current to March 17, 2010;
- *Ministry of Forests and Range Act*, consolidated to March 17, 2010;
- *Forestry Revitalization Act*, current to March 17, 2010;
- *Allowable Annual Cut Administration Regulation*, deposited March 6, 2009
- *Kootenay-Boundary Higher Level Plan Order* (HLPO), October 26, 2002;
- Formal Establishment of Landscape Units and Biodiversity Emphasis Objectives for the Arrow Forest District established by the District Manager, Arrow District dated April 8, 1998;
- Letter from the Minister of Forests to the Chief Forester, dated July 4, 2006, stating the Crown's economic and social objectives;
- *TFL 23 Chief Forester Order* (postponement), Oct 1, 2007, Deputy Chief Forester, and
- Technical review and evaluation of information provided through correspondence and communication with staff from MFR and MoE, including the AAC determination meeting held in Victoria, on September 29, 2009.

* Note: throughout this document there is reference to previous work under the Ministry of Forests and Range (MFR), now formally known as the Ministry of Forests, Mines and Lands and the Ministry of Natural Resource Operations.

Role and limitations of the technical information used

Section 8 of the *Forest Act* requires the chief forester or his designate to consider biophysical, social and economic information. A timber supply analysis, and the inventory and growth and yield data used as inputs to the analysis, typically form the major body of technical information used in AAC determinations. Timber supply analyses and associated inventory information are concerned primarily with management practices and biophysical factors, such as the rate of timber growth and definition of the land base considered available for timber harvesting.

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 variations in physical, biological, and social conditions. Ongoing scientific studies of ecosystem dynamics will help reduce some of this uncertainty.

Furthermore, technical analytical methods such as 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 problems 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 the AAC for TFL 23, I have considered known limitations of the technical information provided. I am satisfied that the information provided forms a suitable basis for my determination.

Guiding principles for AAC determinations

The chief forester has expressed the importance of consistency of judgement in making AAC determinations. I also recognize the need for consistency of approach, and am familiar with the guiding principles that the chief forester has employed in making AAC determinations. I find these principles to be reasonable and appropriate and I have adopted them as described below in making my AAC determination for TFL 23.

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. This principle is central to many of the guiding principles that follow.

In considering the various factors that Section 8 of the *Forest Act* requires the chief forester to take into account in determining AACs, I will 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 the chief forester takes this uncertainty into account to the extent possible in context of the best available information. In making my determination for TFL 23, as deputy chief forester, I have followed the same approach.

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. Although I do not consider these areas to contribute any harvestable volume to the timber supply in AAC determinations, they may contribute indirectly by providing forest cover requirements 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.

For TFL 23, I will consider the Kootenay-Boundary Higher Level Plan Order and other orders under the Government Actions Regulation of the *Forest and Range Practices Act*, which guide many aspects of current management, and as such will be reflected where appropriate in my determination. Also, 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 (TSR) 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 Ac*t, 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.

The AAC that I determine should not be construed as limiting the Crown's obligations under the Court's 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 23. It is also independent of any decisions by the Minister of Forests, Mines and Lands with respect to subsequent allocation of wood supply.

Overall, in making AAC determinations, I am mindful of my obligation as steward of the forest land of British Columbia, of the mandate of the Ministry of Forests, Mines and Lands 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 (FRPA)* and the *Forest 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 Program 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 simulation 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 for a TFL 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 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 for TFL 23

The 2009 timber supply analysis for TFL 23 was prepared by Timberline Natural Resource Group Ltd. (Timberline) using their proprietary simulation model CASH6 (Critical Analysis by Simulation of Harvesting, Version 6.21) under the direction of the licensee. The forecasts from this timber supply

model were reviewed by ministry staff, who advised me about the function of this model, and any associated implications with the harvest projections.

The timber supply analysis incorporated assumptions about 'the best available information' as assessed by the licensee. These included requirements to meet the Kootenay-Boundary Higher Level Plan Order, and information about land base and timber yields for TFL 23. These assumptions are discussed in the information package and in the timber supply analysis documentation.

In the base case proposed by the licensee, an initial harvest level of 450 000 cubic metres per year was projected for the first two decades before decreasing by 11 percent to 402 000 cubic metres per year. In decade 10 the projected harvest level increased to the long-term level of 518 000 cubic metres per year. However I note that the total growing stock declines towards the end of the forecast period suggesting that the modelled long-term harvest level cannot be sustained indefinitely.

The initial harvest level represents about a 34-percent reduction from the current AAC. Since the 1998 timber supply analysis, there have been significant land base changes that have not been reflected in the harvest level set for TFL 23. Therefore in developing the new base case forecast, the licensee updated the land base contributing to timber supply by excluding areas for old growth management areas, private lands, areas associated with parks and boundary adjustments, and areas yet to be deleted from the TFL for BCTS. As the BCTS areas have not yet been officially deleted from the TFL, I have considered the area and harvest level — 176 503 cubic metres assigned to BCTS — in determining an appropriate harvest level for the TFL, as discussed further in ***Reasons for decisions***.

In order to assess the harvest level changes required to stabilize the long-term growing stock, the licensee prepared an alternative harvest forecast. In this scenario, an initial harvest level of 452 000 cubic metres per year could be maintained for two decades before declining to a mid-term level of 404 000 cubic metres per year. A long-term harvest level of 492 000 cubic metres per year, which is 5 percent lower than projected in the base case, was reached after 10 decades. Growing stock at the end of the 40-decade harvest projection was relatively stable.

Since this alternative scenario demonstrates that a relatively stable growing stock is possible at the end of the forecast period and there are no significant differences in the initial and midterm harvest levels projected between the base case and alternative forecasts, I accept that the licensee's proposed base case forms an adequate basis from which I can assess the timber supply for determining a new AAC for TFL 23.

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 modelling assumptions in the base case have been accepted

Forest Act **section and description**	**Factors accepted as modelled**
8(8)(a)(i) Composition of the forest and its expected rate of growth	• Forest cover inventory • Private land, non –TFL, parkland • Non- commercial, non-productive • Existing roads, trails and landings • Low productivity, uneconomic and deciduous leading stands • Environmentally sensitive areas • Site productivity • Natural and managed stand yields • Minimum merchantability standards
8(8)(a)(ii) Expected time for the forest to be re-established following denudation	• Regeneration delays • Non-satisfactorily restocked
8(8)(a)(iii) Silviculture treatments to be applied	• Incremental silviculture • Silvicultural systems
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 from the area that reasonably can be expected by use of the area for purposes other than timber production	• Non-timber resource inventories • Cultural heritage resources • Recreation considerations • Moose and mule deer winter range • Riparian considerations • Watershed considerations • Visual quality considerations • Adjacency considerations • Stand-level biodiversity • Range resources
8(8)(a)(vi) Any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber	• Fish landscape unit • Kootenay-Boundary Higher Level Plan
8(8)(b) Short and long-term implications of alternative rates of timber harvesting from the area	• Alternate rates of harvest
8(8)(c) Repealed: 2003-31-2	
8(8)(d) Economic and social objectives of the government	• Community dependence
8(8)(e) Abnormal infestations, devastations and major salvage programs	• Non-recoverable losses

For other factors, where more uncertainty exists, or where public or First Nations' input indicates contention regarding the information used, the modelling techniques, or some other aspect under consideration, I have stated below how I considered the information or the issues 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

Land base contributing to timber harvesting

- general comments

The data compiled by Interfor for this timber supply analysis shows a total area of 551 471 hectares for TFL 23. The productive forest is 261 701 hectares or 47 percent of the total area. After deductions for areas that are not available for harvesting due to economic, social or ecological reasons, the resultant timber harvesting land base (THLB) is estimated to be 144 623 hectares or about 55 percent of the productive land-base. The THLB derived in this analysis is about 36 percent smaller than in the 1998 timber supply analysis, in which the THLB was 224 702 hectares. This difference—as noted above in *Timber supply analysis for TFL 23*— is primarily due to the removal of areas for old growth management areas, schedule 'A' lands, areas associated with parks and boundary adjustments, and lands yet to be transferred to BCTS.

- British Columbia Timber Sales (BCTS) areas

Prior to 2003, 80 700 cubic metres of the TFL 23 AAC were reserved to government under section 35(1)(h) of the *Forest Act*. In 2003, the B.C. government introduced the *Forestry Revitalization Act* to achieve a number of government objectives. One of these objectives was to strengthen the province's market-based timber pricing system by enhancing the cost and price data for Crown timber by making more timber volume available to the BCTS program. As part of this initiative, effective March 31, 2005, the former Minister of Forests and Range reserved a further 95 803 cubic metres from the TFL 23 AAC under section 3(3) of the *Forestry Revitalization Act.* As a result, the total volume reserved to government is now 176 503 cubic metres, and currently all of this volume is assigned to BCTS.

Following the AAC reservations on TFL 23 under the *Forestry Revitalization Act*, government and licensee staff agreed to an area to be assigned to BCTS operations that, if deleted from the TFL, would represent the total government reservations as noted above. On the expectation this area would be deleted before this AAC determination, the licensee excluded the area, totalling about 160 000 hectares, from contributing to the base case forecast.

However at the time of this AAC determination, the deletion of the BCTS area has not been finalized. Nonetheless I have a high-level of certainty the size of the area will not change and the deletion from TFL 23 will soon be complete. Consequently, for this determination I am prepared to accept the assumption used in the base case forecast that the BCTS area is deleted from the TFL.

In the interim until such time as the BCTS area has been officially deleted from the TFL, for the purposes of my determination, I have considered the area and annual harvest rate of 176 503 cubic metres in determining an appropriate harvest level for the TFL, as discussed further in ***Reasons for decisions***. In the event the actual area deleted is significantly different from that assumed in the

analysis to the extent that it impacts timber supply on the remainder of TFL 23, I am prepared to revisit this determination.

- *operability classes*

Terrain characteristics, access and economic criteria typically affect the areas on which the licensee may potentially conduct harvesting operations. For the timber supply analysis, the licensee employed four operability classes to define areas physically and economically accessible to harvesting operations. The four operability classes are: 'conventional', comprise terrain accessible using ground-based equipment; 'immature above the operability line', areas with immature stands that will be suitable for harvesting in the future as they mature; 'aerial', which denotes areas where helicopters or long-line systems are required; and 'inaccessible', which denotes areas not available for harvesting because of physical or economic limitations.

In the timber supply analysis, the licensee excluded the 'inaccessible' areas from contributing to the timber harvesting land base —71 258 hectares after previous deductions. As the current partition level is 56 000 cubic metres per year based on a larger land base, in the analysis the licensee updated the target level for those areas classified as 'aerial,' which resulted in a steady forecast level of 25 000 cubic metres per year as part of the total harvest level for TFL 23 over the forecast period.

During the past several years, actual harvesting in the aerial area has been about 13 000 cubic metres per year or about half of the new target level. The licensee maintains that this recent performance demonstrates that the company can successfully operate in these areas. While the licensee has demonstrated operations in those areas classified as 'aerial', district staff continue to express concern that harvesting operations will be challenging under present economic conditions in these types of areas.

I have reviewed the criteria and assumptions applied in the analysis and find them to be reasonable. However, I note that in the event that no future harvesting is conducted in areas classified as 'aerial', short-term timber supply could be impacted. A sensitivity analysis that examines the impact of a 10-percent reduction to the THLB, results in a corresponding timber supply reduction of between 8 to 10 percent over the entire forecast period. To reduce the risk and uncertainly to timber supply, I have further discussed the partition level and implications below under *Partitioned component of the harvest*. Regarding the assumptions for conventional operability, I accept the information used in the base case as the best available and suitable for this determination.

- *future roads, trails and landings*

For this timber supply analysis, 4 percent of the area in all stands greater than 30 years old was removed to account for the permanent loss of productive areas due to the establishment of future roads. In the analysis, these stands contributed volume to the first entry but not on subsequent entries. The deduction of 4 percent is based on field sampling and the analysis of road widths used in site plans.

District staff noted the estimated deduction for future roads of 4 percent is lower than the 7.4 percent applied in the Arrow TSA timber supply analysis. Although the licensee advised that skid trails and landings are considered temporary access structures that will be rehabilitated, this has not been a consistent or historical practice in the TFL. Given the likelihood that future trails and landings, if not promptly rehabilitated, will reduce the future productive land base, I have noted a small but unquantified overestimation of timber supply in the mid to long term, and I have reflected this below, in my ***Reasons for decision.***

- *sensitive terrain areas*

Sensitive terrain mapping dating back to the late 1990's was used for the timber supply analysis and shows that potentially unstable or unstable terrain covers about 78 348 hectares. In the analysis, 8

percent of the potentially unstable and 50 percent of the unstable areas were deducted from contributing to the THLB. After other deductions, the total area removed to account for sensitive terrain was 6818 hectares. While district staff do not have any evidence the mapped area are not still current, they have expressed concern the percentage reduction factors are too low, especially compared to the adjacent Arrow TSA. Applying similar percentage reductions from the Arrow TSA to TFL 23 resulted in a further 3 percent reduction to the THLB.

I note that in previous rationales for TFL 23, there have been instructions to refine the sensitive terrain mapping and associated reduction factors. I recommend that prior to the next timber supply analysis and determination the terrain mapping be reviewed; and that any updates are noted and accounted for in the analysis.

I have reviewed the information and accounting of sensitive terrain in the base case. Given the likelihood that unstable terrain has been underestimated, I conclude the base case is overestimated in the short to long term by up to 3 percent, and I will account for this below in ***Reasons for decision.***

- *operational adjustment factor (OAF) to account for Armillaria*

For developing the managed stand yield tables, the licensee applied the standard OAF1 of 15 percent and OAF2 of 5 percent to all existing and future managed stands. OAF 1 is applied to account for small, non-productive land, irregular tree spacing, losses from endemic pests and disease, and other factors affecting the growth of managed stands in natural conditions. OAF 2 is applied to account for age-related factors such as decay and for waste and breakage factors during harvest. These remain unchanged from those used in the previous timber supply analysis. The yield tables for this analysis were approved by MFR Research Branch in March 2009.

District staff indicate the standard OAF2 of 5 percent has been a significant issue in other management units in the district and that an OAF that reflects Armillaria root disease such as described in the paper "*Demonstrating growth and yield adjustments (TIPSY OAFs) for Armillaria root disease in a timber supply analysis" (Stearns-Smith et al, 2004)* should be considered for the determination. Timber supply sensitivity analysis that includes losses for Armillaria in the Arrow and Boundary TSAs show the short-term timber supply is not impacted, however after 50 to 70 years, timber supply decreases by 7 to 8 percent.

Given the high likelihood of the presence of Armillaria within the TFL due to its location in the Southern Interior, there is a risk the mid- to long-term timber supply may be overestimated by 7 to 8 percent as shown by sensitivity analyses for the adjacent Arrow and Boundary TSAs. Based on this information and my knowledge of root diseases in the Southern Interior, I will account for the risk to timber supply as discussed below in my ***Reasons for decision***.

- *genetic gains*

The licensee has indicated that seed orchard production of Class A seed is expected to increase in quantity and genetic quality, such that within 5 years a genetic gain of 12 percent is anticipated. Of the total trees planted in the TFL, the average number of Class A seed trees has averaged about 50 percent and the licensee estimates this will increase to 75 percent within 5 years.

I note the possibility of long-term timber supply gains from increased use of Class A seed. However, given there is uncertainty as to how much genetically improved seed the licensee will be able to utilize in the short to mid- term, and that the impact on short to mid- term timber supply is negligible, I have not accounted for this potential upward pressure at this time. If new information can be substantiated regarding the consistent use of Class A seed, then I encourage the licensee to examine the mid to long-term benefits and reflect accurate levels in future timber supply analyses.

(iv) 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 grade adjustments*

A new log grade system for the interior of British Columbia was implemented in April 2006 to recognize the volume potential from trees impacted by the mountain pine beetle epidemic. Harvest volumes from grade 3 (dead and dry sawlog) and grade 5 (dead and dry lumber reject) logs were previously excluded from AAC cut control summaries. Log grading is now based on the log size and quality at the time of scaling regardless of whether the tree it came from was alive or dead at harvest. The volumes from these grades now contribute to the total volume calculation and are charged against the AAC. Therefore, the volume from the dead component of stands (dead potential) must be accounted for in my AAC determination.

For a ministry study (March 2006) of dead potential volume in the Southern Interior, inventory audit data was available for the majority of the management units (TSAs and TFLs). This data showed that for TFL 23 the overall dead potential volume is about 5 percent.

I recognize the need to account for dead potential volumes in my determination and I am satisfied the audit results represent the best estimate of this volume for TFL 23. On this account, I have considered the short-term timber supply to be underestimated by up to 5 percent, as discussed further below, in my ***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

Integrated resource management objectives

The Ministry of Forests, Mines and Lands is required under the *Ministry of Forests and Range Act* to manage, protect and conserve the forest and range resources of the Crown and to plan the use of these resources 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. Accordingly, the extent to which integrated resource management (IRM) objectives for various forest resources and values affect timber supply must be considered in AAC determinations.

- *identified wildlife*

IRM objectives can include those for identified wildlife, i.e. endangered, threatened, vulnerable or regionally significant species that have been designated as requiring special management. Grizzly bear is an identified wildlife species in TFL 23 as recognized by the established wildlife habitat area (WHA #4-095). There are other small WHAs, however there are no future WHAs planned at this time.

The WHA for grizzly bears was inadvertently missed during information package preparation and consequently not modelled in the base case. The area within the THLB is 362 hectares, representing 0.3 percent of the THLB. Although this WHA was not accounted for, it only represents a small proportion of the THLB and thus a small overestimation of timber supply across the forecast period.

Government has recognized a timber supply budget for the implementation of the Identified Wildlife Management Strategy (IWMS) of up to one percent of the provincial THLB. Where required in other management units, I have accounted for up to a one-percent timber supply impact attributable to established WHAs to reflect IWMS.

For this determination, I consider this approach to also be appropriate, particularly as I note that MP 10 lists a number of red-listed and blue-listed species. In reviewing this factor I have accounted for up to a one-percent overestimation of timber supply for this TFL and I have noted this below, in my ***Reasons for decision***.

- *mountain caribou*

For TFL 23, mountain caribou habitat is legally protected under *Government Action Regulation* (GAR) *Order #U4-014*, which was approved on December 19, 2008. For the base case, the licensee excluded established mountain caribou habitat from contributing to timber supply. Although the total TFL area protected for mountain caribou is about 90 062 hectares, it was only necessary to deduct 8687 hectares from contributing to the THLB since much of the area overlaps with the area assigned to BCTS and non-productive areas.

The licensee indicated the area deducted for caribou habitat in the analysis is the same as for the GAR Order. A sensitivity analysis reflecting caribou constraints that were in place before the GAR order showed the order reduced timber supply by about 4000 cubic metres per year over the first 100 years, which indicates flexibility to management for caribou without significantly impacting timber supply. I accept the information used in the base case appropriately reflects the exclusion of caribou habitat for this determination.

- *old-growth management areas*

The retention of an appropriate area of old growth forest is a key consideration to conserving landscape-level biodiversity. The Kootenay-Boundary Higher Level Plan Order (KBHLPO) identifies old and mature seral forest objectives by biogeoclimatic sub-zone and landscape unit, including those in TFL 23. Draft old growth management areas (OGMAs) have been spatially delineated within the TFL to meet the requirements of KBHLPO and excluding these areas from the THLB reflects current operational practices.

Staff have noted that although the timber supply analysis appropriately excluded the draft OGMAs from the THLB, it did not appear that there was recognition of the old-growth contribution within the 34 135 hectares covered by the GAR order for mountain caribou habitat. There is likely some overlap since some of the mountain caribou habitat likely meets the KBHLPO old seral requirements. In sensitivity analysis, decreasing the constraints for OGMAs increased timber supply over the forecast period. However, the actual impact cannot be quantified without careful examination of the potential overlap and I would encourage the licensee to assess and account for this factor for the next determination. Nonetheless for this determination, I acknowledge this upward pressure on timber supply as discussed further below, in my ***Reasons for decision***.

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

Other Information

- *First Nations considerations*

TFL 23 falls within the asserted traditional territories of the following First Nations groups: Ktunaxa Nation Council, Okanagan Nation Alliance, Lower Similkameen Indian Band, Okanagan Indian Band, Osoyoos Indian Band, Penticton Indian Band, Westbank First Nation, Shuswap Nation Tribal Council, Shuswap Indian Band, and the Splatsin First Nation.

Of the ten groups listed above, all have a Forest and Range Agreement (FRA), a Forest and Range Opportunity (FRO) agreement, or an Interim Measures Agreement Extension (IMAE) in place except for the Okanagan Nation Alliance and the Shuswap Nation Tribal Council. These agreements provide for revenue sharing and forest tenure opportunities and contain provisions for consultation on administrative decisions including AAC determinations, which were followed by district staff. Of these agreements, three have recently expired and three more will be expiring in the upcoming year. 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 Ministry of

Natural Resource Operations is in negotiations regarding the new FCRSAs with those First Nations who have expired agreements.

The Ktunaxa Nation Council is involved in the B.C. Treaty Commission process. The area currently being negotiated as part of their treaty does not extend into TFL 23. As of this date, the Ktunaxa Nation Council and the Province are still in negotiations regarding a final Land Package agreement. I am also aware that the Ktunaxa Nation Council recently signed a Strategic Engagement Agreement (SEA) with the Province which will include new provisions for consultation. Currently however, the consultation process under the new SEA is in transition and at the time of this AAC determination, consulting with the Ktunaxa Nation Council continues as per the current provincial model and the provisions outlined in their FRO.

Information sharing with the ten potentially affected First Nations regarding the TFL 23 timber supply review was initiated by the licensee in January 2009. A referral letter and the Information Package were sent to each group requesting their review and for comments to be received by March 2009. The Analysis Report was then sent to all First Nations groups in May, 2009.

The Arrow Boundary Forest District began consultation with the ten First Nations in February 2009. On June 2, 2009 the district sent a letter to all First Nations indicating that the timber supply analysis is now available for review and that a preliminary assessment of their aboriginal interests based on the information available to MFR has been completed. The district asked First Nations to provide any information on how their aboriginal interests may be impacted by an AAC determination for TFL 23. A follow-up e-mail was sent on June 29, 2010 and a reminder letter on July 15, 2009.

As detailed in the Consultation Summary – TFL 23 TSR 3 Allowable Annual Cut Determination – International Forest Products Ltd, district staff were in contact with some of the First Nations on several occasions during the consultation period. Also as detailed in the summary, letters were received from the Shuswap Nation Tribal Council, Lower Similkameen Indian Band, and the Westbank First Nation. Responses to these letters are included in the consultation summary. The content of these letters did not provide specific aboriginal interests pertaining to TFL 23 that would therefore require consideration in this determination.

Aresponse was received from the Okanagan Nation Alliance in a letter to the chief forester that referenced TFL 23 along with other management unit areas. Following further correspondence between the Okanagan Nation Alliance and former Ministry of Forests and Range staff as detailed in the consultation summary, the Okanagan Nation Alliance expressed an interest to be involved in the upcoming Boundary and Arrow timber supply reviews, and they did not provide specific comments regarding TFL 23.

From my review of the consultation summary, I believe the Arrow Boundary Forest District and the licensee have made reasonable efforts to engage First Nations in consultation respecting their aboriginal interests and how these interests may be affected by this AAC determination. Although the preliminary assessment was not formally shared with First Nations at the beginning of the timber supply review process, the findings from the assessment were referenced in subsequent consultation letters. Based on this, I agree with Arrow Boundary district staff that the level of consultation has been adequate. The scope of the consultation reflected and was commensurate with MFR's assessment of the aboriginal interests asserted by the relevant First Nations within TFL 23.

Furthermore, 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, I am prepared to revisit this determination sooner than ten years as required by legislation.

- partitioned component of the harvest

The *Forest Act* provides for the authority to specify certain portions of an AAC for different types of timber and terrain in different parts of a TFL or TSA. Partitioning an AAC ensures that harvesting is appropriately distributed in forest types, operability classes, or distinct areas.

The current AAC includes a partition to harvest 56 000 cubic metres from areas classified as 'aerial' that are included in the THLB. Due to the change in the size of TFL 23 with the removal of areas such as the pending deletion of the BCTS area, as discussed under *operability classes*—I will reset the partition level in this determination.

I have reviewed the licensee's recent harvesting performance in the partition with district staff. For stands associated with the 'aerial' operable areas, a review of Interfor's performance suggests that the licensee has had difficulty maintaining operations in these areas over the last four years. Nonetheless, I note the intention of the partition was to provide the licensee with an opportunity to demonstrate harvesting performance in this difficult economic area. I believe that continuing the partition for aerial operable areas will both support this opportunity while at the same time ensure that harvesting is not overly concentrated in the conventional land base.

The analysis demonstrates that areas classified as 'aerial' (as discussed under *operability classes*) contribute about 25 000 cubic metres per year to the annual harvest on TFL 23 over the forecast period. I have considered the information and have determined a new partitioned harvest for these areas as discussed further under ***Reasons for decision***.

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

Alternative harvest flows

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.

In addition to the base case, two alternative harvest flows were provided by the licensee. These alternative flows represent tradeoffs between short, mid and long-term harvest levels.

The first alternative flow was prepared to examine the harvest level changes required to stabilize the long-term growing stock (see *Timber supply analysis for TFL 23*).

In the second alternative flow, the objective was to examine the effect on timber supply of maximizing the initial harvest level. In this scenario, the initial harvest level was increased by 18 percent to 530 000 cubic metres per year. This was maintained for one decade before declining to 475 500 cubic metres per year. In the mid term, harvest levels declined to 426 000 cubic metres (after decade two), 382 000 cubic metres (after decade three) and then further declined to 343 000 cubic metres per year (after decade four). After decade 10, harvest levels increased to a long-term harvest level of 523 000 cubic metres per year.

I have considered these alternatives in my determination. I note that in the first projection the initial and mid-term harvest levels are virtually identical to those in the base case. The second projection indicates that an accelerated initial rate of harvest results in a mid-term harvest level 15 percent lower than projected in the base case.

(c) the nature, production capabilities and timber requirements of established and proposed timber processing facilities;

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

(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;

Minister's letter

The Minister of Forests and Range 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 an alternative forecast to the base case projection, the primary objective was to attain a stable, long-term harvest level where the growing stock becomes stable, neither increasing nor decreasing over time. In my determination, I have been mindful of the need for the allowable harvest level in the short term to remain consistent with maintaining the integrity of the timber supply projection throughout the planning horizon. The alternative forecast demonstrates the feasibility of attaining this objective. 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.

- *local objectives*

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 23 are captured in the Kootenay Boundary Higher Level Plan Order and in orders under the *Government Actions Regulation* of the *Forest and Range Practices Act.* The base case assumptions 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'.

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.

As noted in Table 1, I accept as modelled the factors considered under this section.

Reasons for decision

In reaching the AAC determination for TFL 23 I have considered all the factors required under Section 8 of the *Forest Act*. This includes the information addressed in the timber supply analysis and the discussions throughout this document. I have reasoned as follows.

For the base case, the initial harvest level of 450 000 cubic metres per year can be maintained for two decades. The forecast level then steps down by 11 percent to 402 000 cubic metres per year from decades three to nine. The forecast then increases to the long-term harvest level of 518 000 cubic metres per year for decades 11 to 25. I am satisfied the assumptions applied in the base case forecast for the majority of the factors applicable to TFL 23 are appropriate. Following is my consideration of those factors for which I consider it necessary to further take into account their implications to timber supply as projected in the base case forecast.

In determining an AAC for TFL 23, my considerations have identified a number of factors which, 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 the assessment of timber supply by introducing an element of risk or uncertainty, but cannot be reliably quantified at the time of the determination and must be accounted for in more general terms.

In my considerations, the following factors have been identified as reasons why the timber supply projected in the base case may have been *over*estimated:

- *future trails and landings*: although trails and landings are considered temporary access structures that will be rehabilitated, if they are not promptly rehabilitated, they will reduce the future productive land base for the TFL. I conclude this represents a small, but unquantified overestimation of timber supply in the mid to long term.
- *'aerial' operable areas*: the timber supply contribution to the base case forecast is about 25 000 cubic metres per year over the forecast period. There has been limited performance in these areas and if not harvested in the future will create a downward pressure in the short to long term.
- *terrain stability deductions:* there is a high likelihood the accounting of sensitive terrain in the base case has been underestimated. This represents a downward pressure on the timber supply of up to 3 percent in the short to long term.
- *operational adjustment factor (OAF2) for Armillaria:* there was no accounting for Armillaria in the base case forecast. Based on local studies in adjacent and similar units that have accounted for Armillaria losses, I have concluded this factor represents a downward pressure on the timber supply in the mid to long term of between 7 and 8 percent.
- *identified wildlife:* wildlife habitat areas for grizzly bears were inadvertently missed during the preparation of the information package and consequently not modelled in the base case. The grizzy bear areas represent about 0.3 percent (362 hectares) of the total THLB, thus only a small overestimation of timber supply. However, there are several red-listed and blue listed species in the TFL and I conclude that to appropriately account for identified wildlife species in the TFL, I will account for an overestimation of one percent over the forecast period.

I have identified several factors in my considerations that indicate the timber supply projected in the base case may have been *under*estimated:

- *Genetic gains:* I note the possibility of increased long-term timber supply gains from increased use of Class A seed, which represents an unquantified upwards pressure in the long term.

- *Log grades:* The base case did not account for changes in the log grade system which now includes dead potential volume. I therefore conclude the short- and mid-term timber supply has been underestimated by 5 percent.
- *Old growth management areas*: as both the draft old growth management areas and the mountain caribou areas were deducted from contributing to the THLB without consideration of their potential overlap, I consider this to represent an unqualified upward pressure on the short- to long-term timber supply.

I am also mindful of the following factors, which although *not* described in detail in this rationale introduce unquantified uncertainty to the base case.

- *Phase 1 inventory:* the current Phase 1 inventory is very outdated as it originates from the 1960's when a different system and different standards were in effect. District staff consider the uncertainty around the forest inventory a significant issue in the TSR and it has been recommended that a new Phase 1 inventory be done prior to the next determination.
- *Small pine problem forest type:* Within TFL 23 there is uncertainty as to how many small-diameter, low-volume pine stands are within the THLB. While district staff approximate 23 000 hectares of this problem forest type (PFT), the actual area of such stands has not been quantified. The licensee has demonstrated some harvesting in these types of stands and district staff plan to track areas that the licensee proposes are unfeasible.
- *Site productivity - BCG zone of ESSFwc4:* I note there is a preliminary study about the ESSFwc4 BCG zone that is examining the actual area classified as this variant, how representative the current SIBEC site index is, and what other issues such as brush will influence forest growth within this zone.
- *Cultural heritage resources:* A query of the on-line archaeological database Remote Access Archaeological Data (RAAD) that is maintained by the Ministry of Tourism, Culture and the Arts indicated 13 archaeological sites within the TFL boundary. All of these are located on, or near lakeshores. I am aware of these areas and believe that they can be considered during operational planning.
- *Fish Landscape Unit:* District staff noted that access to this landscape unit area is currently limited because the bridge installed in September 2008 by the mining community does not meet the standards required for logging trucks. This landscape unit represents about 8 percent (30 000 cubic metres) of the total AAC for the TFL.

In consideration of the above mentioned influences, I observe there are some quantified and unquantified uncertainties affecting timber supply. The only quantified *under*estimation is the adjustment of volumes for log grades, which acts to increase the short- to long-term harvest level by up to 5 percent. However, I note there are two additional unquantified factors that could potential increase the mid- to long-term timber supply. First there is the potential gains if more genetically improved seed is utilized, and secondly there may be some overlap with the old growth contributions within the caribou habitat to somewhat offset old growth constraints on the remaining areas within the TFL.

The quantified *over*estimations include accounting for the identified wildlife management areas and terrain stability areas, which combined result in decreasing the short-term harvest level by up to 4 percent. The factors that represent potential further downward pressures over the longer term include future trails and landings, aerial operable areas, operational adjustment factors for Armillaria, small pine forest types, and the Fish Landscape Unit. These latter factors, while not quantified, do represent a risk to the future timber supplies for TFL 23 and I encourage the licensee to track these issues as I have noted below, under the Implementation section.

Taken together, the quantified underestimation of 5 percent and the quantified overestimation of 4 percent affecting the projected short-term timber supply indicate that on balance, there is no immediate need to adjust the harvest level from that projected in the base case.

As the BCTS areas have not yet been officially deleted from the TFL, I have considered the area and harvest level — 176 503 cubic metres assigned to BCTS — in determining an appropriate harvest level for the TFL.

When I take into account the upward and downward pressures, sensitivity analyses, uncertainties and risks, I conclude that it is appropriate to determine an AAC for TFL 23 of 626 503 cubic metres until such time as the BCTS areas and volume have been removed from the TFL; thereafter the AAC shall be 450 000 cubic metres, which includes a partition for the aerial operable class of 25 000 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 ten years and that reflects current management practices as well as the socioeconomic objectives of the Crown, can be best achieved in TFL 23 by establishing an AAC of 626 503 cubic metres, which includes 176 503 cubic metres assigned to BCTS operating areas and a partition of 25 000 cubic metres attributable to the 'aerial' operability areas.

Once the BCTS area and volume have been removed from TFL 23, the effective AAC for TFL 23 will be 450 000 cubic metres, including 25 000 cubic metres attributable to the 'aerial' operability areas.

This determination is effective November 30, 2010 and will remain in effect until a new AAC is determined, which must take place within ten years after 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 ten years required by legislation.

Implementation

In the period following this decision and leading to the subsequent determination, I encourage the licensee staff to undertake the tasks noted below, and as discussed throughout this rationale document. I recognize the ability of staff and the licensee to undertake these projects is dependent on available resources including funding. However these projects are important to help reduce the risk and uncertainty associated with key factors that affect the timber supply in TFL 23 and thus I recommend the licensee undertake the following:

- Complete an updated Phase 1 inventory before the next determination.
- Monitor the volume of timber supply harvested from small pine problem forest type areas, and if appropriate, remove non-economic types from contributing to the timber supply for the next determination.
- Review the terrain stability mapping to ensure it is current and ensure the percent reduction factors for sensitive terrain reflect operating conditions.
- Investigate and monitor performance in managed second-growth stands compared to projections assumed in TIPSY, particularly in the higher elevation ESSFwc4 BCG zones.

- Develop an OAF2 that appropriately accounts for root diseases such as Armillaria in the TFL.
- As noted in the last rationale, monitor the timber volumes and areas harvested from the 'aerial' operability class to ensure their contributions are accurately represented in the THLB.

Melanie Boyce, RPF
Deputy Chief Forester

November 30, 2010

Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, current to November 3, 2010, reads as follows:

Allowable annual cut

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.

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

Section 4 of the *Ministry of Forests and Range Act* (current to November 3, 2010) 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.

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

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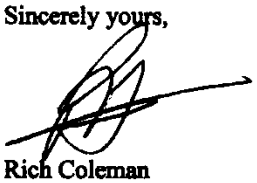
Jim Snetsinger

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