

**BRITISH COLUMBIA
MINISTRY OF FORESTS AND RANGE**

Tree Farm Licence 26
held by
The Corporation of the District of Mission

**Rationale for
Allowable Annual Cut (AAC)
Determination**

Effective March 26, 2010

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Objective of this document

This document provides an accounting of the factors I have considered and the rationale I have employed in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for Tree Farm Licence (TFL) 26. This document also identifies where new or better information is needed for incorporation in future determinations.

Statutory framework

Section 8 of the *Forest Act* requires the chief forester to consider a number of specified factors in determining AACs for timber supply areas (TSAs) and TFLs. Section 8 of the *Forest Act* 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*.

Overview of the TFL

TFL 26 is held by the Corporation of the District of Mission and is administered by the Ministry of Forests and Range (MFR) Chilliwack Forest District office located in Chilliwack. The TFL is situated just north of the community of Mission. The total area of the TFL is 10 564 hectares, of which 7236 hectares constitute the long-term timber harvesting land base. The most recent AAC was determined in 2001 at 45 000 cubic metres. In May 2006, the AAC determination was postponed through a chief forester order for an additional three years.

New AAC determination

Effective March 26th, 2010 the AAC for TFL 26 is maintained at 45 000 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

Information considered in determining the AAC for TFL 26 includes:

- Statement of Management Objectives, Options and Procedures (SMOOP) for Management Plan (MP) No. 8, Tree Farm Licence 26, accepted May 6, 1999;
- Information Package: Tree Farm Licence 26, Management Plan No. 8, Corporation of the District of Mission, accepted July 3, 2001;
- Existing stand yield tables for TFL 26, accepted by MFR Forest Analysis and Inventory Branch, March 23, 2000;
- Managed stand yield tables and site index curves, accepted by MFR Research Branch, March 23, 1999;
- Timber Supply Analysis: Tree Farm Licence 26, Management Plan No. 8 Corporation of the District of Mission, accepted July 3, 2001;
- Draft Management Plan No. 8: TFL 26, Corporation of the District of Mission, submitted March 1, 2001;
- TFL 26, Twenty-Year Plan, Corporation of the District of Mission, accepted July 3, 2001;
- A comparison of FSOS and FSSIM results for timber supply analysis using a benchmark dataset, Hugh Hamilton Ltd. (now Forest Ecosystems Solutions Ltd.), August 14, 1998;
- *Identified Wildlife Management Strategy. Accounts and measures for managing identified wildlife*: Coast Forest Region. Version 2004. Province of BC;

- *Order Establishing Provincial Non-Spatial Old Growth Objectives*, effective June 30 2004;
- Landscape Unit Planning Guide, MFR and Ministry of Environment (MoE), March 1999;
- Higher Level Plans: Policy and Procedures, MFR and MoE, December, 1996;
- Forest Practices Code of British Columbia Act (Forest Practices Code), consolidated to March 2001;
- Forest Practices Code of British Columbia Act Regulations and Amendments, current as of March 2001;
- Forest Practices Code of British Columbia Guidebooks, MFR and MoE;
- *Forest and Range Practices Act* and amendments, 2009;
- *Forest and Range Practices Act – Regulations and amendments*, 2009;
- ‘*Summary of dead potential volume estimates for management units within the Coastal Forest Region*’, draft report, April 2006;
- Letter from the Minister of Forests and Range to the Chief Forester, dated July 4, 2006, stating the Crown's economic and social objectives for the province;
- *Tree Farm Licence 26 Rationale for Allowable Annual Cut Determination*; Ken Baker, Deputy Chief Forester, Effective August 1, 2001;
- Technical review and evaluation of current operating conditions on TFL 26 through comprehensive discussions with MFR and MoE staff, notably at the AAC determination meeting held in Victoria on May 2, 2001;
- *District of Mission Sustainable Forest Management Plan for Mission Tree Farm Licence #26*, March 31, 2003;
- *Terrestrial Ecosystem Mapping of the Mission Tree Farm*, B.A. Blackwell and Associates Ltd, March 31, 2003;
- *District of Mission Tree Farm Licence No. 26 Annual Report*, 2007;
- *District of Mission, Mission Tree Farm Licence No. 26 Forest Stewardship Plan, 2007 – 2012*, January 2007;
- Licensee’s letter dated April 26, 2005 requesting the postponement of the AAC determination for TFL 26;
- *Chief Forester Order Respecting an AAC Determination for Tree Farm Licence No. 26*, Henry Benskin, Deputy Chief Forester, May 29, 2006;
- *Information related to a new AAC determination for Mission TFL 26*, District of Mission, November 18, 2009;
- *First Nations Consultation Summary – TFL 26 Allowable Annual Cut Determination*, Chilliwack Forest District, February 26, 2010;
- Review and evaluation of current operating conditions on TFL 26 through comprehensive discussions with Chilliwack Forest District staff, including the AAC determination meeting held in Victoria, B.C. on February 8, 2010.

Role and limitations of the technical information used

Section 8 of the *Forest Act* requires the chief forester to consider biophysical, social and economic information when determining AACs. 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 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 26 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

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 26.

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 26, 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 (THLB). 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* (FRPA). 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 (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 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.

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 26. It is also independent of any decisions by the Minister of Forests and Range 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 and Range 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, 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 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 judgement, 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 judgement and analysis in which numerous risks and uncertainties are weighed. Depending upon the outcome of these considerations, the AAC determined may or may not coincide with the base case forecast. Judgements that in part may be based on uncertain information are essentially qualitative in nature and, as such, are subject to an element of risk. Consequently, once an AAC has been determined, no additional precision or validation would be gained by attempting a computer analysis of the combined considerations.

Timber supply analysis

The timber supply analysis for TFL 26 was prepared in 2001 using the timber supply model Forest Simulation and Optimization System (FSOS) by the forestry consulting firm Forest Ecosystems Solutions Limited in conjunction with staff of the Corporation of the District of Mission.

FSOS is a spatially-explicit computer model that can operate either as a simulation model or an optimization model. Forest Ecosystems Solution Limited used the simulation function of FSOS to generate the base case harvest forecast, and the optimization function of FSOS to develop the 20-year plan.

A benchmarking study was conducted in order to validate FSOS for use as a timber supply model. Using a standard data set, the consultant compared results of FSOS simulation forecasts with those generated using the BCFS timber supply model Forest Service Simulator (FSSIM).

Based on the results of the benchmarking study and the review by BCFS staff, as well as my own experience reviewing results from similar models, I am satisfied that the simulation function of FSOS is capable of providing an appropriate projection of timber supply.

For the purposes of this determination, I am mindful the timber supply analysis was completed in 2001. MFR staff have reviewed the information and assumptions used in the timber supply analysis as well as current information provided in 2009 by the licensee about the 2001 analysis and current practices on TFL 26. Staff advise the base case 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 2001 base case forecast suitably reflects current management practices.

Where I specifically identify uncertainty in the considerations that follow, I have included several instructions in this rationale for the licensee, to facilitate better information prior to the next determination for TFL 26. In my considerations I am also mindful that this determination takes place at the end of the first decade of the harvest forecasts provided in the analysis.

The base case harvest forecast demonstrates that an initial harvest level of 43 168 cubic metres per year could be maintained for 90 years, before increasing by approximately nine percent to 46 877 cubic metres per year for 80 years. The harvest forecast then increases by approximately seven percent to the long-term harvest level of 50 186 cubic metres per year. The harvest levels presented in the base case do not include any volume contribution from deciduous trees and are net of unsalvaged losses. The initial harvest level in the base case harvest forecast of 43 168 cubic metres per year is about four percent below the current AAC for the TFL.

In the timber supply analysis, various sensitivity analyses were conducted to assess the potential implications and risk to timber supply arising from uncertainty in data assumptions. These analyses have also assisted me in considering the factors leading to my determination. As discussed and quantified throughout this rationale, and in consideration of the items described above, I am satisfied the information presented to me provides an adequate basis from which I can assess the current timber supply for TFL 26 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 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	Non-ownership and non-productive areas Non-forested areas Non-commercial brush Economic and physical operability Non-merchantable stands Environmentally sensitive areas Deciduous stands Existing roads, trails and landings Future roads, trails and landings Forest inventory Dead potential volume estimates Age class distribution Species profile Aggregation procedures Volume estimates for existing stands Operational adjustment factors Minimum merchantability standards Harvest profile/harvest sequencing
8(8)(a)(ii) Expected time that it will take the forest to become re-established following denudation	Regeneration delay Not-satisfactorily-restocked areas Regeneration
8(8)(a)(iii) Silvicultural treatments to be applied	Use of select seed Juvenile spacing Silvicultural systems Commercial thinning
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste, and breakage	Decay, waste and breakage
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for purposes other than timber production	Non-timber resource inventories Recreation resources Riparian habitat Visually sensitive areas Cutblock adjacency/green-up Stand level biodiversity
8(8)(a)(vi) Any other information	Twenty-year plan Partitioned component of the harvest
8(8)(d) Economic and social objectives of the government	Planning considerations Proposed management options Employment and community dependence
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	Unsalvaged losses

For other factors, where more uncertainty exists, or where public or First Nations' input suggests 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 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,**

Land base contributing to timber harvesting

- general comments

For the timber supply analysis, the total area of the TFL was estimated to be 10 564 hectares using the information from the licensee's inventory file. Of this area, 9878 hectares (94 percent) was considered to be productive forest land.

As part of the process used to define the timber harvesting land base (i.e., the land base estimated to be biologically and economically available for harvesting), a series of deductions were applied to the productive forest land base. These deductions account for the factors that effectively reduce the suitability or availability of the productive forest area for harvest due to ecological or economic reasons. In the base case for TFL 26, the deductions resulted in a long-term timber harvesting land base of 7236 hectares. This area is about 68 percent of the productive forest land base.

In the time since the 2001 timber supply analysis was completed, three instruments removed areas from TFL 26. The land base removals total about 26 hectares, resulting in a total TFL area at the time of this determination of about 10 538 hectares.

Staff indicate that the majority of this area was removed to allow for the construction of a municipal landfill. Another area of just over one hectare was removed to enable the sale of an adjacent parcel of Crown land. The proportion of the 26 hectares removed that is considered to be timber harvesting land base is not known.

I have reviewed the information and note the total area removed is small and amounts to less than .2 percent of the total land base. I am satisfied the impact to the timber harvesting land base and thus timber supply is negligible and I have made no adjustments on this account.

- geographic area deductions

In the determination of the timber harvesting land base for the base case, approximately 138 hectares were deducted from the productive forest land base to account for the Cannell Lake watershed. This area was not considered to contribute to timber supply. My consideration of this deduction is discussed later in this document under '*water resources*'.

Expected rate of growth

- site productivity estimates

At the time of the timber supply analysis, no information was available for adjusting local site productivity estimates for the stands on TFL 26. The unadjusted site indices from the inventory file were used in the base case to project growth for all stands. A re-inventory of the stands on TFL 26 was

completed in 1988 and 1989 and the attributes for most stocked stands were revised at that time, including site index assignments. This information was used in the analysis.

Sensitivity analyses to evaluate differing assumptions for site productivity were completed. I am mindful of the results of one of the sensitivity analyses in particular, in which the site indices for managed stands were adjusted using provincial SIBEC results.

The default SIBEC values were used for each BEC variant on the TFL and an area-weighted site index was calculated and applied to each analysis unit. Application of the SIBEC-revised site indices showed an increase in short-term timber supply of about 23 percent to 53 256 cubic metres per year. A long-term level of 57 069 cubic metres per year was attained after nine decades and maintained for the remainder of the analysis horizon. This represented an increase of 22 percent and 14 percent, respectively, over the mid- and long-term supplies projected in the base case.

However, the SIBEC adjustment was applied to a stand only if it resulted in a higher site index than the site index already on the inventory file; otherwise, the original inventory site index was used. Research Branch staff noted that the SIBEC adjustments should have been applied in all cases. This affected 1240 hectares or about 17 percent of the timber harvesting land base. Because of the approach used, the sensitivity analysis likely overestimates the potential timber supply gains. Research Branch staff suggest the true adjustment likely falls between these results and that of another sensitivity analysis conducted using OGSI adjustments, that showed no impact to timber supply because so few stands on the timber harvesting land base were older than 140 years of age and thus eligible for an adjustment.

At the 2001 determination for TFL 26, the uncertainty around the available information about site productivity was noted and the licensee was encouraged to collect localized site productivity data for use in the next determination.

In March 2003, a Terrestrial Ecosystem Mapping (TEM) project was completed for the entire TFL. This project provides detailed ecological information for the TFL land base. The TEM mapping enables preliminary site index comparisons using published SIBEC site indices for the site series on the TFL. The TEM project was completed to provincial standards. However, in order for the TEM mapping to provide more definitive estimates of site productivity and to be used as a basis for site productivity adjustments in a timber supply analysis, additional field data must be collected and an accuracy and quality assessment must be completed. The licensee notes that this has not yet been completed.

I have considered the information regarding the site productivity estimates for TFL 26. I congratulate the licensee for completing the TEM mapping work as it provides local information that is a basis for a number of operational and strategic processes.

However, I am aware that without the final quality assurance stage, the site productivity for stands on the TFL is still subject to a similar level of uncertainty as for the 2001 determination.

Accurate information about site productivity affects a number of other assumptions in timber supply analysis. In addition to better predictions of volumes for managed stands, it also provides better information about the time it takes stands to achieve green-up height or meet other forest cover requirements, as well as the minimum ages at which stands can be harvested. There are some compelling reasons to have better information about the productivity of sites.

In the absence of site specific information, I look to the results of the sensitivity analysis in which the provincial SIBEC adjustments were applied to stands. I am mindful of the bias in the modelling approach in this analysis for 17 percent of the timber harvesting land base. The results of the sensitivity analysis show the timber supply is potentially greater in the short term as well as in the long term on this account.

I conclude for this determination that timber supply has been underestimated by an amount that is currently unquantifiable, but within a range between 0 and 23 percent. I will take this into account as discussed later in this document under '**Reasons for Decision**'.

Given the extent of the work already completed in support of improved site productivity information, and the potential implications for the timber supply on the TFL, I encourage the licensee to complete the work to verify the information before the next determination. Licensee staff could consider working with Forest Analysis and Inventory Branch staff to develop an acceptable methodology.

- *volume estimates for managed stands*

I have reviewed the volume estimates for existing stands, and I have discussed them with staff. I find them suitable for use in this determination, with the exception of my comments regarding site productivity estimates above, and my consideration of fertilization activity on TFL 26 as discussed below.

The licensee has had for some time an active fertilization program as part of its overall silviculture strategy. Completion of the TEM report provided the licensee with information regarding the selection of good candidate stands for fertilization. The licensee completed a type-1 incremental silviculture strategy which identified several goals for fertilization, including treatment of existing stands scheduled for harvesting within 20 years to improve short-term timber supply and treatment of existing stands scheduled for harvesting 20 to 80 years from now to improve mid-term timber supply.

No fertilization of stands was assumed in the timber supply analysis. Between 2005 and 2008, the licensee fertilized an average of 142 hectares per year.

I note that fertilizing forest stands can result in higher yields as well as shorter times to reach target stand heights, helping to meet forest cover requirements and enabling stands to be harvested at lower ages. Having considered the information regarding fertilization on TFL 26, I note that actual yields for managed stands may be higher than modelled in the analysis. The incremental silviculture activity likely provides increased stability in the mid term.

For this determination, I accept the modelling of managed stand yields and make no adjustments on this account. However, I encourage the licensee to investigate methods to reflect its fertilization program in the next timber supply analysis for TFL 26.

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

As noted in Table 1, I accept these factors as modelled in the base case.

iii) silvicultural treatments to be applied to the area:

As noted in Table 1, I accept these factors as modelled in the base case.

(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:

- *utilization standards*

The utilization standards assumed in the base case of the timber supply analysis for all species were a minimum 17.5-centimetre diameter at breast height (dbh) with a 30-centimetre maximum stump height and a 10-centimetre minimum top diameter inside bark.

The licensee typically harvests trees down to a minimum dbh of 12.5 centimetres. Having discussed this with MFR staff, I conclude that the assumption that trees are utilized to a 17.5-centimetre dbh in the base case, rather than the 12.5-centimetre dbh that better represents current practice on TFL 26, leads to a small underestimation of timber supply across the entire forecast period. I have accounted for this in my determination, as discussed 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,

Integrated resource management objectives

The Ministry of Forests and Range 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.

- First Nations' archaeological sites and cultural heritage resources

Provincial legislation requires that BC's forests be managed in a sustainable manner that includes considering the social and cultural needs of First Nations. The *Forest Act* defines a cultural heritage resource as 'an object, site, or location of a traditional societal practice that is of historical, cultural or archaeological significance to the province, a community, or an aboriginal people'. The *Forest Planning and Practices Regulation* under the *Forest and Range Practices Act* further refines the definition of cultural heritage resources by stating an objective set by government to conserve or if necessary protect cultural heritage resources that are the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and are not regulated under the *Heritage Conservation Act*. The known archaeological sites and cultural heritage resources on TFL 26 are all associated with First Nations' interests.

Cultural heritage resources on TFL 26 may include important fishing areas, hunting and trapping sites, villages, burial grounds, trails, spiritual use and culturally modified trees.

I am aware several studies have been conducted on TFL 26 by First Nations and government that provide information regarding cultural heritage resources and archaeological sites.

Such studies include two ethno-historic assessments completed by the Ministry of Attorney General, a traditional use study (TUS) by the Kwantlen and Stó:lō First Nations, two archaeology reports by the Kwantlen First Nation, and a wildlife study completed by the licensee. In addition, an archaeological impact assessment was done in 2000 where potential culturally modified trees were found.

These studies provide information on the land use and resource gathering practices of the Kwantlen, Katzie and Stó:lō First Nations. The 2008 ethno-historic assessment suggested that aboriginal interests would likely be located near riparian and lakeshore areas. The 1996 TUS provided information on archaeological sites and traditional uses for the area around Stave Lake. It indicated that the potential for unrecorded archaeological sites was high given at that time, very little archaeological work was done in the area. Traditional use activities were also identified in the TUS, which included transportation and trading, hunting and trapping, fisheries, and plant material gathering.

Although the TUS indicated the potential for unrecorded archaeological sites was high, the licensee noted in its 2003 sustainable forest management plan that no definitive archaeological sites with First Nations artifacts had yet been found in the TFL. They also noted that some possible culturally modified trees (CMTs) had been identified during archaeological assessments in stands less than 100 years old, and one site was known to have CMTs that had been created within the past decade. The licensee made a number of commitments in its 2007-2012 forest stewardship plan related to the identification and protection or conservation of cultural heritage resources and maintaining communication with First Nations, to ensure appropriate management of these resources.

During the consultation process, the Kwantlen First Nation mentioned concerns with the exercise of their aboriginal interests, including spiritual use, hunting and gathering, and protection of archaeological sites, trails, and fisheries. They noted that members are currently using the area of TFL 26 for spiritual practices and for gathering.

District staff have indicated that access to timber, including cedar, from TFL 26 for domestic uses, such as bark stripping, and for carving, poles and canoes has been mentioned in correspondence and in meetings with the Kwantlen First Nation. Access to alder has also been mentioned for use in building, transportation, tools, household implements, and cultural artifacts. It is important to several First Nations that continued access to the TFL is maintained so they may practice their traditional uses.

I am aware the licensee has responded to requests for bark stripping by issuing free permits. The licensee, as referenced in its licence document, provides unrestricted access to Kwantlen members for bark stripping, plant gathering and for other aboriginal interests.

Additionally, First Nations continue to access cedar and other species for cultural purposes through the application of a Ministry of Forests and Range Free Use Permit.

In addition, the licensee's timber supply analysis indicated that approximately 13 percent of the timber harvesting land base was covered with stands dominated by western red cedar. These stands, along with the red cedar that occurs as a component in other stands, serve as a potential source for bark stripping. The licensee has also committed to replant cedar where ecologically suitable to ensure a future supply for cultural uses. They also note in correspondence that although the majority of TFL 26 is currently second-growth stands, the percentage of old-growth stands will increase over time as landscape-level biodiversity requirements are met.

Therefore, at this time there would appear to be no issues related to domestic use of timber that affect this AAC determination.

In the base case of the 2001 analysis, no deductions to the productive forest land base were made specifically to account for cultural heritage resources. However, deciduous stands that are often located along waterways where aboriginal interests are likely to be found were excluded from the timber harvesting land base. Reductions were also applied in the analysis to account for riparian reserves and wildlife tree patches, and it is expected that the location of these retention areas would be done with consideration for identified cultural heritage resources.

MFR district staff requested information from the licensee regarding any specific wildlife or hunting concerns that the Kwantlen had provided to the licensee. The licensee responded that the Kwantlen had not mentioned specific species management concerns. As mentioned earlier, the licensee conducted a wildlife habitat capability study and has shared the information generally, and commits to sharing it and any future studies specifically with the Kwantlen. The Kwantlen have also advised MFR that they are undertaking a TUS, which will help them identify the amount of use, the resources being used and the location of the resources, and will provide this information to MFR in the future.

I have considered the information regarding cultural heritage resources and archaeological sites on TFL 26. Although no specific areas were excluded from the timber harvesting land base on this account, I am aware that several other deductions applied as discussed above have provided some accounting for archaeological sites and cultural heritage resources. I am also aware that through their FSP the licensee has made commitments to continue to work with First Nations to identify and protect significant sites, and in particular to identify opportunities to assist the Kwantlen with practicing their traditional uses.

I have reviewed this information and discussed it with district staff. I am confident that MFR staff have a good understanding of what is required operationally to appropriately manage cultural heritage resources, and I note the licensee's commitment to ongoing communication with First Nations at the operational level. Given the available information I find it reasonable to believe that appropriate management is occurring operationally.

Although I acknowledge the overlap of other deductions and archaeological sites and cultural heritage resources, I note the 2001 timber supply analysis did not specifically account for any CMTs. As a result, I will take into account in my determination that the timber supply has been overestimated by a small unquantified amount, and I discuss this further under '**Reasons for Decision**'.

I encourage the licensee to continue to work effectively with First Nations to identify specific sites or resources of interest to them, and ensure that the best available information is reflected in the next timber supply analysis.

- *water resources*

TFL 26 contains a network of streams, lakes and wetlands. Management of water resources on the TFL recognizes downstream uses including the provision of water for communities, and for agricultural uses such as irrigation and livestock. The TFL boundaries include the Kenworthy Creek Community Watershed and the Cannell Lake watershed.

The Kenworthy Creek watershed is a designated community watershed, and operations within the watershed were modelled in the analysis using a forest cover constraint to represent equivalent clearcut area (ECA) constraints as approved by the Ministry of Environment. I have reviewed these assumptions and I am satisfied they adequately provide for the maintenance of water quality and reflect current practice in the watershed.

The Cannell Lake watershed includes Cannell Lake and its tributaries located in the eastern portion of the TFL. The Cannell Lake watershed was officially designated as a community watershed under the *Forest and Range Practices Act* in May 2004.

In the analysis, the Cannell Lake watershed for a total of 138 hectares was excluded in the derivation of the timber harvesting land base. No harvesting activity has occurred in the watershed and the licensee indicates that no operations are currently planned for the area.

I note that full exclusion of the area from the timber harvesting land base was not necessary as the area does not have a formal designation, such as for a protected area, that would permanently exclude it from contributing to timber supply. Practices in community watersheds are typically modelled in timber supply analyses in a similar manner to the modelling for the Kenworthy Creek watershed, and the area would not be excluded from the timber harvesting land base. Forest operations can be conducted in the watershed in the future in a manner consistent with forest practices to maintain water quality. In its 2007-2012 Forest Stewardship Plan, the licensee has an objective for Kenworthy Creek and Cannell Lake watersheds and commits that relevant Community Watershed Assessment Plans (CWAP) would be carried out or updated prior to any harvesting in the area.

Having considered the information, I conclude that the timber harvesting land base has been underestimated by up to 138 hectares, or two percent. I will take into account that timber supply has been underestimated by up to two percent and will discuss this further under '**Reasons for Decision**'.

- identified wildlife management strategy

Ministry of Environment staff indicate there are no proposed or established wildlife habitat areas (WHAs) or ungulate winter ranges (UWRs) in TFL 26, and no occurrences of species at risk have been identified. Staff stated that there are no intentions in the short term to establish specific area for identified wildlife species in TFL 26.

A capability assessment was completed in 2004 for identified wildlife species that covered the TFL 26 area. The assessment provided information about the capability of the forests in the TFL to provide habitat for nine different species. Species included black bear, bobcat, snowshoe hare, marbled murrelet and western screech owl. The results showed the forests were capable of supporting some species at risk. The licensee notes that the majority of TFL 26 is rated very low to moderate for habitat capability except for black tailed deer which are abundant.

The licensee, in its 2007 – 2012 forest stewardship plan, makes the following commitment around species at risk and regionally important wildlife: ‘if any detections of Coastal Giant Salamander, Grizzly Bear, Pacific Water Shrew, Tall Bugbane or Spotted Owl or further detections of Coastal Tailed Frog are made in TFL 26, the licensee will report this and be willing to discuss management options with the Ministry of Environment’.

I have reviewed the information regarding identified wildlife and TFL 26. Although specific areas have not yet been identified for the areas within the TFL, given government’s allowance of up to one percent impact for IWMS, for this determination I will take into account an overestimation of up to one percent in the base case of the analysis. I will discuss my reasoning further in ‘**Reasons for Decision**’.

I encourage the licensee to work with Ministry of Environment and other government staff to identify any habitat areas in the TFL that provide for specific wildlife species, so that the best available information can be reflected in the next timber supply analysis.

- landscape-level biodiversity

The TFL covers portions of two landscape units, the Alouette and the Hatzic. The Alouette, which has an intermediate draft biodiversity emphasis option (BEO) covers a small area within the TFL and includes Golden Ears Provincial Park. The majority of the TFL is in the Hatzic landscape unit, which has a low draft BEO.

In the analysis, because Old Growth Management Areas (OGMAs) have not yet been established, an aspatial modelling approach was applied. The two landscape units were combined for modelling purposes, and the provincial distribution was used to calculate the percentages of the land base in each variant to be retained in old seral forest over time. Therefore, 45 percent of the area was assumed to be in lower emphasis, 45 percent in intermediate emphasis, and 10 percent in higher emphasis biodiversity options.

The licensee conducted a sensitivity analysis in which a low BEO was applied to the entire TFL instead of the provincial distribution used in the base case as described above, allowing old-growth requirements to be met over a 210-year period. The results indicated a four percent increase in the short- to mid-term timber supply. Given that the majority of the TFL is within low BEO, these results indicate that the base case assumptions were overly constraining to timber supply.

District staff indicate that the completion of landscape-level biodiversity planning and the establishment of OGMAs is being coordinated by the Integrated Land Management Bureau (ILMB). The licensee for TFL 26 has provided input into the planning process being conducted by a group of licensees known as the Fraser TSA Co-operative Association. This licensee group is working with a consultant to complete draft OGMA plans for the remaining landscape units in the Chilliwack District. Staff also note that there is no plan to conduct OGMA planning for the Alouette landscape unit as the majority of the Alouette is in

park or urban interface areas. The ILMB and the licensee group have general agreement about the location of the OGMA's and the process will soon move to the consultation stage.

I have considered the information about the modelling assumptions for landscape-level biodiversity on TFL 26 and current practices. I conclude that short- to mid-term timber supply has potentially been underestimated by up to four percent as a result of applying the provincial average BEO distribution, rather than the low BEO applicable to the majority of the TFL. I will discuss this further under '**Reasons for Decision**'.

I encourage the licensee to continue to provide input into the planning process for establishing OGMA's so that more specific information for TFL 26 can be reflected in the next timber supply analysis.

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

Other information

- licensee's landscape reserve plan

The licensee has a landscape reserve plan which it developed to assist with operational planning. In the plan, existing permanent and semi-permanent non-contributing areas were targeted for old-growth retention. The intent of the plan was to satisfy objectives for old-forest conditions through retention and recruitment of old forest over time.

The licensee indicates it updates the plan from time to time to reflect any additional mappable reserves that have been retained within cutblocks and make adjustments to the outer existing reserves boundaries using information from harvest boundaries.

I have considered the information about the licensee's landscape reserve plan. I note that the plan could assist the licensee with meeting forest cover constraints for old growth, and I encourage them to continue to update the information if it proves to be a useful tool.

First Nations considerations

The MFR staff in the Chilliwack District Office consulted with the following First Nation groups whose asserted traditional territories overlap with TFL 26: Katzie, Kwantlen, Matsqui, Seabird Island, Skawahlook, Stó:lō Nation, Stó:lō Tribal Council and Sumas First Nations. These First Nations were provided with information regarding the TFL 26 timber supply review and were asked for their review and comments about how the decision would affect their aboriginal interests. Opportunities were also provided to meet with district staff to discuss any concerns or questions First Nations may have.

The majority of the First Nations consulted with have either a Forest and Range Agreement (FRA) or an Interim Agreement on Forest and Range Opportunities (FRO) with the MFR. These agreements provide annual economic benefits and tenure opportunities in the form of non-replaceable forest licences and/or woodlot licences, and may contain provisions for consultation which were followed by MFR staff. The Stó:lō Nation and the Stó:lō Tribal Council do not have agreements, and the Haida principles for consultation were followed for these two First Nation groups. MFR staff note that both these organizations are umbrella tribal councils for individual First Nation communities.

MFR staff met with the Matsqui First Nation and discussed their new, larger asserted traditional territory, and the Matsqui committed to consider the timber supply review information in the context of their new area. The Matsqui First Nation did not provide additional input regarding the TFL 26 timber supply review.

The Katzie First Nation responded with a letter in January 2010 stating that it found it difficult to provide comment on the timber supply review without adequate baseline information. It requested information about what was considered during the timber supply review regarding accommodation of traditional activities, non-timber forest product management, wildlife and old-growth management strategies. It indicated that it would provide comments after receiving this information. In a letter to the Katzie First Nation, the licensee provided a summary of the information being considered, as requested. In that letter the licensee also committed to referring relevant operational plans for the asserted overlap area to the Katzie First Nation.

The Katzie First Nation did not provide further input to the timber supply review process. MFR staff note that the Katzie First Nation asserted territory has a small overlap with TFL 26.

I am aware the Kwantlen First Nation filed a judicial review petition in June 2009 on the replacement of the TFL 26 licence. In its petition the Kwantlen First Nation states that the MFR did not consult adequately or accommodate appropriately in making the decision to replace TFL 26. Affidavits filed as part of the judicial review included new information regarding the Kwantlen's aboriginal interests, such as the use of various tree species for building, transportation, tools, household implements and cultural artifacts, and the use of various plants gathered for food, medicines and technologies such as manufacturing baskets and dyes.

In response to the consultation for the timber supply review, the Kwantlen First Nation noted that it has concerns with the exercise of its claimed aboriginal rights including spiritual use, hunting and gathering, protection of archaeological sites, trails, and fisheries. It also shared that its members are currently using the area of TFL 26 for spiritual practices and gathering.

The measures taken in the analysis and in current practice by the licensee for TFL 26, and my consideration of that information, for the specific resources and interests of First Nations on the TFL were discussed earlier in this document under '*cultural heritage resources*'. As mentioned in that section, I am satisfied that forest practices on TFL 26 are conducted appropriately.

As part of consultation a preliminary assessment was completed, which included a review of aboriginal interests information, available traditional use studies, ethno-historical assessments, and an assessment of the potential impacts my AAC decision may have on those aboriginal interests. I have considered this information regarding the scope of consultation for the timber supply review for TFL 26, and I am satisfied that the consultation was commensurate with the MFR's assessment of the aboriginal interests asserted by the relevant First Nations within TFL 26.

I note that if any new information becomes available regarding First Nations interests on TFL 26 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.

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

Harvest flows

In addition to the base case, the licensee provided several alternative harvest flows. These alternative flows represent trade-offs between short- and mid-term harvest levels.

I have considered the alternative harvest flows provided in the analysis. They provide me with an assessment of the harvest levels possible given different assumptions in the short- to mid-term. The alternative harvest flows suggest that the short-term harvest level, while it can be maintained for many decades to come, is constrained to a level below the long-term harvest level for the TFL.

I note that as is the case when considering the base case harvest forecast, there are a number of factors in this determination for which better information would likely suggest more robust timber supply, such as the site productivity information and inventory information.

- *harvest performance*

Information regarding the harvest performance of the licensee shows that it has harvested on average 99 percent of its allowable annual cut over the past eight years. In addition, harvest records indicate excellent harvest profile performance. Having reviewed the information, I note that the licensee demonstrates good performance on the TFL in this regard and is to be commended.

- (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 and public input*

The Minister of Forests and Range has expressed the economic and social objectives of the government 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 and in the alternative harvest flow projections with which I have been provided for reference in this determination, a primary objective in the harvest flow has been to attain a stable, long-term harvest level where the growing stock becomes stable, neither increasing nor decreasing over time. I find this to be consistent with the direction provided in the Minister's letter.

The Minister's letter also suggests that the chief forester should consider important social and economic objectives that may be derived from the public input in the timber supply review where these are consistent with government's broader objectives.

I am aware that the licensee specifically sought public input for this timber supply review, including through an announcement posted on its website requesting comment. Public input was received from the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association, who indicated that it had no concerns about the timber supply review. No other public input was received.

The licensee demonstrates a high level of engagement with the local community, and has various commitments in a number of its planning documents to continue to consider public input in its operations.

I recognize this high level of engagement and, in consideration of the Minister's letter, I have considered current practice as accounted for in the base case as maintaining a range of forest values. I am therefore 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 my AAC determination for TFL 26, I have considered all of the factors required under Section 8 of the *Forest Act* and I have reasoned as follows.

In the 2001 timber supply analysis, the base case projected a stable harvest level of 43 168 cubic metres per year, which could be maintained for 80 years. After this time, the harvest level increased to a mid-term level of 46 877 cubic metres per year. After a further 80 years, the harvest level increased to 50 186 cubic metres per year. The base case forecast showed that the timber supply for TFL 26 is stable and able to support a modest increase over time.

I am mindful that the initial harvest level in the base case, and indeed the level for the first 80 years of the forecast period, was 1832 cubic metres (about four percent) less than the level of the current AAC for TFL 26. I am also aware that this determination occurs approximately one decade into the analysis horizon, and I have considered the implications of both of these items in my determination.

I have considered the information regarding the assumptions applied in the base case forecast, and I am satisfied the majority of the assumptions were appropriate, as detailed earlier in Table 1. Following is my consideration of those factors for which I consider it appropriate to further consider and take into account an impact on the timber supply projected in the base case forecast.

In determining an AAC for TFL 26, 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. Some of these factors can be readily quantified and their impact on the harvest level assessed with reliability. Others may influence timber supply by adding an element of risk or uncertainty to the decision, but cannot be reliably quantified at this time.

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

- *identified wildlife management strategy* – as a result of no specific accounting in the base case for the establishment of wildlife habitat areas or the implementation of general wildlife measures on TFL 26, timber supply has been overestimated by up to one percent over the forecast period;
- *archaeological sites and cultural heritage resources* – as a result of the lack of specific accounting in the base case for cultural heritage resources and archaeological sites, timber supply has been overestimated by a small and unquantifiable amount over the forecast period.

In addition, I have identified several factors as indicating that the timber supply projected in the base case may have been underestimated, as follows:

- *utilization standards* – as a result of the differing assumptions in the analysis regarding utilization of logs as compared to current practice, I accept that timber supply has been underestimated by an unquantified and small amount over the forecast period;
- *water resources* – as a result of the Cannell Lake watershed being excluded entirely from the timber harvesting land base in the base case of the analysis, timber supply has been underestimated by approximately two percent over the forecast period;
- *site productivity* – the site index estimates used for current and future managed stands underestimate site productivity by an unknown amount that ranges between 0 and 23 percent, and as a result timber supply has been underestimated on this account in the mid- to long-term;
- *landscape-level biodiversity* – as a result of the application of the modelling assumptions regarding landscape-level biodiversity, timber supply has been underestimated by up to four percent in the short- to mid-term.

I have considered the factors above that indicate the timber supply projected in the base case has been either overestimated or underestimated, and I reason as follows.

All of the above factors, with the exception of the implications of the underestimation of site productivity, influence timber supply in the short- to mid-term. In consideration of the cumulative impact of these factors, I note that those factors indicating timber supply has been underestimated – utilization standards, water resources and landscape-level biodiversity – more than offset the impact of the factors indicating that timber supply has been overestimated in the short- to mid-term – identified wildlife management strategy and archaeological sites and cultural heritage resources. The cumulative impact of these factors also indicates sufficient additional timber supply is available to allow for a higher harvest level than what was projected in the base case initial harvest forecast.

In considering the mid to longer term, I note that the possible timber supply is likely greater than what is shown by the base case harvest forecast. I look forward to improvements in the available information between this determination and the next for TFL 26, so that those factors influencing the mid to longer term can be better quantified and reflected in an analysis.

Having reviewed the information and taking into account the factors as identified above, as well as considering the results of sensitivity analyses, and the uncertainties and risks associated with various factors, I conclude that it is appropriate at this time to determine an AAC for TFL 26 of 45 000 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 10 years and that reflects current management practices as well as the socio-economic objectives of the Crown, can be best achieved in the TFL by establishing an AAC of 45 000 cubic metres.

This determination is effective March 26, 2010, and will remain in effect until a new AAC is determined, which must take place within 10 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 10 years required by legislation. I will also revisit this decision sooner if any new issues arise concerning First Nations that may impact timber supply.

Implementation

In the period following this decision and leading to the subsequent determination, I encourage the licensee staff to undertake the tasks noted below. I recognize that the licensee's ability to undertake these projects is dependent on available staff resource time and funding. However, these projects are important to help reduce the level of risk and uncertainty associated with key factors affecting timber supply on TFL 26.

I recommend that the licensee:

- Update the inventory data for the area of the TFL, so that better information can be used in the next analysis, including information regarding environmentally sensitive areas (ESAs), and information regarding the use of improved seed on the TFL and the genetic gain adjustments appropriate to apply in future analyses;
- Work with Forest Analysis and Inventory Branch staff to determine an appropriate and feasible methodology to incorporate improved site productivity information into the next timber supply analysis;

- Review available information regarding cultural heritage resources and archaeological sites, and wildlife habitat resources with the intent of ensuring their protection and management are appropriately reflected in the timber supply analysis, including any land base exclusions if appropriate;
- Continue to work with the Integrated Land Management Bureau to spatially locate and establish OGMA's prior to the next determination;
- Review and update mapping for established wildlife tree patches.



Melanie Boyce, RPF
Deputy Chief Forester

March 26, 2010



Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, Consolidated to December 30, 2009, 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 portions of the allowable annual cut attributable to
 - (a) different types of timber and 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, and
 - (b) different types of timber and 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 Act*

Section 4 of the *Ministry of Forests and Range Act* (consolidated 2006) 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 co-ordinated and integrated, in consultation and co-operation with other ministries and agencies of the government and with the private sector;
 - (d) encourage a vigorous, efficient and world competitive
 - (i) timber processing industry, and
 - (ii) ranching sectorin British Columbia;
 - (e) assert the financial interest of the government in its forest and range resources in a systematic and equitable manner.

Document attached:

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



JUL 04 2006

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

Dear Jim:

Re: Economic and Social Objectives of the Crown

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

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

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

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**Minister of
Forests and Range
and Minister Responsible
for Housing**

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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