

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

Cassiar Timber Supply Area

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

Effective March 5, 2015

**Diane Nicholls, RPF
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 in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for the Cassiar Timber Supply Area (TSA). This document also identifies where new or better information is needed for incorporation in future determinations.

Acknowledgement

For preparation of the information I have considered in this determination, I am indebted to staff of the BC Ministry of Forests, Lands and Natural Resource Operations (FLNR) in the Skeena Stikine Natural Resource District, and the Forest Analysis and Inventory Branch (FAIB). I am also grateful to local residents, First Nations, and stakeholders who contributed to this process.

Statutory framework

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

Description of the Cassiar TSA

The Cassiar TSA is located in the north-western corner of BC and is the largest TSA in the province, covering approximately 13.1 million hectares or one-sixth of the total provincial area. It is the least populated TSA and includes the communities of Dease Lake, Atlin, Telegraph Creek, Iskut, Good Hope Lake and Lower Post. The Cassiar TSA is bordered to the west by Alaska, to the north by the Yukon Territory, to the east by the Fort Nelson and Mackenzie TSAs, and to the south by the Nass and Prince George TSAs. The Cassiar TSA is administered by the Skeena Stikine Natural Resource District in Smithers.

First Nations people comprise approximately 55 percent to 65 percent of the population living within the TSA. The Tahltan, Taku River Tlingit, Kaska Dena, Teslin Tlingit, Carcross Tagish, Champagne-Aishihik, Treaty 8 (Doig River, Prophet River and West Moberly First Nations), Nisga'a Lisims Government First Nations all have asserted traditional territories within the Cassiar TSA.

The majority of the Cassiar TSA is characterized by mountains and plateaux separated by wide valleys and lowlands, while the western part of the TSA consists of rugged, ice-capped mountains, dissected by several major river valleys. About 2 504 000 hectares or 19 percent of the Cassiar TSA land base is considered productive Crown forest, and of this area 207 576 hectares are available for timber harvesting.

The majority of the TSA is located in the interior with extensive boreal forests and species such as lodgepole pine. Coastal forests include species such as western hemlock, sitka spruce and subalpine fir. On the productive land base, the dominant tree species are white spruce (32 percent) and lodgepole pine (30 percent). On the area assumed to be available for timber harvesting for the purposes of timber supply analysis, the dominant tree species are white spruce (32 percent) and lodgepole pine (54 percent).

History of the AAC

The boundaries of the Cassiar TSA were established in 1980 and in 1984 the first AAC was set at 140 000 cubic metres. In 1995, the chief forester determined a new AAC of 400 000 cubic metres effective January 1, 1996. The AAC was then partitioned by timber supply block, as follows: Iskut--Boundary (240 000 cubic metres), Dease--Liard (120 000 cubic metres), and Atlin (40 000 cubic metres).

The current allowable annual cut (AAC) for the TSA of 305 000 cubic metres was determined in 2001. The current AAC is partitioned by timber supply block, as follows: Iskut-Boundary (120 000 cubic metres), Dease-Liard (153 000 cubic metres), and Atlin (32 000 cubic metres).

A Chief Forester Order postponing the AAC determination to a date prior to November 7, 2011 was issued on August 12, 2008.

The Minister of Forests, Lands and Natural Resource Operations apportioned the AAC in the Cassiar TSA effective April 7, 2004 as shown below in Table 1.

Table 1. Current apportionment of the Cassiar TSA allowable annual cut

	Total AAC volume		Apportionment by operable block					
	m ³	%	Atlin		Dease-Liard		Iskut-Boundary	
			m ³	%	m ³	%	m ³	%
Forest Licences (replaceable)								
Forest Licences (non-replaceable)	205,000	67.21			85,000		120,000	
BC Timber Sales	2,500	0.82	2500	7.81				
Forest Service reserve	12,500	4.10	12,500	39.06				
Total of AAC allocated	220,000	72.13	15,000	46.88	85,000	55.43	120,000	100.00
Total of AAC unallocated	85,000	27.87	17,000	53.13	68,000	44.57		
Total AAC	305,000	100.00	32,000	100.00	153,000	100.00	120,000	100.00

New AAC determination

Effective March 5, 2015 the new AAC for the Cassiar TSA is 196 000 cubic metres of which a maximum of 80 000 cubic metres is attributable to the Iskut "A" operable block, as identified in the map (see Appendix 5).

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

- *Forest Practices Code of BC Act – and amendments*, current to February 18, 2015, and regulations and guidebooks;
- *Forest and Range Practices Act – Regulations and amendments*, current to February 18, 2015;
- *Forest Act*, current to February 18, 2015;
- *Heritage Conservation Act*, current to February 18, 2015;
- *Provincial Logging Residue and Waste Measurement Procedures Manual* as specified in the *Forest Act* current to July 15, 2011;
- *Government Actions Regulation (GAR)*;
- Order Establishing the Dease-Liard Landscape Unit and Objectives, December 2004;
- Order Establishing Provincial Non-Spatial Old Growth Objectives, June 2004;
- Atlin-Taku Resource Management and Forest Retention Areas Order (2014);
- Forest Planning and Practices Regulation Section 7 Wildlife Notices (2004);
- Cassiar Iskut Stikine Land Resource Management Plan (LRMP), September 2000;
- Atlin Taku Land Use Plan / Wóoshtin wudidaa, July 2011;
- Dease-Liard Sustainable Resource Management Plan (SRMP), 2004 and 2012;
- Letter from the Minister to the Chief Forester, Re: Economic and Social Objectives of the Crown, July 4, 2006;
- Cassiar TSA Public Discussion Paper, September 2013, BC Ministry of Forests, Lands and Natural Resource Operations, Forest Analysis and Inventory Branch;
- Cassiar TSA Timber Supply Review Data Package, September 2013, BC Ministry of Forests, Lands and Natural Resource Operations, Forest Analysis and Inventory Branch;
- Cassiar TSA Timber Supply Review Rationale, January 2002, BC Ministry of Forests;
- Summary of dead potential volume estimates for management units within the Northern and Southern Interior Forest Regions, Ministry of Forests and Range, Forest Analysis and Inventory Branch, March 2006;
- Provincial Harvest Billing System (HBS) reports, BC Ministry of Forests, Lands and Natural Resource Operations;
- A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region (Part 1, Part 2, and Supplement No. 1), 1993, BC Ministry of Forests, Research Branch;
- Gap disturbances in northern old-growth forests of British Columbia, 1998, Ministry of Forests, Prince Rupert Forest Region;
- Age to green-up height: using regeneration survey data by region, species and site index, 2000, B.C. Ministry of Forests Forest Renewal;
- Procedures for Factoring Visual Resources into Timber Supply Analysis, 1998, B.C. Ministry of Forests;
- Modelling Visuals in TSR III (2003), 2007, Luc Roberge, Visual Resource Specialist, BC Ministry of Forests, Northern Interior Forest Region;
- Forest Service Bulletin - Modelling Visuals in TSR III, December 2003, B.C. Ministry of Forests and Range;

- Grizzly Bear Habitat Assessment and Candidate Wildlife Habitat Assessment Submission: South Central Cassiar TSA, March 2009. McElhanney Consulting Services Ltd.;
- Provincial Logging Residue and Waste Measurement Procedures Manual, BC Ministry of Forests;
- Natural Disturbance Units of the Prince George Forest Region: Guidance for Sustainable Forest Management, 2002. S.C. DeLong, B.C. Ministry of Forests;
- Natural Disturbance Rate and Patch Size Distribution of Forests in Northern British Columbia: Impactions for Forest Management, Northwest Science, Volume 72, 1998, S. C. DeLong;
- Landscape Unit Planning Guide, 1999, Ministry of Forests and Ministry of Environment, Lands and Parks;
- Forest Practices Code Biodiversity Guidebook; September 2005, BC Ministry of Forests;
- Draft publication of a province wide volume comparison of VDYP 6 and VDY7 (Appendix 2 Results for northern interior TSAs), January 2009. BC Ministry of Forests, Lands and Natural Resource Operations; and
- A biophysical model for estimating site index for major commercial tree species in British Columbia: Technical Report 073, 2012, G.D. Nigh BC Ministry of Forests, Lands and Natural Resource Operations.

Role and limitations of the technical information used

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

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

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

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

Guiding principles for AAC determinations

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

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

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

Integrated decision making

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

Information uncertainty

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

Two important ways of dealing with this uncertainty are:

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

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

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

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

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

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

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

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

Climate change

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

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

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

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

First Nations

Aboriginal Title Lands and other areas, such as Treaty Lands or Indian Reserves, are not provincial Crown land. Consequently, the timber on these lands does not contribute to the AAC of the timber supply area or tree farm licence with which they overlap. For other areas, where aboriginal title has not been legally proven, the Crown has a legal obligation to consult with First Nations regarding their asserted rights and title (Aboriginal Interests) in a manner proportional to the strength of their Aboriginal Interests and the degree to which the decision may impact these interests. In this regard, full consideration will be given to:

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

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

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

The role of the base case

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

For most AAC determinations, a timber supply analysis is carried out using an information package including data and information from three categories: land base inventory, timber growth and yield, and management practices. Using this set of data and a computer model, a series of timber supply forecasts can be produced to reflect different starting harvest levels, rates of decline or increase, and potential 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 is not an AAC recommendation. Rather, it is one possible forecast of timber supply, whose validity – as with all the other forecasts provided – depends on the validity of the data and assumptions incorporated into the computer model used to generate it.

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

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

Thus, in reviewing the considerations that lead to the AAC determination, it is important to remember that the AAC determination itself is not simply a calculation. Even though the timber supply analysis I am provided is integral to those considerations, the AAC determination is a synthesis of judgment and analysis in which numerous risks and uncertainties are weighed. Depending upon the outcome of these considerations, the AAC determined may or may not coincide with the base case forecast. Judgments 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.

Base case for the Cassiar TSA

- original base case

The THLB in the Cassiar TSA consists of stands that are often separated by large distances. To account for this in the analysis, concentrated areas of merchantable timber within 20 kilometres of a major road were grouped into non-contiguous “operable blocks” or “blocks”. In order to prevent the model from overharvesting any one of the blocks, the timber supply for each block was projected separately. These block-level harvest forecasts were subsequently summed to produce the base case.

The five, non-contiguous operable blocks used in the base case include: Iskut “A” (accessible now), Iskut “B” (not accessible for at least 10 years – contribution of the Iskut “B” operable block to the timber harvesting land base is discussed later in this document.), Dease-Liard, Swan-Teslin and Atlin. The harvest forecasts for Iskut “A” and Iskut “B” operable blocks were further sub-divided on the basis of wood quality: Iskut “A” sawlog and pulpwood sub-blocks, and Iskut “B” sawlog and pulpwood sub-blocks.

In timber supply analysis, the term “even-flow” describes a forecast in which the initial harvest level is maintained, without change, for the entire forecast period. In the original base presented in the *Cassiar TSA Public Discussion Paper* (September 2013), an even-flow harvest of 329 000 cubic metres per year is maintained for the entire 250-year forecast. This harvest level is the sum of the even-flow harvests projected for each of the operable blocks and sub-block components: Iskut “A” sawlog – 66 000 cubic metres per year; Iskut “A” pulpwood – 6000 cubic metres per year; Iskut “B” sawlog – 50 000 cubic metres per year; Iskut “B” pulpwood 13 000 cubic metres per year; Atlin – 6000 cubic metres per year; Dease-Liard 141 000 cubic metres per year; and Swan Teslin 47 000 cubic metres per year.

In keeping with current management, stands with the highest volume per hectare were harvested first in the analysis. The model primarily harvested pine and interior spruce, but in the short- to mid-term the base case harvest also included about 50 000 cubic metres per year of timber from balsam and hemlock stands.

Fire is a major source of natural disturbance in the TSA. Historic fire information was used to develop the disturbance assumptions used in the base case. Interior stands are generally less than 200 years old due to the relatively higher frequency of fires in these drier stands; whereas, coastal stands are often older than 200 years due to the relatively lower frequency of fires in these wetter stands. Stands within the THLB that would likely remain unsalvaged after fires, were accounted for as non-recoverable losses. Natural disturbance in stands outside the THLB was modelled according to results from relevant natural disturbance studies.

- revised base case

During my review of the original base case, I identified a number of factors that increased the level of uncertainty in the base case. In order to reduce this uncertainty, I requested that the base case and alternative harvest forecasts be revised as follows:

- Increase the minimum harvestable volume criteria were to better reflect current harvest performance. For the Iskut operable blocks the minimum harvestable volume was increased to 250 cubic metres per hectare. For the Dease-Liard and Swan-Teslin operable blocks the minimum harvestable volume was increased to 200 cubic metres per hectare. For the Atlin operable block the minimum harvestable volume was maintained at 150 cubic metres per hectare.
- Update the forest inventory for depletions to 2014, to account for areas harvested in conjunction with major project development, including forestry, and the exclusion of the Kaska Dene Interim Treaty Agreement Area. This decreased the size of the THLB by about 3100 hectares.
- Account for the timber supply impact due to the development of future roads, trails and landings by applying a 3.9 percent volume reduction to all stands older than 15 years at the beginning of the forecast after initial harvest in the model.
- Exclude the Iskut “B” operable block from harvest during the first decade of the forecast.

In the resultant revised base case, an initial harvest of 196 000 cubic metres per year is maintained for 10 years before decreasing to 164 000 cubic metres per year for the remainder of the 250-year forecast period. These harvest levels are the sum of the operable block and sub-block forecasts. With the exception of the Iskut “A” sawlog sub-block, all of the component forecasts are even-flow.

For the Iskut “A” sawlog sub-block an initial harvest of 80 000 cubic metres per year can be maintained for 10 years before decreasing to 32 000 cubic metres per year for the remainder of the forecast. For the Iskut “A” pulpwood sub-block the even-flow harvest is 6000 cubic metres per year. For the Atlin, Swan-Teslin and Dease-Liard operable blocks the even-flow harvests are 5500 cubic metres per year, 11 000 cubic metres per year and 97 000 cubic metres per year, respectively. There is no harvest during the first decade in the Iskut “B” operable block; thereafter, the even-flow harvest levels are 9500 cubic metres per year for the sawlog sub-block and 2500 cubic metres per year for pulpwood sub-block.

For the purposes of this determination I have used the revised forecast described above as my point of reference when considering the uncertainty associated with the information and factors that influence timber supply and that I am required to consider under Section 8 of the *Forest Act*. Consequently, I will refer to this forecast as the “base case” throughout the remainder of this document. As discussed and quantified throughout this rationale, I am satisfied the information presented to me provides an adequate basis from which I can assess the current timber supply for the Cassiar TSA for this determination.

In the following sections, I will discuss many of the analysis assumptions in the context of my considerations for this AAC determination.

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

I have reviewed the information for all of the factors required to be considered under Section 8 of the *Forest Act*. Where I have concluded that the modelling of a factor in the base case appropriately represents current management or the best available information, and uncertainties about the factor have little influence on the timber supply projected in the base case, no discussion is included in this rationale. These factors are listed in Table 2.

Table 2. Section 8 of the Forest Act: factors accepted as modelled in the base case

Forest Act section and description	Factors accepted as modelled
8(8)(a)(i) Composition of the forest and expected rate of growth - land base contributing to timber harvesting	<ul style="list-style-type: none"> • land ownership and forest tenures not contributing to TSA timber supply • regeneration issues and unstable terrain (environmentally sensitive areas) • stands considered inoperable • non-forest, non-productive and non-commercial • current and future roads, trails and landings
8(8)(a)(i) Composition of the forest and expected rate of growth – Forest Inventory and growth	<ul style="list-style-type: none"> • minimum harvest criteria • volume estimates for existing and regenerated stands • operational adjustment factors (OAFs)
8(8)(a)(ii) Expected time for the forest to be re-established following denudation	<ul style="list-style-type: none"> • regeneration delay • not-satisfactorily re-stocked (NSR) areas
8(8)(a)(iii) Silvicultural treatments to be applied	<ul style="list-style-type: none"> • silvicultural systems
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste, and breakage	<ul style="list-style-type: none"> • utilization standards and compliance • decay, waste and breakage
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for other purposes	<ul style="list-style-type: none"> • patch size distribution • research installations and growth and yield plots • riparian management • stand-level biodiversity • seral stage distribution • natural disturbance • wildlife habitat • scenic resources • recreation • First Nations cultural heritage resources • community watersheds and sensitive areas of community use zones
8(8)(a)(vi) Other information that, in the chief forester’s opinion, relates to the capability of the area to produce timber	

(continued)

Table 2. Section 8 of the Forest Act: factors accepted as modelled in the base case (concluded)

<i>Forest Act section and description</i>	<i>Factors accepted as modelled</i>
8(8)(b) Short and long-term implications of alternative rates of timber harvesting from the area	
8(8)(d) Economic and social objectives of the government	
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	<ul style="list-style-type: none"> • unsalvaged losses

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

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

The total area of the Cassiar TSA reported in the public discussion paper is 13.1 million hectares, of which 2 504 089 hectares are classified as Crown forest land base (CFLB).

The timber harvesting land base (THLB) is an estimate of the land where timber harvesting is considered both acceptable and economically feasible, given the objectives for all relevant forest values, existing timber quality, market values and applicable technology. It is a strategic-level estimate used for timber supply analysis and as such could include some areas that may never be harvested or could exclude some areas that may be harvested. Consequently, the THLB estimate used in the base case has limited utility outside of the timber supply review process.

As part of the process used to estimate the THLB a series of deductions was made from the productive CFLB. These deductions account for economic or ecological factors that operate to reduce the forest area available for timber harvesting. In reviewing these deductions, I am aware that some areas may have more than one classification. To ensure accuracy in estimating the THLB, care must be taken to avoid any potential double-counting associated with overlapping objectives. Hence, a specific deduction for a given factor reported in the analysis or this AAC rationale does not necessarily reflect the total area with that classification; some portion of it may have been deducted earlier under another classification.

For the Cassiar TSA, I acknowledge that the approach described above resulted in a current THLB of 207 581 hectares and a long-term THLB of 195 061 hectares. (These numbers reflect the decrease in area that resulted from the revisions made to the original base case.) This means that of the about 2.5 million hectares of CFLB, only eight percent is currently suitable and legally available for timber harvesting. Based on my review of the information and discussions with staff, I accept that all of the land base assumptions used in the base case reasonably reflect current management and represent the best available information.

- Iskut “B” operable block

As discussed under *Base case for the Cassiar TSA*, the THLB is divided into five non-contiguous operable blocks, including: Iskut, “A”, Iskut “B”, Dease-Liard, Swan-Teslin and Atlin. With the exception of Iskut “B”, all of the operable blocks contribute to the harvest levels at the beginning of the base case. After one decade, the Iskut “B” sawlog and pulpwood sub-blocks contribute 9500 cubic metres per year and 2500 cubic metres to the base case, respectively.

The 10-year delay applied in the base case for the Iskut “B” operable block is intended to reflect the likelihood that it will be at least 10 years before any commercial timber harvesting begins in these stands. However, in the absence of any evidence that harvesting has occurred or will occur in the foreseeable future, I am unwilling to speculate on the eventual contribution of these areas to the timber supply of the Cassiar TSA.

On this basis, I will exclude the contribution of the Iskut “B” operable block to the THLB used in the base case. Given the delayed contribution of the Iskut “B” operable block, this has no effect on the base case during the first decade. In addition, because the timber supply for each operable block was projected independently, this change does not affect the harvest flows from the other operable blocks. Consequently, after the first decade, exclusion of the Iskut “B” operable block decreases the base case harvest by a total of 12 000 cubic metres per year and I will account for this in my determination as described in “**Reasons for Decision**”.

Any information that would support inclusion of the Iskut “B” operable block in the THLB can be reflected in the timber supply analysis for the next AAC determination.

Forest inventory and growth

- forest inventory

The forest inventory available at the time of the timber supply analysis for the Cassiar TSA is based on forest cover maps that were produced in the 1970’s using aerial photographs from the 1950’s. In 1999, a limited number of mapsheets in the Bob Quinn area were updated using vegetation resource inventory phase I (photo interpretation) methodology. For the base case, forest cover was updated for depletion to 2014 prior to growth projection.

An inventory audit of mature stands in the Cassiar TSA, completed in 1997, found that for most of the TSA there was no significant difference between the audit stand volumes and stand volumes based on the inventory, except for some stands in the northern part of the TSA. On this basis, no adjustments were applied to the inventory stand volumes used in the base case.

During the TSR, the licensee, district staff and members of the public expressed concern about the age and quality of the inventory. According to the licensee, the correlation between the inventory information and actual stand attributes varies between 20 percent and 60 percent. It

indicated that if the corresponding stand attributes such as species, age and height are mislabelled or outdated due to stand succession, then the stand volume estimates used in the base case are likely incorrect and this could affect the timber supply projected in the base case. Input from the public indicated that aside from nine mapsheets in the Bob Quinn area there has not been a ground or aerial photo-based inventory in the TSA since 1975 and that this outdated information is not suitable for the purpose of determining an AAC.

New aerial photography is currently being taken in support of a new landscape-level vegetation inventory (LVI) for the entire Cassiar TSA. Interpretation and field verification of the aerial photography information is expected to begin later this year. The LVI information will also be used to prepare predictive ecosystem mapping (PEM) for the entire TSA. In addition to LVI, a new VRI is planned for about 400 000 hectares in the southern portion of the TSA. Photography in support of this project is expected to begin this year.

I acknowledge that the inventory used in the base case is dated and that its use does introduce a degree of uncertainty to the base case. However, this is the best information available and as such I accept it as adequate for use in my determination. The new inventory information, including site productivity estimates (discussed below) will be available for use in the next timber supply review.

-site productivity estimates

In general, forest stands between 30 years and 150 years of age provide the most accurate measurements of site productivity. These measurements, which are based on tree height at age 50 years at breast height, are referred to as *site indices*. Site indices based on information from younger stands and older stands may not accurately reflect potential site productivity. This has been verified in many areas of the province where studies of old-growth site index suggest that actual site indices may be higher than those indicated by existing data from mature forests.

In the absence of PEM or terrestrial ecosystem mapping for the Cassiar TSA, site indices from the ministry's biophysical site index model were used in the base case. This model assigns site index estimates for each tree species through application of data for the biogeoclimatic zone, slope, aspect, elevation, and climatic variables.

As discussed under "*forest inventory*", the landscape level inventory work currently underway will also be used to complete PEM for the entire TSA. The new PEM can be used to improve site productivity estimates for use in the next timber supply review. For this determination, I accept the approach used in generating site productivity estimates and I will make no adjustments to the base case on this account.

- log grades

In April 2006 new log grades were implemented for the BC Interior. Previously, a log was assessed according to whether the tree it came from was alive or dead at the time of harvest. Prior to April 2006, grade 3 endemic (the "normal" mortality observed in a mature stand) and grade 5 (dead tree with less than 50 percent firmwood and/or less than 50 percent of lumber produced from this grade is merchantable) were not charged to the AAC if harvested. Under the new system, grades are based on log size and quality at the time it is scaled, regardless if the tree was alive or dead at harvest. To better account for all harvested volume in the AAC cut control, logs that were previously considered grade 3 endemic and grade 5, also referred to as "dead

potential”, are now charged to the AAC. Therefore, this volume now needs to be taken into account in the AAC determination.

Estimates of timber volume in the base case did not include dead potential volume. Possible sources of data about dead potential volume include inventory audit plots, VRI phase II ground samples, permanent sample plots, and temporary sample plots. At this time, the inventory audit is the only source of information for estimating the amount of dead potential timber in the Cassiar TSA. The 1997 inventory audit for this TSA indicated that dead potential volume is about nine percent of the total volume on the forested land base but I am advised by district staff that current utilization of dead volume is extremely limited.

Having considered the available information, I agree with staff that the inventory audit data provides the best estimate of dead potential timber in the Cassiar TSA. Given the age of the inventory audit, the lack of dead timber utilization, and the likelihood of minimal or no utilization in the near future, I accept the exclusion of this volume from the base case.

Section 8 (8) (a) (ii) the expected time that it will take the forest to become re-established on the area following denudation

Table 2 above lists each of the factors I have considered under this section for which I have agreed with the representation in already published information respecting current practice and with the modelling as incorporated in the analysis.

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

Table 2 above lists each of the factors I have considered under this section for which I have agreed with the representation in already published information respecting current practice and with the modelling as incorporated in the analysis.

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

Table 2 above lists each of the factors I have considered under this section for which I have agreed with the representation in already published information respecting current practice and with the modelling as incorporated in the analysis.

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

Integrated resource management objectives

- general comments

The Ministry of Forests, Lands and Natural Resource Operations (formerly 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. The *Forest and Range Practices Act* (FRPA) and other legislation provide for, or enable, the legal protection and conservation of timber and non-timber values. Accordingly, the extent to which integrated resource management objectives for various forest resources and values affect timber supply must be considered in AAC determinations.

The Cassiar TSA supports an abundance of wildlife species. Moose are the most abundant ungulate, and thin horn sheep, caribou and mountain goats are also plentiful. Grizzly and black bears, wolverines, lynx and wolves are common throughout the valleys of the TSA. Many bird species also occur, and several breed exclusively in this area. The watersheds of the TSA drain into both the Pacific and the Arctic Oceans and, subsequently there is a large variety of fish species. These include five salmon species, which are found in the Stikine, Taku and Tatshenshini Watersheds, and freshwater fish such as rainbow trout, arctic grayling, Dolly Varden char, lake char, white sucker, whitefish and northern pike which occur throughout the TSA.

-higher level plans

In 2000, government signed the Cassiar-Iskut-Stikine Land and Resource Management Plan (LRMP) covering an area of about 5.2 million hectares of the Cassiar TSA. The land use planning process that led to the development of the LRMP provided an opportunity for the public, the Tahltan Nation, special interest groups and governments to make recommendations regarding proposed protected areas and future management of public forest lands within the Cassiar-Iskut-Stikine planning area. Through recommendations from this LRMP, 14 protected areas, totalling about 229 000 hectares were established. These areas were excluded from the THLB.

In 2000, Cabinet issued the Klappan Area Permit Deferral Area Order, which included a 15-year commercial timber harvest deferral for the Klappan Area. At the time the base case was revised, the harvest deferral was set to expire on December 1, 2014. Consequently, the area was included in the THLB. On November 28, 2014 Cabinet extended the deferral period to March 31, 2015.

As discussed in "*Iskut "B" operable block*", I do not accept the inclusion of the Iskut "B" operable block in the THLB used in base case. Given that the Klappan Area is wholly located within the Iskut "B" operable block, my decision to exclude the Iskut "B" operable block from the THLB results in the exclusion of the Klappan Area, regardless of the status of the deferral order. Any changes in access to the Iskut "B" operable block and any legal direction regarding the Klappan Area can be considered at the time of the next AAC determination.

In 2004, government approved the Dease-Liard Sustainable Resource Management Plan (SRMP) which encompasses an area of 2.4 million hectares within the Dease-Liard operable block of the Cassiar TSA. The majority of the plan area lies within the traditional territory of the Kaska Dena First Nation, although portions also overlap with the traditional territories of the Tahltan First Nation in the southwest and with the Teslin Tlingit First Nation in the west. Many components of the SRMP were established as legal objectives through an *Order Establishing the Dease-Liard Landscape Unit and Objectives* signed December 2004. Through this order, forest management objectives, indicators, and targets were formally established for wildlife, biodiversity, cultural heritage, visual quality, community use, and timber values in this landscape unit. These legal requirements are reflected in the base case.

In 2010, new chapters were created in the SRMP for resource values not addressed in the original plan. As a result, in January 2012, the province in partnership with the Kaska Dene First Nation established the Ne'ah'-Horseshoe/Deadwood Protected Area. The Kaska Dene First Nation is

concerned that inclusion of the new protected area could result in an overestimation in the THLB. I reviewed the information regarding the new protected area and the THLB and note that the area contributes only 10 hectares to the THLB. Given the relatively small size of the area, inclusion of the Ne'ah'-Horserranch/Deadwood Protected Area from the THLB has little, if any, effect on the base case.

In 2011, the Atlin-Taku Land Use Plan (LUP) and a Strategic Engagement Agreement (SEA) with the Taku River Tlingit First Nation was signed by the Premier of BC and representatives of the Taku River Tlingit. Tlingit and Tahltan First Nations' traditional territories overlap the approximately 3.04 million hectare-area identified in the LUP. The LUP is intended to assist in resolving access, protection and mineral development issues, and provides clarity with respect to the values and objectives to be considered in resource management decision-making.

Consistent with the LUP, Cabinet issued the Atlin-Taku Resource Management and Forest Retention Areas Order under the *Environment and Land Use Act* on July 25, 2014. The order applies to that part of the LUP area that overlaps Tlingit territory and does not apply to those parts that overlap Tahltan territory. The order directs provincial officials not to authorize large hydropower plants and transmission lines in three resource management areas covering about 116 000 hectares. In addition, the order prohibits commercial logging in forest retention areas (FRA) totalling about 1.2 million hectares. Some commercial logging is allowed in the Wilson Creek FRA (300 hectares) for 20 years to allow local small operators time to relocate operations to other areas of the TSA. Due to the small size of the Wilson Creek FRA and limited period in which commercial logging is allowed to continue, all FRAs, including Wilson Creek, and protected areas established under the *Park Act*, were excluded from the THLB used in the base.

The only remaining area without established land use planning objectives is the Swan-Teslin operable block for which the 2004 Aspatial Old Growth Order for established landscape units provides direction for old growth management. The seral stage requirements in the order were used in the base case.

In determining the AAC for the Cassiar TSA, I have considered the legal requirements established in the orders described above and to the extent reflected in current legal requirements the provisions of the Cassiar-Iskut-Stikine Land and Resource Management Plan, the Dease-Liard Sustainable Resource Management Plan and the Atlin Taku Land Use Plan. In the event that there are changes in legal requirements for forest management and land use in the Cassiar TSA that could significantly affect timber supply in the Cassiar TSA, I am prepared to revisit this decision earlier than required by the *Forest Act*.

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

Other information

-harvest performance

Due to the lack of infrastructure, distance to markets etc., primary timber harvesting in the Cassiar TSA is dependent on high timber prices. As reported in the Harvest Billing System (HBS), the annual harvest level fluctuated considerably between 2002 (when the AAC was set at 305 000 cubic metres) and 2012. In some years (2002, 2006 and 2008) virtually no

timber was harvested in the TSA; whereas, in 2012 about 99 percent of the AAC was harvested. On average the annual harvest in the 10-year period from 2002 to 2012 has been about 30 percent of the AAC. With the exception of a small amount of harvesting in the Atlin operable block, most of the harvesting in the TSA has occurred in the Iskut “A” operable block.

The 2002 AAC includes a partition of 120 000 cubic metres attributable to an area roughly equivalent to the area of the Iskut “A” operable block. This volume was allocated under a single, 10-year, non-replaceable forest licence (NRFL) totalling 1.2 million cubic metres. In 2011, the NRFL was extended for five years; however, no additional volume was added to the licence. Currently only about a third of the volume allocated in the licence has been cut. On average about four percent of the volume harvested under the NRFL has been pulpwood, the remainder was high value sawlog timber sold for export. Sawlogs of lesser quality and pulp logs were not utilized.

I am aware that in spite of the low level of harvest performance under the NRFL, annual harvesting in the Iskut “A” operable block has repeatedly (in 2007, 2011 and 2012) exceeded the AAC partition due to the volume of timber harvested in conjunction with major industrial development (excluding forestry). In 2012, a total of about 300 000 cubic metres was harvested in Iskut “A”. Of this volume, about half was harvested within the total volume available in the NRFL; the remainder was attributable to major project development. I am concerned that if the current rate of harvest in the Iskut “A” operable block continues, both timber and non-timber resources in the area may be adversely affected and I will discuss my considerations in this regard throughout the remainder of this rationale (see “*major projects/cumulative effects*”, “*alternative harvest forecasts*”, “**Reasons for Decision**” and “**Implementation**”).

- Major projects/cumulative effects

Recent development in the Cassiar TSA includes the construction of the BC Hydro Northwest Transmission Line. The transmission line has been completed to a new substation near the Town of Bob Quinn Lake, where a cluster of hydropower projects on the Iskut River system is nearly complete. Permitting and construction of the Red Chris Mine project near Tattoga have also occurred and extension of the Northwest Transmission Line to the mine site and the Community of Iskut is underway. There is also interest in a number of other potential mine projects in the area.

The development of major projects; such as large mines, clean energy projects and transmission line corridors, is resulting in significant areas of temporary and permanent deforestation in the Cassiar TSA. In order to account for deforestation due to industrial development (including forestry) up to 2014, a total of about 19 600 hectares, including about 2900 hectares of area previously assumed to contribute to the THLB, were excluded from the productive forest land base. Most of the area was deleted from the Iskut “A” operable block. It is uncertain how much of this area will remain permanently deforested and what the long-term impact on forest values might be. The projected clearing for major projects in the next 10 years could result in the deforestation of an additional 7388 hectares of CFLB.

In the Cassiar TSA there are currently 22 Occupant Licences to Cut (OLCs) issued for a total volume of 2 146 700 cubic metres. If the two pending OLCs are granted, which will likely occur within the next five years, the total volume of timber harvested could increase to 2 585 793 cubic metres. All but 100 000 cubic metres of this volume is attributable to major project development in the Iskut “A” operable block. If the volume in approved OLCs and

pending OLCs is harvested to any significant extent, both timber and non-timber values in the Iskut “A” operable block could be seriously impacted.

Although major project developers are required to have OLCs to remove timber for road building and infrastructure construction, and developers are charged stumpage for any commercial timber harvested (regardless of whether it is left on site or not), there is no legal requirement for the timber to be utilized. I am aware that most of the timber harvested for major project development in the Cassiar TSA continues to be destroyed on site, usually by burning. The Tahltan First Nation has expressed concern regarding the lack of utilization of this timber and would prefer to see the timber offered to First Nations or possibly retained/stored for use during mine reclamation.

I have been mindful in this determination of the cumulative effect of timber harvesting on both timber and non-timber resources, particularly in the Iskut “A” operable block. Continued development at the rate described above has the potential to negatively impact a wide range of forest resource values. For this reason, I am instituting a partition in the AAC limiting the annual rate of harvest in the Iskut “A” operable block (see Appendix 5) to a maximum of 80 000 cubic metres per year (see “*alternative rates of harvest*” and “**Reasons for Decision**”).

As described under “**Implementation**”, it is my expectation that district staff will monitor the total volume and species of timber harvested the Iskut “A” operable block, as reported in HBS, regardless of whether or not the volume is attributable to major project development or forestry or whether the area harvested was assumed to contribute to the THLB estimate used in the base case or not. Furthermore, I encourage the ministry and relevant government agencies, in collaboration with First Nations, forestry, mining and energy industries to improve the tracking and sharing of development information. This information is pivotal to inform a broad range of decisions and to support the assessment of cumulative effects on an array of values, including aboriginal interests. I am also mindful of the potential impacts associated with the permanent loss of forest and I encourage all of the groups described above to work collaboratively to minimize the impact of development on forest resources, maximize the utilization of the harvested timber and to maximize the rehabilitation of deforested areas following development.

- First Nations consultation

In June 2014, the Supreme Court of Canada (SCC) released its decision on the *Tsilhqot’in Nation v. British Columbia* case (*Tsilhqot’in* decision). This decision provided further clarification on the nature of and tests for aboriginal title, and established that the Tsilhqot’in Nation holds aboriginal title over an extensive area in the central interior of the province. I have considered the *Tsilhqot’in* decision and its relevance for this AAC determination. Of the First Nations with territory in the Cassiar TSA, three are signatories to Treaty 8, in which title to the land was ceded to the Crown. The Nisga’a Lisisms Government also has Treaty rights associated with the Nass watershed (discussed in more detail below). Treaty lands are not Crown land, consequently these lands were excluded from the THLB used in the base case.

The First Nations groups whose traditional territories overlap with the Cassiar TSA include:

- Tahltan First Nation; consisting of the Tahltan Band (Telegraph Creek) and the Iskut First Nation (Iskut village), both represented by the Tahltan Central Council in Dease Lake;
- Kaska Dena Council; on behalf of the Daylu Dena Council (Lower Post) and the Dease River First Nation (Good Hope Lake);
- Taku River Tlingit First Nation (Atlin);

- Teslin Tlingit Council (Teslin, Yukon Territory (YT));
- Carcross Tagish First Nation (Carcross, YT); and
- Champagne and Aishihik First Nation (Haines Junction, YT).

The First Nations groups with treaty rights or assertions that overlap the Cassiar TSA include: the Nisga'a Lisims Government (New Aiyansh) that holds Treaty rights associated with the Nass watershed ("Nass Area") and the Treaty 8 First Nations who assert Treaty areas ("Treaty 8 disputed area") and rights extending into the Cassiar TSA.

It is acknowledged that at least some of these First Nations historically practiced their aboriginal rights in the TSA and that these practices were exercised at the site and landscape levels. There is an area of the Cassiar TSA located at the very southern end that is not covered by any First Nations asserted territorial claims. This area, which is largely non-forested, amounts to 117 563 hectares or about one percent of the total TSA area.

A portion of the Nisga'a Nass Area shares more or less a common border with the south-western edge of the Cassiar TSA. There are small areas of overlap along these adjacent boundaries and the overlap is estimated to be less than 3000 hectares, or 0.02 percent of the Cassiar TSA. The boundary discrepancy is mainly due to differences in map scale between the Cassiar TSA boundary and the Nisga'a Nass Area boundary from the Province's Consultative Areas Database. Any overlap occurs along heights of land, which are for the most part not forested. There is no THLB in the Nisga'a Nass Area within the Cassiar TSA. For this reason, consultation with the Nisga'a was carried out at a notification level only.

Treaty 8 First Nations have challenged the western boundary of the Treaty 8 Area, and claim an additional area upon which to exercise their treaty rights. The "disputed area" is identified on some Treaty 8 maps and agreements as "Zone B", and includes a portion of the Cassiar TSA. The Province disputes the claim, and the issue is currently under litigation in the BC Supreme Court. In accordance with established consultation procedures contained in the *Treaty 8 Forest and Range Resource Management Agreement*, consultation was conducted at a notification level with the First Nations signatory to this agreement, namely: Doig River First Nation, Prophet River First Nation, and West Moberly First Nation. The Treaty 8 First Nations were not consulted with in previous TSRs.

Three of the First Nations (Champagne and Aishihik, Carcross Tagish, and Teslin Tlingit) are headquartered in the Yukon, and all of these Nations have a final agreement, or modern-day treaty, with the Yukon and federal governments. For claimed areas within BC, all three of the First Nations are presently in Stage 4 of the BC Treaty Process. Champagne and Aishihik, Carcross Tagish, and Teslin Tlingit were consulted according to provincial procedures in line with *Haida* principles.

All of the BC-based First Nations with interests in the Cassiar TSA without treaties have Strategic Engagement Agreements (SEA) with the province. These agreements all have an established engagement level for an AAC decision. The engagement level for TSR is specified as level 4 in the Tahltan agreement and a "Strategic Shared Decision" for the Kaska Dena agreement. The Taku River Tlingit SEA does not explicitly state an engagement level for an AAC decision.

As of April 2013, the Kaska Dena signed an Incremental Treaty Agreement with the province. As part of that agreement, a number of small land parcels have been transferred in fee simple to the Kaska Dena. When this information became known to the district and FAIB staff in August 2013, a geographic information system (GIS) analysis was undertaken. The results indicate that out of the total 3146 hectares of land offered to the First Nation, 253 hectares

contribute to the THLB in the Cassiar TSA. These areas were excluded from the THLB when the base case was revised.

As part of the consultation process, initial assessments were undertaken by district staff that considered existing information provided by First Nations regarding the strength of aboriginal rights claims and the potential impact this decision would have on these rights. The province acknowledges that non-treaty First Nations within the Cassiar TSA have aboriginal interests within their traditional territories but that the specific nature, scope, or geographic extent of these aboriginal interests have yet to be determined. The Skeena Stikine Natural Resource District Office uses the province's Consultative Area Database (CAD) to determine areas within which a particular First Nation has asserted traditional territory. In addition, the province uses Remote Access to Archaeological Data (RAAD) along with any local knowledge to highlight site-specific areas of cultural or archaeological use and potential throughout the Cassiar TSA. During the consultation process, there were no changes made to the consultation levels for any First Nations on the basis of these assessments.

Contact was made with all First Nations in July 2011 informing them of the upcoming timber supply review (TSR) for the Cassiar TSA. Given that there was limited progress on the TSR until late in 2012, a re-engagement letter was sent to all First Nations in December 2012 notifying them that the consultation process was expected to begin shortly. At that time an AAC determination was expected in early 2013. There was limited engagement from the affected First Nations, other than a desire to be kept informed. Update letters were sent in the spring and summer of 2013 announcing the pending release of the data package and public discussion paper. When those were officially released in September 2013, consultation began in earnest.

District staff advise that no concerns were raised by Champagne and Aishihik, Carcross Tagish, Nisga'a Lisims Government, Treaty 8 First Nations or Taku River Tlingit First Nation.

The Tahltan First Nation raised concerns about the destruction of timber harvested in conjunction with major projects (addressed in "*major projects*"), questioned whether the Klappan Area was excluded from the THLB and whether inclusion of the Iskut "B" operable block would contribute to overharvesting in the Iskut "A" operable block (addressed in "*Iskut "B" operable block*"), and questioned access plans for the THLB area near the eastern edge of Mount Edziza Park. With regard to the latter, FLNR staff, along with staff from other ministries, are involved in a number of formal and informal processes that should help to resolve these concerns. For example, the Klappan Strategic Initiative process is examining the access-related issues in the Klappan Area. In addition, the approval for a major amendment to the Cassiar Forest Products' forest stewardship plan includes the expectation that any cutting permits and road permits proposed near the Mt. Edziza Park will require multi-agency referrals.

The Kaska Dena indicated at meetings held in January 2014 at Good Hope Lake and Lower Post that they support timber harvesting particularly in areas near old logging, are interested in tenure opportunities and that they do not support a bridge over the Liard River. They also had questions about whether the Horse Ranch protected area was included in the THLB (see "*Higher level plans*") and about mountain pine beetle (MPB) in their territory.

In response, district staff indicated that a significant proportion of the stands in the Dease-Liard operable block are isolated by the Liard River. While there was a small amount of harvesting in these stands in the 1980's that utilized an ice bridge across the Liard River for access, the majority of the harvest was accessed from Highway 37 or existing roads. Currently, there are no plans to harvest stands isolated by the Liard River. If in the future a permanent bridge is proposed, there would be consultation prior to any decision. With regard to mountain pine

beetle (MPB): unlike the Mackenzie TSA which also overlaps with Kaska Territory, there is very little MPB in the Cassiar TSA.

The Teslin Tlingit Council expressed concerns about the use of old inventory information to determine an AAC, requested details about area netdowns specific to Aboriginal Rights and Title in the Swan Teslin Block, questioned the process for developing the new operability (operable) blocks, and emphasized that they would like to see land use planning completed for the Swan Teslin area. The Teslin Tlingit Council also questioned how the new operability (operable) blocks were defined and whether there was any consultation.

The information about the netdowns in the Teslin Tlingit area has been forwarded to the council's environmental officer. Ministry staff explained the process used to define the operable blocks and said that there was no consultation on block definition, as the definition is a construct used to model timber supply. The Teslin Tlingit Council was particularly concerned about wildlife, especially caribou, moose, and marten. In this regard, I note that all of the legal requirements established under the various land use plans and orders and current legislation were reflected in the base case. Areas excluded from the THLB to directly account for wildlife habitat requirements included: caribou no harvest zones, bull trout no harvest zones, and wildlife tree patches. In addition, areas excluded from the THLB to account for other factors such as riparian areas, visual quality, community watersheds and recreation, also provide habitat.

Ministry staff replied to these concerns at a meeting that was held with Teslin Tlingit Council members in Teslin on January 28, 2014. On May 13, 2014 the Teslin Tlingit council provided me with a letter touching on several themes including government-to-government relationships, Aboriginal Rights and Title claimed by the Teslin Tlingit Council, strength of claims, non-timber values in relation to the TSR, TSR process and land use planning. I have provided a response to the council and will restrict my comments here to those issues that relate to TSR.

Based on the process described earlier in this section, district staff concluded that any impact this decision might have on the Teslin Tlingit's interests is low to negligible, given that the AAC represents the maximum volume available for harvest on an annual basis but does not specify where, when or even if harvesting will occur. (For example, although the 2002 AAC was set at 305 000 cubic metres the average annual harvest has been about 30 percent of the AAC). Furthermore, there has been and continues to be no industrial demand for timber in the Swan-Teslin operable block. If any interest is expressed in the future, further consultation would be required before the minister could set an apportionment for the area and prior to the issuance of any licences or permits.

The Teslin Tlingit Council suggests that I postpone this AAC determination until land use plans and better information are available. I have considered this request; however, given that the AAC remains at the level determined in 2002 until a new AAC is determined, a decision to postpone this determination is in itself a decision to maintain the AAC at 305 000 cubic metres. As noted throughout this document there have been significant changes in the Cassiar TSA since 2002 that could significantly affect timber supply. On this basis, I have decided not to postpone this decision. Furthermore, although there is no land use plan for the Swan-Teslin operable block, the base case does account for the current management requirements and practices in the area. If, following this determination, legal land use requirements are established for the area that could significantly affect timber supply in the Cassiar TSA, I am prepared to re-visit this determination earlier than the 10-year period required in legislation.

Based on my review of the information sharing and consultation processes described above, the information regarding Aboriginal Interests made available to FLNR staff, and the potential impact my decision may have on Aboriginal Interests and Treaty rights, I conclude that FLNR has engaged in consultation at an appropriate level according to the agreements, treaties and provincial consultation procedures, which are in line with the *Haida* decision. Furthermore, I note that district staff will continue to be available to meet and consult with First Nations on issues at the operational planning level.

Opportunities were provided to all First Nations to share their concerns related to specific Aboriginal Interests that may be impacted by this decision. If new information regarding First Nations' Aboriginal Interests becomes available that significantly varies from the information that was available for this determination and that may affect timber supply, I am prepared to revisit this determination sooner than in 10 years, as required by legislation.

-climate change

Climate change may affect a variety of factors that influence timber supply, such as stand productivity, forest health, fire frequency etc. However, it is not clear at this time what specific climate changes will occur in a particular area and in turn how these will affect forest ecosystems. For example, warmer temperatures, increases in carbon dioxide and wetter conditions may increase tree growth. Conversely, these same factors could also result in significant increases in the forest pests, such as beetles, stem rust, etc.

In addition to climate change research, a number of possible forest management adaptations are being explored by the ministry, including changes in species for reforestation, planting densities and assisted migration. As forest responses to climate change and management adaptation become known, they will be integrated in timber supply reviews. To this end, the legal requirement for periodic re-determination of AACs will allow new information to be continuously integrated into timber supply as it becomes available.

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

Alternative rates of harvesting

- alternative harvest forecasts

The base case used in this determination is one of several alternative forecasts that could be prepared using the same set of information and assumptions. In addition to the base case, I was provided with two alternatives forecasts.

In the first, the initial harvest in the Iskut "A" sawlog operable sub-block was increased to the maximum level attainable – 110 000 cubic metres per year. This level was maintained for one decade before decreasing to 28 000 cubic metres per year for the remainder of the forecast. The even-flow harvest levels for the Iskut "A" pulpwood, Iskut "B" sawlog, Iskut "B" pulpwood, Atlin, Swan-Teslin and Dease-Liard blocks and sub-blocks remained essentially the same as in the base case. Summing the harvest levels for each of the blocks and sub-blocks, including the Iskut "A" sawlog sub-block results in a total initial harvest of 226 000 cubic metres, which is maintained for one decade before decreasing to 162 000 cubic metres per year for the remainder of the forecast.

In the second alternative forecast, the Iskut “A” sawlog harvest level was set at the maximum even-flow level of 35 000 cubic metres per year. The even-flow harvest levels for the Iskut “A” pulpwood, Iskut “B” sawlog, Iskut “B” pulpwood, Atlin, Swan-Teslin and Dease-Liard blocks and sub-blocks were the same as in the base case. Summing the harvest levels for each of the blocks and sub-blocks, including the Iskut “A” sawlog sub-block results in a total even-flow harvest of 151 000 cubic metres per year.

In summary, varying the initial harvest level for Iskut “A” sawlog between 35 000 cubic metres per year and 110 000 cubic metres per year has only a small effect on harvest levels after the first decade. From this I conclude that there is a reasonable degree of flexibility in the first decade of the base case. I will discuss the implications of this flexibility in the context of my other considerations under “**Reasons for Decision**”.

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

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

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

Economic and social objectives

- Minister’s letters

The Minister of Forests and Range expressed the economic and social objectives of the Crown in two letters to the chief forester, dated July 4, 2006 (attached as Appendix 3) and October 27, 2010 (attached as Appendix 4). The minister asked for consideration, during AAC determinations, of the importance of a stable timber supply in maintaining a competitive and sustainable forest industry while being mindful of other forest values.

In respect of this, in the base case and in the alternative harvest forecasts described above, a primary objective is to attain a stable, long-term harvest level where the growing stock also stabilizes. I have also considered the adequacy of the provisions made both in current practice, and assumed in the analyses, for maintaining a range of forest values.

Finally, the minister suggested that the chief forester should consider the local social and economic objectives expressed by the public and relevant information received from First Nations.

During my consideration of the factors required under Section 8 of the *Forest Act*, I have been mindful of the local objectives, as provided by land use plans and orders. I have also reviewed the public consultation and First Nations processes undertaken by the district and considered the input received in making my determination. On this basis, I am satisfied that this determination accords with the objectives of government as expressed by the minister.

- employment and community dependence

I am mindful that annual harvest activity in the TSA has been fairly sporadic, largely due to the preponderance of marginally economic stands in the Cassiar TSA. The commercial viability of timber harvesting in the TSA is largely restricted due to issues such as limited access, lack of mill

infrastructure and low local demand for forest products. Consequently, harvesting in the Cassiar TSA continues to be well below the AAC.

Mining, guide outfitting, recreation and tourism are the primary economic sectors in the region – forestry is a relatively minor contributor. The past few years have brought significant industrial development to the Cassiar TSA including the development of the Red Chris Mine near Tattoga, construction of the Northwest Transmission Line that links to the mine and to the community of Iskut, and hydro-electricity generators on the Iskut River system. There is also interest in a number of other potential mining projects in the TSA area.

I have reviewed the information regarding employment and community dependence related to the Cassiar TSA. I am aware of the linkages between AAC and employment, both locally and provincially, and have taken this into account in this determination. As discussed under “*major projects*”, I am concerned about how the rate of non-timber industrial development may impact timber supply and other forest resource values that support the local economy.

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

As noted in Table 2, I accept as modelled the factors usually considered under this section, and need not to discuss them further.

Reasons for Decision

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

The base case proposed in the timber supply review public discussion paper was revised, as described under “*Base case for the Cassiar TSA*”. Throughout the remainder of this document, the term “base case” refers to the revised base case.

In the base case, an initial harvest of 196 000 cubic metres per year is maintained for 10 years before decreasing to 164 000 cubic metres per year for the remainder of the 250-year forecast period. These harvest levels are the sum of the operable block and sub-block forecasts.

For the Iskut “A” sawlog sub-block an initial harvest of 80 000 cubic metres per year can be maintained for 10 years before decreasing to 32 000 cubic metres per year for the remainder of the forecast. For the Iskut “A” pulpwood sub-block the even-flow harvest is 6000 cubic metres per year. For the Atlin, Swan-Teslin and Dease-Liard operable blocks the even-flow harvests are 5500 cubic metres per year, 11 000 cubic metres per year and 97 000 cubic metres per year, respectively. There is no harvest during the first decade in the Iskut “B” operable block, thereafter, the even-flow harvest levels are 9500 cubic metres per year for the sawlog sub-block and 2500 cubic metres per year for pulpwood sub-block.

In my review of the base case, I identified only one significant source of uncertainty that would lead me to directly adjust the base case – inclusion of the Iskut “B” operable block, (including both the sawlog and pulpwood sub-blocks) in the THLB. As discussed under “*Iskut “B” operable block*” there is no history of harvesting in these areas, access is limited and there are no plans for timber harvesting in the areas in the foreseeable future. District staff informed me that it will be at least 10 years before these stands could be considered for harvest. Consequently,

I did not accept the contribution of the Iskut “B” operable block to the base case harvest levels starting in the second decade. (Exclusion of the Iskut “B” operable block also resulted in the exclusion of the Klappan Area from the THLB.) Although this decreases the base case harvest level after the first decade from 164 000 cubic metres per year to 152 000 cubic metres per year, there is no effect on the short-term harvest level. In addition, because the timber supply for each operable block was projected independently, this change does not affect the harvest flows from the other operable blocks.

Throughout my considerations I have been aware of the age of the forest inventory information available for the Cassiar TSA. Although I accept that the best available information was used in the base case, and I note that there was a reasonable correlation between the audit sample volumes and the forest inventory volumes, this information is dated. This introduces significant uncertainty regarding the species composition and growth of stands in the base case. However; in the absence of newer inventory information there is no way of knowing in which way the information may be biased. (For example, is there more or less of a particular species or are stands growing faster or slower than projected in the base case). This type of uncertainty cannot be accounted for directly by adjusting the base case, but does introduce the need for caution when considering harvest projections for the Cassiar TSA.

The uncertainty associated with the inventory is compounded, primarily in the Iskut “A” block by the timber harvesting taking place in conjunction with major project development. Information regarding the species composition of the volume billed in HBS under OLCs is based on the forest inventory rather than direct observation at the time the timber is scaled. The availability of new inventory information from the work currently underway will help to reduce this uncertainty.

I am also mindful that the AAC partition of 120 000 cubic metres per year attributable to the Iskut “A” operable block is being over-harvested and that this is the direct result of timber harvesting to clear land for major project development rather than commercial logging for timber procurement. This is a cause of significant concern and I will discuss my expectations in this regard under “**Implementation**”. In order to limit the concentration of timber harvesting in the Iskut “A” operable block, I am establishing a partition in the AAC of 80 000 cubic metres per year attributable to the Iskut “A” operable block. This partition applies to the entire area within the Iskut “A” operable block, as identified in the map included in Appendix 5 of this document, regardless of whether the area was assumed to contribute to the THLB used in the base case or not.

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 TSA by establishing an AAC of 196 000 cubic metres that includes a partition of 80 000 cubic metres attributable to the Iskut “A” operable block (see Appendix 5).

This determination is effective March 5, 2015, and will remain in effect until a new AAC is determined, which must take place within 10 years of the effective date of this determination.

If additional significant new information is made available to me, or major changes occur in the management assumptions upon which I have predicated this decision, then I am prepared to revisit this determination sooner than the 10 years required by legislation.

Implementation

In the period following this decision and leading to the subsequent determination, I encourage Ministry of Forests, Lands and Natural Resource Operations (FLNR) staff, licensees and other major project proponents to undertake or support the tasks and studies noted below, the particular benefits of which are described in appropriate sections of this rationale document. I recognize that the ability of all parties to undertake or support these projects is dependent on provincial priorities and 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 the Cassiar TSA.

1. It is my expectation that district staff will monitor the total volume and species of timber harvested in the Iskut “A” operable block as reported in HBS and will provide me with this information annually.
2. In order to minimize the permanent loss of productive forest, I encourage all of the groups listed above to work collaboratively to minimize the impact of development on forest resources, to maximize the utilization of harvested timber, and to maximize the rehabilitation of deforested areas following development activities.
3. In order to better inform resource management decisions, cumulative effects, and potential impacts on aboriginal interests, I request that the ministry and relevant government agencies, in conjunction with forestry, oil and gas, mining, BC Hydro and alternative energy industries and First Nations, work to improve the tracking and sharing of information on forest land base changes associated with all industrial development.

Other considerations

1. *Climate change:* Climate change may impact site productivity estimates, forest health and other factors that were addressed in this determination. I encourage staff to try and understand projected climate change impacts in the TSA so that this important consideration can be factored into the next determination.
2. *Dead potential volume:* By accounting for this factor in my determination, dead potential volumes (i.e. grade 3 endemic and grade 5 log volumes) that are harvested in the future in the TSA should be charged against the AAC.



Diane Nicholls, RPF
Chief Forester

March 5, 2015



Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (current to February 18, 2015), 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 the Crown land in the following areas:

- (i) tree farm licence areas;
- (ii) community forest agreement areas;
- (iii) first nations woodland licence areas;
- (iv) 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 minister must determine an allowable annual cut for each woodlot licence area, in accordance with the woodlot licence for that area.

(7) The minister must determine an allowable annual cut for

(a) each community forest agreement area in accordance with the community forest agreement for that area, and

(b) each first nations woodland licence area in accordance with the first nations woodland licence for that area.

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

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

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

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

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

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

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

- (vi) any other information that, in the chief forester's opinion, relates to the capability of the area to produce timber,
 - (b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area,
 - (c) [Repealed 2003-31-2.]
 - (d) the economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia, and
 - (e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area.
- (9) Subsections (1) to (4) of this section do not apply in respect of the management area, as defined in section 1 (1) of the ***Haida Gwaii Reconciliation Act***.
- (10) Within one year after the chief forester receives notice under section 5 (4) (a) of the ***Haida Gwaii Reconciliation Act***, the chief forester must determine, in accordance with this section, the allowable annual cut for
- (a) the Crown land in each timber supply area, except the areas excluded under subsection (1) (a) of this section, and
 - (b) each tree farm licence area
- in the management area, as defined in section 1 (1) of the ***Haida Gwaii Reconciliation Act***.
- (11) The aggregate of the allowable annual cuts determined under subsections (6), (7) and (10) that apply in the management area, as defined in section 1 (1) of the ***Haida Gwaii Reconciliation Act***, must not exceed the amount set out in a notice to the chief forester under section 5 (4) (a) of that Act.

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

Section 4 of the *Ministry of Forests and Range Act* (current to February 18, 2015) reads as follows:

Purposes and functions of ministry

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

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



JUL 04 2006

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

Dear Jim:

Re: Economic and Social Objectives of the Crown

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

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

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

Minister of
Forests and Range
and Minister Responsible
for Housing

Office of the
Minister

Mailing Address:
PO Box 9049 Stn Prov Govt
Victoria BC V8W 9E2
Telephone: 250 387-6240
Facsimile: 250 387-1040

Location:
Parliament Buildings
Victoria BC V8V 1X4
e-mail: FOR.Minister@gov.bc.ca



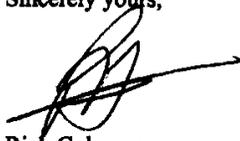
Jim Snetsinger

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

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

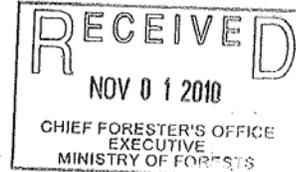
You should also consider important local social and economic objectives expressed by the public during the Timber Supply Review process, where these are consistent with the government's broader objectives as well as any relevant information received from First Nations.

Sincerely yours,

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

Rich Coleman
Minister

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



File: 280-30/MPB
Ref: 126097

OCT 27 2010

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

Dear Mr. Snetsinger:

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

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

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

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Ministry of Forests and Range and
Minister Responsible for Integrated
Land Management Bureau

Minister's Office

Mailing Address:
P.O. BOX 9049 Stn Prov Govt
Victoria, BC V8W 1X4

Tel: (250) 387-6240
Fax: (250) 387-1040
Website:
gov.bc.ca/forlmbwww.gov.bc.ca

Jim Snetsinger, Chief Forester

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

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

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

Sincerely,



Pat Bell
Minister

pc: Dana Hayden, Deputy Minister

Appendix 5: Iskut “A” Operable Block

