

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

**Tree Farm Licence 47**

held by  
**TimberWest Forest Corp.**

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

**Effective February 4, 2014**

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## Table of Contents

Objective of this document.....	2
Statutory framework.....	2
Description of the TFL.....	2
History of the AAC.....	3
New AAC determination.....	4
Information sources used in the AAC determination.....	4
Role and limitations of the technical information used.....	7
Guiding principles for AAC determinations.....	8
The role of the base case.....	10
Timber supply analysis.....	11
Consideration of factors as required by Section 8 (8) of the <i>Forest Act</i> .....	13
Factors requiring additional explanatory consideration.....	15
Factors considered under Section 8(8)(a)(i).....	15
- total area.....	15
- low productivity sites.....	16
- recreation reductions.....	17
- marine foreshore buffer.....	18
- wildlife habitat.....	19
- site productivity assignments.....	20
- natural stand yields.....	21
- log grades.....	21
- operational adjustment factors.....	22
Factors considered under Section 8(8)(a)(ii).....	22
Factors considered under Section 8(8)(a)(iii).....	23
- silvicultural systems.....	23
Factors considered under Section 8(8)(a)(iv).....	23
- utilization level.....	23
Factors considered under Section 8(8)(a)(v).....	24
- higher level plans – Vancouver Island Land Use Plan Higher Level Plan Order and the South Central Coast Ministerial Order.....	24
- visually sensitive areas.....	25
- landscape-level biodiversity in non-EBM areas.....	26
- watersheds.....	26
- resources and features important to First Nations.....	27
- high value fish habitat.....	28
- landscape-level biodiversity in EBM areas.....	28
Factors considered under Section 8(8)(a)(vi).....	29
- First Nations considerations.....	29
Factors considered under Section 8(8)(b).....	39
- alternative rates of harvest.....	39
Economic and social objectives; Section 8(8)(d).....	39
- Minister’s letter of July 4, 2006.....	39
- local objectives.....	40
- Minister’s letter of April 12, 2013.....	40
- partitioned component of the AAC.....	41
Factors considered under Section 8(8)(e).....	42
Reasons for Decision.....	42
Determination.....	44

Appendix 1: Section 8 of the *Forest Act* .....46  
Appendix 2: Section 4 of the *Ministry of Forests and Range Act* .....49  
Appendix 3: Minister’s letter of July 4, 2006.....50  
Appendix 4: Minister’s letter of April 12, 2013 .....52

**List of Tables**

Table 1. List of factors for which base case modelling assumptions have been accepted..... 13

## **Objective of this document**

This document provides an accounting of the factors I have considered, and the rationale I have employed in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for Tree Farm Licence (TFL) 47. This document also identifies where new or better information is needed for incorporation in future determinations.

## **Statutory framework**

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

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

## **Description of the TFL**

TFL 47, held by TimberWest Forest Corp., is comprised of two management units (MU). The Johnstone Strait MU is located in the vicinity of the communities of Campbell River and Sayward and includes islands in the Johnstone Strait and some area on the adjacent mainland. It consists of Blocks No. 1-12 (Hanson Island, West Cracroft, Port Harvey, Boughey Bay, Port Neville, Wellbore Channel, Deer Lake, West Thurlow, Simmons Lake, Hemming Bay, Sonora Island, and Quadra Island), which are characterized by coastline with mountainous terrain that is not especially rugged or steep. The majority of the MU lies within the Coastal Western Hemlock (CWH) biogeoclimatic zone with small portions in the Mountain Hemlock zone. Timber harvesting began in this MU in the early 1900's. It is administered from the Campbell River Natural Resource District of the Ministry of Forests, Lands and Natural Resource Operations (FLNR).

The Bonanza Lake MU is located on northern Vancouver Island near the communities of Port McNeill, Alert Bay, Sointula, Beaver Cove and Telegraph cove. This MU also lies within the Coastal Western Hemlock (CWH) biogeoclimatic zone. Harvesting operations started within this MU in the 1940's. It is administered from the North Island – Central Coast Natural Resource District.

The total TFL area is 125 004 hectares and the productive area is 115 444 hectares, or 92 percent. Of this, 84 601 hectares, or 68 percent, is considered to be available for timber harvesting. The Johnstone Strait MU, which covers about 70 percent of the productive area of the TFL, is mainly composed of second-growth stands, while the Bonanza Lake MU includes a larger component of old-growth stands.

Western hemlock and Douglas-fir are the most common tree species on the TFL with lesser amounts of western redcedar, yellow-cedar, amabilis fir, and red alder.

There are eleven First Nations whose traditional territories overlap with TFL 47. They are the: Da'naxda'xw-Awaetlala First Nation, K'omoks First Nation, Kwakiutl First Nation, Kwiakah First Nation, Mamalilikulla-Qwe'Qwa'Sot'Em First Nation, Tlowitsis First Nation, Wei Wai Kum (Campbell River) First Nation, We Wai Kai (Cape Mudge) First Nation, Klahoose First Nation, 'Namgis First Nation, Xwe'malhkwa First Nation.

## History of the AAC

In January 1985, TFL 2 and TFL 12 were consolidated to form TFL 47, which was then issued to Crown Forest Industries Limited. At that time, the AAC was determined at 1 090 000 cubic metres. In 1988 and 1989, in response to new provisions of the *Forest Act*, a total of 37 050 cubic metres of the AAC was allocated to the Ministry of Forests' Small Business Forest Enterprise Program (SBFEP).

In 1991, the AAC was reduced to 748 050 cubic metres, in part because at that time facilities were not yet available to economically process the significant amount of second-growth timber covering the Johnstone Strait MU. In December 1992, in order to move the SBFEP into the adjacent Strathcona TSA, a portion of the TFL area was deleted and added to the TSA. Consequently the AAC for the TFL was reduced by 37 050 cubic metres to 711 000 cubic metres.

By 1996, to reflect improved economics of harvesting and milling second-growth stands, the AAC was determined at 865 000 cubic metres. In 1998, as a result of a transfer in licence ownership, the licensee's portion of the AAC was reduced to 836 758 cubic metres, and the difference, 28 242 cubic metres, was allocated to the SBFEP.

On January 1, 1999, two large areas of private land near Nanaimo Lakes and Courtenay were deleted from the TFL as part of a land exchange agreement with the provincial government. These MU's covered almost 54 000 hectares of Schedule A (private) land. As a result of this deletion, the AAC was reduced to 725 000 cubic metres.

In May 2002, the Lieutenant Governor in Council specified certain areas in the central coast, including Hanson Island on TFL 47, as "designated areas" under Section 169 of the *Forest Act*. Accordingly, under the provisions of Section 173 of the *Act*, the chief forester reduced the AAC by 8000 cubic metres to 717 000 cubic metres.

On August 1, 2003 the AAC was determined at 780 000 cubic metres. The 8000 cubic metre temporary reduction was still in place. Effective June 30, 2004, the Central Coast Designated Area was rescinded and a new one was instituted. As a result of that order the chief forester's temporary AAC reduction of 8000 cubic metres expired. A new order was not issued.

On January 1, 2005 the Minister made an order under the *Forestry Revitalization Act* that reduced the AAC available to the licence holder by 33 207 cubic metres. Effective March 16, 2005, the Minister signed an order that deleted land from TFL 47 that had contributed 33 207 cubic metres to the AAC, and as a result, the AAC of TFL 47 was reduced by 33 207 cubic metres.

On July 1, 2005 and September 8, 2006 the AAC was reduced by 10 000 cubic metres and 7000 cubic metres respectively under Section 173 of the *Forest Act* to reflect the designation, under Section 169 of the *Forest Act*, of areas within the former Moresby MU of TFL 47 on Haida Gwaii.

Effective April 7, 2006, the Central Coast Designated Area No. 2 was specified, and the areas identified in this designation included four areas in TFL 47; Boat Bay, Forward Harbour, Hanson Island, and the Thurston Bay extension. To reflect this, the chief forester reduced the AAC by 8000 cubic metres under Section 173 of the *Forest Act*.

On December 1, 2006, the Moresby MU was deleted from TFL 47 and became TFL 58. The Moresby MU contributed 100 000 cubic metres to the TFL 47 AAC. At the time, the 17 000 cubic metre reduction under Section 173 was still in effect for the area. Accordingly, upon deletion of the Moresby MU, the AAC of TFL 47 was reduced by 83 000 cubic metres to 638 793 cubic metres. The 8000 cubic metre reduction was still in effect for the Johnstone Strait MU.

On May 23, 2010 the Central Coast Designated Area No. 2 expired and as a result the 8000 cubic metres was added back to the AAC of the TFL. Therefore, the AAC in effect for TFL 47 immediately before this AAC determination was 646 793 cubic metres.

### **New AAC determination**

Effective February 4, 2014 the new AAC for TFL 47 is 630 000 cubic metres. This AAC will remain in effect until a new AAC is determined, which must take place within 10 years of this determination.

### **Information sources used in the AAC determination**

The information sources considered in determining this AAC for TFL 47 include the following:

- Natural Stand Yields, accepted by Forest Analysis and Inventory Branch on July 6, 2011;
- Managed Stand Yields, accepted by Forest Analysis and Inventory Branch on May 24, 2011;
- *Site Index Adjustment of Douglas-fir and Western Hemlock in the Low Elevation Biogeoclimatic Subzones on TFL 47*. J.S. Thrower & Associates Consulting Foresters Ltd., 2002;
- *Tree Farm Licence 47 – Vegetation Resource Inventory Statistical Adjustment Ver. 1.0*. TECO Natural Resource Group Ltd., 2010;
- *Tree Farm Licence 47, Management Plan # 4, Timber Supply Analysis Information Package*, dated June 2012, accepted by Forest Analysis and Inventory Branch on May 25, 2011;
- *TFL 47 Timber Supply Analysis*, dated December 15, 2011, accepted by Forest Analysis and Inventory Branch on January 17, 2012;
- *TFL 47 Timber Supply Analysis, Addendum*, dated November 1, 2013;
- *Tree Farm Licence 47, Proposed Management Plan No. 4*, submitted to Forest Analysis and Inventory Branch on January 16, 2012;
- *Tree Farm Licence 47 – Duncan Bay Tree Farm Licence*, March 1, 2010;
- *Tree Farm Licence 47 – Management Plan No. 3*, January 1, 2002;
- *Tree Farm Licence 47 – Rationale for Allowable Annual Cut Determination*, effective August 1, 2003;
- Chief Forester Order under Section 173 of the *Forest Act*, effective September 8, 2006;
- *Coastal Detailed Strategic Planning, Decision-Support, Report 24, Analysis of Revised Strategic Land-Use Objectives*, July 2009;
- *Landscape Unit Planning Guide*, March 1999, Province of BC;
- *Vancouver Island Summary Land Use Plan*, Province of BC, February 2000;
- *Vancouver Island Land Use Plan Higher Level Plan Order*, effective December 2000, Province of BC;
- *South Central Coast Order*, July 27, 2007, *South Central Coast Amendment Order*, March 23, 2009 and *South Central Coast Order Minor Amendment Order*, April, 2013;

- *Background and Intent Document for the South Central Coast and Central North Coast Land Use Objectives Order*, April 18, 2008;
- *Procedures for Factoring Visual Resources into Timber Supply Analyses*, Ministry of Forests, 1998;
- *Order to Establish Visual Quality Objectives for the Campbell River Forest District*, Ministry of Forests and Range, 2007;
- *Order to Establish Visual Quality Objectives for the North Island-Central Coast Forest District*, Ministry of Forests and Range, 2005;
- *Order Establishing Provincial Non-Spatial Old Growth Objectives*, Ministry of Sustainable Resource Management, 2004;
- *Identified Wildlife Management Strategy—Accounts and Measures for Managing Identified Wildlife*, Version 2004, Province of BC;
- *Notice—Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the North Island–Central Coast Forest District*, March 2, 2006, Ministry of Environment;
- *Notice—Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species at Risk in the Campbell River Forest District*, July 27, 2004, Ministry of Water, Land and Air Protection;
- *Approved Wildlife Habitat Areas*, BC Ministry of Environment, available online at <http://www.env.gov.bc.ca/wld/frpa/iwms/wha.html>;
- *Approved Ungulate Winter Ranges*, BC Ministry of Environment, available online at [http://www.env.gov.bc.ca/wld/frpa/uwr/approved\\_uwr.html](http://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html);
- *Regional Guidelines, West Coast Region Wildlife Habitat Area Strategy*, October 17, 2012;
- *Forest Planning and Practices Regulation*, January 2010;
- *Updated Procedures for Meeting Legal Obligations When Consulting First Nations: Interim*, May 7, 2010;
- *Timberwest Forest Corp., Bonanza, Forest Stewardship Plan*, amended February 8, 2013;
- *Timberwest Forest Corp., Johnstone Strait, Forest Stewardship Plan*, amended February 8, 2013;
- *Timberwest Forest Corp., Quadra-Quinsam, Forest Stewardship Plan, May 11, 2007*;
- *Summary of Dead Potential Volume Estimates for Management Units within the Coastal Forest Region*, Ministry of Forests and Range, March 2006;
- *In the Matter of Tree Farm Licence 47, Instrument 16, Amendment*, June 25, 2003;
- *In the Matter of Tree Farm Licence 47, Instrument 19, Amendment*, December 1, 2006;
- *Forestry Revitalization Act Order No. 3(2) 23-1*, December 21, 2004, Ministry of Forests;
- *Forestry Revitalization Act Order No. 3(4) 23-3*, March 16, 2005, BC Ministry of Forests;
- *Bill 24 – 2007, Parks and Protected Areas Statutes Amendment Act*, effective May 3, 2007;

- *Forest Practices Code of British Columbia Act*, current to January 22, 2014, and regulations and guidebooks;
- *Ministry of Forests and Range Act*, current to January 22, 2014;
- *Forest Act* and regulations, current to January 22, 2014;
- *Forest and Range Practices Act* and regulations, current to January 22, 2014;
- *Land Act*, current to January 22, 2014;
- *Environment and Land Use Act*, current to January 22, 2014;
- *Parks and Protected Areas Statutes Amendment Act*, current to May 3, 2007;
- *Forestry Revitalization Act*, current to January 22, 2014;
- *Heritage Conservation Act*, current to January 22, 2014;
- *Tree Farm Licence Management Plan Regulation*, with amendments to January 30, 2013;
- *Allowable Annual Cut Administration Regulation*, with amendments to January 30, 2013;
- *Nanwakolas/British Columbia Framework Agreement*, December 16, 2009;
- *Nanwakolas Reconciliation Protocol*, July 29, 2011;
- *Amendment of the Nanwakolas Reconciliation Protocol*, November 28, 2011;
- *Atmospheric Benefit Sharing Agreement*, between British Columbia and the Nanwakolas First Nations, March 23, 2012;
- *Additional Percentage Amendment Agreement*; between British Columbia and the Nanwakolas First Nations, July 9, 2012;
- *Renewal of the Nanwakolas/British Columbia Framework Agreement*, December 3, 2012;
- *Nanwakolas First Nations Letter of Understanding*, April 16, 2013;
- *Nanwakolas Reconciliation Protocol – Appendix 2 Schedule B (Forestry Schedule), Shared Decision Making Process*, April 16, 2013;
- *Letter from Jim Snetsinger, Chief Forester, to Art Sterritt, Executive Director Coastal First Nations, and Dallas Smith, president of the Nanwakolas Council, regarding consideration of carbon offset projects in allowable annual cut determinations*, September 9, 2011;
- *Letter from Jim Snetsinger, Chief Forester, to Art Sterritt, Executive Director Coastal First Nations, and Dallas Smith, president of the Nanwakolas Council, regarding consideration of establishing allowable annual cut partitions in management units that are only partially subject to the Coastal Land Use Decision and Ministerial Orders for the South Central, Central and North Coast*, November 30, 2011;
- *Letter from Domenico Iannidinardo, Vice President, Sustainability & Chief Forester, TimberWest Forest Corp. to Dave Peterson, Chief Forester, regarding Timberwest's commitment to work with Nanwakolas First Nations in pursuit of an economic development and jobs strategy*, October 23, 2013;
- *E-mail to Ted Nash, representative of the Nanwakolas First Nations, from the team lead strategic initiatives of FAIB, titled "Nanwakolas shared decision making and TFL 47 AAC determination - carbon offsets"*, July 14, 2014;



- *E-mail to Jim Sutherland, Deputy Chief Forester, from the manager, forest analysis and decision support, titled "TFL 47 Shared Decision Making Recommendation", January 17, 2014;*
- *Wei Wai Kum First Nation Forest and Range Consultation and Revenue Sharing Agreement, June 13, 2011;*
- *Cape Mudge Indian Band Forest and Range Consultation and Revenue Sharing Agreement, March 31, 2011;*
- *Homalco Indian Band Forest and Range Consultation and Revenue Sharing Agreement, February 9, 2011;*
- *Klahoose First Nation Interim Agreement on Forest Opportunities, January 23, 2008;*
- *Namgis First Nation Forest and Range Consultation and Revenue Sharing Agreement, March 31, 2011;*
- *First Nations Consultation for the Proposed Approval of Management Plan # 4 and Annual Allowable Cut Determination for Tree Farm Licence 47, July 9, 2012;*
- *Letter from the Minister of Forests and Range to the chief forester stating the economic and social objectives of the Crown. July 4, 2006;*
- *Letter from the Minister of Forests, Lands and Natural Resource Operations to the chief forester stating the economic and social objectives of the government for signatory First Nations of the Nanwakolas Reconciliation Protocol. April 12, 2013;*
- *Input received from the public and First Nations;*
- *Technical review and evaluation of current and expected operating conditions through comprehensive discussions with staff of FLNR, including the AAC determination meeting held in Victoria on December 11 and 12, 2012.*

### **Role and limitations of the technical information used**

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

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

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

In determining this AAC for TFL 47, I have considered known limitations of the technical information provided. I am satisfied that the information provides a suitable basis for my determination.

## **Guiding principles for AAC determinations**

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

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

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

### Integrated decision making

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

### Information uncertainty

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

Two important ways of dealing with this uncertainty are:

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

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

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

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

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

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

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

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

### Climate change

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

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

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

future increases in natural disturbance due to climate change. Conversely, the present forest conditions resulting from the MPB infestation provide a clearer circumstance to which to respond.

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

### First Nations

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

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

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

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

### **The role of the base case**

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

For most AAC determinations, a timber supply analysis is carried out using an information package including data and information from three categories: land base inventory, timber growth and yield, and management practices. Using this set of data and a computer model, a series of timber supply forecasts can be produced to reflect different starting harvest levels, rates of decline or increase, and potential tradeoffs between short- and long-term harvest levels.

From a range of possible forecasts, one is chosen in which an attempt is made to avoid both excessive changes from decade to decade and significant timber shortages in the future, while ensuring the long-term productivity of forest lands. This is known as the "base case" forecast and

forms the basis for comparison when assessing the effects of uncertainty on timber supply. The base case is designed to reflect current management practices.

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

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

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

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

### **Timber supply analysis**

The timber supply analysis used as a base of reference for my considerations in this AAC determination was performed by Ecora Resource Group Limited for TimberWest using the Patchworks spatial forest estate model by Spatial Planning Systems. The analysis was finalized on December 15, 2011. The timber supply analysis information package was completed by TECO Natural Resource Group Limited in May 2011.

The licensee's objective for the base case forecast provided in the analysis was to reflect management practices consistent with the *Forest and Range Practices Act*, the Vancouver Island Land Use Plan Higher Level Plan Order, and the South Central Coast Amendment Order. The latter set out objectives for ecosystem-based management (EBM). In the base case the analyst attempted to maximize the even-flow of timber harvesting that can be achieved from TFL 47 while meeting non-timber and other management objectives. The model was run over a 250-year term, starting in 2010, using five-year planning periods.

The highest even-flow harvest level attained was 617 500 cubic metres per year, which is slightly less than the AAC of 646 793 cubic metres that was in effect immediately prior to this determination. To reflect market conditions and operational practice, the analyst limited the harvesting of old-growth stands (older than 250 years) to 20 percent of the total harvest. Growing stock constraints were applied to the last 50 years of the planning horizon to ensure that the harvest beyond the 250-year term of this analysis is sustainable.

An alternative harvest flow was presented which showed that an initial harvest level of 647 000 cubic metres per year (approximately the AAC that was in effect immediately prior to this determination) could be maintained for 30 years. After that, the harvest level declined to the previously described even-flow level of 617 500 cubic metres per year and remained at the level to the end of the forecast period. In the timber supply analysis the licensee recommended the alternative flow scenario be used as the basis for this AAC determination.

I have considered the even-flow base case and the alternative harvest flow provided in the analysis, and I find the alternative flow more compatible with the direction provided in the July 4, 2006 'Letter from the Minister of Forests and Range to the chief forester stating the economic and social objectives of the Crown', a required consideration under Section 8(8)(d) of the *Forest Act* when making AAC determinations. In the letter, the minister asks that the chief forester consider the importance of a stable timber supply in maintaining a competitive and sustainable forest industry, while being mindful of other forest values. Consistent with this direction, when providing analysis information for AAC determinations, analysts usually attempt to initiate the base case harvest forecast at the current AAC. Both harvest forecasts provided in the analysis are based on current management requirements for other forest values, subject to my considerations in this document. However, the base case provided in the analysis represents a reduction from the former AAC, while the alternative flow suggests an initial harvest at the level of the former AAC can be sustained for three decades.

For the above reasons I will consider the alternative harvest flow scenario, which has an initial harvest level of 647 000 cubic metres per year, as the "preferred base case" for this determination. I will refer to this forecast as the base case in this document.

On April 12, 2013, the Minister of Forests, Lands and Natural Resource Operations provided the chief forester with a second letter and it concerns the government's economic and social objectives for signatory First Nations of the Nanwakolas Reconciliation Protocol. I will discuss my considerations of these objectives below, under 'First Nations considerations' and 'Minister's letters'.

I have reviewed the assumptions and methodology incorporated in the even-flow projection and related sensitivity analyses. As part of this review, I have examined projections over the forecast period for the growing stock of timber in the TFL, including the dominant tree species, the age class distribution of stands on the TFL, the average age at which they were harvested, as well as their contributions to the volumes of timber projected to be harvested over time and I have inferred how these projections would differ for the alternative harvest flow scenario I will use as the base case for this determination. Details of my considerations of particular aspects of the analysis and its projections, in some cases in relation to uncertainties in associated assumptions, are provided in the following sections of this document.

I have also reviewed the November 1, 2013, *TFL 47 Timber Supply Analysis Addendum* which includes harvest forecasts pertaining to the area on TFL 47 covered by the South Central Coast Order and provides information related to Nanwakolas' carbon project. I will discuss these harvest forecasts below, under 'First Nations considerations'.

From my review of the timber supply analysis, including discussions with the FLNR analyst who reviewed the analysis, I find that the alternative harvest flow forecast (referred to as the base case in this document) provides a reliably informative basis of reference for consideration in this determination. In addition to this "base case", and the licensee's even-flow forecast presented in the analysis, I have reviewed the sensitivity analyses provided by the licensee. As these sensitivity analyses were based on the licensee's even-flow harvest forecast, I have inferred how the change in assumption for each sensitivity analysis would affect the alternative harvest flow scenario I have chosen as the base case for this determination. Where I was uncertain how the

change in assumption would affect the alternative harvest flow, I asked the licensee to provide a sensitivity analysis using the alternative flow scenario as the basis for the analysis. These sensitivity analyses have been helpful in my considerations as documented in the following sections and in the reasoning leading to my determination.

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

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

*Table 1. List of factors for which base case modelling assumptions have been accepted*

<b><i>Forest Act</i> section and description</b>	<b>Factors accepted as modelled</b>
8(8)(a)(i) Composition of the forest and its expected rate of growth	<ul style="list-style-type: none"> <li>• Forest inventory</li> <li>• Non-forest and non-productive forest</li> <li>• Existing roads, trails and landings</li> <li>• Inoperable areas</li> <li>• Unstable terrain</li> <li>• Landslides</li> <li>• Problem forest types</li> <li>• Environmentally sensitive areas</li> <li>• Riparian reserves and management zones</li> <li>• Existing wildlife tree patches</li> <li>• Cultural heritage resource reductions</li> <li>• Future roads</li> <li>• Aggregation procedures</li> <li>• Managed stand yields</li> <li>• Minimum harvest age</li> </ul>
8(8)(a)(ii) Expected time it will take the forest to become re-established following denudation	<ul style="list-style-type: none"> <li>• Regeneration delay</li> <li>• Backlog and current non-stocked areas</li> </ul>
8(8)(a)(iii) Silvicultural treatments to be applied	<ul style="list-style-type: none"> <li>• Silviculture regimes</li> <li>• Fertilization</li> </ul>
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste and breakage	<ul style="list-style-type: none"> <li>• Decay, waste and breakage for unmanaged stands</li> </ul>

<i>Forest Act section and description</i>	<b>Factors accepted as modelled</b>
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for purposes other than timber production	<ul style="list-style-type: none"> <li>• Objectives for adjacent cutblock green-up</li> <li>• Objectives for stand-level biodiversity in the non-EBM areas</li> <li>• Objectives for watersheds</li> <li>• Objectives for aquatic habitat that is not high value fish habitat</li> <li>• Objectives for forested swamps</li> <li>• Objectives for upland streams</li> <li>• Objectives for active fluvial units</li> <li>• Objectives for red- and blue-listed plant communities</li> <li>• Objectives for stand-level retention</li> <li>• Objectives for grizzly bear habitat</li> </ul>
8(8)(a)(vi) Any other information	<ul style="list-style-type: none"> <li>• Harvest performance</li> </ul>
8(8)(e) Abnormal infestations in and devastation of, and major salvage program planned for, timber on the area	<ul style="list-style-type: none"> <li>• Unsalvaged losses</li> </ul>

For other factors, where more uncertainty exists, or where I have concern about the information used, or the modelling technique, or where public or First Nations' input suggests contention regarding the information used, the modelling, or some other aspect under consideration, I have explained below how I have considered and accounted for the uncertainty, the information, the modelling, or issues raised.

In accordance with the "Public Review Strategy", the draft Management Plan for TFL 47, the Timber Supply Analysis Report and the Information Package were posted on both the TimberWest website and the FLNR Campbell River Natural Resource District site and made available for public review and comment for a period of 60-days. The licensee received approximately 70 letters from a variety of respondents including First Nations, tourism operators, environmental organizations, and members of the public. A number of concerns were expressed relating to various factors of the timber supply analysis including, but not limited to, recreation values, visual resources, old growth, watersheds, silvicultural systems, ecosystem based management implementation, and fisheries values.

I have reviewed the summary of public input, letters received and responses by TimberWest and have found that in the majority of cases the comments by the public were considered adequately by TimberWest and its responses were appropriate. In instances where significant input was received related to a specific factor, I will discuss the input in more detail in the section below pertaining to that factor. In other cases where the input was more limited in nature, the other issues relating to the factor were minimal, and I deemed the response from TimberWest to be adequate, I will provide no further response in this rationale.



Factors requiring additional explanatory consideration

**Section 8 (8)**

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

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

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

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

Table 1 above lists each of the factors I have considered under this section for which I have agreed with the representation in already published information respecting current practice and with the modelling as incorporated in the analysis. In addition to the factors listed under this section in Table 1 above, I have also considered the following factors which require additional comment.

*- total area*

Hanson Island in the Johnstone Strait Management Unit (MU) of TFL 47 was first established as a protection area under the *Environment and Land Use Act* in May, 2002. In July, 2003 a management agreement was signed between the Province and the First Nations who's traditional territory covers Hanson Island; the Mamalilikulla-Que'Qwa'Sot'Em, the 'Namgis and the Tlowitsis First Nations. The objectives of this agreement were to protect the First Nations culture and heritage values and natural values of the island, while permitting continued traditional activities, public recreation opportunities, and sustainable economic benefits to the Hanson Island First Nations.

In January, 2005 a Head Lease was issued under Section 38 of the *Land Act* by the Province to the Yukusam Heritage Society, jointly controlled by the three First Nations, granting the Society a lease for use of the land, including the ability to sub-lease, primarily for commercial and public recreation and tourism purposes, in exchange for annual rent and a revenue sharing agreement with the Province.

Effective April 7, 2006 the Central Coast Designated Area No. 2 was established under Section 169 of the *Forest Act*. Four areas in TFL 47 were included in the designated area: Boat Bay, Forward Harbour, the Thurston Bay extension and Hanson Island. To reflect this, the chief forester reduced the AAC of TFL 47 by 8000 cubic metres under Section 173(2) of the *Forest Act*.

Effective May 3, 2007 three conservancies were deleted from the TFL through Bill 24 under the *Parks and Protected Areas Statutes Amendment Act*. The conservancies are at Boat Bay, Thurston Bay, and Forward Harbour. These conservancies and Hanson Island are all within the area covered by the South Central Coast Order.

When land is deleted from a management unit, the AAC should be reduced accordingly. Section 173(2) of the *Forest Act* enables the chief forester to reduce the AAC of a TSA or TFL if all or part of the area is a designated area. The licensee has acknowledged the status of Hanson Island and that it no longer contributes to the timber supply of TFL 47 by excluding it from the THLB. No harvesting has taken place there for some time, and it is unlikely that TimberWest will be harvesting there in future. The three conservancies were deleted from the TFL and no longer contribute to the timber supply.

As I mentioned above, in 2006 the chief forester reduced the AAC of TFL 47 by 8000 cubic metres to account for the designation of these four areas. I have reviewed the basis for that reduction and found that 8000 cubic metres per year is a reasonable amount to attribute to the three new conservancy areas and Hanson Island. Therefore, consistent with my rationale of utilizing a base case that reflects the current AAC, I conclude that the initial harvest level in the base case should be reduced by 8000 cubic metres per year.

Another factor related to the area of TFL 47 modelled in the base case is the inclusion in the land base of four timber licences (TL) which the licensee expects will revert to the TFL. They cover a total of 917 hectares, or one percent of the THLB, and they are all within the area covered by the South Central Coast Order. Negotiations with the provincial government are not yet complete, and until they are finalized and the TLs are indeed included in the TFL, they should not contribute to the timber supply.

I will discuss these land-base related factors further in '**Reasons for Decision**'.

*- low productivity sites*

In the base case, areas considered to be of low site productivity were excluded in the derivation of the THLB. Low productivity stands have low volumes or low site index values which indicate they are not likely to achieve a harvestable volume in a reasonable time period.

The following stand types were excluded from the THLB as low productivity sites: immature coniferous stands on slopes less than 30 percent incapable of achieving 150 cubic metres per hectare at 150 years of age; immature coniferous stands on slopes of 30 percent or more incapable of achieving 250 cubic metres per hectare at 150 years of age; and immature deciduous stands incapable of achieving 150 cubic metres per hectare. This resulted in a net reduction of 3822 hectares from the THLB.

This approach is a change from the assumptions used in the analysis for the last AAC determination in that the minimum volume threshold for stands on slopes less than 30 percent was reduced from 250 cubic metres per hectare to 150 cubic metres per hectare. According to the licensee, the threshold for this analysis was reduced to reflect operational reality since stands on these slopes can be harvested using less expensive ground-based systems and road construction costs are lower. This change resulted in an addition of 2353 hectares, or 2.8 percent, to the THLB compared to the information in the last analysis.

FLNR district staff indicate that the threshold of 150 cubic metres per hectare is a concern if the model depends on harvesting these low-volume, small-diameter stands to maintain the harvest level. They are concerned that these stands cannot be harvested during periods of low markets. TimberWest provided information that shows its performance to date in harvesting these lower-volume stands has been commensurate with their contribution to the base case harvest forecast.

Given the harvesting that has occurred in these stands at a level similar to the rate at which they contributed to the base case harvest forecast, I conclude that the contribution to the harvest from areas of low productivity in the base case is appropriate. Harvesting performance on low productivity sites will be reviewed at the time of the next AAC determination to ensure that the performance continues.

- *recreation reductions*

The Recreation Features Inventory (RFI) was developed to help land managers properly protect and manage recreation values on the forest landscape. The RFI identifies areas that provide significant recreation opportunities, such as wildlife viewing, camping, sheltered moorages, and areas that are sensitive to alteration. The RFI for the Johnstone Strait MU was completed in 1999 and the RFI for the Bonanza Lake MU was updated in 2001.

In 2006 a Government Actions Regulation (GAR) Order was issued for “Identified Recreation Resource Features” for the Campbell River Natural Resource District. It identified significant recreation resource features under Section 5 of the GAR. Although not specifically prohibited, under Section 70(1) of the *Forest Planning and Practices Regulation* (FPPR), timber harvesting may not “damage or render ineffective” these recreation features. A public review process was conducted during the development of the GAR order.

Another GAR Order for “Identified Karst Resource Features” was issued in 2007 for the Campbell River Natural Resource District. It protects specific elements of karst ecosystems identified in the karst inventory. This designation also results in protection under FRPA’s *Forest Planning and Practices Regulation* for specified karst elements.

In the base case, recreation resources in both MUs were accounted for as follows: identified recreation sites and trails were excluded from the THLB; areas in the RFI with a significance class of “very high” or “high” and a management class of “0”, except karst features, were entirely excluded from the THLB; and area in the RFI with a significance class of “very high” or “high” and a management class of “1”, except karst features, were excluded by 50 percent. This approach resulted in a net reduction of 1100 hectares from the THLB.

Areas with karst features were not excluded from the THLB because TimberWest staff believe that harvesting operations can be managed in a way that will protect these features. These areas tend to be small and can usually be protected within the areas that are retained to meet stand level biodiversity requirements.

During the public review process approximately 70 letters were received by TimberWest regarding various aspects of forest management on the TFL and how these relate to the timber supply analysis. Many of these letters focused on or raised the issue of recreation use in the TFL, how it relates to timber management, and how it was accounted for in the timber supply analysis. Specific concerns and perspectives that were raised included: the RFI is out of date and should have been updated prior to the timber supply analysis; the impact of timber harvesting on tourism operators has not been adequately considered; harvesting in the Boat Bay area of West Cracroft Island should be limited or stopped in order to protect recreation features used by kayakers, boaters, and tour operators; harvesting in the Morte Lake watershed and near other recreation trails on Quadra Island and Sonora Island should be limited to protect recreation trails and features.

Recreation staff from FLNR indicated that, while the RFI is over 10 years old, the intensity of recreation use has increased, and use patterns may have evolved since the RFI was completed, the inventory itself is not the issue. In their opinion, despite its age, the inventory continues to reasonably identify current recreation values. The issue is differing perspectives on how the inventory should be used to define the THLB, not the inventory itself. FLNR staff also noted that, while there has been a small amount of timber harvesting within areas identified as sensitive in the RFI, it has been quite limited, and is adequately reflected in the 50 percent and 100 percent deductions applied in the base case.

TimberWest staff indicate they have been meeting with the local tourism operator regarding operations in the Boat Bay area and with local stakeholders regarding harvesting in the Morte Lake watershed. TimberWest has responded to letters from individuals regarding recreation concerns, noting that considerable areas have already been removed from TFL 47 for parks.

Recreation staff from FLNR indicate that, while there are several trails on Quadra Island that have legal designation, the trails near Morte Lake and Sonora Island mentioned above have not been established under Section 56 or authorized under Section 57 of the *Forest and Range Practices Act*. I note that in TimberWest's responses to the concerns raised about recreation trails and features, they have indicated that they work with stakeholders when exploring possibilities for harvesting near such areas.

I am aware of the large amount of public input and concern regarding recreation on TFL 47. Many of the comments are related to issues that are operational in nature and can therefore be dealt with more effectively at that level. With respect to the Boat Bay area and the Morte Lake watershed, I am aware that the licensee is working with the local tourism operators and the public regarding harvesting in those areas. I support the TimberWest approach of working with local stakeholders in a transparent and collaborative manner and expect that this will continue.

I accept FLNR staff advice that the RFI adequately identifies recreation values for timber supply analysis purposes and that the deductions for recreation features adequately reflect current management for recreation values. If operational practice changes as a result of ongoing discussions between TimberWest, local stakeholders and the public, this can be accounted for in future determinations. Based on the information provided in the analysis and advice from FLNR staff, for this determination I conclude that the assumptions regarding recreation applied in the base case reasonably reflect current management on TFL 47 and I make no adjustment on this account.

*- marine foreshore buffer*

A marine foreshore buffer of 30 metres was generated for the base case. Within this buffer 90 percent of the area was assumed not to be available for timber harvesting. This resulted in a total of 714 hectares being removed from the THLB as marine foreshore. There is no requirement or government direction with respect to the establishment of marine foreshore buffers. The 30-metre buffer was used in the base case as an average width to model the timber supply impact of buffers retained on the marine foreshore to protect visual and other non-timber values.

Tourism operators, conservation groups, and other individuals wrote expressing concerns that a marine foreshore buffer of 30 metres is not adequate to protect visual quality, recreation resources or habitat within the Johnstone Strait area. Concern was also expressed about potential blowdown in a 30-metre buffer strip. TimberWest responded noting that it established the 30-metre buffer voluntarily, it is an average width for the entire TFL, the actual width varies depending on the amount required to address visual and other non-timber values, and that the employment of strategies to minimize blowdown is part of its routine planning process.

Ministry of Environment staff commented that the question of the adequacy of a 30-metre wide buffer for marine shorelines may be more of an issue for visual aesthetics than for aquatic habitat protection. Staff noted that the relationship and interactions between terrestrial environments and marine/estuarine areas at their interface are quite different than between riparian and freshwater habitats.

I acknowledge the public input received regarding the appropriate width for marine foreshore buffers. However, TimberWest established these buffers voluntarily and there is no government standard to assist me in evaluating their adequacy. I am confident that the buffer, together with other management practices, will serve the purpose of protecting visual and other non-timber values to some extent. Having considered the available information, I conclude that the timber supply analysis assumption of a 30-metre foreshore buffer reasonably accounts for current management on the marine foreshore in TFL 47.

*- wildlife habitat*

Wildlife habitat areas (WHA) and Ungulate Winter Ranges (UWR) have been legally established on the Bonanza Lake MU. UWR Order #U1-009 for black-tailed deer and Roosevelt Elk was established in April 2004 under the GAR. These UWR polygons were removed from the THLB. Two WHA's for Marbled Murrelet were established by order under the GAR in the Bonanza Lake MU in December 2006 and excluded from the THLB. In the area subject to the South Central Coast Order (SCCO) grizzly bear habitat identified in Schedule 2 of the SCCO was removed from the THLB. A total of 2187 hectares was removed from the THLB for UWR, WHA, and grizzly bear.

No WHA's are currently established on Quadra Island or in the other blocks in the Johnstone Strait MU. There is a Species at Risk Notice for the Campbell River District under Section 7(2) of the FPPR for several species at risk, including marbled murrelet and Queen Charlotte Goshawk. The three Forest Stewardship Plans (FSP) covering TFL 47 specify that a total of 190 hectares of marbled murrelet habitat will be deferred from harvesting until WHA's are established in the plan area. This deferral was not accounted for in the base case and no allowance was made for potential future wildlife habitat areas that may be reserved from harvesting.

Numerous individuals and groups commented on the wildlife habitat assumptions applied in the timber supply analysis. They questioned why no WHA's have yet been established on Quadra Island or the other islands in Johnstone Strait. There were also a number of comments relating to specific cutblocks and the treatment of bear dens in those areas.

TimberWest responded noting that they agree that the process of identifying WHA's for species at risk needs to be completed. They also stated that there are areas other than WHA's set aside for wildlife, including ungulate winter ranges, riparian reserve zones, grizzly bear habitat and marbled murrelet habitat.

Identified wildlife are species at risk and regionally important wildlife in BC that have been designated as requiring special management attention. The Identified Wildlife Management Strategy (IWMS) provides direction and guidance for managing identified wildlife where their habitat needs are not already addressed. At the time of implementation government anticipated that all habitat requirements for identified wildlife, in the absence of strategic plan direction, would reduce the provincial timber supply by about one percent.

In the Fall of 2012, West Coast Region staff developed the West Coast Region Wildlife Habitat Area Strategy. In this document regional staff acknowledge that GAR tests that guide the decision maker when considering legal establishment of WHAs presume more careful consideration be applied than simply accepting existing timber supply impact policies. In other words, the final impact on timber supply in a particular management unit may be greater than (or less than) one percent. However, for the purposes of AAC determination, and in the absence of any better information, the one-percent provincial average impact provides a reasonable target for consideration.

Having considered the available information, I find it likely that more WHA's will be established in TFL 47 to meet the IWMS. While the final impact on the TFL 47 land base is not certain, the 190 hectares of marbled murrelet habitat currently deferred from harvesting as indicated in TimberWest's FSP strategies for Species at Risk in the Campbell River Natural Resource District and North Island – Central Coast Natural Resource District is a reasonable approximation of the potential magnitude. This amounts to an overestimate of timber supply in the base case over the forecast period of less than one percent. I will discuss this further in '**Reasons for Decision**'.

*- site productivity assignments*

For all existing natural stands the inventory site index from the vegetation resources inventory (VRI) was used to develop yield tables. Site index estimates derived in the study titled: Site Index Adjustment of Douglas-fir and Western Hemlock in the Low Elevation Biogeoclimatic Subzones on TFL 47 (2002) were used for managed stand yield tables (stands that regenerated after 1974). This site index adjustment (SIA) project involved the development of preliminary site index estimates and then adjusting the preliminary estimates using field sampling results. The preliminary estimates were developed for Douglas-fir and western hemlock for all Coastal Western Hemlock (CWH) subzones in TFL 47 (except the CWHvm2). Field site index estimates were collected in 69 second-growth stands aged 21 to 80 years throughout the CWH zone (except the CWHvm2). The preliminary site index estimates were adjusted using the results of the field sampling to produce the site index estimates for managed stand yield tables in the targeted CWH subzones. Following adjustment, the area-weighted site index of Douglas-fir in the target population was 33.1 metres and for hemlock it was 27.4 metres. In the base case these SIA-based site productivity estimates were used for both existing and future managed stands.

Although the results of the SIA approach used on TFL 47 have not yet been independently assessed for accuracy, the licensee considers it to be the best source of site productivity estimates for managed stands on TFL 47. Another approach that is often used to develop site index estimates is the Site Index Estimates by Site Series (SIBEC) approach developed by the government of British Columbia. The average SIBEC-based site index for the TFL, for both Douglas-fir and western hemlock combined, was three metres lower than the average SIA-based site index. FAIB research staff indicate that there is no information available that indicates which of the two approaches provides better estimates of site productivity on TFL 47.

A sensitivity analysis using SIBEC site productivity estimates for managed stands was completed and it showed a 13.4 percent lower long-term harvest level than the even-flow forecast presented in the analysis report. From this I infer that application of the SIBEC site productivity estimates would affect the long-term level of the preferred base case in a similar manner. However, given that the harvest in the first periods is comprised almost entirely of existing natural stands, this change in site productivity estimates does not affect the short term.

Staff from FLNR and the licensee held an information-sharing meeting with the 'Namgis First Nation at which they discussed the VRI inventory and site productivity estimates for TFL 47. Licensee staff acknowledged that it was difficult to confirm the accuracy of this information, but they were using what they believed to be the best available information.

From my review of the procedures used for obtaining and applying site index values for managed stands in the base case, I am mindful of the advice from FAIB's research staff that there is currently no information to indicate which of the two available approaches provides the most reliable estimates for TFL 47. This factor produces a significant amount of uncertainty in the long term, but it has little effect in the short term. For this determination I will therefore make no adjustment on this account.

Given that many of the managed stands are now 30 to 40 years old and approaching harvestable age, it should be possible to verify these site productivity estimates. I encourage TimberWest to work with FAIB staff to develop a young stand monitoring program for TFL 47 in order to provide reliable site productivity estimates for managed stands for the next AAC determination. I have included a statement to that effect under ‘**Implementation**’.

*- natural stand yields*

The natural stand yield tables used in the base case were generated for each polygon using the Variable Density Yield Prediction model version 7 (VDYP) and results from the VRI Phase II and Net Volume Adjustment Factor (NVAF) sampling. A total of 69 stands were field sampled. The target population in the Phase II sampling was stands greater than 30 years old. These stands were stratified into two age classes (30-100 years and 101+ years) and two species groups (western hemlock/mountain hemlock; and all others). Field sampling results were used to adjust, height, age, basal area, stems per hectare, Lorey height (average height weighted by basal area), and live net merchantable volume from Phase I of the VRI following FAIB statistical adjustment standards. The overall effect of the Phase II adjustment is an increase in volume of 32 percent compared to the Phase I estimate.

The overall sampling error for the Phase II sampling was plus or minus 11 percent, slightly greater than the target sampling error of 10 percent. FAIB staff have reviewed and accepted the natural stand yield tables including the adjusted attributes as applied in the base case.

As I discussed above under ‘site productivity assignments’, the VRI inventory was a topic of discussion at the meeting between FLNR and licensee staff and the ‘Namgis First Nation. Licensee staff indicated they believed this information to be the best available.

I have reviewed the approach used and discussed it with FAIB staff. I find the volume adjustment resulting from the Phase II sampling to be large. Nevertheless, standard procedures were followed in making the adjustments and FAIB staff have accepted the approach used. I therefore conclude that the best available information was used and the procedures for adjusting the yield tables applied in the base case forecast are appropriate. Given the large size of the adjustment, efforts should be focused on confirming these volume estimates for the next determination and I have included discussion to that effect in ‘**Implementation**’.

*- log grades*

The inventory and base case yield tables excluded dead logs that could potentially be used as saw logs (referred to as dead potential volume). An inventory audit conducted in 1999 for TFL 47, which then included the former Moresby MU, indicated that the dead potential volume is approximately 2.7 percent of the green volume for stands over 60 years of age. This estimate represents the maximum amount of dead timber that could potentially be harvested in addition to the live volume projected in the base case.

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

Having considered the available information, I am satisfied that these dead potential volumes should not be included in the base case projection. If any of the dead potential volume is utilized, it will provide a slightly more robust timber supply. I will discuss this further in ‘**Reasons for Decision**’.

*- operational adjustment factors*

In this analysis all stands regenerated after 1974 were considered to be managed stands. For these stands volume estimates were based on FLNR's Table Interpolation Program for Stand Yields (TIPSY) model using the standard provincial operational adjustment factors (OAF) of 15 percent for OAF1 and five percent for OAF2. OAF1 accounts for factors such as small stand openings, uneven tree distribution, and endemic pests and diseases that affect yield curves across all ages, whereas OAF2 accounts for factors whose impacts increase over time, such as decay, waste, and breakage.

According to licensee staff, operational experience indicates that managed stands in TFL 47 are more evenly stocked than indicated by the default OAF1, which they believe is too high for TFL 47. TimberWest compiled information from 45 sample plots that was gathered as part of the SIA project. This information was used to provide estimates of the non-productive 'holes' in sampled stands.

FAIB staff note that when the OAF concept was developed by research staff, small non-productive openings were estimated to comprise about four percent of the 15 percent OAF1. Using the information from the SIA project, TimberWest found that non-productive area, excluding roads and creeks, comprised 1.8 percent of the sampled stands. The sampling focused only on non-productive areas; field measured volume estimates were not developed for comparison to TIPSY-derived volume estimates. Based on the information, TimberWest concluded that an OAF1 value of 13 percent in TFL 47 was justified. A sensitivity analysis was prepared to examine the effect on timber supply when an OAF1 of 13 percent is assumed. This forecast produced an even-flow harvest level 2.5 percent higher than the even-flow base case presented in the analysis report. Since the OAF1 is applied to managed stands that will be harvested in future, this effect likely resulted from increased supply in the mid- and long-term. Therefore, I infer that the long-term level of the preferred base case would be similarly sensitive to changes in OAF1 assumptions.

I appreciate TimberWest's efforts to gain better estimates of non-productive openings for its estimates of managed stand yields on TFL 47. Given that the ultimate goal is to provide better estimates of timber yields over time, I would prefer that this effort be focused on overall stand monitoring (e.g. a young stand monitoring program) rather than on individual factors such as OAFs. For this determination I find that this adjustment to OAF1 suggests managed stand yields may have been underestimated in the base case and this may provide for a more robust timber supply in the longer term. I will discuss this further in '**Reasons for Decision**'.

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

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

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



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

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

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

*- silvicultural systems*

Currently, the silvicultural systems used in TFL 47 are predominantly clearcut and to a lesser extent clearcut with reserves, subject to EBM constraints and the protection of other resource values.

Through the public review process several individuals commented that clearcutting was not part of the vision for the Special Management Zone (SMZ) on Quadra Island. Some suggested there are alternate forms of harvesting that will cause less negative environmental impact and should therefore be employed for harvesting within the TFL. Two individuals pointed out that a previous management plan included a strategy for variable retention. TimberWest responded stating that several legal objectives are in effect for the SMZ on Quadra Island that set it apart from other operating areas on the TFL and that clearcutting in the SMZ is permitted, but the size of the openings is limited to five hectares.

I have considered the public comments about this factor and discussed them with FLNR staff. I find that the licensee is operating in accordance with current government direction. I find TimberWest's response to the expressed concerns adequate, and that the information used in the base case is an accurate representation of current management on TFL 47. Should TimberWest's approach to silvicultural systems change, this can be incorporated in future AAC determinations.

**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:**

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

*- utilization level*

Much of the terrain on TFL 47 is flat or moderately sloping, and according to TimberWest staff, this lends itself to mechanical harvesting, especially in second-growth stands. Staff further indicated that using feller bunchers, stump height is typically lower than the 30 centimetre maximum stump height allowed under current utilization standards. TimberWest provided a sensitivity analysis that showed that timber supply would be increased by one percent relative to the base case with stump heights measuring 17 centimetres. No survey data was provided to confirm these assumed stump heights.

District staff field checked stump heights on Quadra Island and found no stumps that were less than 30 centimetres in height. Staff did not check stump heights on the other islands in the Johnstone Strait MU.

I find it likely that, as TimberWest suggests, stump heights are lower when feller bunchers are used. However, I have not been provided with a study that includes data on the amount of additional timber volume that is being harvested using mechanical methods compared to harvesting methods that result in 30-centimetre stumps. For this determination I consider the likelihood that some stumps are shorter than the minimum the utilization standard requires to

provide for a somewhat more robust timber supply, and I will discuss this further in ‘**Reasons for Decision**’.

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

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

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

*- higher level plans – Vancouver Island Land Use Plan Higher Level Plan Order and the South Central Coast Ministerial Order*

The Vancouver Island Land Use Plan Higher Level Plan Order (VILUP HLP) was established in 2000. The order sets management objectives for a number of Special Management Zones (SMZ), General Management Zones (GMZ), and Enhanced Forestry Zones (EFZ) on Vancouver Island and some adjacent islands.

The intent of the SMZ is to identify Crown land and coastal areas with regionally significant values or combinations of values requiring management objectives and strategies to minimize development impacts. As I mentioned above, one SMZ (SMZ 19) is located on the northern portion of Quadra Island in TFL 47. The VILUP HLP order specifies a number of objectives for SMZ 19. These affect forest management practices including targets for mature seral forest retention, retention of ecosystem structure and function, and targets for maximum cutblock size (five hectares for clearcuts and 40 hectares for retention cutblocks).

The intent of the EFZ is to identify forested lands that are suitable for increased timber production. The entire Bonanza Lake MU is within EFZ 11. Most of the objectives for EFZs relate to operational practices, such as cutblock size and green-up height.

The intent of the GMZ is to identify Crown land, coastal near shore areas and private land within TFLs where a wide range of resource values are found. They are managed in accordance with all general legislated requirements and the principles of integrated resource management, based on an ecosystem approach. All of the plan area not within boundaries of SMZ, EFZ, or protected areas is allocated to the GMZ.

In the preamble to the March 2009 consolidated version of the South Central Coast Order (SCCO), the Province’s stated goal is to implement ecosystem-based management (EBM) in the North and Central Coast area through land use objectives and other measures. The SCCO, as amended in March 2009 and April 2013, applies to the Johnstone Strait MU, excluding Quadra Island, and lays out a suite of objectives for riparian, biodiversity and First Nations’ cultural resources. For the base case, areas requiring protection under the EBM objectives were excluded from the THLB (i.e., cultural resources, fish habitat, forested swamps, blue/red-listed plant communities); and EBM objectives requiring harvest constraints were incorporated into the model and reflected in the timber supply forecast (these include targets for upland riparian area and landscape-level biodiversity).

A letter submitted jointly by several environmental organizations raised concerns that the timber supply analysis overestimates the potential sustainable timber supply given the requirements of the 2009 SCCO Land Use Objectives. They further commented that the TFL 47 proposed Management Plan No. 4 must be cognizant of the upcoming review of those Land Use Objectives in 2014 and the context of full implementation of EBM, in order to be ecologically precautionary

and socially responsible. In support of the first point, this letter referenced an analysis of TFL 47 operational EBM scenarios undertaken by Forsite Consultants Ltd. in January 2012 to inform discussions between the Coast Forest Conservation Initiative and the Rainforest Solutions Project. That analysis shows that substantially less timber is available in those parts of the TFL in the Great Bear Rainforest than in the base case forecast for MP No. 4.

TimberWest responded to this letter and noted that there are several reasons why the modelling completed by Forsite and the modelling done specifically for MP No. 4 indicate a different result. The MP No. 4 base case allows for recruitment of old forest over time, which is consistent with the current legislation, whereas in the Forsite analysis the oldest forests were recruited first. MP No. 4 includes a sensitivity analysis for recruiting oldest first. This sensitivity analysis results in a harvest forecast 72 500 cubic metres per year lower than the 617 500 cubic metres per year even-flow forecast presented as the base case in the analysis. In addition, TimberWest noted that a different “economic lens” was applied in the Forsite analysis compared to the MP No. 4 analysis, and the Forsite analysis only covered the area in TFL 47 that is subject to the SCCO. Both of these differences tended to constrain the timber supply in the Forsite analysis. TimberWest also noted that this AAC determination would require revision to account for the outcome of the review of the EBM Land Use Objectives, which is ongoing and expected in 2014.

I have reviewed the assumptions applied in the base case to reflect the objectives established under the higher level plans and have found they were modelled appropriately. I appreciate the importance of the issues raised, however, in accordance with the guiding principles, I cannot speculate on the outcome of the review of EBM objectives in this AAC determination. If changes in practice resulting from the review are likely to affect timber supply on TFL 47 to the extent that a timber supply review is warranted, a new AAC can be determined sooner than in the 10 years allowed by legislation.

*- visually sensitive areas*

Visual quality objectives (VQO) for scenic areas were legally established in the Campbell River District by an order made under GAR Section 7(1) (2) on December 14, 2005. In the North Island-Central Coast Natural Resource District, visual quality classes in the approved TFL 47 visual landscape inventory were continued as established VQOs under GAR Section 17 in December 2004.

The visual landscape inventory (VLI) for Blocks 1, 2, and 3 in the Johnstone Strait MU and Block 17 (the Bonanza MU) was completed in 1999 following the “*Visual Landscape Inventory Procedures and Standards Manual*”. Thirty-seven agencies and individuals were solicited for input into the VLI, including tourism and outdoor recreation groups and individuals living on or near the inventoried area. Forest cover constraints were applied in the base case to account for the established VQOs in accordance with direction provided in “Procedures for Factoring Visual Resources into Timber Supply Analysis”, March 1998 (updated December 2003).

During the public review period approximately 40 comments were received from tourism operators and the general public regarding visual quality management. A number of concerns were raised, including the vintage of the visual landscape inventory, changing recreational use patterns since the inventory was completed, a desire for generally more restrictive VQOs, and a desire for increased minimum green-up height. Comments were also received relating to visual management for specific locations within the TFL.

FLNR staff note that during an informal, non-random field review of visual landscape management in TFL 47 in May 2012 conducted by FLNR visual resource management staff, it was observed that there was a large degree of consistency between TimberWest harvesting operations and the legally established VQOs. Two landforms were observed where it appeared

harvesting operations were starting to exceed the VQOs. FLNR staff also commented that, while the VLI may be getting somewhat old, it is sufficient for timber supply analysis purposes. The real issue is with the application of the VQOs and not with the VLI itself. Updating the VLI may result in changes in visual sensitivity ratings, but that alone would not change the VQOs.

I appreciate that there is a growing amount of interest and concern about visual management in portions of TFL 47. Region and district staff are also aware of these concerns. I encourage the respondents to engage with the licensee and participate in the operational planning processes where site specific management practices are discussed. If changes in visual management occur as a result of these discussions, they can be considered in future AAC determinations. In the event that there are changes made which may significantly impact timber supply, the AAC can be revisited earlier than the 10-year period allowed by legislation.

For this determination I conclude that the base case harvest forecast is consistent with the legally established objectives for visual resources and reflects current management for visually sensitive areas in TFL 47.

*- landscape-level biodiversity in non-EBM areas*

Management for landscape-level biodiversity in the Bonanza Lake MU and on Quadra Island was accounted for in the base case using the non-spatial old growth retention requirements as specified in the Order Establishing Provincial Non-Spatial Old Growth Objectives (2004) and the levels of biodiversity emphasis assigned to each landscape unit.

Many comments were received regarding old-growth harvesting. These included referencing the relatively small amount of old growth left within the TFL, suggesting that all remaining old growth in the TFL should be protected, as well as some comments regarding old growth in specific parts of the TFL.

TimberWest responded by noting that government, through legislation and land-use plans, have placed significant restrictions on the harvesting of old growth. Targets are set for retention of old growth, and only old growth that is in excess of these targets is available for harvesting. FLNR staff note that draft Old Growth Management Areas (OGMA's) have been developed.

I acknowledge that there are strong opinions about this subject and that many have chosen to express those as part of this public review process. A considerable amount of land has been set aside by government for a variety of reasons in this area already, and much of this is, or will eventually become, old growth. The growing stock age distribution produced as part of the timber supply analysis shows that under current management approximately one-third of the forests on the productive area of the TFL will be 250 years of age or older at the end of the forecast period (250 years from now). Government has made decisions about old-growth management for this area and I accept that the licensee has modelled those decisions in the base case.

*- watersheds*

There are no community watersheds or fisheries sensitive watersheds (as defined in the *Forest Planning and Practices Regulation*) within TFL 47. However, 16 important fisheries watersheds defined under Objective 8 of the SCCO are within the TFL. There are also water bodies that are presently licensed and used for domestic water supplies (e.g. Hemming Lake on East Thurlow Island), and water bodies that are considered important as potential future sources for domestic water supplies (e.g. Morte Lake on Quadra Island).

In the base case, in each of the 16 important fisheries watersheds for which a professional review had been done, an equivalent clearcut area (ECA) constraint of 35 percent was applied to the productive forest area. Full hydrologic green-up was assumed to be reached at a stand height of 12 metres.

Comments were received regarding the use of herbicides in the Hemming Lake area and protection of the Morte Lake watershed for use as a future water supply area. One comment was received that pointed out that under Schedule 3 of the SCCO, watershed assessments are to be completed when the effective clearcut area approaches 20 percent.

TimberWest responded to the comments about Hemming Lake and Morte Lake with a commitment to continue to work with the Hemming Bay and Morte Lake communities. With respect to the ECA comment, TimberWest responded that for watersheds where a professional review has been undertaken, the higher ECA limit of 35 percent was justified, but that in all important fisheries watersheds noted in Schedule 3 of the SCCO a watershed assessment is completed when the ECA approaches 20 percent.

FLNR staff consider the base case to reasonably reflect management practices under Objective 8 of the SCCO for important fisheries watersheds.

Considering the above information I conclude that the base case adequately accounts for the implications of managing watershed values. I encourage TimberWest to continue the dialogue with these communities regarding harvesting and forest management practices in watersheds.

*- resources and features important to First Nations*

Part 2 of the SCCO includes five sections (Sections (3) through (7)) with objectives for First Nations' forest resources and features, including: traditional forest resources; traditional heritage features; culturally modified trees (CMT); monumental cedar; and the stand-level retention of western red and yellow-cedar. The intent of the objectives is to provide for the maintenance of forest resources traditionally used by First Nations, which can include merchantable timber accessed by First Nations through Free Use Permits. The objectives include specifications for management zones to protect traditional heritage features and culturally modified trees.

In the TFL 47 information package TimberWest stated that on TFL 47 these objectives are primarily managed operationally and have minimal impact on strategic timber supply. In the timber supply analysis a 0.1 percent aspatial land base reduction was applied, in addition to all other reductions, to account for SCCO objectives (3) through (7).

In the Campbell River Natural Resource District, First Nations may access timber for traditional and cultural uses from a variety of sources including the Strathcona TSA and Crown forest reserves such as parks and conservancies. FLNR staff note that to date the Forest Service reserve has had sufficient volume to meet all requests.

One comment was received from a tourism operator suggesting that parts of West Cracroft Island are well suited as a source for resource features important to First Nations. TimberWest responded "it is envisioned that these needs will come from several locations within the traditional territory of the respective First Nations. These locations may include all manner of public lands including parks and conservancies. The forests on the south shore of West Cracroft will receive the same set asides for wildlife trees as required for all areas in the SCCO plan area." FLNR staff consider the base case forecast to reasonably reflect management practices under SCCO objectives for resources and features important to First Nations.

Having considered the available information, I conclude that the base case harvest forecast uses the best available information about resources and features important to First Nations and reasonably reflects current management practices under Objectives (3) through (7) of the SCCO

in TFL 47. These requirements are largely managed at the operational level, through location of wildlife tree patches and other site-level reserves and retention.

*- high value fish habitat*

High value fish habitat is defined in the SCCO as meaning “critical spawning and rearing areas for anadromous and non-anadromous fish, including estuaries, wet flood plains, and marine interface areas”. Objective 9 of the SCCO specifies that adjacent to high value fish habitat a reserve is to be maintained with an average width of 1.5 times the height of the dominant trees. TimberWest reported that TFL 47 does not have any high value fish habitat, as defined by SCCO Objective 9, outside of estuaries and marine interface areas. Therefore, the protection of high value fish habitat along marine interface areas was accounted for in the timber supply analysis by applying the 30-metre marine foreshore buffer.

Numerous comments were received questioning the assumption that no high value fish habitat occurs in TFL 47 outside of estuaries and marine interface areas. In particular it was noted that many of the small streams located on Quadra and other islands are critical to populations of anadromous and non-anadromous fish.

In response TimberWest staff acknowledged that the comments were correct in pointing out that there are many streams within TFL 47 that support fish populations, however staff noted that this fish habitat is protected through the provisions of the *Forest and Range Practices Act* (FRPA) and TimberWest operates in compliance with the FRPA.

Protection of fish habitat is a significant focus of the FRPA and the *Forest Planning and Practices Regulation* (FPPR). The provisions for protection of areas categorized as “high value fish habitat” under the SCCO are an enhancement to the level of protection provided under the FRPA.

Having considered the available information, I conclude that the base case is based on the best available information about high value fish habitat and reasonably reflects current management practices under Objective 9 of the SCCO in TFL 47.

*- landscape-level biodiversity in EBM areas*

Objective 14 of the SCCO includes provisions for the amount of old forest that must be retained by site series surrogate (groupings of stand types within BEC variants). It also specifies that a maximum of 50 percent of the forest may be mid-seral forest in each site series surrogate and provides direction on acceptable time frames for addressing old forest deficits or mid-seral surpluses. Where there are old forest deficits, the direction is to recruit forest to meet the requirements within 250 years.

For the base case, within the EBM area of TFL 47 a constraint was applied that maintained a minimum amount of old forest in each site series surrogate as per Schedules 4, 4b, and 4d of the SCCO. Old seral representation targets were applied by landscape unit (LU) and site series surrogate. Old-growth stands within site series surrogates identified as being in a deficit position were excluded from the THLB and the recruitment of old forest in these deficit site series surrogates to meet the targets was required to be completed in the model within the final five-year planning period.

Changing old seral targets in the area covered by the SCCO affected the forecasted timber supply significantly. For LU/site series surrogates in a deficit condition, existing old seral forest was unavailable to harvest for the entire forecast period. However, old forest recruited to achieve the old-seral targets did not necessarily attain the required 250 years of age until the final five-year period (245 years from 2010).

Comments were received in a letter jointly submitted by three environmental organizations which pointed out that much of the forest in this unit has already been converted from old growth to second growth and as a consequence, implementation of EBM in this part of the region is already primarily a restoration strategy. Furthermore they noted that the “Background and Intent Document for the South Central Coast and Central North Coast Land Use Objectives Orders” encourages licensees to set aside oldest first. TimberWest responded by saying that “MP No. 4 allows for recruitment of old forest over time, which is consistent with the current legislation”. Another respondent requested old-growth recruitment from stands in a particular part of the TFL.

FAIB staff noted that the non-legal “Background and Intent Document” describes an expectation that recruitment strategies for deficit landscape units should attempt to recruit the oldest possible age classes first. This strategy would allow old forest representation targets to be achieved in the shortest time possible. For this reason FAIB requested that a sensitivity analysis be developed which explores the consequence of applying a rule that would work to achieve the old-seral target as soon as possible in the deficit units. The result was a non-declining harvest forecast that is 102 000 cubic metres per year (16.0 percent) lower than the short-term harvest level attained in the base case. A further sensitivity analysis was requested to test the effect on timber supply of applying an oldest first recruitment strategy, this time using the same initial harvest level as the base case but allowing the harvest level to decline over time. This forecast showed that the base case initial harvest level of 647 000 cubic metres per year could be maintained for 15 years before it declined to the long-term harvest level of 545 000 cubic metres per year.

Having considered the available information, I conclude that the base case harvest forecast reasonably reflects Objective 14 for landscape-level biodiversity in the area covered by the SCCO in TFL 47. The modelled old-seral retention strategy accords with government legal direction, however, as was pointed out by the letter discussed above, it may not be completely in accord with the intent of the EBM program for the area. This raises the potential for possible future changes in management direction. As I mentioned above under ‘higher level plans’, land use objectives are being reviewed, and any changes made as a result of that review will be accounted for in future AAC determinations.

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

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

*- First Nations considerations*

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

There are eleven First Nations whose traditional territories overlap with TFL 47. They are the: Da’naxda’xw-Awaetlala First Nation, K’omoks First Nation, Kwakiutl First Nation, Kwiakah First Nation, Mamalilikulla-Qwe’Qwa’Sot’Em First Nation, Tlowitsis First Nation, Wei Wai Kum (Campbell River) First Nation, We Wai Kai (Cape Mudge) First Nation, Klahoose First Nation, ‘Namgis First Nation, Xwe’malhkwa (Homalko) First Nation.

### *Nanwakolas First Nations*

The Nanwakolas First Nations are a part of the Kwakwaka'wakw – a culturally defined group of First Nations sharing the same language – whose traditional territories are located in the Northern Vancouver Island and adjacent South Central Coast areas of British Columbia. On December 16, 2009, after nine years of negotiations with the Province, six Kwakwaka'wakw First Nations: the Kwakiutl First Nation, the Mamalilikulla-Qwe'Qwa'Sot'Em First Nation, the Tlowitsis First Nation, the Da'naxda'xw-Awaetlala First Nation, the Gwa'sala-'Nakwaxda'xw First Nation and the K'omoks First Nation, the Nanwakolas Council Society and the Province signed the Nanwakolas/British Columbia Framework Agreement (Strategic Engagement Agreement or SEA). In this document I will refer to the signatories to the SEA as the Nanwakolas First Nations. Among other things, this agreement sets out the engagement framework for consultation with the Nanwakolas First Nations and includes the engagement levels and processes for each of the various administrative decisions that will be made by the Province. It also introduces the concept of shared decision making between the Province and the Nanwakolas First Nations.

The Kwiakah and Wei Wai Kum First Nations signed on to the SEA on September 24, 2010 and October 21, 2011, respectively through two amendments to the SEA.

On December 3, 2012 the SEA was renewed for another three years. The renewed agreement is meant to give the Nanwakolas First Nations improved opportunities, information and resources necessary to participate in natural resource activity in their traditional territory, while increasing investment certainty and strengthening Nanwakolas' relationship with the provincial government. In addition, two more First Nations signed on to the renewed agreement, the 'Namgis First Nation and the We Wai Kai First Nation. Portions of the engagement framework were amended in an effort to improve consultation efficiencies between the Province and the Nanwakolas First Nations, however the amendment did not alter the engagement process for AAC determinations.

The Kwakiutl First Nation did not sign the renewed SEA and therefore, on April 1, 2013 the Kwakiutl First Nation was deemed to have withdrawn from the SEA. The 'Namgis First Nation has indicated it will also withdraw effective January 31, 2014.

The outer boundary of the traditional territories of all the Nanwakolas First Nations overlaps all of TFL 47. The traditional territory of the Gwa'sala-'Nakwaxda'xw First Nation does not overlap TFL 47.

### *Nanwakolas Reconciliation Protocol*

On July 29, 2011 the Nanwakolas Council Society and five of the Nanwakolas First Nations (the Mamalilikulla-Qwe'Qwa'Sot'Em First Nation, the Tlowitsis First Nation, the Da'naxda'xw-Awaetlala First Nation, the Gwa'sala-'Nakwaxda'xw First Nation and the K'omoks First Nation) signed the Nanwakolas Reconciliation Protocol (RP) with the Province. On a date to be determined, the We Wai Kum First Nation intends to sign the RP as well. The RP includes provisions for shared decision making, carbon offset sharing, revenue sharing, economic opportunities, economic strategies, community well being, stakeholders interests and resourcing for RP implementation. Particularly relevant to this AAC determination are the provisions for shared decision making and economic opportunities, as I will explain further below.

As indicated above, the RP provides a framework for carbon offset sharing. The Great Bear Forest Carbon Project is an improved forest management project, predicated on the ecosystem-based management regime negotiated between the Nanwakolas First Nations, other First Nations and the Province of British Columbia. It generates emission reductions by protecting forest areas that were previously available for timber harvesting. It encompasses the South Central Coast area, the North and Central-Mid Coast Area and Haida Gwaii. The traditional territories of the signatories to the RP are located in a portion of the area covered by the Great Bear (South Central



Coast) Forest Carbon Project which is one component of the larger Great Bear Forest Carbon Project. On March 23, 2012 the signatories entered into an Atmospheric Benefit Sharing Agreement (ABSA) with the Province of British Columbia, and on July 9, 2012 the ABSA was amended. These agreements define how greenhouse gas emissions reductions resulting from the Great Bear (South Central Coast) Forest Carbon Project will be shared between the Province and the N̄nwaḱolas First Nations. In this rationale I will refer to these agreements as the carbon project.

The N̄nwaḱolas First Nations Letter of Understanding was signed by the Province and the N̄nwaḱolas Council Society on behalf of the five RP First Nations on April 16, 2013, and it brought into effect the Reconciliation Protocol - Appendix 2 Schedule B (Forestry Schedule), Shared Decision Making Process. This document details the steps that must be taken for shared decision making for three initial strategic forest management decisions: AAC determinations, decisions on land use objectives, and other strategic forest management decisions as agreed to by both parties.

At about the same time, on April 12, 2013, and in accordance with section 1.1 of the Shared Decision Making Process, the Minister of Forests, Lands and Natural Resource Operations provided the chief forester with a letter detailing the government's economic and social objectives for First Nations who signed the RP. This letter is included in Appendix 4 of this rationale and I will discuss my considerations of its provisions below, under 'Minister's Letters'.

#### *Treaty processes*

The Da'naxda'xw-Awaetlala, Kwiakah, Tlowitsis, Wei Wai Kum, We Wai Kai, Klahoose, 'Namgis, and the Xwe'malxkwu First Nations are negotiating at stage 4 – Agreement in Principle in the BC Treaty Commission (BCTC) process. The K'omoks First Nation is negotiating at Stage 5 – Final Agreement in the process. They achieved Agreement-in-Principle in March 2012. The Kwakiutl First Nation is a signatory to a Douglas Treaty. Negotiations under the BCTC process with the Kwakiutl First Nation are "under suspension". The Mamalilikulla-Qwe'Qwa'Sot'Em First Nation is not involved in the BCTC process.

#### *General review of available information*

A general review of available information was conducted by FLNR for each First Nation. Information reviewed included available ethno-historic reports, traditional use studies, archaeological records, wildlife assessments, and notes from related consultation processes. The findings of these reviews were communicated to the First Nations as required and the initial level of consultation was derived by FLNR staff based either on this information or as specified in agreements.

#### *Consultation levels*

For this AAC determination, except initially for the Kwiakah First Nation and Wei Wai Kum First Nation as described below, engagement with the Da'naxda'xw-Awaetlala First Nation, K'omoks First Nation, Kwakiutl First Nation, Kwiakah First Nation, Mamalilikulla-Qwe'Qwa'Sot'Em First Nation, Tlowitsis First Nation, and Wei Wai Kum First Nation was coordinated by the N̄nwaḱolas Council Referrals Office and was guided by the SEA.

According to the SEA, the engagement level for timber supply reviews is "4 – deep". The seven N̄nwaḱolas First Nations with traditional territories overlapping TFL 47 were consulted in accordance with this level. The consultation process was initiated on May 31, 2010 with a letter sent by FLNR staff to the N̄nwaḱolas Referrals Office.

The consultation process with the Kwiakah and the Wei Wai Kum First Nations was initiated on June 15, 2010. At that time these two First Nations had not yet signed on to the SEA. The

Kwiakah had no previous agreement with government that outlined a consultation process and as a result, until the Kwiakah signed on to the SEA, consultation was conducted in accordance with government consultation policy.

The Wei Wai Kum First Nation had signed the Wei Wai Kum First Nation Interim Agreement on Forest Opportunities (FRO), which expired in 2011. It contained consultation provisions that required government to include the First Nation in the public timber supply review process. Initially this approach was taken. The Wei Wai Kum First Nation did enter into the Wei Wai Kum First Nation Forest and Range Consultation and Revenue Sharing Agreement (FCRSA) with the province in September 2011. The FCRSA contains consultation guidance, however it was superseded when the Wei Wai Kum signed the SEA.

Engagement with the other four First Nations who were initially not (Kwiakah and Wei Wai Kum First Nations), or are still not (Klahoose and Xwe'malhkwa First Nations) signatories to the SEA was conducted in accordance with the relevant agreements signed by each First Nation, or in absence of a relevant agreement, in accordance with guidance provided in the "Updated Procedures for Meeting Legal Obligations When Consulting First Nations" (May 7, 2010). Government consultation policy is based on the consultation principles set out in the Supreme Court of Canada Haida decision (2004) as amended or modified through subsequent court decisions.

The majority of the 'Namgis First Nation's traditional territory is shown to overlap with the Bonanza Lake MU. The 'Namgis also assert territory over Hanson Island, located in the Johnstone Strait MU, however this area is one of competing claims with the Mamalilikulla-Qwe'Qwa'Sot'Em and the Tlowitsis First Nations. Consultation with the 'Namgis First Nation was initiated on June 15, 2010 and was based on government consultation policy since the 'Namgis Interim Forestry Agreement had expired before the TSR consultation process was initiated. The appropriate level of consultation was determined to be "normal" with a 60-day referral timeframe based upon an initial review of available aboriginal interest information and some initial consideration of the potential impact of this decision on those interests. On March 31, 2011 the 'Namgis First Nation Forest and Range Consultation and Revenue Sharing Agreement came into effect which affirmed the "normal" level of consultation undertaken by government.

Consultation with the We Wai Kai First Nation (Cape Mudge Indian Band) was initially based on government consultation policy since the We Wai Kai's Interim Forestry Agreement expired before the TSR consultation process was initiated on June 15, 2010. The appropriate level of consultation was determined to be "normal" with a 60-day referral timeframe based upon an initial review of available aboriginal interest information and some initial consideration of the potential impact of this decision on those interests. On May 31, 2011 the Cape Mudge Indian Band Forest and Range Consultation and Revenue Sharing Agreement came into effect and it affirmed the "normal" level of consultation undertaken by government.

As I mentioned above, on December 3, 2012 the 'Namgis First Nation and the We Wai Kai First Nation signed on to the renewed SEA. However, this occurred after the formal consultation process for this AAC determination had taken place and therefore these First Nations were not consulted through the N̓n̓w̓ak̓olas Council Referrals Office.

Consultation with the Xwe'malhkwa First Nation (Homalco Indian Band) was initially based on government consultation policy since the Xwe'malhkwa's Interim Forestry Agreement expired before the consultation process was initiated on June 15, 2010. The appropriate level of consultation was determined to be "normal" with a 60-day referral timeframe based upon an initial review of available aboriginal interest information and some initial consideration of the potential impact of this decision on those interests.

On February 9, 2011 the Homalco Indian Band Forest and Range Consultation and Revenue Sharing Agreement came into effect which affirmed the “normal” level of consultation undertaken by government.

On January 23, 2008 the Klahoose First Nation signed the Klahoose First Nation Interim Agreement on Forest Opportunities. The agreement contains a detailed description of the consultation process to be followed for operational and administrative decisions, and it includes 60-day consultation periods for components of the TSR. This process was followed.

*Consultation processes*

FLNR staff led the consultation process for the TFL 47 AAC determination and approval of Management Plan No. 4. TimberWest staff were available for assistance as required. The consultation process was initiated by FLNR staff on May 31, 2010 with a letter to the Nānwaḱolas referrals office. This letter was followed by letters sent on June 15, 2010 to the ‘Namgis First Nation and the Laich-Kwil-Tach Treaty Society and its member bands (the Kwiakah, Xwe’malhkwu, Klahoose, We Wei Kai, and Wei Wai Kum First Nations). In the letters FLNR informed the First Nations that two administrative decisions were pending, the approval of Management Plan No. 4 and the AAC determination for TFL 47.

FLNR staff only communicated with the Nānwaḱolas referrals office for the First Nations belonging to that organization, not the individual member First Nations. For First Nations belonging to the Laich-Kwil-Tach Treaty Society, staff communicated with both the society and the individual member First Nations. FLNR staff consulted with the ‘Namgis First Nation directly.

First Nations were consulted at the information package stage of the timber supply review process and at the draft management plan (including the timber supply analysis) stage of the process. The relevant documents were provided to the First Nations at each of these stages of the TSR process.

FLNR staff met with the ‘Namgis First Nation on March 11, 2011 to review the information package. Meetings were offered to the other First Nations at the consultation on the draft management plan and timber supply analysis stage of the consultation process. No other First Nations requested to meet.

The Nānwaḱolas Referrals Office indicated its concurrence with the engagement level suggested by FLNR staff at both the information package and management plan stages of the consultation process. No other First Nations commented on the suggested levels of consultation. The Laich-Kwil-Tach Treaty Society responded to the consultation on the information package that they had no concerns at that time.

At the March 11, 2011 meeting with the ‘Namgis First Nation a discussion was held regarding the accuracy of the VRI data for TFL 47 and site index estimates. I discussed my consideration of these factors above under ‘site productivity assignments’ and ‘natural stand yields’.

In January 2012 the Nānwaḱolas Referrals Office sent an email seeking clarification of the status of Hanson Island. FLNR staff responded indicating that the area does not contribute to the TFL 47 timber supply.

At the management plan and timber supply analysis stage of the consultation process, the Da’naxda’xw-Awaetlala, Kwakiutl First Nation, Tlowitsis First Nation, Wei Wai Kum First Nation, We Wai Kai First Nation indicated that they had no concerns with the proposed decisions for TFL 47. The Kwiakah First Nation chose to defer consultation to the other First Nations with interests in the area.

The Xwe’malhkwu First Nation indicated it is nearing completion of a Land Use Plan, Traditional Use Plan, and Archaeological Overview of its traditional lands and that when these

are completed, they may have additional comments. District staff have received no updates on the status of these plans.

The Mamalilikulla-Qwe'Qwa'Sot'Em and the K'omoks First Nation noted that there are likely many unrecorded archaeological sites within TFL 47 and questioned whether 85 hectares for the entire TFL 47 is adequate to address retention for cultural heritage resources as required by the EBM objectives. I note that archaeological sites are often protected by locating wildlife tree patches or riparian reserve zones over these sites, and the 85 hectare exclusion from the THLB is in addition to using other reserves.

The We Wai Kai First Nation indicated that the area around Jackson Bay (Topaze Harbour) known as Tekya was a traditional village site for their people and requested that harvesting be limited. TimberWest responded that they are aware of the cultural importance of Topaze Harbour and that they have worked closely with the Laich-Kwil-Tach Treaty Society regarding operations in the vicinity, have deferred harvesting in the area, and have offered assistance to do detailed archaeological work in the area.

The 'Namgis First Nation indicated its comments were directed at the Bonanza Lake MU only. They also indicated that they hold unextinguished aboriginal rights and title throughout the Bonanza watershed and that all forest development activities proposed in the watershed would infringe on their interests. They requested a reduction in the AAC for the block in order to provide more protection to riparian areas, that high elevation poor growing sites be removed from the THLB, that more protection to environmentally and culturally sensitive sites be provided and that a margin for error be allowed for in the AAC determination. They also questioned the site index estimates and future stand volumes based on the site index estimates. TimberWest responded noting that the TSR is based on current legislation and performance. They further indicated that they believe current requirements for S4 and S6 streams, old growth and environmentally and culturally sensitive sites are sufficient, and also provided some justification for their approach to site index estimation. I discussed my consideration of site productivity estimates above, under 'site productivity assignments'.

Consultation with the Kwakiutl First Nation related to the TFL 47 Management Plan No. 4 and this AAC determination has been in accordance with the Engagement Framework contained within the Nanwakolas/British Columbia Framework Agreement, which constitutes the processes by which the Province intends to fulfill consultation obligations owed to the Nanwakolas First Nations with respect to Section 35 rights. Section 35 rights as defined within the Framework Agreement means "asserted or proven aboriginal rights of the Nanwakolas First Nations, including aboriginal title and Douglas Treaty Rights, recognized and affirmed by Section 35(1) of the *Constitution Act*, 1982". The Province is unaware of Section 35 rights asserted by the Kwakiutl First Nation within any portions of TFL 47. The only boundary provided for the Kwakiutl traditional territory is on the Provincial Consultative Areas Database, and it does not overlap with any of TFL 47.

#### *Litigation*

On April 11, 2008 the Kwakiutl First Nation filed a petition against the Minister of Forests and Range on the decision to allow Western Forest Products (WFP) to remove private lands from TFL 6 and against the District Manager of the North Island – Central Coast District for his approval of the WFP North Island Forest Stewardship Plan, citing inadequate consultation and accommodation on both decisions. Since that time the Kwakiutl First Nation has filed two amended petitions, the most recent in the fall of 2012. In June, 2013 a judicial review was held (*Chartrand v. The District Manager*, BC Supreme Court, 2013). Its findings are now subject to appeal by both parties. The adequacy of Provincial consultation on the associated decisions was

one of the subjects of the judicial review, and the courts found the Province had discharged its obligations.

*Nanwakolas shared decision making process*

The AAC determination process was almost complete when the MOU was signed on April 16, 2013 which gave effect to the shared decision making process pursuant to the Nanwakolas Reconciliation Protocol (RP). As I mentioned above, the shared decision making process applies to the five First Nations who signed both the SEA and the RP. It does not apply to all the First Nations who signed the SEA.

In keeping with the intent of the RP, on June 12, 2013 FLNR staff met with Nanwakolas representatives to discuss how the shared decision making process would affect timber supply review processes that were already underway. For TFL 47 it was agreed that a Nanwakolas and a FLNR representative would work together in implementing Section 1.7 of the shared decision making process, which includes preparing recommendations on the allowable annual cut. It was also affirmed that the deputy chief forester would consider the minister's letter detailing the government's social and economic objectives for signatory First Nations to the RP (the 2013 minister's letter).

On June 24, 2013 Dallas Smith, President of the Nanwakolas Council, sent the chief forester a letter in preparation for a meeting to be held on June 28, 2013, to discuss more thoroughly with the deputy chief foresters and FLNR staff, the Nanwakolas' expectations regarding the 2013 minister's letter and the shared decision making process. In this letter Dallas Smith listed four economic interests the Nanwakolas wish to be considered in upcoming AAC determinations. Three of these pertain to the AAC determination for TFL 47. First, Nanwakolas wished to have the chief forester consider the effects of the AAC decision on the Nanwakolas' carbon project, including, but not limited to any need to partition any portions of the AAC to the Central Coast Land Use Plan area. Second, the Nanwakolas asked that the chief forester base his determination on a harvest flow that maintains options for the Nanwakolas First Nations, and third the Nanwakolas asked that when making AAC determinations, the chief forester commission whatever information and analyses necessary to make an informed decision as to how the AAC decision can achieve the socio-economic objectives outlined in the 2013 minister's letter.

The June 28, 2013 meeting was postponed to July 3, 2013. At this meeting it was confirmed that the shared decision making process would be followed for this AAC determination for TFL 47. A meeting was set for August 6, 2013 at which the deputy chief forester and the Nanwakolas representative would discuss how to implement the shared decision making process (Section 1.7 of the RP). This meeting was postponed.

On July 9, 2013 the Nanwakolas representative sent the deputy chief forester an e-mail containing technical questions related to the TFL 47 analysis and TSR process. The representatives for Nanwakolas and FAIB met on August 1, 2013 to discuss these questions. Several action items were identified during the meeting and some responses were provided by FAIB staff on August 2, 2013.

On September 4, 2013 I sent a letter to Dallas Smith, President, and Merv Child, Executive Director of the Nanwakolas Council expressing my concern over the possibility that some information available for this determination may become outdated and asking that they provide me with the key information and perspectives the Nanwakolas RP First Nations would like me to consider in the AAC determination so I could move forward with the determination. Dallas Smith responded on September 6, 2013 indicating that Nanwakolas remain committed to working with me in accordance with the shared decision making process. In his letter, Dallas Smith reiterated the Nanwakolas' request from the August 1, 2013 meeting that FLNR staff complete an

analysis to determine whether or not the old growth recruitment strategy modelled in the TFL 47 base case would affect their carbon project. He also asked that staff review the strategic landscape reserve design and forest stewardship plan for the central coast component of TFL 47 to determine what old growth assumptions were used in those processes and whether or not they were consistent with their timber supply review assumptions.

On September 11, 2013 I met with the Nānwaḱolas representative and we discussed outstanding information gaps and the next steps in the process. Following this meeting, several technical meetings were held between FAIB and Nānwaḱolas representatives. FLNR identified the government representative who would make recommendations with the Nānwaḱolas representative pursuant to Section 1.7 of the Shared Decision Making Process.

On October 24, 2013 the two representatives met to discuss how to proceed with making the recommendations. Nānwaḱolas identified two key questions that needed to be addressed: whether the AAC determination would affect the carbon project, and whether the deputy chief forester would be willing to include as a condition of the AAC determination that TimberWest fulfill their commitment regarding Nānwaḱolas' economic interests that was expected to be outlined in a forthcoming letter. During this process, Nānwaḱolas representatives were in discussion with TimberWest staff. On August 26, 2013 the Nānwaḱolas sent TimberWest a letter to make them aware of the 2013 minister's letter. In response, and after discussions and meetings with FLNR and Nānwaḱolas representatives, on October 28, 2013 TimberWest's Vice President of Sustainability and Chief Forester sent the Chief Forester a letter stating that over the next 12 months, TimberWest commits to work with the Nānwaḱolas First Nations in pursuit of an economic development and jobs strategy to meet the intent of the shared decision making process and that TimberWest supports Nānwaḱolas First Nations in their broader Nānwaḱolas Protocol forest economic development strategy discussions with the Province. I acknowledge this commitment by TimberWest and I strongly encourage them to follow through with this commitment expeditiously.

In discussions with TimberWest, Nānwaḱolas representatives requested that TimberWest provide harvest forecasts for the area in TFL 47 covered by the South Central Coast Order (the EBM area) with assumptions based on both pre and post EBM implementation. TimberWest provided this information in an addendum to the analysis dated November 1, 2013. According to this analysis, using assumptions from before EBM was implemented the EBM area contributed 451 000 cubic metres per year to the TFL 47 harvest forecast, and using assumptions from post EBM implementation the EBM area contributed 371 000 cubic metres per year.

On November 19, 2013 TimberWest provided information to the Nānwaḱolas representative and FAIB that confirmed that it is not possible to increase the initial harvest level from 371 000 cubic metres per year in the EBM forecast provided by TimberWest for the EBM area of TFL 47.

On December 4, 2013 the Nānwaḱolas and FLNR representatives (the parties) held the formal meeting to develop the recommendations. During the meeting agreement was reached between the parties, however subsequently FLNR staff discovered errors in reasoning and therefore a second meeting was held on December 19, 2013 to explain the errors.

Finally, on January 10, 2014 agreement was reached between the parties that this AAC determination will not affect the Nānwaḱolas's carbon project because the even-flow 371 000 cubic metre per year harvest level projected for the EBM area by TimberWest using post EBM implementation assumptions is lower than the initial harvest level of 444 000 cubic metres per year in the declining harvest flow projection used in the carbon project analysis using the same assumptions. In other words, less timber is projected to be harvested in the TimberWest analysis than in the carbon project analysis which means more timber will remain on the area over the next 10 years than expected using the results of the carbon project analysis.

It was also agreed that the initial increase in the harvest level in the alternative harvest flow provided for TFL 47 as a whole in the TFL 47 timber supply analysis to 647 000 cubic metres per year from 617 500 cubic metres per year projected in the even flow base case was solely attributable to the areas outside the EBM area. This conclusion was based on the finding by TimberWest that the short-term harvest level for the EBM area could not be increased above an even-flow harvest level of 371 000 cubic metres per year.

*Nanwakolas shared decision recommendations*

In an e-mail to me dated January 17, 2014 representatives of the Nanwakolas RP First Nations and the Province of British Columbia (the parties) found they could conditionally support both the alternative flow scenario recommended by TimberWest and the base case established by TimberWest. Therefore they recommended that I adopt either of the options put forward by TimberWest or an alternative that is within the range of these options as the new AAC for TFL 47, subject to the following conditions:

1. The deputy chief forester's rationale incorporates an instruction regarding the economic commitments for the Nanwakolas First Nations included in TimberWest's October 28, 2013 letter to the chief forester.  
The commitments referred to in this point are, as I noted above, TimberWest's commitment to work with the Nanwakolas First Nations in pursuit of an economic development and jobs strategy and TimberWest's support of the Nanwakolas First Nations in their broader Nanwakolas Protocol forest economic development strategy discussions with the Province.
2. The deputy chief forester includes a partition in his rationale that TimberWest is not to exceed a harvest level of 371 000 cubic metres per year in the portion of the Johnstone Straight MU that is subject to the EBM objectives.
3. In his rationale, the deputy chief forester comments on and supports the January, 2014 e-mail from the team lead, strategic initiatives of FAIB to the Nanwakolas First Nations and the deputy chief forester.  
In this e-mail the team lead, strategic initiatives affirmed that a harvest level of 371 000 cubic metres per year in the EBM area would not impact the Nanwakolas' carbon project

The parties also recommend that the commitment by TimberWest to work with Nanwakolas in pursuit of an economic development and jobs strategy be included in the rationale as an implementation instruction. I am not able to follow this recommendation as I have no authority to require TimberWest to adhere to this commitment and no remedial measures should TimberWest not adhere to it. I have indicated my strong support for TimberWest's commitment and I expect they will follow through with it.

I have considered the Nanwakolas' recommended partition as discussed in more detail below.

In the e-mail from the team lead, strategic initiatives of FAIB to the Nanwakolas RP First Nations and me, the team lead indicates that a harvest level of 371 000 m<sup>3</sup>/year or less in the EBM area within TFL 47 would not have a negative impact on the carbon offset potential relative to the original analysis done in support of the carbon project. Having reviewed the information, I concur with the conclusions of the team lead. In general I consider that improved forest management emissions reduction projects are driven by the management regime and not AAC determinations. That is because AAC determinations reflect the management regime. AAC determinations do not drive the management regime. In this case emissions are reduced because of the management regime specified in the South Central Coast Order which reduces the timber available for harvesting. However the regime does not include limitations on harvest levels at

any particular time.

In addition, the team lead indicated that even if the EBM regime on the coast were not in place, the updated inventory and non-EBM management information used in the Management Plan No. 4 timber supply analysis would have been used by FAIB and the deputy chief forester as the basis for analysis and AAC decision making. In other words, it is appropriate to ensure that both baseline (i.e., pre-EBM) and project (i.e., EBM) runs are based on the same updated information on the forests, and on land use and forest management practices to ensure that the estimate of potential offsets due to the project (i.e., EBM regime) is as accurate as possible.

I agree that in making AAC determinations it is preferable and most defensible to use the most current and best available information. When analysis is used to make comparisons between differing management regimes, these comparisons are only relevant if the same, most current and best available information is used for the analyses.

### *Conclusion*

I am satisfied that the consultation process on the two decisions (approval of Management Plan No. 4 and the AAC determination for TFL 47) has been appropriate and in accordance with current Provincial consultation guidance.

I am aware of the 'Namgis First Nation's concerns expressed during the consultation process and outlined previously. I encourage the 'Namgis First Nation to continue to engage with TimberWest at the operational planning phase, to ensure that their interests, both known and yet undiscovered, are considered. Such information, especially that related to culturally sensitive sites, may inform future AAC determinations.

As I described above, I have received the recommendations from the representative of the signatories to the Nanwakolas RP and the government representative pursuant to Section 1.7 of the Shared Decision Making Process. I concur with the recommendation to apply an AAC partition to the area covered by the South Central Coast Order and I will discuss this further under 'partitioned component of the AAC'. As I discussed above, I do not have the authority or remedial measures to require TimberWest to adhere to its commitment to work with Nanwakolas RP First Nations in pursuit of an economic development and jobs strategy. I strongly support this commitment and I expect TimberWest will adhere to it.

Based on my review of the information sharing and consultation process followed, the aboriginal interest information available to FLNR staff, and the potential impact my decision may have on these interests, I believe that the FLNR has engaged in consultation in accordance with current Provincial guidance and applicable case law. I conclude that no accommodation is required as part of this decision. I expect that any adverse impacts upon any Section 35 rights within the area of TFL 47, stemming from forest development activities that occur subsequent to the AAC determination, can be appropriately mitigated or minimized through existing legislation, regulation, and most importantly through engagement at the operational level.

With respect to comments received from the 'Namgis First Nation regarding the VRI and Site Index information, I encourage TimberWest to address these concerns on an ongoing basis, in particular through a young stand monitoring program.



Factors considered under Section 8(8)(b)

*- alternative rates of harvest*

The initial harvest level of the base case I chose as my preferred base case is 647 000 cubic metres per year (approximately the current administratively adjusted AAC). As discussed under ‘timber supply analysis’, this harvest forecast was initially presented as an “alternative harvest flow scenario” and the licensee’s base case was an even-flow harvest forecast at 617 500 cubic metres per year. Aside from these two forecasts the licensee notes in the timber supply analysis report that, “given the balanced age class distribution of the TFL and the need to manage for non-timber resource values, the options for alternative harvest flows are limited”.

The Nānwākōlas First Nations expressed concern that harvest flow choices that favour the short term over the long term tend to disadvantage Nānwākōlas First Nations in the distribution of economic benefits to Nānwākōlas First Nations unless there is a change in this distribution. As I mentioned under ‘First Nations considerations’, the Nānwākōlas First Nations asked that I select a harvest flow choice that maintains options for them.

I have considered harvest flow choices and the concerns expressed by the Nānwākōlas First Nations in making my determination. I will discuss this further under ‘Economic and Social Objectives’.

**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)].

Economic and social objectives; Section 8(8)(d)

**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; and**

*- Minister’s letter of July 4, 2006*

The Minister of Forests and Range (now the Minister of Forests, Lands and Natural Resource Operations) expressed the economic and social objectives of the government in a letter to the chief forester, dated July 4, 2006 (attached as Appendix 3). Two of the government’s stated goals are to create more jobs per capita than anywhere else in Canada, and to lead the world in sustainable environmental management. The Minister asked for consideration, during AAC determinations, of the importance of a stable timber supply in maintaining a competitive and sustainable forest industry while being mindful of other forest values. In respect of this, in the licensee’s even-flow base case projection and the licensee’s alternative harvest flow projection (the base case in this document), a primary objective in the harvest flow has been to attain a stable, long-term harvest level where the growing stock also becomes stable, neither increasing nor decreasing over time. Consequently, in my determination I have remained mindful of the need for the allowable annual harvest in the short term to remain consistent with maintaining the integrity of the timber supply projection throughout the planning horizon. I have also considered with care the adequacy of the provisions, both as made in current practice and as assumed in the analyses, for maintaining a range of forest values. From applying careful attention to all of these

considerations throughout, I am satisfied that my determination accords with the objectives of government as expressed by the Minister.

*- local objectives*

The Minister's letter of July 4, 2006 suggests that the chief forester should consider important social and economic objectives that may be derived from the public input in the TSR where these are consistent with government's broader objectives.

To this end, and to ensure appropriate opportunities both for public input and for consultation with First Nations, in addition to the specific elements of the formal First Nations consultation process described separately under '*First Nations considerations*', public input was invited by the licensee on the information package in notices published in the North Island Gazette and the Campbell River Mirror newspapers in January 2011. The Management Plan, including the updated Information Package and the TFL 47 Timber Supply Analysis Report, was posted on the TimberWest website and on the FLNR Campbell River Natural Resource District internet site and made available for public review and comment for a period of 60-days. A notice inviting public review was published by TimberWest in two consecutive editions of the North Island Gazette and the Campbell River Mirror with the first publication occurring prior to the commencement of the 60-day review period. Numerous comments on a variety of topics were received and they are discussed under individual subject headings in this rationale.

Information obtained from the First Nations' consultation process is discussed earlier in this document under '*First Nations considerations*'.

*- Minister's letter of April 12, 2013*

The Minister of Forests, Lands and Natural Resource Operations expressed the economic and social objectives of the government for signatory First Nations of the Nanwakolas Reconciliation Protocol in a letter to the chief forester, dated April 12, 2013 (attached as Appendix 4). In the letter, the minister asked that I consider the following objectives when making AAC determinations within the traditional territories of the Nanwakolas RP First Nations. Government's objectives are to share in economic development initiatives within the Traditional Territories of the Nanwakolas RP First Nations that facilitate, over time, the individual members of the Nanwakolas RP First Nations obtaining a quality of life that is equal to or better than the national Canadian average; for the Nanwakolas RP First Nations to become full partners with the Province (i.e., to the fullest or maximum extent possible) in the forest sector within the Nanwakolas RP First Nation's Traditional Territories, including, but not limited to, opportunities for shared decision-making, forest tenures and revenue sharing; to develop significant involvement with the forest industry operating within their Traditional Territories, through the development of measures that will facilitate new relationships with industry; to significantly increase employment opportunities in the forest industry, over time, for Nanwakolas RP First Nations members, within their Traditional Territories; and to consider the value of forest resource development in the Traditional Territories of Nanwakolas RP First Nations when developing appropriate strategies for full Nanwakolas RP First Nation's participation in the management and operation of the forest resource sector in the Traditional Territories.

As I described above under '*First Nations considerations*', during the shared decision making process the team lead, strategic initiatives of FAIB affirmed that a harvest level of 371 000 cubic metres per year in the EBM area would not impact the Nanwakolas' carbon project, a project that provides the Nanwakolas RP First Nations economic benefit. In addition, analysis provided by TimberWest indicates that a harvest level of 371 000 cubic metres per year can be sustained on the EBM area and that no increase in the short term is possible. Therefore the short term flexibility in harvest levels in the two harvest forecasts provided for the TFL as a whole is

associated with the areas outside of the EBM area and choosing either of the alternative harvest forecasts for TFL 47 as a whole would not affect the carbon project.

TimberWest also provided the Nanwakolas RP First Nations with a commitment to work with the Nanwakolas RP First Nations in pursuit of an economic development and jobs strategy and provided its support of the Nanwakolas RP First Nations in their broader Nanwakolas Protocol forest economic development strategy discussions with the Province.

I have considered these factors in making my AAC determination for TFL 47. The carbon project is an improved forest management project predicated on emissions reductions resulting from managing the area under the EBM regime specified in the South Central Coast Order. In this AAC determination I have accounted for this management regime within the EBM area of the Johnstone Strait MU where it applies.

I am satisfied that my determination has no influence on the carbon project. I am also pleased that TimberWest has committed to working with the Nanwakolas, and I expect they will adhere to this commitment. I believe these two factors are consistent with the five objectives stated in the Minister's letter of April 12, 2013.

*- partitioned component of the AAC*

In their e-mail to me dated January 17, 2014 the Nanwakolas First Nations' and FLNR representatives recommended that I partition an AAC of 371 000 cubic metres to the area on TFL 47 covered by the South Central Coast Order. Information provided by TimberWest indicates that a harvest level of 371 000 cubic metres per year can be sustained on this area, and that an increase in the short term is not possible.

I am aware that on March 31, 2009 the Province and First Nations endorsed a five-year EBM implementation plan which, among other things, committed to a review of land use order (LUO) objectives by March 31, 2014. The goal of the review is to assess progress towards full implementation of EBM, including progress towards concurrently achieving low ecological risk and high human well being and, if this is not possible, seek meaningful increments towards both.

I am also aware that the review process is well underway, and that First Nations, Provincial Agencies, and the Joint Solutions Project (JSP), comprised of major forest licensees on the coast and environmental organizations, are engaged in the review process. Recommendations arising from the review process will be considered by First Nations and the Province in accordance with strategic government to government agreements and their respective laws, policies, customs and traditions.

In January 2014, First Nations and the Province received an integrated package of recommendations from the JSP that is currently being reviewed by the government to government tables (Nanwakolas and Coastal First Nations EBM forums). The implications and impacts of the recommendations still need to be assessed and extensive consultation with other First Nations and stakeholders will be required. Once the consultation is complete, proposed LUOs will be drafted and submitted for public review. When the public review process is complete, the internal legal Provincial process will commence. It is anticipated that legally amended Land Use Orders will be established by December 2014.

In considering whether there is a need to partition a portion of the AAC to the EBM area, I am mindful of the 2013 minister's letter. It gives me the responsibility to provide for and protect economic opportunities for the Nanwakolas First Nations. I have concluded that the non-declining harvest forecast provided by TimberWest for the EBM area does not affect the Nanwakolas' carbon project, and hence one of the Nanwakolas' economic opportunities. I am

also aware that the analysis results provided by TimberWest indicate that no short term increase in the harvest level from the 371 000 cubic metres per year is possible.

I am also mindful of the uncertainty around the eventual outcome of the review of the South Central Coast Order and the sensitivity with respect to recruitment of old growth. I find it reasonable that a harvest level should be partitioned to the area covered by the South Central Coast Order on TFL 47 so that there is a greater certainty that there will be a broad range of options available for the potential evolution of EBM in this area.

In conclusion, I find the 371 000 cubic metre per year level attained in the TimberWest analysis a reasonable starting point for consideration. As I have described in this document, there are some factors modelled in the base case that I have concluded cause the timber supply to have been overestimated in the base case, and some of these factors are applicable in the EBM area. I will discuss my consideration of these factors in '**Reasons for Decision**'.

### Factors considered under Section 8(8)(e)

- *unsalvaged losses*

For the only factor considered under this section, 'non-recoverable losses', I have accepted the assumptions as applied in the base case projection, as indicated earlier in Table 1.

### **Reasons for Decision**

In reaching my AAC determination for TFL 47 I have considered all of the factors required under Section 8 of the *Forest Act*. I have made the considerations documented above, all of which are integral to the reasons for my decision, and from which I have reasoned further as follows.

I am satisfied that the assumptions applied in the base case for the majority of the factors applicable to TFL 47 were appropriate. In this section, I have summarized my considerations related to factors for which there is uncertainty, or the need for some adjustment, with respect to the analysis inputs, which in turn affect the base case timber supply.

The AAC in effect for TFL 47 immediately before this determination was 646 793 cubic metres. This AAC resulted from a determination made under Section 8 of the *Forest Act* effective August 1, 2003 that has been subject to several administrative adjustments between January 1, 2005 and May 23, 2010.

The licensee's even-flow base case projected a flat-line harvest forecast of 617 500 cubic metres per year. Also included in the analysis was an alternative forecast with an initial harvest level of 647 000 cubic metres per year, declining to a long-term harvest level of 617 500 cubic metres per year after three decades. Under 'timber supply analysis' I discussed the 2006 letter from the minister to the chief forester stating the social and economic objectives of the government, and based on it, I found the alternative harvest forecast to be more consistent with the government's objectives than the licensee's even-flow base case. Throughout this document I therefore considered the alternative forecast as the base case against which I considered appropriate adjustments when making this determination.

In determining an AAC for TFL 47, I have identified a number of factors, which, if considered separately, indicate reasons why the timber supply may be greater or less than that projected in the base case. Some of these factors can be quantified and their impact on the harvest level

assessed with reliability. Others may influence timber supply by adding an element of risk or uncertainty to the decision, but cannot be reliably quantified at this time.

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

- Log grade – an inventory audit has indicated that dead potential volume on TFL 47 is approximately 2.7 percent of the green volume for stands over 60 years of age. It is unclear how much of this is being utilized, but to the degree that it is utilized, it will increase timber supply by an unknown small amount in the short- and medium-term.
- OAF1 – the licensee’s OAF1 study suggests managed stand yields may have been underestimated in the base case and this may increase timber supply by a small amount in the longer term.
- Stump height – the licensee indicated that on flat or moderately sloping terrain where feller bunchers are used for harvesting, stump heights are lower than the maximum height permitted. No study was provided to confirm this claim, however I find it reasonable that a small amount of volume is harvested that was not accounted for in the base case, and this may increase timber supply by an unknown small amount over the forecast period.

I did not make any specific adjustments for these factors but note that they will mitigate some of the risk associated with natural stand yields, discussed below.

I have also identified factors in my considerations that indicate the timber supply projected in the base case was overestimated:

- Conservancies and Hanson Island – I concluded that the initial harvest level in the base case should be reduced by 8000 cubic metres per year to account for the deletion of the conservancies from TFL 47 and the exclusion of Hanson Island from the THLB.
- Inclusion of Timber Licences – 917 hectares of unreverted Timber Licences were included in the TFL 47 base case land base on the assumption that they will revert to the TFL. This resulted in an overestimate of the THLB of approximately one percent.
- Identified Wildlife Management Strategy (IWMS) – The IWMS has not yet been completely implemented in TFL 47. Marbled murrelet habitat covering 190 hectares is presently deferred from harvesting until Wildlife Habitat Areas are established. This area contributed to the THLB in the base case. I concluded that the base case timber supply was overestimated on this account by less than one percent over the forecast period.

Having considered the information above, I reason as follows:

I find the timber supply on TFL 47 to be quite robust, given that the initial harvest level in the base case is just under five percent higher than the forecasted long-term harvest level. I also expect that the combined increases in timber supply associated with harvesting dead trees, and reduced OAFs and stump heights are likely to add to the stability of the TFL 47 timber supply.

In my considerations I have accepted as modelled three factors for which I found significant risk and/or uncertainty in the information used in the analysis. These factors are site index, natural stand yields and the method used to recruit old growth in the EBM areas. Given the robust timber supply on TFL 47, if site indexes and natural stand yields are in fact overestimated in the analysis, or if the method used to recruit old growth does not represent actual practice following further developments in EBM implementation, I do not expect timber supply would be affected in the short term, and future declines could be managed with reasonable step downs in line with those experienced in other units where timber supply is declining.

I concluded that the base case initial harvest level should be reduced by 8000 cubic metres per year to account for the deletion of three conservancies and the exclusion of Hanson Island from contributing to timber supply in the analysis. I note that these areas are all within the EBM area of TFL 47 and that the harvest forecast provided by TimberWest for the EBM area excludes these areas from contributing to timber supply. Therefore, in my consideration of the AAC attributable to the EBM area, I conclude it is not necessary to reduce the modelled harvest level of 371 000 cubic metres per year to account for Hanson Island and the Conservancies. In effect, the indicated harvest level for the EBM area would likely have been 379 000 cubic metres per year if those areas had been included.

I also concluded that the four timber licences that TimberWest expects will revert to the TFL should not have been included in the base case land base. These TLs are located in the EBM area and cover about one percent of the TFL 47 THLB. This amounts to a reduction in timber supply of about 6000 cubic metres per year relative to the base case, all attributable to the EBM area.

In addition, the assumptions applied in the base case pertaining to IWMS reduce the TFL 47 timber supply by less than one percent.

Considering all these factors together, the land base-related factors in combination with accounting for the IWMS reduce short-term timber supply by about 17 000 cubic metres per year. I am also mindful of the three factors that may act to increase short-term timber supply by an unknown small amount, and I consider these factors to add to the stability of the TFL 47 timber supply. I therefore determine an appropriate harvest level for TFL 47 at this time is 630 000 cubic metres. Given that it was possible to attain a short-term harvest level of 647 000 cubic metres per year in the base case with the conservancies and Hanson Island excluded from the THLB, this level will provide for further stability should it be discovered that any of the three large risks and uncertainties I identified above do in fact represent an overestimate in timber supply – i.e. site index, natural stand yields, and old-forest recruitment.

I also concluded that it is appropriate at this time to partition a portion of the AAC to the area covered by the South Central Coast Order. In deriving an appropriate partition for the area I have used the harvest level of 371 000 cubic metres per year suggested in the forecast provided by TimberWest as a starting point. I have accounted for a contribution from the TLs of 6000 cubic metres per year leaving an AAC partition to the area covered by the South Central Coast Order of 365 000 cubic metres.

## **Determination**

Having considered all of the factors 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 decade, and that reflects current management practices as well as the socio-economic objectives of the government, can best be achieved on TFL 47 at this time by establishing an AAC of 630 000 cubic metres. I also partition 365 000 cubic metres of this volume to the area on TFL 47 covered by the South Central Coast Order.

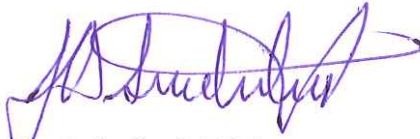
This determination is effective February 4, 2014 and will remain in effect until a new AAC is determined, which must take place within 10 years of the effective date of this determination.

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, I am prepared to revisit this determination sooner than the 10 years allowed by legislation.

### Implementation

The following actions are very important in the period following this decision and leading to the next AAC determination:

- TimberWest should work with FLNR staff to implement a young stand monitoring program to confirm that the managed stand yield estimates for TFL 47 are attainable in practice.
- TimberWest should provide information that confirms the natural stand volume estimates and projections that will be used in the next timber supply analysis for the next AAC determination.



Jim Sutherland, RPF  
Deputy Chief Forester

February 4, 2014



## Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (consolidated to January 22, 2014), reads as follows:

### Allowable annual cut

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

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

(2) If the minister

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

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

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

(3) If

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

(a) the community forest agreement, and

(b) any directions of the chief forester.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) each tree farm licence area

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

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

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

Section 4 of the *Ministry of Forests and Range Act* (consolidated to January 22, 2014) reads as follows:

### **Purposes and functions of ministry**

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

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



JUL 04 2006

Jim Snetsinger  
Chief Forester  
Ministry of Forests and Range  
3<sup>rd</sup> 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.

Page 1 of 2

Minister of  
Forests and Range  
and Minister Responsible  
for Housing

Office of the  
Minister

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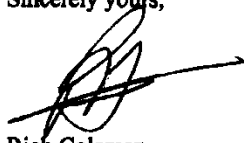
Jim Snetsinger

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

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

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

Sincerely yours,

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

Rich Coleman  
Minister

## Appendix 4: Minister's letter of April 12, 2013



Ref: 196701

April 12, 2013

Dave Peterson  
Chief Forester and Assistant Deputy Minister  
Ministry of Forests, Lands & Natural Resource Operations  
Tenures, Competitiveness and Innovation Division  
PO Box 9352 Stn Prov Govt  
Victoria, British Columbia  
V8W 9M1

Dear Dave Peterson:

The *Forest Act* gives you the responsibility and authority to make allowable annual cut determinations.

Section 8 of the *Forest Act* requires you to consider the government's social and economic objectives, as expressed by the Minister, as well as the other items listed in section 8.

As provided for in Section 1.1 of the Shared Decision Making Process agreed to as part of Schedule B, Appendix 2 (the Forestry Schedule) of the Nanwakolas Reconciliation Protocol, this letter provides government's social and economic objectives for signatory First Nations. In addition to government's social and economic objectives provided in other letters, please consider these objectives when making determinations of Allowable Annual Cut within the traditional territories of Nanwakolas First Nations:

- To share in economic development initiatives within the Traditional Territories of the Nanwakolas First Nations that facilitate, over time, the individual members of the Nanwakolas First Nations obtaining a quality of life that is equal to or better than the national Canadian average;
- To become full partners with the Province (i.e. to the fullest or maximum extent possible) in the forest sector within the Nanwakolas Traditional Territories including, but not limited to, opportunities for shared decision-making, forest tenures and revenue sharing;
- To develop significant involvement with the forest industry operating within their Traditional Territories, through the development of measures that will facilitate new relationships with industry;

Page 1 of 2

Ministry of Forests, Lands and  
Natural Resource Operations

Office of the Minister

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- To significantly increase employment opportunities in the forest industry, over time, for Nanwakolas First Nations members, within their Traditional Territories; and
- To consider the value of forest resource development in the Traditional Territories of Nanwakolas First Nations when developing appropriate strategies for full Nanwakolas First Nations participation in the management and operation of the forest resource sector in the Traditional Territories.

Sincerely,

A handwritten signature in black ink that reads "Steve Thomson". The signature is written in a cursive style with a long horizontal flourish at the end.

Steve Thomson  
Minister