

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

**Tree Farm Licence 54**

**held by**

**Ma-Mook Natural Resources Ltd.**

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

**Effective February 7, 2019**

**Diane Nicholls, RPF**

**Chief Forester**

**Table of Contents**

Objective of this document ..... 1

Acknowledgement ..... 1

Statutory framework ..... 1

Description of the Tree Farm Licence ..... 1

History of the AAC ..... 2

New AAC determination ..... 3

Role and limitations of the technical information used ..... 3

Guiding principles for AAC determinations ..... 3

The role of the base case ..... 7

Base case for TFL 54 ..... 8

Consideration of factors as required by Section 8(8) of the *Forest Act*, as varied by  
Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program  
Regulation ..... 8

    Land base contributing to timber harvesting ..... 10

        - recreation and tourism - inside CSLUP ..... 11

        - hydrioparian reserves and riparian areas - outside CSLUP ..... 12

        - First Nations cultural heritage resources ..... 13

        - dead potential volume ..... 14

        - Meares Island ..... 14

    Expected rate of growth ..... 15

        - managed stand yields ..... 15

        - minimum harvestable criteria ..... 16

    Expected time for the forest to be re-established following harvest ..... 16

    Silviculture systems ..... 17

        - timber utilization ..... 17

    Integrated resource management objectives ..... 17

        - stand-level biodiversity ..... 17

        - adjacent cutblocks and green-up – outside CSLUP ..... 18

        - scenic areas and visual quality objectives ..... 18

        - harvest performance ..... 19

        - unharvested volume carry-forward ..... 20

        - climate change ..... 20

        - cumulative effects ..... 21

Economic and social objectives.....	22
- economic and social objectives of the Crown .....	22
First Nations considerations .....	23
- Maa-nulth Treaty .....	25
- Ahousaht First Nation.....	25
- Hesquiaht First Nation.....	26
- Mowachaht/Muchalaht First Nation .....	26
- Tla-o-qui-aht First Nation.....	26
- summary .....	27
Non-recoverable loss .....	27
Reasons for Decision .....	28
Determination .....	29
Implementation .....	30
Information sources used in the AAC determination .....	31
Appendix 1: Section 8 of the <i>Forest Act</i> .....	34
Appendix 2: Section 4 of the <i>Forest Act</i> Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation .....	37
Appendix 3: Section 4 of the <i>Ministry of Forests and Range Act</i> .....	38
Appendix 4: Minister’s letter of October 30, 2017 .....	39
Appendix 5: Minister’s letter of April 12, 2013 .....	42

**List of Tables**

Table 1. List of factors accepted as modelled .....	9
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## **Objective of this document**

This document provides an accounting of the factors I have considered and the rationale I have employed as chief forester of British Columbia (BC) in making my determination, under Section 8 of the *Forest Act*, and Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation, of the allowable annual cut (AAC) for Tree Farm Licence (TFL) 54. This document also identifies where new or better information is needed for incorporation in future determinations.

## **Acknowledgement**

For preparation of the information I have considered in this determination, I thank licensee staff, and staff from BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRO) in the South Island Natural Resource District and the Forest Analysis and Inventory Branch (FAIB). I am also grateful to the First Nations, the public, and the licensees who have provided input.

## **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. Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation provides the chief forester with additional considerations specific to area-based AACs and is reproduced in full as Appendix 2 of this document.

## **Description of the Tree Farm Licence**

TFL 54 is located on the west side of Vancouver Island in the vicinity of Clayoquot Sound and is within the traditional territories of the Ahousaht First Nation, Hesquiaht First Nation, Mowachaht/Muchalaht First Nation, and Tla-o-qui-aht First Nation. TFL 54 also overlaps the Maa-nulth First Nation Area of Toquaht Nation and Yuułuꞑilꞑathꞑ (Ucluelet) First Nation. The communities in the area include Tofino and Ucluelet, Ahousaht, Esowista, Opitsaht, Hot Springs Cove and Port Albion.

Since 2007, the licence has been held by Ma-Mook Natural Resources Limited (Ma-Mook or “the licensee”). Ma-Mook is a partnership of the Ahousaht, Hesquiaht, Tla-o-qui-aht, Toquaht and Yuułuꞑilꞑathꞑ (Ucluelet) First Nations and is held under the Ma-Mook Development Corporation. The licence is administered from the South Island Natural Resource District office in Port Alberni which is within the jurisdiction of the West Coast Region of FLNRO. Approximately, 93 percent of the TFL falls within the area covered by the Clayoquot Sound Land Use Decision (CSLUD). Forest management in this part of the TFL is guided by the Clayoquot Sound Landscape Unit Plan (CSLUP) and the corresponding watershed plans. All watershed plans were developed following the recommendations of the Scientific Panel for Sustainable Forest Practices in Clayoquot Sound (the Scientific Panel) and were endorsed by the BC Government and the Central Region First Nations chiefs before becoming law under the Ministerial Order Establishing Land Use Objectives for Clayoquot Sound on June 26, 2008.

Areas outside of Clayoquot Sound are managed in accordance with the *Forest and Range Practices Act* (FRPA) and the Vancouver Island Land Use Plan (VILUP) Higher Level Plan Order. This order establishes Resource Management Zones including Special Management Zones (SMZ),

Enhanced Forestry Zones (EFZ) and General Management Zones (GMZ). SMZ areas are designated to reduce the impact of commercial resource development through specification of special biodiversity conservation objectives, EFZ areas allow for increased commercial timber production and labour intensive forest management, and GMZ areas are designed to accommodate a wide variety of resource values and uses. Reserve areas have also been established to protect wildlife habitat, riparian areas, sensitive soils and unstable terrain.

The total area of the TFL is approximately 49 000 hectares of Crown land and consists of 315 separate geographical blocks interspersed with parks, protected areas and other TFL blocks. The TFL has a large proportion of productive forest land, covering 46 649 hectares, of which 17 912 hectares is considered timber harvesting land base.

The landscape is a complex of mountains, valleys, ocean inlets, lakes, rivers, islands and forests. The TFL is located in the Windward Island Mountains Eco-section and includes two physiographic regions: the Estevan Coastal Plan and the Vancouver Island Mountains. Vegetation is dominated by old-growth forests comprised primarily of western redcedar, western hemlock, and amabilis fir as part of the Coastal Western Hemlock (CWH) and Mountain Hemlock (MH) biogeoclimatic zones. Species at risk include marbled murrelet and northern red-legged frog.

As required under the Tree Farm Licence Management Plan Regulation of the *Forest Act*, the licensee has prepared Management Plan 5 (MP 5) for TFL 54. This includes three components: a) management plan: general description and history of the TFL, title and description of all publicly available planning documents, and a summary of the First Nations and public reviews, b) timber supply analysis of the short-term and long-term availability of timber available for harvesting, and c) information package and other supporting documentation.

### **History of the AAC**

In 1991, during Management Plan 1, the AAC for TFL 54 was set at 180 000 cubic metres, with 8991 cubic metres allocated to the small business forest enterprise program (now BC Timber Sales).

In May 1994, the chief forester reduced the AAC to 138 000 cubic metres under Part 15 (now Part 13) of the *Forest Act* as an interim measure to account for newly protected areas and anticipated changes to management resulting from the CSLUD.

In 1996, a new AAC of 75 750 cubic metres was determined, and 66 759 cubic metres was allocated to the licensee and 8991 cubic metres to the small business forest enterprise program.

The AAC of 75 750 cubic metres was maintained until November 5, 2004, when an area-based AAC trial was initiated for TFL 54 under the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation. At that time, a simplified area-based analysis was used to determine a short-term AAC of 320 hectares.

Effective September 4, 2008, after considering the watershed plan reserve networks and the Scientific Panel recommendations, the deputy chief forester determined the AAC to be 320 hectares, the same as the previous AAC.

On April 19, 2011, 4.2 hectares were removed from the TFL under the *Maa-nulth Treaty Act* and the Maa-nulth Forest Compensation Interim Regulation to result in the current AAC of 315.8 hectares.

## **New AAC determination**

Effective February 7, 2019, the new area-based AAC for TFL 54 is 170 hectares. This AAC will remain in effect until a new AAC is determined, which must take place within 10 years of this determination unless significant new information becomes available or the trial program is terminated under Section 7 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation.

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

Section 8 of the *Forest Act* and Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation 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 related to inventory, growth and yield, and management. 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.

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 issues that must be considered when making decisions such as AAC determinations. Such information does provide valuable insight into potential impacts of different uncertainties about or changes to resource information and management practices, and thus forms an important component of the information I must consider in AAC determinations.

In determining this AAC, I have considered the technical information provided, including any known limitations.

## **Guiding principles for AAC determinations**

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 my approach in these matters explicit, I have considered and adopted the following body of guiding principles, which have been developed over time by BC's chief foresters and deputy chief foresters. However, in any specific circumstance in a determination where I consider it necessary to deviate from these principles, I will explain my reasoning in detail.

When considering the factors required under Section 8, I am also aware of my obligation as a steward of the forests of British Columbia, of the mandate of the Ministry of Forests, Lands, Natural Resource Operations and Rural Development ("the Ministry") as set out in Section 4 of the *Ministry of Forests and Range Act*, and of my responsibilities under the *Forest Act*, *Forest and Range Practices Act (FRPA)*, and *Forester's Act*.

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 AAC 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, Natural Resource Operations and Rural Development with respect to subsequent allocation of wood supply.

These guiding principles focus on: responding to uncertainties; incorporating information related to First Nations' rights, titles and interests; and considering information related to integrated decision making, cumulative effects, and climate change.

### 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 potential current and future social, economic, and environmental risks associated with a range of possible AACs; and,
- (ii) re-determining AACs regularly to ensure they incorporate current information and knowledge, and greater frequency in cases where projections of short-term timber supply are not stable and/or substantial changes in information and management are occurring.

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 consistent with legislative requirements and not substantiated by demonstrated performance.

It is not appropriate to speculate on timber supply impacts that may eventually result from land-use designations not yet finalized by government. Where specific protected areas, conservancies, or similar areas have been designated by legislation or by order in council, these areas are deducted from the 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 that helps meet resource management objectives such as biodiversity.

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

Where appropriate, 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.

I acknowledge the perspective that alternate strategies for dealing with information uncertainty may be 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, I believe that no responsible AAC

determination can be made solely on the basis of a precautionary response to uncertainty with respect to a single value.

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

### First Nations

The BC government has committed to true, lasting reconciliation with Indigenous peoples, including fully adopting and implementing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Reconciliation and implementation of UNDRIP will likely require changes to policies, programs and legislation, which will take time and involve engagement with Indigenous peoples. While this work is undertaken, BC is committed to fulfilling its legal obligations to consult and accommodate Aboriginal Interests consistent with the Constitution, case law, and relevant agreements between First Nations and the government of BC.

Where First Nations and the Province are engaged in collaborative land and resource planning, the Province may make general commitments regarding stewardship and other aspects of resource management. Where such commitments have been made, I will consider them when determining AACs, within the scope of my statutory authority.

As is the case for land use and management planning in general, where land use zones or management objectives resulting from collaborative planning between First Nations and the Province have not been finalized, it is beyond the statutory authority of the chief forester to speculate on final outcomes. If the timber supply implications of final designations are substantial, application of the Allowable Annual Cut Administration Regulation to reduce a management unit AAC between Section 8 determinations, or a new AAC determination prior to the legislated deadline may be warranted.

Where the nature, scope and geographic extent of Aboriginal rights and title have not been established, the Crown has a constitutional obligation to consult with First Nations regarding their Aboriginal Interests in a manner proportional to the strength of those Interests and the degree to which they may be affected by the decision. The manner of consultation must also be consistent with commitments made in any agreements between First Nations and the Province. In this regard, full consideration will be given to:

- (i) the information provided to First Nations to explain the timber supply review process and analysis results;
- (ii) any information brought forward through consultation or engagement processes or generated during collaboration with First Nations with respect to Treaty rights or Aboriginal Interests, including how these rights or Interests may be impacted;
- (iii) any operational plans and/or other information that describe how First Nations' Treaty rights or Aboriginal Interests are addressed through specific actions and forest practices; and,
- (iv) existing relevant agreements and policies between First Nations and the BC Government.

Treaty rights or 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 scope of statutory

authority, 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 that could have implications for the AAC determination are addressed in the various sections of this rationale where it is within the statutory scope of the determination.

Established Aboriginal title lands (meaning declared by a court or defined under an agreement) and other areas, such as Treaty Settlement Lands or Indian Reserves, are not provincial Crown land. Consequently, the timber on these lands does not contribute to the AAC of the TSA or TFL with which they overlap. Prior to establishment of Aboriginal title, it is not appropriate for the chief forester to speculate on how potential establishment of Aboriginal title in an area, either by court declaration or by agreement, could affect timber supply, given uncertainties about the scope, nature and geographic extent of title. Until land has been established as Aboriginal title land, it remains as provincial land managed by the province, and will contribute to timber supply.

#### Integrated decision making and cumulative effects

One of the responsibilities of the Ministry is to plan the use of forest and range resources such that the various natural resource values are coordinated and integrated. In addressing the factors outlined in Section 8 of the *Forest Act*, I will consider relevant available information on timber and non-timber resources in the management unit, including information on the interactions among those resources and the implication for timber supply.

With respect to cumulative effects, I must interpret related information according to my statutory authority. As emphasized above, the chief forester is authorized only to make decisions on allowable harvest levels, not to change or institute new management regimes for which other statutory decision makers have specific authority. However, cumulative effects information can highlight important issues and uncertainties in need of resolution through land use planning, which I can note and pass to those responsible for such planning. Information on cumulative effect can also support considerations related to Aboriginal Interests.

#### Climate change

One key area of uncertainty relates to climate change. There is substantial scientific agreement that climate is changing and that the changes will affect forest ecosystems. Forest management practices will need to be adapted to the changes, and can contribute to climate change mitigation by promoting carbon uptake and storage. Nevertheless, the potential rate, amount, and specific characteristics of climate change in different parts of the province are uncertain. This uncertainty means that it is not possible to confidently predict the specific, quantitative impacts on timber supply.

When determining AACs, I consider available information on climate trends, potential impacts to forest ecosystems and communities that depend on forests and related values, and potential management responses. As research provides more definitive information on climate change and its effects, I will incorporate the new information in future AAC determinations. Where forest practices are implemented to mitigate or adapt to the potential effects of climate change on forest resources, or where monitoring information indicates definite trends in forest growth and other dynamics, I will consider that information in my determinations.

I note, however, that even with better information on climate change, in many cases there will be a range of reasonable management responses. 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, which appear to be likely in some areas. Hypothetically, focused harvests in at-risk forests could forestall losses of timber and allow for planting of stands better adapted to future conditions. Conversely, lower harvest levels could provide buffers against uncertainty. The appropriate mix of timber supply management approaches is ultimately a social decision.

Deciding on the preferred management approach will involve consideration of established climate change strategies, and available adaptation and mitigation options together with social, economic, cultural, and environmental objectives. Analysis will be useful for exploring options and trade-offs. Any management decisions about the appropriate approach and associated practices will be incorporated into future AAC determinations. In general, the requirement for regular AAC reviews will allow for the incorporation of new information on climate change, on its effects on forests and timber supply, and on social decisions about appropriate responses as it emerges.

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

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

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

From a range of possible forecasts, one is chosen in which an attempt is made to avoid both excessive changes from decade to decade and significant timber shortages in the future, while ensuring the long-term productivity of forest lands. This is known as the base case forecast, and forms the basis for comparison when assessing the effects of uncertainty on timber supply. The base case is designed to reflect current management practices.

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

Therefore, much of what follows in the considerations outlined below is an examination of the degree to which all the assumptions made in generating the base case forecast are realistic and current, and the degree to which any adjustments to its predictions of timber supply must be made, if necessary, to more properly reflect the current 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 wherever 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. Judgments that in part may be based on uncertain information are essentially qualitative in nature and, as such, are subject to an element of risk. Consequently, once an AAC has been determined, no additional precision or validation would be gained by attempting a computer analysis of the combined considerations.

#### **Base case for TFL 54**

The timber supply analysis for MP 5 was prepared for the licensee by Forsite Consultants Ltd. using the modelling software Patchworks™ (version 1.3, 2018-02-27). I am familiar with this computer model and I am comfortable that its' output provides a sound basis for AAC determinations.

Similar to the previous management plan for TFL 54, MP 5 includes an area-based analysis which was conducted following the recommendations in the document, *Area-Based Allowable Annual Cut Determination: Recommended Information Requirements for Tree Farm Licences*. These recommendations were made to maintain the credibility and rigor of the AAC determination process while simplifying the requirements for information and analysis that support area-based AAC determination.

The MP 5 timber supply analysis included assumptions based on the licensee's assessment of the best available information on current forest management and the land base available for timber harvesting for the TFL. These assumptions are discussed in the information package and in the timber supply analysis documentation, which form integral components of the management plan.

The base case projection for MP 5 is an even-flow harvest level of 185 hectares per year. This is the maximum amount of THLB that can be harvested every year from the entire TFL when current practices are applied.

As discussed throughout this rationale, and in consideration of the items described above, I am satisfied that base case forecast presented in MP 5 provides an adequate basis from which I can assess the timber supply for TFL 54 in this determination.

#### **Consideration of factors as required by Section 8(8) of the *Forest Act*, as varied by Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation**

I have reviewed the information for all of the factors required to be considered under Section 8 of the *Forest Act*, as varied by Section 4 of the Tree Farm Licence Area-Based Allowable Annual Cut Trial Program Regulation. Where I have concluded that the modelling of a factor in the base case is a reasonable reflection of current legal requirements, demonstrated forest management and 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.

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

Table 1. List of factors accepted as modelled

<b>Forest Act section and description</b>	<b>Factors accepted as modelled</b>
4(1)(a) the composition of the forest within the trial management unit 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>- Land Ownership</li> <li>- Physical and Economic Operability</li> <li>- Existing and Future Roads, Trails and Landings</li> <li>- Terrain Stability</li> <li>- Sensitive Sites and Flood Plains</li> <li>- Wildlife Habitat Areas and Ungulate Winter Range</li> <li>- Interior Old Growth – inside CSLUP</li> <li>- Site Productivity Assignments</li> <li>- Natural Stand Yields</li> <li>- Genetic Gain</li> <li>- Operational Adjustment Factors for Managed Stands</li> </ul>
4(1)(b) the expected time that it will take the forest within the trial management unit, excluding areas that no longer contribute to the productive forest land base, such as areas on which permanent access structures have been constructed, to become re-established after timber is cut, damaged, or destroyed	<ul style="list-style-type: none"> <li>- Stand Establishment</li> </ul>
4(1)(c) the silvicultural systems and silviculture treatments to be applied within the trial management unit	<ul style="list-style-type: none"> <li>- Silviculture Systems</li> </ul>
4(1)(d) the constraints on the amount of land available for timber harvesting that reasonably can be expected from use of the trial management unit for purposes other than timber production	<ul style="list-style-type: none"> <li>- Higher Level Plans</li> <li>- Landscape-Level Biodiversity</li> <li>- Harvest Rules and Priority</li> <li>- Hydroriparian Reserves and Riparian Areas – inside CSLUP</li> <li>- Watershed Rate of Cut and Community Watersheds</li> </ul>
4(1)(e)(i) and (ii) any other information that, in the chief forester's opinion, relates to the capability of the trial management unit to produce timber, or the suitability of areas within the trial management unit for timber harvesting	<ul style="list-style-type: none"> <li>- Decay, Waste and Breakage for Unmanaged Stands</li> </ul>

<b><i>Forest Act</i> section and description</b>	<b>Factors accepted as modelled</b>
8(8)(b) The short and long-term implications to British Columbia of alternative rates of timber harvesting from the area	- Alternative Rates of Harvest
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	- Summary of Public Input
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	- No factors apply

Section 4(1) of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation states:

“When determining the allowable annual cut for a trial management unit, the chief forester, in addition to the matters set out in section 8(8)(b) to (e) of the Act, must consider the rate of harvesting, based on the amount of land from which timber is to be harvested annually, that may be sustained within the trial management unit, taking into account the following factors, which replace the factors set out in section 8(8)(a)(i) to (vi) of the Act”.

#### **Section 4(1)(a) The composition of the forest within the trial management unit and its expected rate of growth**

##### Land base contributing to timber harvesting

The timber harvesting land base (THLB) is an estimate of the land where timber harvesting is considered both available and economically feasible, given the objectives for all relevant forest values, existing timber quality, market values and applicable technology. It is a strategic-level estimate developed specifically for the timber supply analysis and, as such, could include some areas that may never be harvested or could exclude some areas that may be harvested.

As part of the process used to define the THLB, a series of deductions was made from the Crown forest management land base (CFMLB). These deductions account for land designations such as biophysical, economic or ecological factors that reduce the forest area available for harvesting. In reviewing these deductions, I am aware that some areas may fall into more than one land class. For example, an area may be both uneconomic and in unstable terrain. To ensure accuracy in defining the THLB, care was taken in the analysis to avoid double counting areas with overlapping objectives. Hence, the deduction amount for a given factor in the analysis or in this document does not necessarily reflect the total area within that land class, as some portion of it may have been deducted earlier under another land class.

The total area of TFL 54 is approximately 48 922 hectares. This area is 364 hectares smaller than reported in the previous Management Plan 4 (MP 4) due to boundary changes that include the *Maa-nulth Treaty Act*.

The THLB assumed in the base case is 17 912 hectares which is approximately 38 percent of the CFMLB area. The THLB is approximately 25 percent smaller than reported in MP 4 due to updated economic operability assessment information.

The process used to define the THLB was run independently for areas within the CSLUP and areas outside the CSLUP. Within the CSLUP, area removals were based on specifications from the eight watershed plans for Clayoquot Sound that fall within the TFL. Outside the CSLUP, area removals were defined in accordance with VILUP guidance. For this determination, I accept that the approach used to determine the THLB for TFL 54 was appropriate.

- *recreation and tourism - inside CSLUP*

Recreation features are biophysical, cultural, and historic features which provide an opportunity for outdoor recreation experiences. Biophysical features include sand beaches, estuaries, and islets, and historical and cultural features include buildings and building sites, trails, routes, and resource use sites.

In the base case, recreation netdown areas were based on recreation and tourism use information and capability modelling data from between 1996 and 1999 assembled for the Clayoquot Sound watershed plans. Recreation features and areas that have a significance rating of 'very high' and 'high' have been added to watershed reserve networks and were removed from the THLB. These areas are generally located around marine and lake shorelines. The total area of mapped recreation reserves in CSLUP watershed plans in TFL 54 was 1883 hectares of which 892 hectares were excluded from the THLB specifically for this reason.

During the Information Package consultation phase, the District of Tofino asked that the licensee consider updated recreation values to ensure that the potential impact of harvesting on eco-tourism businesses such as kayaking, scenic flights and whale watching would be appropriately considered. The licensee responded by acknowledging that recreation and tourism are important factors to be managed and that they update new information as it comes to their attention regarding important features. They also stated: "each block that is available for harvest must meet the test of the results and strategies in the approved Forest Stewardship Plan (FSP) and the site plan which are legal documents available to the public under the *Freedom of Information Act*. It is here that all factors including high recreation, visual and tourism values are incorporated in our plans".

I note that under the Ministerial Order Establishing Land Use Objectives for Clayoquot Sound, the licensee must comply with all recommendations outlined in the watershed plans. Accordingly, in the base case the licensee modelled constraints for visual management within established scenic corridors based on local visual inventories from the work of the Scientific Panel. Scenic corridors are a special management zone under the CSLUD, identified as important areas to manage the visual landscape in support of recreation and tourism.

I am satisfied that the Clayoquot Sound watershed plans appropriately guide the protection of recreation and tourism values within TFL 54 and I am satisfied that the base case reflects the intent of these watershed plans and make no adjustment to the base case on this account.

- *hydroriparian reserves and riparian areas - outside CSLUP*

Hydroriparian reserves and riparian areas are designated along the borders of streams, rivers, floodplains, wetlands, lakes, and marine shores to support the protection of watershed integrity.

Outside the CSLUP area, the protection of riparian areas is done following the requirements of the Forest Planning and Practices Regulation through the establishment of riparian reserve areas and riparian management areas of varying widths dependant on stream class. This was modelled in the base case by the removal of riparian buffer areas from the THLB. The effective buffer distance was determined as the riparian reserve zone buffer distance (area where no logging occurs) plus 50 percent of the riparian management distance (it was assumed that in the riparian management areas, 50 percent of the trees were removed during logging). The total area within riparian buffer reserves outside the CSLUP is 193 hectares of which 122 hectares were specifically excluded from the THLB for this purpose.

The available data set for TFL 54 does not include stream class designations for areas outside the CSLUP. For this reason the licensee adopted an assumption from the 2008 Arrowsmith TSA analysis and applied a buffer distance of 15 metres (either side) uniformly to all streams outside the CSLUP. In comparison, stream reserve zone buffers applied in the 2016 Arrowsmith TSA base case ranged from 3 to 54 metres. Based on this comparison, district staff suggest that the buffer distance applied in TFL 54 for non-CSLUP streams is too small. The licensee provided information indicating that application of a 30 metre buffer to all non-CSLUP streams would exclude an additional 114 hectares from the THLB, which would reduce the calculated annual harvest area in the base case (net of non-recoverable losses) by about one hectare.

A comment was received in a letter from the Director of Lands, Public Works and Resources for Toquaht Nation, during the Information Package phase which emphasized the importance of preventing negative impacts to riparian habitat in the development of operational forestry permits. Comment was also received from Maa-nulth First Nations regarding the impacts of harvesting on riparian management habitat within Maa-nulth First Nations' important harvest areas. In response to these comments, the licensee committed to continue involving Toquaht Nation and the First Nations of Maa-nulth Treaty Society in the planning and engineering stages of cultural surveys, fish and wildlife assessments, and terrain reports; including sharing these assessments and associated harvest maps directly with both groups. The licensee also noted that TFL areas within important harvest areas will be sent directly to the Maa-nulth Chair for review and comment along with maps, shape files, assessments, and any other requested information.

I would like to acknowledge the Harvesting Rights of the Toquaht Nation as outlined in the Maa-nulth First Nations and British Columbia Reasonable Opportunity Agreement (ROA) and encourage the licensee to continue seeking meaningful engagement and collaboration regarding the management of the TFL with Maa-nulth First Nations who hold treaty rights to harvest fish, wildlife and migratory birds within the harvest area. More detail regarding the ROA can be found under '*First Nations considerations*'.

Based on my review of the analysis methods and the advice from district staff, I conclude that streamside reserve areas outside the CSLUP are underestimated in the base case. As a result, the base case overstates the timber supply in the TFL by up to one hectare per year. I will discuss my consideration of this in combination with other factors in my '**Reasons for Decision**'. To remove future uncertainty, as indicated in '**Implementation**', I expect the TFL holder to develop and apply

a spatial riparian area netdown using stream class for the non-CSLUP portion of the TFL for the next TSR.

- *First Nations cultural heritage resources*

The *Forest Act* defines cultural heritage resources (CHR) as “an object, site or location of a traditional societal practice that is of historical, cultural or archaeological significance to the province, a community, or an aboriginal people”. CHR include, but are not limited to, archaeological sites, structural features, heritage landscape features, important harvest areas and traditional use sites.

Within the CSLUP area, the Scientific Panel recommended that culturally important areas identified by First Nations be protected in ways that are consistent with traditional knowledge. Therefore, reserve networks established in Clayoquot Sound watershed plans were designed to provide protection for important culturally important areas such as sacred sites, culturally modified trees and traditional areas. These network areas, along with all registered archaeology sites, are removed from the THLB.

The total area of mapped protected areas identified in the Clayoquot Sound watershed plans within TFL 54 is 107 hectares and of this, the licensee excluded 55 hectares from the THLB specifically for CHR. Outside the CSLUP, no land was removed from the THLB specifically for CHR.

During the Information Package phase, input was received from the Toquaht Nation highlighting the cultural and harvest significance of important harvest areas and all archeological sites (known and unknown) to First Nations within the Toquaht Bay region. The Maaqutsiis Hahoulthee Stewardship Society (MHSS) provided input regarding the Ahousaht land use vision and calls for some areas currently within TFL 54 to be set aside as Ahousaht Cultural and Natural Areas. MHSS requested that licensee “revise the Information Package and timber supply analysis for TFL 54 to formally acknowledge the Ahousaht *Iisaakstal* land use vision and to fully reflect the Ahousaht land use vision in the timber supply assumptions and analysis for TFL 54”.

The licensee’s response to the Toquaht Nation is the same as discussed under *‘hydriparian reserves and riparian areas - outside CSLUP’*. In response to MHSS, the licensee commented that “with these strict environmental guidelines in Clayoquot Sound under the Science Panel with the watershed rate of cuts and 40 percent old growth retained in the watershed, Ma-Mook believes we can work with Ahousaht Chief and Council, MHSS and its elders on this through the planning stages, council and public community meetings to better educate everyone on the process and address potential concerns or issue’s around your land use vision and the affect it may have on the timber supply analysis for future harvesting”.

I would like to acknowledge the Ahousaht land use vision and encourage the licensee to continue engaging with MHSS to discuss its implementation. Further discussion related to the Ahousaht land use vision can be found under *‘First Nations considerations’*.

I have reviewed and discussed with staff the information regarding CHR in TFL 54 and conclude that the base case forecast adequately accounts for known culturally important areas and archeological sites. For unregistered archaeological sites and contemporary cultural heritage features, which are not accounted for in the base case, I conclude that the application of clearcut with retention silviculture will allow for the protection of these features without altering the gross harvest area projected in the base case.

In keeping with my '*Guiding principles*', should significant new information become available regarding CHR, including any new findings or recommendations by government, I may revisit the AAC determination for TFL 54 prior to the 10-year deadline provided for in legislation. I note that AAC determinations do not determine particular harvesting areas or patterns, and as a result do not relate directly to the manner in which timber is utilized or managed on the ground. Harvesting activities are guided by requirements such as those contained in the *Heritage Conservation Act*, *Forest Act*, FRPA and other resource management legislation.

- *dead potential volume*

Dead potential volume is the potential volume that is available from dead yet merchantable stems in harvested stands.

Dead potential volume estimates were not included in the base case because with an area-based analysis, additional volume is unlikely to alter the rotation age determined for each analysis unit and therefore would not affect the determined AAC for the TFL.

I do however encourage the licensee to look for carbon sequestration opportunities related to increased utilization of dead potential volume and other residual fibre.

- *Meares Island*

Meares Island covers approximately 8237 hectares and is located entirely within the CSLUP area. TFL 54 occupies 3662 hectares of the island, which includes 1536 hectares of potential THLB.

In the mid-1980's, in opposition of MacMillan Bloedel's plans to log within TFL 44 on Meares Island, the Tla-o-qui-aht and Ahousaht First Nations obtained a court injunction stopping all logging on Meares Island. In 1994, court action was adjourned indefinitely with the injunction remaining in force. Since then, general interpretation is that the injunction applies to all harvesting of Crown land on Meares Island, even though the injunction is not a formal designation of protection.

Meares Island was excluded from contributing to the THLB in the 2016 TFL 57 TSR and the 2008 TFL 54 TSR but not in the 2018 Arrowsmith TSA TSR. In the current MP for TFL 54, MP 5, Meares Island was excluded from the land base.

To ensure consistency across management decisions regarding the exclusion of Meares Island from the THLB in all overlapping management units, I would like to address how I have accounted for the inclusion of Meares Island in the 2018 Arrowsmith TSA base case. Meares Island contributes 919 cubic metres per year to the 2018 Arrowsmith TSA base case however, during the determination I limited contribution from the Clayoquot Sound portion of the TSA by approximately 50 percent due to lack of harvesting; a reduction from 13 700 to 6850 cubic metres per year. I reason that the Meares Island contribution of 919 cubic metres is part of the 6850 cubic metres already removed from the THLB and therefore conclude that no further action is required to account for Meares Island in the Arrowsmith TSA AAC decision.

For TFL 54, adding Meares Island to the contributing land base would increase the base case by approximately eight percent or 15.5 hectares. The licensee notes in MP 5 that Meares Island may be reintroduced if changes to the injunction occur. However, as stated by the licensee, they have no current or future plans to harvest on Meares Island. If any formal designation of protection occurs or if the injunction lifts, I am prepared to re-evaluate my AAC determination accordingly. Having reviewed the information presented to me by staff, I am satisfied that the current analysis

appropriately excludes Meares Island from the THLB and I will make no adjustment on this account.

### Expected rate of growth

#### - *managed stand yields*

In the timber supply analysis, all stands younger than or equal to 22 years in age and all future regenerated stands were considered to be managed stands. In the base case, these stands were grouped into analysis units that were defined based on treatment zone, management era, silvicultural system and variable retention amounts. Timber yield estimates for each analysis unit were then derived using the Table Interpolation Program for Stand Yields (TIPSY) Version 4.4 yield model.

In TFL 54, the clearcut with retention silviculture system is generally applied to all areas outside the CSLUP scenic corridors and the partial cut silviculture system is applied to areas within the CSLUP scenic corridors. The variable retention adjustment function in TIPSY was used to account for the effects of tree retention on stand growth in partial cut areas. The adjustments were configured based on how tree retention is implemented operationally. An examination of information about cutblocks harvested over the last 10 years within CSLUP scenic corridors showed that 75 percent of the retained trees fall within harvest openings and 25 percent are left in areas adjacent to harvest openings. In addition, approximately 75 percent of the retained trees were in aggregated (patches) and 25 percent were dispersed (as individual trees) over the harvested areas.

Ministry staff noted that information from RESULTS and field observation indicates the proportion of dispersed retention being left in some partial cut areas may be higher than the 25 percent applied in the analysis. Ministry staff also noted that the base case regeneration assumptions apply the same species composition to both planted and natural management regimes. Staff suggest that this introduces uncertainty because natural regeneration often results in a higher composition of hemlock than what was assumed by the planted species distribution (except for within poorly drained cedar sites). An increase in hemlock, over more economical species such as cedar, could result in stands that are predicted to be harvestable actually being uneconomical to harvest due to the species composition. For this reason, I encourage the licensee to consider ways to ensure cedar regeneration occurs in areas where there are high levels of retention.

Finally, staff suggested that the current Tree and Stand Simulator (TASS) model, would be better for modelling species interactions, to better predict the future crop trees based on the effects of competition between the planted and natural ingress components, than TIPSY.

For the reasons discussed above there is uncertainty regarding regenerated species composition of managed stands in partial cut areas and uncertainty about the amount of dispersed retention in CSLUP scenic areas. This uncertainty may affect modelled rotation ages and gross-harvest area by a small amount and constitutes an unquantified, though likely small, impact to the base case across all periods and is discussed further under '**Reasons for Decision**'. As noted under '**Implementation**', I expect the licensee to provide detailed information on stand-level retention and regeneration establishment to improve managed stand yield estimates in time for the next timber supply review.

- *minimum harvestable criteria*

Minimum harvestable criteria are used to define when existing and future managed stands become merchantable and available for harvest. While harvesting may occur in stands that meet the minimum requirements, in order to meet forest-level objectives, most stands will not be harvested until well past the minimum criteria because other resource values take precedence (e.g., requirements for the retention of old forest).

The base case applied minimum harvestable age (MHA) criteria from the Arrowsmith TSA to inform the area-based analysis for TFL 54; the criteria requires a minimum volume of 350 cubic metres per hectare and a mean annual increment within 90 percent culmination of mean annual increment. The licensee made exceptions to MHA criteria for four categories of stands with poor site conditions (poor cedar, poor hemlock – balsam, red alder, and other (e.g., pine)). These exceptions either reduced or eliminated the minimum volume component of the criteria or eliminated the mean annual increment component of the criteria. By the applying these exceptions the timber supply model scheduled 1345 hectares of poor-site stands for harvesting in the base case forecast that would not have been eligible for harvesting had the exceptions not been applied.

I note, as further discussed under *'harvest performance'*, that harvest performance from 2013 to 2017 has been significantly below the current AAC and I therefore question why the licensee seeks to include more hectares in the THLB when harvest performance is currently not achieving the determined AAC. Furthermore, cruise data for TFL 54 collected between 2002 and 2016, indicated no units were cruised with volumes below 230 cubic metres per hectare and that 90 percent of all cruised units had volumes above 320 cubic metres per hectare. A sensitivity analysis to test the impact of excluding low-site index stands that do not meet the minimum volume criteria of 350 cubic metres per hectare resulted in a 7.2 percent reduction to the base case and staff note that this may be more reflective of current operations.

District staff also note that the licensee did not apply higher MHA volume per hectare criteria to helicopter harvestable blocks in the base case, a method typically utilized for coastal TSR analysis. In comparison, the 2018 analysis for the Arrowsmith TSA applied a minimum volume level of 450 cubic metre per hectare to these blocks. Cruise data also suggests that, operationally, in helicopter access blocks the licensee consistently harvests above what the base case assumes as standard MHA volume per hectare criteria.

Considering the net impact of the above two alterations from the base case assumptions with respect to minimum harvestable criteria in poor-site conditions and rotation ages in helicopter harvestable areas, it is my assessment that timber supply has likely been overestimated by up to 14 hectares per year across all periods. I will discuss my consideration of this further in **'Reasons for Decision'**.

**Section 4(1)(b) The expected time that it will take the forest within the trial management unit, excluding areas that no longer contribute to the productive forest land base, such as areas on which permanent access structure have been constructed, to become re-established after timber is cut, damaged or destroyed**

Expected time for the forest to be re-established following harvest

No factors considered under this section require additional comment.

**Section 4(1)(c) The silviculture systems and silviculture treatments to be applied within the trial management unit**

Silviculture systems

- *timber utilization*

The dimensions and quality of timber that is cut and removed from an area is determined by maximum stump height, minimum top diameter inside bark and minimum diameter at breast height by species; these criteria define merchantable volume and translate to timber utilization.

TFL 54 applied assumptions from the 2018 Arrowsmith TSR to generate timber utilization yield estimates. Ministry staff advise that similar to the factor ‘*dead potential volume*’ as discussed above, a change in volume on account of criteria used to define timber utilization will have no influence on the AAC determined in an area-based analysis as it is unlikely to alter the forecasted rotation age.

I have considered the information regarding the assumptions for timber utilization in the TFL and I accept that they represent an acceptable estimation of operational requirements and practices.

I would like to encourage the licensee to reduce waste by using harvested wood fibre to the fullest extent possible and improving the utilization of lower-quality wood and wood residue, including dead potential volume.

**Section 4(1)(d) The constraints on the amount of land available for timber harvesting that reasonably can be expected from use of the trial management unit for purposes other than timber production**

Integrated resource management objectives

- *stand-level biodiversity*

Stand-level biodiversity can be conserved through stand-level retention as it maintains or restores important structural attributes such as wildlife trees, tree species diversity, and understory vegetation diversity. In managed stands, stand-level retention is provided through wildlife tree patches, and dispersed wildlife tree retention. Objectives for stand structure through wildlife tree retention are described in the *Landscape Unit Planning Guide* (1999). Further to this, higher level plan objectives for stand structure through retaining trees in harvested areas are described in the VILUP and Clayoquot Sound watershed plans. Retention targets for stand structure, if necessary, are considered and described in forest stewardship plans.

The practice of leaving trees for wildlife and for assisting in conservation of stand-level biodiversity is modelled in the base case by reducing the land base available for harvest to account for trees that must be left standing in harvested areas (i.e., to derive the net harvest area). Within the CSLUP area, the silviculture systems applied in the base case include the clearcut with reserves and partial cut systems with retention levels ranging from 15 to 70 percent. Outside the CSLUP, the clearcut with reserves system was assumed with an average in-block retention level of seven percent.

District staff advise me that for areas outside of the CSLUP, the licensee may be leaving more in-block retention reserves than the seven percent assumed in the base case. I am concerned that a misestimation of operational stand-level retention may impede accurate modelling of future timber supply impacts. For the next TSR, I would like to see data on actual stand-level retention within

these cutblocks. This request is tied to the factor ‘*managed stand yields*’ and its’ associated implementation instruction. Also, as discussed in ‘*managed stand yields*’, there is uncertainty about the amount of dispersed retention in CSLUP scenic areas which I conclude to contribute to an unquantified, though likely small, impact to the base case across all periods.

- *adjacent cutblocks and green-up – outside CSLUP*

Green-up is the time needed after harvesting for a stand of trees to reach a desired condition (usually a specific height) to ensure maintenance of water quality, wildlife habitat, soil stability, or aesthetics before harvesting is permitted in adjacent areas.

Outside the CSLUP area, the VILUP defines green-up objectives. Specifically, for the Maggie Landscape Unit Enhanced Forestry Management Zone and the Escalante Landscape Unit General Management Zone the VILUP recommends a green-up height of 1.3 and 3 metres, respectively.

In the base case, the green-up height applied to all stands outside the CSLUP was 1.3 metres, which as per the VILUP is incorrect for stands within the Escalante zone, where recommended green-up height is 3 metres. I therefore conclude that the application of a lower green-up height in the Escalante zone indicates a small, unquantified overestimation of the base case forecast and I will discuss this impact further under ‘**Reasons for Decision**’.

- *scenic areas and visual quality objectives*

Within the Clayoquot Sound watershed plans, highly-scenic areas are defined as typically unaltered landscapes with important recreational significance. They are commonly visible from a community and/or important recreation site or corridor and are afforded a high level of visual protection. Visual quality objectives (VQO), as considered for areas outside the CSLUP, are defined as a resource management objective established for an area that reflects the desired level of visual quality based on the physical characteristics and social concern for the area.

The timber supply analysis for highly-scenic areas within the CSLUP was guided by scenic corridor objectives developed by the Scientific Panel and outlined in the Clayoquot Sound watershed plans. Applying these objectives, the licensee modelled three types of scenic corridors (natural appearing, minimal alteration, and small scale alteration) which describe the maximum allowable level of disturbance and the required tree height (green-up) to achieve the associated scenic class objectives. Within the CSLUP, the total area of land removed from the THLB to account for scenic areas was 8452 hectares.

To model visual quality objectives for areas outside the CSLUP the licensee applied recommendations as listed under the BC Government’s Visual Landscape Inventory. In the timber supply analysis, VQOs were listed as partial retention or modification, which describe (like in scenic corridors) the maximum allowable amount of area that is below a specified green-up height. Thirty-two hectares were removed from the THLB to account for VQOs.

I would like to acknowledge the comment received by the District of Tofino during the Information Package public review regarding visual impacts to their downtown and highway vantage points. They were concerned that harvesting in the TFL on Vargas Island and the Mainland would negatively impact the District of Tofino visually and that these areas were not properly considered within scenic corridor objectives. They stated that “a key consideration of the District’s Official Community Plan is to retain the rugged, natural west coast character of the area”. In response the licensee assured the District of Tofino that their areas of concern are considered within scenic corridors and that these areas would be managed to display little or no visible alteration. The

licensee also stated that at the present time they have no harvest operations planned on Vargas Island.

I acknowledge the importance of visuals to tourism in Tofino and the surrounding areas and expect that the licensee is following best management practices for visuals prior to any harvesting activity within TFL 54. Based on my review of the analysis methods and the comments received I accept that the assumptions represent an acceptable estimation of operational requirements and practices for the management of visual quality within TFL 54. I have considered the information regarding the analysis assumptions for the management of visual quality in the TSA and I accept that the assumptions represent an acceptable estimation of operational requirements and practices.

**Section 4(1)(e) Any other information that, in the chief forester's opinion, relates to**

- i) the capability of the trial management unit to produce timber, or**
- ii) the suitability of areas within the trial management unit for timber harvesting**

- *harvest performance*

The harvest performance of the licensee was evaluated and presented in the *Provincial Timber Management Goals, Objectives and Targets* from a reported period between 2010 and 2018. Over the current cut control period (2013 to 2017), the total harvested area was 172 hectares which equates to an average annual area of 34 hectares; this is significantly below the current AAC. The total combined harvest performance is approximately 15 percent of the total AAC for TFL 54.

Certain watersheds in the TFL, covering 22 percent of the THLB, are currently unlogged or have had very limited harvesting activity. These areas are not designated as protected areas in the CSLUP and are not removed from the THLB by watershed planning reserves. The lack of harvesting in these watersheds, if continued, poses a significant risk to the ability of the licensee to realize the AAC over the long term and hinders my ability to fully meet the economic and social objectives expressed to me by the Minister (as discussed under '*economic and social objectives of the Crown*'). However, the risk of over harvesting in the areas outside of the undeveloped watersheds, due to these deferrals, is thought to be mitigated by the watershed rate-of-harvest limits that are place within the CSLUP. For this reason, and because of the licensee's stated intent to pursue activity in undeveloped watersheds, an adjustment to the base case harvest level is not warranted at this time.

Since the deferral of harvesting in undeveloped watershed does not appear to be causing sustainability issues (i.e., no over-concentration of harvesting elsewhere) and the licensee has indicated its intent to pursue operations in these watersheds, I will not reduce the AAC for this reason. However, I caution that the continued deferral of these areas will eventually lead to a reduction in future AAC determinations.

Further, the *Provincial Timber Management Goals, Objectives and Targets* show that for scaled volumes of species, relative to the THLB (MP 4) Vegetation Resources Inventory, cedar is harvested at a greater relative proportion than hemlock and balsam. As western redcedar is a more valuable species than hemlock and balsam, I am concerned that the value differentials in the remaining stands will move these stands from an economic opportunity in the future to an uneconomic condition. I am concerned that the harvested species profile is not aligned with that of the inventory on the land base. Therefore, as noted under '**Implementation**', I expect the licensee to review the *Provincial Timber Management Goals, Objectives and Targets* reports to ensure that

they are complying with all current performance metrics such as species harvested profile and as discussed above, harvest performance.

- *unharvested volume carry-forward*

In January 2018, FLNRO introduced the *Policy Regarding the Administration of Unharvested Volumes, Uncommitted Volumes and Unused BC Timber Sales Volumes* (collectively referred to as accumulated volume). One of the purposes of the document is to provide guidance on the administration of accumulated volumes for forest licences, tree farm licences and woodlot licences in accordance with Section 75.8 of the *Forest Act*. Accumulated volume arises from three sources: (1) unharvested volume, (2) uncommitted volume, and (3) unused BC Timber Sales volume.

The policy sets out process steps that should be followed to determine the unharvested volume that may be made available in the next AAC determination period (i.e., after a Section 8 determination is made). However, application of the Unharvested Volume Regulation within the context of area-based AAC is uncertain.

Coast Area Regional Tenures has advised that, at this time, there is no intent to award the unharvested AAC area in TFL 54. It is the expectation of the Strait of Georgia Business Area that BC Timber Sales will forego the 364 hectares of under harvest in TFL 54. The Timber Sales Manager has expressed desire to retire this volume, but there has been no decision to initiate the new policy approach that would ultimately lead to a formal retirement decision. Should the process be initiated it would be up to six months before a formal decision.

Although there is significant unharvested area-AAC in TFL 54 the mechanism for disposing of this unharvested AAC is uncertain. No adjustment to the area-based harvest amount is warranted, although it should be recognized that the unharvested area is included in the THLB supporting base case forecast. The continuous under harvest in TFL 54 relative to AAC is cause for caution. I note that any significant additional allocation and utilization of volume above what is provided for in my AAC, potentially puts the sustainable timber supply for the TFL at risk. I expect staff to continue to track unused and unharvested volume and I will revisit my decision if the amount of accumulated volume significantly increases and if government indicates a desire to issue this volume in additional tenures, and if the increased harvest constitutes a significant risk to the sustainable timber supply in TFL 54.

- *climate change*

Climate change predictions suggest that forest ecosystems will be impacted in a number of different ways as a result of increased temperatures, altered precipitation patterns and increased frequency of as well as severity of disturbances. Although research is ongoing, it is difficult to determine the magnitude of the climate changes and the implications for forests as a significant amount of uncertainty still exists.

Projections for the mid-century suggest we will continue to see increased spring precipitation, reduced winter snowpack, and earlier snowpack melt, influencing growing season length, streamflow, and water supply to trees. In general terms, a longer growing season may benefit many tree species. However, this benefit will likely be offset by increased summertime drought conditions, which appear as a result of generally lower summer precipitation and lower winter snowpack. The stand impact of forest pests, such as dwarf mistletoe, is also predicted to increase as altered precipitation levels stress and weaken stands established under previously existing climatic conditions.

Models suggest that there will be a reduction in the amount of area with the current climate of Alpine and Mountain Hemlock biogeoclimatic zones and an increase in the area with a climate of the Coastal Western Hemlock biogeoclimatic zone.

At the species level, Douglas-fir is expected to continue growing well under warmer temperatures even with increased summertime drought stress conditions. Western hemlock, western redcedar, and grand fir are likely to show increasing levels of drought stress, particularly on mesic to drier sites, resulting in slower growth with significant pulses of mortality when climate cycles generate a series of hot, dry years. Suitable trees at any given point in time may become maladapted by rotation age, creating additional uncertainty and complexity for management. For example, yellow-cedars from Alaska to Seymour Inlet are dying as snowpack declines due to the warmer winters allowing frost to damage roots.

There is a large amount of uncertainty surrounding the short- and long-term impacts from climate change but it is important to encourage dialogue to develop climate change mitigation and adaptation strategies through stakeholder engagement forums (e.g., Coast Operational Issues Forum, Forest Management Leadership Teams).

It will be worthwhile to continue to consult and collaborate with federal and provincial government agencies, First Nations, universities, and forest licensees to better understand climate adaptation and mitigation challenges and opportunities in relation to forest management. Findings from research initiatives can be incorporated into Coast Area climate actions.

While projected climate change will likely affect forest productivity and growth, the dynamics of natural disturbances, forest pests and hydrological balances (e.g., drought stress), the mean, magnitude, extent and timing of these impacts is uncertain. I accept that the best approach in the short term is to monitor for changes to enable timely adaptive responses and to undertake analysis to increase our understanding over time. 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. For the next timber supply review, I encourage the licensee to investigate the application Climate Based Seed Transfer (CBST) in the development of yield estimates for future managed stands. CBST promotes healthy, resilient and productive forests and ecosystems through the matching of seed sources (seedlots) to climatically suitable planting sites.

- *cumulative effects*

Cumulative effects are changes to social, economic and environmental conditions caused by the combined impact of past, present and potential human activities or natural events. The Government of British Columbia supports the phased implementation of the Cumulative Effects Framework (CEF) that aims to provide relevant information and supporting policy. The framework will ultimately provide information related to a number of environmental, social and economic factors including biodiversity, riparian conditions, water and air quality, fish and wildlife impacts, cultural and heritage concerns, community needs and economic development opportunities. The CEF provides resource managers with procedures and tools to inform decisions that support sustainable management and the needs of many different users.

The provincial cumulative effects team is focusing on implementing cumulative effects assessments within pilot areas across the province, building assessment procedures for values, and developing policies and procedures. A cumulative effects pilot has not been established for the West Coast Natural Resource Region.

Many of the current objectives and management approaches applied in TFL 54 may be mitigating the negative effects of forest development activities. Such objectives that are reflected in the timber supply analysis include: the Clayoquot Sound Land Use Decision; CSLUP watershed plans; Vancouver Island Land Use Plan Higher Level Plan order; *Forest and Range Practices Act* objectives; visual quality objectives; landscape-level biodiversity objectives; cutblock adjacency objectives; non-spatial and spatial old-growth objectives; wildlife tree retention and stand-level retention objectives; wildlife habitat areas and special reserves; recognition of sensitive soils, unstable terrain; riparian reserve and management zones; and the use of different harvest systems to address issues associated with differing terrain.

I have considered the information on cumulative effects and I must interpret related information according to my statutory authority and my '*Guiding principles for AAC determinations*'. I note that a cumulative effects pilot has not been established in the West Coast Natural Resource Region. However, work is ongoing that will improve our understanding. Based on discussions with staff, I believe that at this time many of the management approaches in the TFL are thought to mitigate the negative impacts of forest development activities. A cumulative effects assessment that includes analysis of potential future condition and coordinated response across sectors is not warranted at this time. I conclude that the base case reflects current management, the current status of the effects of past and present industrial activity on the land base, and the legal objectives established by government for various non-timber resources. I will make no adjustments on this account. Changes in management, as the implications of cumulative effects are more directly considered, will be addressed in future AAC determinations.

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

No factors considered under this section require additional comment.

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

Economic and social objectives

- *economic and social objectives of the Crown*

The Minister of Forests, Lands, Natural Resource Operations and Rural Development (and the former Minister of Forests, Lands and Natural Resource Operations) have expressed the economic and social objectives of the Crown for the province in letters dated October 30, 2017 and April 12, 2013 respectively. The latter of these letters, is focused on the Nanwakolas Reconciliation Protocol which is not specific to TFL 54.

In the letter dated October 30, 2017, the Minister emphasizes the BC Government's commitment to building a strong, sustainable, innovative economy and creating well paid jobs in the province. The letter identifies Government's three objectives for the management of BC's forests and Crown lands that are relevant to AAC determinations. These are:

1. modernizing land-use planning to effectively and sustainably manage BC's ecosystems, rivers, lakes, watersheds, forests and old-growth forests;
2. expanding investments in reforestation; and,
3. collaborating to develop strategies to manage wildlife resources and habitat.

The October 30, 2017, letter also asks that I do the following when making an AAC determination:

- ensure that the Ministry's approved strategies for delivering its forestry objectives are integrated into the TSR process.
- ensure AAC determinations take into consideration relevant agreements between First Nations and the Government of BC, and court decisions that define Aboriginal title and rights; and in addition support Government's commitment to moving forward on reviewing policies, programs, and legislation to determine how to bring the principles of the United Nations Declaration on the Rights of Indigenous Peoples into action for AAC determinations.
- consider traditional knowledge and other input from BC First Nation communities and organizations as they pertain to the AAC determination.
- consider how AAC determinations can support Government's objective to focus on planning and sustainable resource management in a way that supports robust forest recovery and timely and effective responses to emerging threats from factors such as insect infestations and wildfire while promoting forest health and values.
- ensure the TSR process incorporates the best available information on climate change and the cumulative effects of multiple activities on the land base and explores management options that align with established climate change strategies, adaptation and mitigation practices.
- where the cumulative effects of timber harvesting and other land based activities indicate a risk to natural resource values, ensure the TSR identifies those risks for consideration in land-use planning.
- consider the environmental, social and economic needs of local communities as expressed by the public during TSR processes, including strategies that contribute to community economic stability, and the jobs that the forest sector creates in communities, where these are consistent with the government's broader objectives.
- when faced with necessary reductions in AAC's, that those reductions be no larger than necessary to avoid significant longer-term impacts.

During my consideration of the factors required under Section 8 of the *Forest Act* as well as Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation, I have been mindful of both the local objectives as well as the objectives of First Nations. I have also reviewed the public consultation process undertaken by the district and considered the input received in making my determination. On this basis, I am satisfied that this determination accords with the objectives of Government as expressed by the Minister.

#### First Nations considerations

The Crown maintains a duty to consult with and accommodate, as necessary, those First Nations for whom it has knowledge of claimed Aboriginal rights and/or title (Aboriginal Interests) that may be impacted by a proposed decision, including strategic level decisions such as AAC determinations. The AAC determination as a strategic decision sets the stage for other decisions such as AAC apportionment and disposition, leading to issuance of cutting authorities. AAC determinations do not determine particular harvesting areas or patterns, and as a result do not relate

directly to the manner in which timber is utilized or managed on the ground. The relationship to claims of Aboriginal title is not a direct one. The AAC considers the sustainable harvest level from a particular geographic area which may include lands claimed as Aboriginal title lands but not yet declared by a court to be such. While under claim, such lands remain Crown lands and are considered to be part of the harvestable land base. Whether timber is ultimately harvested from those lands is an issue that is subject to allocation decisions, and the AAC determination does not determine that matter.

Aboriginal Interests or treaty rights may be connected to biophysical, spatial, social, cultural, spiritual or experiential values. The overall AAC can affect various resource values and therefore the ability of Aboriginal peoples to meaningfully exercise their Aboriginal rights. Information gained through consultation with potentially affected First Nations about Aboriginal rights claims has been taken into account in the development of this determination. Where the Province and First Nations have negotiated a treaty or have contractually agreed to a process for consultation, that process was followed.

TFL 54 overlaps the traditional territories of the following First Nations: Ahousaht First Nation, Hesquiaht First Nation, Mowachaht/Muchalaht First Nation, and Tla-o-qui-aht First Nation. TFL 54 also overlaps the Maa-nulth First Nation Area of Toquaht Nation and Yuułu?ił?ath (Ucluelet) First Nation.

Consultation with First Nations on the AAC determination and management plan approval was undertaken by FLNRO and began in October 2017. This consultation was assisted by information sharing with First Nations that was done by the licensee, Ma-Mook Natural Resources Ltd. On October 2, 2017, the licensee distributed the draft information package material to all applicable First Nations which included hyperlinks to access and download the 42-page document, and a temporary web map service for online viewing of various spatial data to be used in the analysis. In addition, the licensee made a request for confirmation that the email was received, offered to print the documents and/or maps and offered to meet with representatives from the applicable First Nation, provided a 60-day review period, provided a brief summary highlighting changes (where applicable) proposed from the existing to new plan, and provided contact information for submitting questions and comments. On November 19, 2017, FLNRO staff initiated consultation activities on the information package by emailing all applicable First Nations with the TFL Brochure, TFL Base Map and a consultation letter requesting response within the 60-day time frame.

On May 16, 2018, the licensee continued with consultation on the management plan by providing hyperlinks to access and download draft MP 5 and to view spatially all datasets to be used in the analysis. In addition, the licensee followed the same process as discuss above while completing the Information Package consultation phase (requesting confirmation that the email was received, offering to print the documents and/or maps, etc.). On June 6, 2018, delegated Reasonable Opportunity Agreement (ROA) engagement with the Maa-nulth Treaty Group was initiated by the licensee in compliance with the Maa-nulth First Nations and British Columbia ROA (see below '*Maa-nulth Treaty*' for more detail on this topic). On June 6, 2018, FLNRO staff requested response on the draft Management Plan and concurrent determination of the AAC for TFL 54 in a 60-day time frame and on July 7, at the half-way point of the consultation time frame, a reminder email was sent.

- *Maa-nulth Treaty*

Five First Nations are signatories to the Maa-Nulth Final Agreement (MFA). They are Huu-ay-aht First Nation, Ka:’yu:k’t’h’/Che:k’tles7et’t’h’ First Nation, Toquaht Nation, Uchucklesaht Tribe and Yuułu?ił?ath First Nation. The MFA establishes rights to harvest fish, aquatic plants, wildlife, and migratory birds, and gather plants within parks and protected areas. Harvesting Rights are held commonly by the Maa-nulth First Nations throughout the Harvesting Areas, for food, social and ceremonial purposes.

The Reasonable Opportunity Agreement (ROA), a side agreement to the MFA, came into effect on March 5, 2015, establishing engagement procedures within the Maa-nulth Harvest Area, including the Important Harvest Areas (IHA). IHA cover approximately 3557 hectares of the THLB within TFL 54. Under the ROA, a new Management Plan for a TFL that overlaps IHA is considered a “Significant Use or Disposition” and engagement with Maa-nulth is therefore required.

- *Ahousaht First Nation*

The Ahousaht First Nation (Ahousaht) traditional territory overlaps significantly with TFL 54. Ahousaht and the Province of BC are currently not signatories to a Forest Consultation and Revenue Sharing Agreements (FCRSA). The last FCRSA between Ahousaht and the Province of BC expired on February 20, 2017. Consultation is currently carried out in accordance with the Supreme Court of Canada Haida decision.

On July 18, 2016, the provincial government and Ahousaht signed the Ahousaht Protocol, an agreement to work together to improve the Ahousaht economy, to develop a collaborative approach to natural-resource management and permitting within Ahousaht traditional territory.

On August 12, 2016, Ahousaht publicly released the *Ahousaht Ha-houhoulthlee Land and Marine Use Designations* which is the first phase of their land use vision. On January 25, 2017, the Ahousaht publicly released the Ahousaht Land Use Vision Plan which prioritizes sustainable economic development within the traditional territory of the Ahousaht First Nation. As described by MHSS in a letter to the licensee during the consultation process, “the plan calls for some areas currently within TFL 54 (and TFL 57) to be set aside as Ahousaht Cultural and Natural Areas, where commercial forest harvesting would not occur. Other areas are identified as Ahousaht Forest Management Areas, where Ahousaht community-based forest management, including restoration, enhancement and forest harvesting would take priority.” The letter expresses concern that the future timber supply for TFL 54 on Ahousaht Traditional Territory will be overestimated if their land use plan is not reflected in the timber supply assumptions and analysis for the TFL.

In a letter dated December 29, 2017, the licensee responded to MHSS stating that “until such time as lands are removed from the TFL land base through the legal process with the province these areas must be included in the plan and cannot be removed.” The letter went on to state that “Ma-Mook believes we can work with Ahousaht Chief and Council, MHSS and its elders on this through the planning stages, council and public community meetings to better educate everyone on the process and address potential concerns or issues around your land use vision and the affect it may have on the timber supply analysis for future harvesting”.

I note that the Province of BC has not currently adopted, or legally implemented this vision and therefore as discussed under my ‘*Guiding principles for AAC determinations*’, it is not within my scope of authority to remove these areas from the THLB as the chief forester should not speculate on timber supply impacts that may eventually result from land-use designations not yet finalized by

government. In a July 31, 2018, letter to MHSS regarding the Ahousaht Protocol, the Minister of Indigenous Relations and Reconciliation confirmed additional funding to assist the Ahousaht Protocol Working Group complete Protocol implementation priorities. An agreed upon priority is to assess the socio-economic implications, such as employment opportunities, between the Ahousaht Land Use Vision Plan and existing public land management. The letter states the Province's commitment to working with Ahousaht to explore reconciliation opportunities between the land use plan and current public land management.

I recognize that concerns have been brought forward by MHSS regarding the reflection of their land use vision in the timber supply assumptions and analysis for TFL 54. I encourage the licensee to continue working with Ahousaht Chief and Council and with MHSS and its elders in all planning stages in order to address potential concerns overlapping areas within the Ahousaht Land Use Vision Plan.

- *Hesquiaht First Nation*

Although Hesquiaht First Nation (Hesquiaht) traditional territory is relatively small, it covers a large proportion of the available Crown land within TFL 54. Hesquiaht and the Province of BC are signatories to an FCRSA requiring consultation on Management Plan approvals, timber supply reviews and AAC determinations for the TFL. Consultation was conducted in accordance with the FCRSA.

- *Mowachaht/Muchalaht First Nation*

There is a small area of overlap of TFL 54 and Mowachaht/Muchalaht First Nation traditional territory in the area of the Escalante River and Hesquiat Peninsula. Mowachaht/Muchalaht First Nation and the Province of BC are signatories to an FCRSA and consultation was conducted in accordance with the FCRSA.

- *Tla-o-qui-aht First Nation*

The Tla-o-qui-aht First Nation traditional territory overlaps with a large portion of the TFL. Tla-o-qui-aht First Nation and the Province of British Columbia are signatories to an FCRSA and consultation was conducted in accordance with the FCRSA.

Tla-o-qui-aht First Nation is currently in Stage 4 (of 6) of the Agreement-in-Principle (AIP) treaty negotiation process. Although Tla-o-qui-aht failed to ratify an AIP in 2012, they are continuing to negotiate an AIP. Tla-o-qui-aht has identified Areas of Interest (AOI) lands that they are negotiating for inclusion in the AIP, several of which overlap TFL 54. While there is currently no formal protection on these lands to prevent forest harvesting, they have been reserved under Section 17 of the *Land Act* as a conditional reservation that limits the type of other development that can occur, which needs to be compatible with Tla-o-qui-aht treaty interests as well.

During the Information Package consultation phase in a letter dated December 7, 2017, input was received from the Lands and Resource Manager of Tla-o-qui-aht First Nation regarding the implementation of the Tla-o-qui-aht land use plan, which includes Haa'uukim Tribal Park and other areas within Clayoquot Valley. A section of the letter states: "Under the Tla-o-qui-aht strategic land use planning, as described in the Haa'uukmin Tribal Park, many portions of the Tree Farm License has readily been incorporated into the objectives of the Land Use Plan, subject to retention levels and restoration. However, the Tla-o-qui-aht elders have raised many concern related to the operation area identified in the License Area in the Clayoquot Valley, and the potential for increased deforestation of lands within the Heart of the Haahulthii [traditional

territory of the Tla-o-qui-aht Hawiith (Chiefs)]. It is Tla-o-qui-aht's desire to assist the Ministry and MDC (the licensee) in resolving issues related to Forestry within the Haahuulthii. Without progress on remaining Forestry issues, Tla-o-qui-aht will continue to encounter difficulties throughout the life of the Tree Farm License with tenure areas and harvest rates that jeopardize and negatively impact our Rights and Interests." The letter suggests potential solutions to address identified issues (environmental, as well as systematic issues of stumpage, annual rents, and benefits sharing) and expressed desire for "...meaningful consultation on the Government-to-Government level to work on these solutions over the period of this License."

In a letter dated December 29, 2017, the licensee responded to the Tla-o-qui-aht First Nation by acknowledging Ma-Mook's consideration of Tla-o-qui-aht strategic land use planning and the Haa'uukmin Tribal Park but stated "until such time as lands are removed from the TFL land base through the legal process with the province these areas must be included in the plan and cannot be removed". Ma-Mook also acknowledged the strict environmental guidelines in place under the CSLUP Science Panel to protect all resources (cultural, visual, water, terrain, soils, blue- and red-listed species, and old growth areas) and committed to continue working with Tla-o-qui-aht council and hereditary members on solutions to address their identified concerns.

I acknowledge the concerns brought forward by the Tla-o-qui-aht First Nation and encourage the licensee to continue seeking meaningful engagement and collaboration with Tla-o-qui-aht First Nations to identify and implement measures in forestry operations that address the concerns. The timber supply review focused on the assessment of a sustainable timber supply for the TFL under the current management and legislative framework and was guided by the chief forester's principles for AAC determinations, and as noted elsewhere, did not speculate on timber supply impacts that may eventually result from land-use designations not yet finalized by government. I am satisfied the analysis provided the appropriate basis for my determination. Also, consistent with my guiding principles, for those elements specific to Tla-o-qui-aht First Nation concerns that I see are within the scope of other statutory decisions, I will endeavor to make those concerns known to the appropriate decision makers for their consideration.

- *summary*

Following the chief forester's '*Guiding principles for AAC determinations*' and my review of the information sharing and consultation process, the Aboriginal Interests information available to Ministry staff, and the potential impact my decision may have on these interests, I believe that the Ministry has engaged in consultation in accordance with current provincial guidance and applicable case law. I conclude that no additional accommodation beyond that which I have described in this rationale document is required as part of this decision. I believe that any adverse impacts upon asserted rights within the area of TFL 54 stemming from forest development activities that occur subsequent to the AAC determination, can be appropriately mitigated or minimized through existing legislation and regulation, planning documents and meaningful engagement at the operational level.

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

Non-recoverable loss

Unsalvaged or non-recoverable loss is the volume of timber killed or damaged annually by natural causes (e.g., fire, wind, insects, and disease) that is not harvested. Unsalvaged loss is accounted for

by averaging the recorded periodic volume losses over the recorded time frame to approximate an average annual volume loss attributable to the THLB.

For TFL 54 losses were prorated from the 2016 Arrowsmith TSR to predict an average loss of 2410 cubic metres per year; equating to a gross area of 5.1 hectares per year and a net harvest area of 3.8 hectares per year removed from the forecasted AAC.

I have considered the information regarding the accounting in the base case for unsalvaged losses. In the absence of data explicitly collected from stands on the TFL 54 land base, I accept that the approach taken in the analysis to account for unsalvaged losses was reasonable and I make no adjustment in this determination. However, as mentioned in ‘**Implementation**’, I expect the licensee to collect information on appropriate loss factors from the TFL (such as dwarf mistletoe) to enable more site-specific information to be available for the next timber supply review. Ensuring accurate estimates for future losses expected from various forest health factors is increasingly important, in particular given the concerns noted earlier in this document under ‘*climate change*’.

### **Reasons for Decision**

In reaching my AAC determination for TFL 54, I have considered all of the factors required under Section 8 of the *Forest Act* as varied by Section 4 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation. 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 54 were appropriately modelled and reasonably reflect current legal requirements, demonstrated forest management and the best available information. In this section, I have summarized my considerations related to other factors where uncertainty exists or I have identified a need for some adjustment with respect to the analysis inputs, which in turn affect the base case timber supply.

In MP 5 the licensee recommends an AAC of 185 hectares per year, which is the harvest level indicated in the base case forecast.

I am aware of three factors that indicate an overestimation in the base case timber supply to a degree that can be quantified, as follows:

- *Non-CSLUP Riparian Areas* – in the base case, the licensee applied a 15-metre buffer width (either side) uniformly to all streams which, in comparison to information from the Arrowsmith TSA and other areas outside the CSLUP, appears to under-represent the area that is being left within stream-side reserve zones in operations. This indicates that the base case overestimates the available timber supply by up to one hectare per year across all periods.
- *Minimum Harvestable Criteria* – there is uncertainty regarding merchantability of poor-site stands that were harvestable in the base case only when minimum harvestable criteria were reduced. In addition, the minimum volume requirement for helicopter harvestable stands was not set higher than the minimum for conventionally harvestable areas, which is normally seen in coastal operations. For these two reasons, the average volume per hectare of stands that area projected for harvest in the base case is lower than what is typically seen

in operations. Combined, these factors indicate that the base case forecast overestimates the timber supply for the TFL by up to 14 hectares per year across all periods.

I am also aware of one factor that indicates an overestimation in the base case timber supply, but to a degree that cannot be quantified, as follows:

- *Adjacent Cutblocks and Green-Up* – for areas outside the CSLUP, the base case does not reflect current management requirements for green-up height as listed under the VILUP for the Escalante Landscape Unit General Management Zone. The impact of this is a small unquantified overestimation of the base case across all periods.

I note that there is uncertainty with respect to information on regenerated species composition in partial cut areas and uncertainty about the amount of dispersed retention in CSLUP scenic areas. This uncertainty may affect modelled rotation ages and gross-harvest area by a small amount and constitutes an unquantified, though likely small, impact to the base case across all periods.

I note that certain watersheds in the TFL, covering 22 percent of the THLB, are currently unlogged or have had very limited harvesting activity. These areas are not designated as protected areas in the CSLUP and are not removed from the THLB by watershed planning reserves. The lack of harvesting in these watersheds, if continued, poses a significant risk to the ability of the licensee to realize the AAC over the long term and hinders my ability to fully meet the economic and social objects expressed to me by the Minister. However, the risk of over harvesting in the areas outside of the undeveloped watersheds, due to these deferrals, seems to currently be mitigated by the watershed rate-of-harvest limits that are in place within the CSLUP. For this reason, and because of the licensee's stated intent to pursue activity in undeveloped watersheds, an adjustment to the base case harvest level is not warranted at this time. However, the continued deferral of harvesting these areas will eventually lead to a significant reduction in future timber supply and will be addressed in subsequent AAC determinations.

In consideration of the above, I surmise that the combined result is an overestimation of the harvest level projected in the base case by approximately 15 hectares per year. Decreasing the base case initial harvest level by this amount results in an initial harvest level of 170 hectares per year.

### **Determination**

I have considered and reviewed all the factors as documented above, including the risks and uncertainties of the information provided. It is my determination that a timber harvest level for the TFL that accommodates objectives for all forest resources during the next 10 years and that reflects current management practices as well as the socio-economic objectives of the Crown, is 170 hectares per year.

This determination is effective February 7, 2019 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 or the trial program is terminated under Section 7 of the Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation.

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

## Implementation

During the term of the AAC, the TFL holder is instructed by the chief forester to undertake the following activities:

- 1) *Hydroriparian Reserves and Riparian Areas*: develop and apply spatial riparian area netdown using stream class for the non-CSLUP portion of the TFL in time for the next management plan.
- 2) *Managed Stand Yields*: provide detailed information on stand-level retention and regeneration establishment in order to, improve managed stand yield estimates and accurately account for the impact of these factors on timber supply in time for the next timber supply review.
- 3) *Harvest Performance*: review current *Provincial Timber Management Goals, Objectives and Targets* reports to ensure compliance with performance metrics (e.g., species harvested profile).
- 4) *Unsalvaged Losses*: collect information on appropriate loss factors from the TFL (such as dwarf mistletoe) to enable more site-specific information be available for the next timber supply review.



Diane Nicholls, RPF  
Chief Forester

February 7, 2019



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

The information sources considered in determining this AAC for TFL 54 include the following:

#### Legislation

- *Forest Act* and regulations, BC Government, current to January 30, 2019;
- *Ministry of Forests and Range Act*, BC Government, current to January 30, 2019;
- *Forest and Range Practices Act* (FRPA) and regulations and amendments, BC Government, current to January 30, 2019;
- *Forest Practices Code of British Columbia Act*, BC Government, current to January 30, 2019, and regulations and amendments;
- *Land Act*, BC Government current to January 30, 2019;
- *Environment and Land Use Act*, BC Government current to January 30, 2019;
- *Park and Protected Areas Statutes Amendment Act*, BC Government current to January 30, 2019;
- *Species at Risk Act*, Government of Canada (S.C. 2002, c29) current to December 18, 2018;
- *Forestry Revitalization Act*, BC Government current to January 30, 2019;
- *Heritage Conservation Act*, BC Government current to January 30, 2019;
- *Interpretation Act*, BC Government current to January 30, 2019;
- *Wildlife Act*, BC Government, current to January 30, 2019;
- Maa-Nulth First Nations and British Columbia Reasonable Opportunity Agreement, Province of British Columbia, 2014;
- Ministry of Forests and BC Ministry of Environment, Lands and Parks, 1995. Biodiversity Guidebook, Victoria: BC Ministry of Forests, Lands and Natural Resource Operations.

#### Management Plans and Timber Supply Review Documents

- Tree Farm Licence 54 Management Plan #5, including Information Package and Timber Supply Analysis, Ma-Mook Natural Resources Ltd. October, 2018;
- Tree Farm Licence 54 Rationale for Allowable Annual Cut (AAC) Determination, Ministry of Forests and Range. September 4, 2008;
- Tree Farm Licence 54 Review and comment report for Management Plan #10 Ma-Mook Natural Resources Ltd. October, 2018;
- Forest Stewardship Plan – Interfor Arrowsmith Forest Stewardship Plan, Ma-Mook Natural Resources Ltd, September 2016;
- Letter from the Minister of Forests, Lands, Natural Resource Operations and Rural Development to the chief forester stating the economic and social objectives of the Crown, BC Government October 30, 2017;
- Letter from the Minister of Forests and Range to the chief forester, October 27, 2010, regarding the Crown's economic and social objectives and mid-term timber supply in areas affected by the mountain pine beetle;
- 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;
- Supporting Documentation for Consultation Report Draft Management Plan #10 and Annual Allowable Cut Determination for TFL 54, BC Government March, 2018;
- Consultation Report Draft Management Plan #10 and Annual Allowable Cut Determination for TFL 54, BC Government March, 2018;
- AAC Determination Binder for TFL 54 - including input received from First Nations through the consultation process and comprehensive discussions with Ministry staff, including the AAC determination meeting held in Port Alberni on October 9, 2018;
- BC Ministry of Forests and BC Ministry of Environment, Lands and Parks, 1995. Biodiversity Guidebook, Victoria. BC Ministry of Forests, Lands and Natural Resource Operations;
- BC Ministry of Forests, Lands and Natural Resource Operations, November 2016. Arrowsmith Timber Supply Area, Timber Supply Review, Updated Data Package following completion of the timber supply analysis, Victoria, BC. BC Ministry of Forests, Lands and Natural Resource Operations;
- Forest Ecosystem Solutions Ltd., 2014. Economic Operability Assessment for Arrowsmith TSA, Victoria, BC. BC Ministry of Forests, Lands and Natural Resource Operations;
- Province of British Columbia, 2014. Maa-Nulth First Nations and British Columbia Reasonable Opportunity Agreement, Victoria, BC. URL: [https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/maa-nulth\\_roa\\_side\\_agreement\\_signed\\_05\\_22\\_2014.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/maa-nulth_roa_side_agreement_signed_05_22_2014.pdf)
- Timberline Natural Resource Group, 2008. Arrowsmith Timber Supply Area TSR 3 Analysis Report and Data Package, Victoria. BC. BC Ministry of Forests and Range;
- Davis, L. S., Johnson, N. K., Bettinger, P. & E, H. T., 2001. Forest Management to Sustain Ecological, Economic, and Social Values. Fourth ed. Long Grove, IL: Waveland Press, Inc.;
- Forsite Consultants Ltd., 2014. Tree Farm Licence 57. Management Plan #2 Information Package, Ucluelet, BC. Iisaak Forest Resources Ltd.;
- Forsite Consultants Ltd., 2018. Tree Farm Licence 54 – Management Plan #5 Information Package. Version 1.1. April 2018, Unpublished Report: Prepared for Ma-Mook Natural Resources Limited;
- Ministry of Forests and Range, 2008. Tree Farm Licence 54, Rationale for Allowable Annual Cut Determination, Victoria, B.C.: Ministry of Forests and Range;
- Timberline Forest Inventory Consultants, 2005. Timber Supply Analysis Information Package Tree Farm Licence 54, Vancouver, BC: Timberline Forest Inventory Consultants;
- Timberline Forest Inventory Consultants, 2005. Timber Supply Analysis Report, Tree Farm Licence 54, Vancouver, B.C.: Timberline Forest Inventory Consultants;
- Forsite Consultants Ltd. 2017 Timber Supply Analysis Information Package, Tree Farm Licence 5, Salmon Arm, BC: Forsite Consultants Ltd.;
- Forsite Consultants Ltd. 2018 Timber Supply Analysis Report, Tree Farm Licence 5, Salmon Arm, BC: Forsite Consultants Ltd.

#### Land Use, Forest Practices and other Documents

- Vancouver Island Land Use Plan Higher Level Plan Order, effective December 1, 2000, pursuant to Sections 3(1) and 3(2) as well as Section 9.1 of the *Forest Practices Code of British Columbia Act*, BC Government current to December 12, 2018;
- Coast Area Forest Health Aerial Overview Survey, 2015, Summary Report, B.A. Blackwell & Associates Ltd.;
- Summary of Dead Potential Volume Estimates for Management Units within the Coast Forest Region, Ministry of Forests and Range. March 2006;
- Adapting natural resource management to climate change in the West and South Coast Regions: Considerations for practitioners and Government staff, Ministry of Forest Lands and Natural Resource Operations, February 22, 2016;
- Policy Regarding the Administration of Unharvested Volumes, Uncommitted Volumes and Unused BCTS Volumes, January 10 2018, Ministry of Forests, Lands, Natural Resource Operations and Rural Development;
- Implementation Plan for the Recovery of Marbled Murrelet (*Brachyramphus marmoratus*) in British Columbia, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, February 2018;
- Implementation Plan for the Recovery of Northern Goshawk, laingi Subspecies (*Accipiter gentilis laingi*) in British Columbia, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, February 2018.

#### First Nations

- Updated Procedures for Meeting Legal Obligations when Consulting First Nations, May 7, 2010;
- Haida Nation v. British Columbia (Minister of Forests), [2004] 3 S.C.R. 511, 2004 SCC 73
- Tsilhqot'in Nation v. British Columbia, 2014 SCC 44, [2014] 2 S.C.R.;
- R. v. Sparrow, [1990] 1 S.C.R. 1075;
- First Nations Consultation Report Draft Management Plan #4 and Allowable Annual Cut Determination for TFL 54 , Ministry of Forests, Lands and Natural Resource Operations, February, 2018;

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

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (current to January 30, 2019), 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 *Forest Act Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation***

Section 4 of the *Forest Act Tree Farm Licence Area-based Allowable Annual Cut Trial Program Regulation* (current to January 29, 2019) 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: Section 4 of the *Ministry of Forests and Range Act***

Section 4 of the *Ministry of Forests and Range Act* (current to January 30, 2019) reads as follows:

**Purposes and functions of ministry**

**4** The purposes and functions of the ministry are, under the direction of the minister, to do the following:

(a) encourage maximum productivity of the forest and range resources in British Columbia;

(b) manage, protect and conserve the forest and range resources of the government, having regard to the immediate and long term economic and social benefits they may confer on British Columbia;

(c) plan the use of the forest and range resources of the government, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are coordinated and integrated, in consultation and cooperation with other ministries and agencies of the government and with the private sector;

(d) encourage a vigorous, efficient and world competitive

(i) timber processing industry, and

(ii) ranching sector

in British Columbia;

(e) assert the financial interest of the government in its forest and range resources in a systematic and equitable manner.

## Appendix 4: Minister's letter of October 30, 2017



Reference: 230810

October 30, 2017

Diane Nicholls, Chief Forester and Assistant Deputy Minister  
Ministry of Forests, Lands, Natural Resource Operations  
and Rural Development  
Victoria, British Columbia  
V8W 2H1

*Dear Diane*

The British Columbia *Forest Act* conveys the responsibility to determine an Allowable Annual Cut (AAC) to the Chief Forester of the Province of BC for each timber supply area and tree farm licence in the province. It also specifies considerations that must be brought to bear during the course of such determinations including, among others, the economic and social objectives of the government.

This letter is intended to provide you with guidance regarding the objectives of the British Columbia (BC) government that require your consideration when determining an AAC.

Your office implements a rigorous Timber Supply Review Process to help ensure that each AAC you determine responds to a broad array of objectives and aligns with land use and management decisions established by provincial statutes and regulations. The objectives identified below are to be considered and as part of the review process to ensure that AAC determinations, and the timber harvest rates they enable, continue to support government goals.

This letter replaces two letters previously issued by the Minister of Forests and Range to the chief forester, dated July 4, 2006 and October 27, 2010. It is intended to be used in concert with direction provided by the Minister of Forests, Lands and Natural Resource Operations to the chief forester in a letter dated April 12, 2013, concerning objectives outlined in the Shared Decision Making Process pursuant to the Nanwakolas Reconciliation Protocol.

The BC government has committed to building a strong, sustainable, innovative economy and creating well paid jobs in the province. The health of the forest sector, and its ability to respond to an array of short and long term social, economic and environmental interests, is a key to delivering on this commitment. As such, Government has identified specific objectives for the management of BC's forests and Crown lands. Those relevant to AAC determinations include:

Page 1 of 3

Ministry of Forests, Lands,  
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Diane Nicholls, Chief Forester and Assistant Deputy Minister

- modernizing land-use planning to effectively and sustainably manage BC's ecosystems, rivers, lakes, watersheds, forests and old growth forests
- expanding investments in reforestation; and
- collaborating to develop strategies to manage wildlife resources and habitat

Strategies for delivering on these objectives will be developed in collaboration with the Ministry of Forests, Lands, Natural Resource Operations and Rural Development, relevant Natural Resource Ministries, indigenous partners and industry. Once approved by government, I ask that you ensure such strategies are integrated into the Timber Supply Review Process to support AAC determinations.

The BC government has committed to full and lasting reconciliation with Indigenous peoples. As chief forester, your responsibility includes continuing to ensure that AAC determinations take into consideration relevant agreements between First Nations and the Government of BC, court decisions that define Aboriginal title and rights as well as moving forward on reviewing policies, programs, and legislation to determine how to bring the principles of the United Nations Declaration on the Rights of Indigenous Peoples into action for AAC determinations. You also have a responsibility to continue to carefully consider traditional knowledge and other input from BC First Nation communities and organizations in the course of AAC determinations as they pertain to the AAC determination.

The *Forest Act* requires that the chief forester consider a range of forest health issues as part of AAC determinations, including the impacts of circumstances such as infestations, devastations and salvage programs. This is particularly relevant as BC's forest sector emerges from a period of significant, compounding challenges. The infestation of the Mountain Pine Beetle that peaked in the late 2000s has largely subsided but with continuing effects to the size and composition of the forest inventory. Currently, the north area is experiencing Spruce Beetle infestations which also pose impacts. Recently, the Province has experienced record levels of wildfires that have impacted timber supply, community stability and multiple forest values.

In response to these challenges, it is a government objective to focus on planning and sustainable resource management in a way that supports robust forest recovery and timely and effective responses to emerging threats. Please consider how your AAC determinations can support these objectives while promoting forest health and values. In some cases AAC determinations may encourage management practices that avert another infestation in the province's forests. In certain regions, they will need to reflect the reality of a lower timber supply. Some regions will require expanded investment in reforestation and/or an increased focus on timber utilization and recovery. In the wake of extensive natural disasters, the extent of damage in certain areas may also warrant re-determining AACs earlier than scheduled.

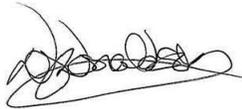
In order to ensure that AAC determinations align with government objectives to modernize land-use planning and sustainably manage B.C.'s ecosystems, rivers, lakes, watersheds, forests and old growth forests, the Timber Supply Review process should incorporate the best available information on climate change and the cumulative effects of multiple activities on the land base. Management options that align with established climate change strategies, adaptation and mitigation practices should be explored. Where the cumulative effects of timber harvesting and other land based activities indicate a risk to natural resource values, the process should identify those risks for consideration in land-use planning.

Diane Nicholls, Chief Forester and Assistant Deputy Minister

This government recognises that the forest sector is of critical importance to BC. The needs of rural communities and forest based industries are evolving in response to a number of the factors mentioned above. To support BC's forest-dependent communities, I ask that your AAC determinations consider the environmental, social and economic needs of local communities as expressed by the public during Timber Supply Review processes, including strategies that contribute to community economic stability, and the jobs that the forest sector creates in communities, where these are consistent with the government's broader objectives. I also ask that when faced with necessary reductions in AAC's, that those reductions be no larger than necessary to avoid significant longer term impacts.

Thank you Diane, for your continued service and considerable efforts in these regards.

Sincerely,

A handwritten signature in black ink, appearing to read 'Doug Donaldson', with a horizontal line underneath.

Doug Donaldson  
Minister

## Appendix 5: 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

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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 stroke at the end.

Steve Thomson  
Minister