

**BRITISH COLUMBIA
MINISTRY OF FORESTS**

**Sunshine Coast
Timber Supply Area**

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

Effective June 6, 2024

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Objective of this document

This document is intended to provide an accounting of the factors I have considered and the rationale I have employed as deputy chief forester of British Columbia (BC) in making my determination, under Section 8 of the *Forest Act*, of the allowable annual cut (AAC) for the Sunshine Coast Timber Supply Area (TSA). This document also identifies where new or better information is needed for incorporation in future determinations.

Acknowledgement

For preparation of the information I considered in this determination, I am indebted to staff of the BC Ministry of Forests (the 'Ministry') in the Sunshine Coast Natural Resource District (SCNRD), and the Forest Analysis and Inventory Branch (FAIB). I am also grateful to the First Nations, forest industry representatives, local residents, individuals, and other stakeholders who contributed to this process.

Statutory framework

Section 8 of the *Forest Act* requires the chief forester to consider a number of specified factors in determining AACs for TSAs and Tree Farm Licences (TFL). Section 8 of the *Forest Act* is reproduced in full as Appendix 1 of this document. For the purposes of this AAC determination in accordance with Section 23(3) of the *Interpretation Act* the deputy chief forester is expressly authorized to carry out the functions of the chief forester (including those required under Section 8 of the *Forest Act*).

Description of the Sunshine Coast Timber Supply Area

The Sunshine Coast TSA comprises approximately 1.7 million hectares along the southwest coast of BC. The TSA is administered by the Ministry's SCNRD with an office in Powell River, BC.

The landscape of the TSA is dominated by the Coast Mountains and several coastal fjords, most notably the Bute, Toba, and Jervis Inlets. The TSA spans seven biogeoclimatic zones, ranging from rocky coastal shorelines, nutrient-rich floodplains in valley bottoms, alpine meadows at higher elevations, to rugged ice-capped mountains. These wide-ranging landscapes support forest types dominated by Douglas-fir, hemlock, and amabilis fir (balsam), with lower proportions of western redcedar, spruce, pine, alder, and cottonwood.

The varied topography and high annual precipitation encourage a diverse climate and forest ecology capable of supporting a wide variety of environmental values, such as fishery and wildlife habitat, and recreation and tourism. The TSA is home to several identified species at risk such as the Marbled Murrelet, Northern Goshawk (*laingi* subspecies), two Vananda Creek Stickleback species, Coastal Tailed Frog, Red-legged Frog, and Great Blue Heron. Wildlife and their habitat are partially protected by wildlife habitat areas (WHA), old growth management areas (OGMA), recreation reserves, and riparian reserve zones.

The population of the Sunshine Coast TSA in 2020 was 52,947, with more than half of the population living in the communities of Powell River, Sechelt, and Gibsons. Other smaller communities include Halfmoon Bay, Pender Harbor, and Lund, as well as communities on Texada and Cortes Island.

The residents in the Sunshine Coast TSA are very active outdoors, recreationally, and very engaged in forest management and how harvest occurs in the TSA. The TSA supports recreation and tourism values with 30 115 hectares of provincial parks, protected areas, and ecological reserves. These parks, as well as recreation sites and trails, provide opportunities for numerous

outdoor activities such as hiking, camping, skiing, mountain biking, horseback riding, mountaineering, angling, hunting, canoeing, and kayaking.

History of the AAC

The Sunshine Coast TSA was established in 1986 with an AAC of 1 429 580 cubic metres. The AAC was temporarily increased in 1989 by 16 000 cubic metres to facilitate the harvesting of deciduous species. In 1993, the AAC was reduced by 24 percent to 1 100 000 cubic metres.

In 1996, the AAC was increased by about 3.6 percent to 1 140 000 cubic metres and included a 95 000 cubic metre partition attributed to red alder stands with a deciduous component greater than 50 percent.

In 2002, the AAC for the Sunshine Coast TSA was determined to be 1 143 000 cubic metres. This harvest level included a partition of 95 000 cubic metres attributed to red alder-leading stands with at least 50 percent deciduous by volume, and a further 3000 cubic metres to other deciduous-leading stands. The AAC was increased by 54 949 cubic metres to 1 197 949 cubic metres in 2007 to account for land added to the TSA from the former TFL 10.

The last determination occurred in 2012, with an AAC of 1 197 949 cubic metres. The AAC included a partition of 95 000 cubic metres for red alder-leading stands, and a 3000 cubic metre partition for other deciduous-leading stands. Shortly after the 2012 AAC determination, a small portion of TFL 39 was added and a Community Forest Agreement (CFA) area was removed from the Sunshine Coast TSA. Consequently, in August of 2013, the AAC was increased by 6869 cubic metres to 1 204 808 cubic metres.

In 2018, a TSA boundary realignment occurred which moved Lasqueti and smaller surrounding islands from the Sunshine Coast TSA into the Arrowsmith TSA, resulting in an AAC reduction to 1 197 466 cubic metres.

New AAC determination

Effective June 6, 2024, the new AAC for the Sunshine Coast TSA will be 1 050 000 cubic metres of which a maximum of 262 500 cubic metres may be harvested from stands older than 140 years, and a maximum of 787 500 may be harvested from stands 140 years and younger.

This new AAC is 12.3 percent below the current AAC of 1 197 466 cubic metres. This AAC will remain in effect until a new AAC is determined, which must take place within 10 years of this determination. As discussed under '*First Nations engagement*' and '*Forest landscape plan*', I have committed to determining a new AAC once the Sunshine Coast forest landscape plan (FLP) is completed.

Role and limitations of the technical information used

Section 8 of the *Forest Act* requires the chief forester, in determining AACs, to consider biophysical, social, and economic information. Most of the technical information used in determinations is in the form of a timber supply analysis and its inputs 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 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 the AAC for the Sunshine Coast TSA, I have considered known limitations of the technical information provided. I am satisfied that the information provides a suitable basis for my determination.

Guiding principles for AAC determinations

Given the substantial number of periodic AAC determinations required for B.C.'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 B.C.'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 ("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 the *Professional Governance 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 with respect to subsequent allocation of timber supply.

These guiding principles establish a framework for AAC decision-making with consideration to the following: advancing reconciliation with Indigenous people; responding to uncertainties; the incorporation of forest landscape planning information (including any legal orders associated with forest management), cumulative effects, and climate change.

Reconciliation with Indigenous people

The Government of B.C. has committed to true and lasting reconciliation with Indigenous people. The *Declaration on the Rights of Indigenous Peoples Act* of 2019 (the '*Declaration Act*') creates the path forward for aligning provincial laws with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Recognizing that reconciliation and changes to policies, programs, and legislation take time, any interim processes undertaken for AAC determinations should be responsive to the information and issues raised by Indigenous people to the extent possible within the existing legislative framework for AAC determinations. Interim collaborative engagement processes will seek to move beyond the legal duty to consult, align with relevant agreements between First Nations and the Province (including commitments regarding stewardship or resource management), promote capacity building within Indigenous communities, and provide a clear and transparent understanding of the decision-making process.

Where the nature, scope and geographic extent of Aboriginal rights and title have not been established, the Province has a constitutional obligation to consult with First Nations in a manner proportional to the strength of any claimed Aboriginal rights (including title) and the degree to which they may be affected by the decision. The Province also has an obligation to consult with First Nations regarding their treaty rights. In this regard, when making an AAC determination I will give consideration to the following information:

- (i) information provided to First Nations to explain the timber supply review process and analysis results;
- (ii) information, including Indigenous Knowledge, brought forward through consultation or a collaborative engagement process with respect to Aboriginal Interests, and how these interests may be impacted by an AAC decision;
- (iii) any strategic level plans, operational plans, or management information that describe how Aboriginal Interests are addressed through specific actions and forest practices;
- (iv) existing relevant agreements and policies between First Nations and the Province; and,
- (v) other information regarding the potential impact of an AAC decision on the ability of Indigenous communities to meaningful exercise of Section 35 rights as recognized in the *Constitution Act* (1982), such as information about cumulative effects.

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*, and with consultation obligations defined in court decisions. 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.

The timber on established Aboriginal title lands (meaning Aboriginal title declared by a court or defined under an agreement with necessary federal and provincial implementation legislation), Treaty Settlement Lands or Indian Reserves, is no longer provincial timber. Consequently, it does not contribute to the AAC of the management unit overlapped by those lands. 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 could affect timber supply, given uncertainties about the scope, nature and geographic extent of title. Unless land has been established to be Aboriginal title land, Treaty Settlement Land or reserve land it remains as provincial land managed by the Province and will contribute to timber supply. However, where there is clear intent by government to recognize lands as title land that are yet to be finalized, I will consider information that is relevant to the decision in a manner that is appropriate to the circumstances. The requirement for regular AAC reviews will ensure that future determinations address ongoing changes to the land base.

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. The following are two ways of addressing they uncertainty of information available to support an AAC determination:

- (i) undertaking analyses to evaluate the significance of uncertainties associated with available information and assessing the social, economic, and environmental risks associated with a range of possible decisions; 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 several 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 that (as closely as

possible) 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 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.

Where appropriate, the chief forester will consider information 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 an alternative strategy for dealing with information uncertainty is to generally reduce AACs in the interest of caution. On its own, this precautionary approach is not a complete framework for decision making under uncertainty. It is one tool that could be used to address the risk of serious harms in situations of deep uncertainty or significant deficiencies in information. However, the precautionary approach does not consider the full spectrum of values or extensive range of research and information utilized by the chief forester. For these reasons, AAC determinations more appropriately follow a decision process utilizing analyses of current land and management practices and the exploration of the potential effects of uncertainties, rather than relying on an overriding precautionary approach.

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, can assist me in evaluating this uncertainty.

Forest Landscape Planning

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 a sustainable timber supply.

AAC determinations will be made in the context of new forest landscape plans and legal orders that establish forest management expectations. These plans and orders direct forestry activities and guide the stewardship of B.C.'s public land and resources, have been established with an understanding of the relationships among the various components of forest management systems, and follow deliberative processes and laws designed to achieve a balance of natural resources values and benefits.

As is the case for land use and management planning in general, it is beyond my statutory authority to speculate on final outcomes where there are preliminary but not yet finalized and formalized land use zones or management objectives. 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.

In some cases, even when government has made a formal land-use decision, it is not necessarily possible to fully analyze and immediately account for the consequent timber supply impacts in an AAC determination. Many of government's land-use decisions must be followed by detailed implementation decisions requiring, for instance, further planning or legislated designations such as those provided for under the *Land Act* and *Forest and Range Practices Act* (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 AAC 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.

Cumulative Effects

Cumulative effects (CE) are changes to environmental, social and economic values caused by the combined effect of past, present and potential future human activities and natural processes. In the context of AAC determinations, I am aware of the mandate provided by the Minister of Forests (FOR) which tells me to ensure that my AAC determinations continue to incorporate the best available information on the CE of multiple activities on the land base. Where the CE of timber harvesting and other land-based activities indicate a risk to natural resource values, my determinations should identify those risks for consideration in land-use planning. I am also asked to consider ways in which my AAC determinations could encourage actions or practices to mitigate risks to natural resource values.

Section 8 of the *Forest Act* only authorizes the chief forester 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 refer to those responsible for such planning.

Where a cumulative effects assessment has suggested that an important value is at risk and that a reduced harvest level or implementation of an AAC partition could help to reduce that risk, I will appropriately factor these into my AAC determination. I may also identify actions or implementation instructions that would mitigate risk or accommodate potential impacts to Aboriginal Interests. In this case, I will include expectations that Ministry staff work with relevant interests to address the issues identified and encourage forest licensees to follow the recommendations of CE assessments.

As with all management issues, additional information and any changes can be incorporated into subsequent AAC determinations.

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. 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 substantiated predictions 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 are 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 and the use of partitions in my AAC decisions could provide buffers against uncertainty. The appropriate mix of timber supply management approaches is ultimately a social decision.

Due to the uncertainty surrounding impacts on the AAC from climate change, it is important to encourage dialogue to develop climate change mitigation and adaptation strategies and remain open to new opportunities for forest management. 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. The timber supply analysis is a useful tool to determine the potential changes to the frequency, intensity, and scope of natural disturbances under climate change; and for exploring options and trade offs. Any management decisions about the appropriate approach and associated practices will be incorporated into future AAC determinations. The requirement for regular AAC reviews will ensure continuous improvement of the information and knowledge on climate change and ensure the development of a responsive decision-making process to emerging natural resources issues.

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 projections 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 a *Data 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 projections 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 harvest projections, 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”, and it forms the basis for comparison when assessing the effects of uncertainty on timber supply. The base case is designed to reflect current management practices, demonstrated performance, and established management requirements.

Because the base case represents only one in a number of theoretical projections, and because it incorporates information about which there may be some uncertainty, the base case is not an AAC recommendation. Rather, it is one possible projection of timber supply, whose validity – as with all the other projections 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 projection are realistic and current, and the degree to which any adjustments to its projections 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 *Data Package* was assembled. Forest management data are particularly subject to change during periods of legislative or regulatory change, or during the implementation of new policies, procedures, guidelines, or plans.

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

Base case for the Sunshine Coast TSA

In the Sunshine Coast TSR, two base case scenarios were created. These scenarios, as well as all the other timber supply projections for the Sunshine Coast TSA, utilized a PATCHWORKS™ forest estate spatial model. Both base case scenarios were configured to first, achieve a non-declining harvest level over the long term and avoid large, short-term variation in harvest volumes, and second, maintain non-timber, spatial, and growing stock objectives applied in the model, maximizing the harvest level over the first period. The data and assumptions used in the base cases are documented in the *Sunshine Coast TSA Data Package* (December 2021).

Timber supply projections are not predictions, because many unforeseeable events will certainly occur, and practices and knowledge will change and evolve. Given this change and uncertainty, the projections may change in the future. Changes in practices and information will be incorporated into future AAC determinations. However, the harvest projections developed to support this AAC determination were designed to provide a rigorous and reasonable basis for the AAC decision and be consistent with the ‘*Guiding principles for AAC determinations*’.

The first base case scenario was referred to as the established scenario and was created to understand the timber supply dynamics given legally established forest management requirements. The second, was referred to as the current practice scenario and reflects additional management practices that are not legally established, but forest managers currently implement to address operational, economic, or First Nations requirements.

The current practice scenario differed from the established scenario by excluding the following areas from contributing to timber supply:

- Conservation areas from the strategic land use plan for the shíshálh First Nation.
- Stands older than 140 years in the shíshálh swiya (territory).
- Coastal Douglas-fir biogeoclimatic zones in the shíshálh swiya.
- Areas in the TSA where there is either agreement to not harvest or there has not been any harvest occurring, referred to as avoidance areas.

The *Sunshine Coast TSA Discussion Paper* (March 2023) contains the results of the timber supply analysis. The published base case harvest projections begin in 2021 for both scenarios. Over the first decade, the established scenario achieved a harvest level of 1.557 million cubic metres per year, declining to a long-term harvest level of 1.463 million cubic metres per year. In the current practice scenario 1.272 million cubic metres is achieved in the first decade, declining to a long-term harvest level of 1.224 million cubic metres.

In my determination, I have also considered several sensitivity analyses. A sensitivity analysis examines how changes in base case modelling assumptions affect the projected timber supply.

These analyses have been helpful as I made specific considerations and reasoning in my determination as documented in the following sections.

As discussed under ‘*Strategic land use plan for the shíshálh Nation*’ and ‘*Avoidance areas*’, I believe that the current practice base case scenario reflects licensee harvesting practices and best represents current practice within the TSA. I am satisfied that the current practice base case, and the other analyses as noted and described, represent the best information available to me respecting various aspects of the current projection of the timber supply in this TSA, and as such they are suitable for reference in my considerations in this determination. Unless otherwise stated, for the remainder of this document I will reference the current practice scenario as the base case.

First Nations engagement

The Sunshine Coast TSA overlaps the traditional territory of 22 First Nations. These First Nations include: Da'naxda'xw/Awaetlala First Nation, Esk'eteme First Nation, Klahoose First Nation, K'omoks First Nation, Kwakiutl First Nation, Kwiakah First Nation, Líl'wat Nation, Musqueam First Nation, Qualicum First Nation, shíshálh First Nation, Snaw'Naw'As First Nation, Squamish First Nation, Tit'q'et First Nation, Tla'amin First Nation, Tsal'alh First Nation, Tsleil-Waututh First Nation, Ulkatcho First Nation, Wei Wai Kum First Nation, We Wai Kai First Nation, Xení Gwet'in First Nations Government, Xwémalhk'wu (Homalco) First Nation, and Xwisten (Bridge River) First Nation. Five First Nations, the Klahoose First Nation, shíshálh First Nation, Squamish Nation, Tla'amin First Nation, and Homalco First Nation have traditionally occupied communities within the TSA boundaries.

The *Tla'amin Final Agreement* came into effect on April 5, 2016, and is currently the only modern treaty agreement in place within the Sunshine Coast TSA. The Tla'amin Nation and the Province signed a *Reasonable Opportunity Agreement* with the objective of defining the collaborative process to evaluate the impact of authorizations of Crown land and ensuring that the Tla'amin Nation continues to have a reasonable opportunity to exercise their right to harvest fish and aquatic plants, wildlife, and migratory birds and to gather plants within identified areas.

There are several Nations in Stage 5 treaty negotiations, including: K'omoks First Nation, Wei Wai Kum, We Wai Kai First Nation, and Kwiakah Treaty Society. The Homalco First Nation and Klahoose First Nation are actively negotiating in Stage 4 of the treaty process.

In October 2018, the provincial government and the shíshálh Nation signed the *shíshálh-BC Foundation Agreement* that provides direction for the development of a Modernized Land Use Plan within the shíshálh territory. A key part of this agreement included the establishment of a landmark government-to-government working relationship intended to create new shared decision-making structures between the provincial government and the shíshálh government.

The K'omoks First Nation, Wei Wai Kum First Nation, and We Wai Kai First Nation are signatories to the *Nanwakolas Strategic Engagement Agreement* which establishes mutually agreed upon procedures for consultation and accommodation.

Many of the First Nations that assert Aboriginal Interests within the Sunshine Coast TSA have signed Forest Consultation and Revenue Sharing Agreements. This type of agreement outlines consultation engagement expectations and provides the Nations with economic benefits based on harvest activities in their consultative areas.

A FLP process was initiated concurrently with the Sunshine Coast TSA TSR. At the time of the initiation and throughout the TSR process there were five core Nations (“core Nations”): Klahoose First Nation, shíshálh First Nation, Squamish Nation, Tla'amin First Nation, and

Homalco First Nation. TSR engagement with the FLP core Nations was initiated at the FLP governance table beginning in October 2020. Work on the FLP and TSR data progressed concurrently for the following year. In October 2021, the core Nations made the decision that the TSR should proceed separately while the FLP work progressed, if a commitment was made to revisit the AAC following the completion of the FLP. On October 20, 2021, a letter of commitment was sent from then Chief Forester Diane Nicholls, confirming that the AAC would be revisited after the completion of the FLP. TSR engagement then continued as a separate process, engaging with the FLP core Nations at key stages throughout the process, at the FLP planning table.

On November 3, 2020, initial engagement letters were sent to all First Nations with territories overlapping the Sunshine Coast TSA to discuss their perspectives on timber supply within their respective territories. First Nations were subsequently provided with the *Data Package*, analysis results, and the *Discussion Paper* to inform their discussions with Ministry staff.

On February 20th, 21st and 22nd, 2024, I met separately with representatives from the Klahoose First Nation, shíshálh First Nation, Squamish Nation, Tla'amin First Nation, and Homalco First Nation. At these meetings I listened to the concerns and issues raised by the representatives.

Comments from the Nations above and concerns from First Nations who were not able to meet with me were presented to me at the AAC determination meeting by Ministry staff as documented throughout this rationale and in the First Nations consultation record. I have reviewed the consultation record provided by staff and I will reflect on what I read as well as what I heard during my meetings with First Nations as I make this AAC decision.

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

I have reviewed the information for all of the factors required to be considered under Section 8 of the *Forest Act*. Where I have concluded that the modelling of a factor in the current practice 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 current practice base case, no discussion is included in this rationale. These factors are listed in Table 1.

Table 1. List of accepted factors

Forest Act section and description	Factors accepted as modelled and not discussed further in the rationale
8(8)(a)(i) the composition of the forest and its expected rate of growth on the area	<ul style="list-style-type: none"> • Land ownership • Non-forest areas • Provincial parks • Growth and yield permanent sample plots and research installations • Low productivity sites and non-merchantable forest types • Karst • Forest inventory • Site productivity estimates • Volume estimates for natural stands • Operational adjustment factors • Genetic gain
8(8)(a)(ii) the expected time that it will take the forest to become re-established following denudation	<ul style="list-style-type: none"> • Regeneration delay • Backlog not satisfactorily restocked
8(8)(a)(iii) silviculture treatments to be applied to the area	<ul style="list-style-type: none"> • Silviculture systems • Incremental silviculture
8(8)(a)(iv) the standard of timber utilization and the allowance for decay, waste, and breakage expected to be applied with respect to timber harvesting on the area	<ul style="list-style-type: none"> • Utilization standards and compliance • Decay, waste, and breakage and coarse woody debris
8(8)(a)(v) constraints on the amount of timber produced by use of the area for purposes other than timber production	<ul style="list-style-type: none"> • Adjacency and green-up
Section 8(8)(a)(vi) any other information that, in the chief forester’s opinion, relates to the capability of the area to produce timber	<ul style="list-style-type: none"> • Coastal Douglas-fir • Harvest performance
8(8)(b) the short and long term implications to British Columbia of alternative rates of timber harvesting from the area	<ul style="list-style-type: none"> • Harvest sequencing • Economic and employment implications
8(8)(d) economic and social objectives of the government, as expressed by the minister, for the area, for the general region and for British Columbia	<ul style="list-style-type: none"> • Economic and social objectives expressed in the Minister’s letter
8(8)(e) abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	<ul style="list-style-type: none"> • Forest health • Non-recoverable losses

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

Forest Act Section 8 (8)

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

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

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

- General comments

The total land area of the Sunshine Coast TSA is 1 906 100 hectares. After removing areas not managed by the province, non-forest and non-productive areas, the Pacific TSA, and areas managed by area-based tenure holders the remaining forested area is 440 792 hectares (25 percent of the TSA area). This area is referred to as the analysis forest land base (AFLB) and contributes to timber and non-timber objectives.

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 were made from the AFLB. These deductions account for biophysical, economic, or ecological factors that reduce the forested area available for harvesting. For the Sunshine Coast TSA, the THLB that is available after deductions are applied is 190 668 hectares for the established base case scenario. The current practice base case scenario THLB is approximately 16 percent smaller at 159 996 hectares, as it reflects additional management practices that are not legally established, but forest managers currently implement to address operational, economic, or First Nations requirements. The current practice scenario THLB represents about 8 percent of the total area of the TSA and about 36 percent of the AFLB.

In reviewing these deductions, I am aware that some areas may have more than one classification. To ensure accuracy in defining the THLB, the FAIB analysts took care to not double-count the area associated with overlapping objectives. Hence, a specific deduction for a given factor reported in the analysis or the AAC rationale does not necessarily reflect the total area with that classification; some portion of it may have been deducted earlier under another classification.

For this determination, I accept that the approach used to determine the THLB for the Sunshine Coast base cases was appropriate.

- Estimates for roads, trails, and landings

Forest roads, logging trails, landings, and maintained transmission lines are considered permanent access structures as they are constructed through soil or rock that is not suitable to the growth of a commercial crop of trees or because they are required for a long enough time that prevents the timely growth of a commercial crop of trees. For these reasons, they are considered non-forest and are removed from the AFLB.

In the current practice base case the area removed from the AFLB to account for existing roads, trails, landings, and transmission lines was 16 064 hectares.

For future permanent access structures, it was assumed that where existing road sections are not maintained, much of the area currently classified as rough roads and removed from the productive forest land base will eventually become overgrown by forest. As the land base approaches a normal age class distribution, this increase in productive forest will be roughly offset by permanent access structures needed to develop future harvest areas, and the overall disturbance

was expected to remain stable over time. Thus, no reductions for future roads, trails, and landings were applied in the current practice base case scenario.

As there are future harvest areas remaining to develop, I believe the balance of roads to be constructed will exceed the balance of roads that are returning to productive forest. For this factor, I conclude that the current practice base case overestimated the long-term timber supply by a small unquantified amount by not appropriately accounting for future permanent access structures. I account for this small unquantified overestimation in my determination as discussed under '**Reasons for Decision**'.

- Wildlife habitat

Wildlife habitat may be identified and managed through several processes including the Identified Wildlife Management Strategy (IWMS). For the IWMS, wildlife habitat areas (WHA) can be established under the Government Actions Regulation (GAR) or grandparented under the *Forest Practices Code Act*. WHAs are established to provide habitat for identified wildlife species that are at risk or are of regional importance. Management objectives may prevent harvest or set conditions under which harvesting can occur.

At the time of analysis for the Sunshine Coast TSA there were 244 approved WHAs for Grizzly Bear, Marbled Murrelet, Northern Goshawk, and Vananda Creek Stickleback. Approved WHAs that prevent harvest were identified and removed from the current practice base case THLB.

In February 2018, the provincial government announced a plan for further protection of Northern Goshawk and Marbled Murrelet nest and breeding areas through the release of implementation plans for each species.

- Northern Goshawk wildlife habitat areas

The Northern Goshawk implementation plan set a target of 53 breeding areas in the South Coast Conservation Region. At the time of the analysis, there were seven proposed WHAs for Northern Goshawk that had not yet been legally established. A sensitivity analysis removed the seven proposed WHAs from the current practice base case THLB, reducing the short-term timber supply by 0.5 percent.

In October 2022, after the analysis was completed, a Ministerial Order established six of the seven originally proposed Northern Goshawk WHAs. Exclusion of these six WHAs from the THLB reduces the short-term timber supply by 0.4 percent. The impact was reduced from 0.5 percent in the sensitivity analysis to 0.4 percent, as only six of the seven originally proposed WHAs were approved. Five additional Northern Goshawk WHAs are moving imminently to decision, which would reduce the short-term timber by an additional 0.4 percent.

As six of the seven proposed Northern Goshawk WHAs have now been legally designated and there are an additional five WHAs that are moving imminently to decision, I will consider that the current practice base case short-term timber supply was overestimated by 0.8 percent, as discussed under '**Reasons for Decision**'. I note that there will be additional Northern Goshawk WHAs required to meet the target identified in the implementation plan. Future AAC decisions will account for any additional WHAs once they become approved.

- Marbled Murrelet

A Ministerial Land Use Objectives Regulation (LUOR) *Order for the Recovery of Marbled Murrelet* took effect on December 2, 2021. The LUOR Order specifies a minimum threshold of suitable habitat to be retained by landscape unit aggregate. The LUOR thresholds and targets align with the goal set in the *2018 Implementation Plan for the Recovery of Marbled Murrelet (Brachyramphus marmoratus) in British Columbia* to achieve overall protection of 70 percent of the 2002 suitable nesting habitat across the coast. Notices under Section 7(2) of the Forest and

Range Practices Regulation (FPPR) support the LUOR Order and require spatial protection of at least 80 percent of the minimum habitat threshold for the Southern Mainland Coast Conservation Region (SMCCR).

Spatial reserve planning is underway in high priority landscape units that are at greater risk of not meeting the Province's habitat objectives. The spatial suitable habitat data associated with the LUOR Order were not available at the time the analysis was completed. As data were not available, Marbled Murrelet habitat was defined based on field surveys and an age requirement for stands to be older than 140 years. Staff noted that the number of hectares identified as Marbled Murrelet habitat in the analysis aligned well with the suitable habitat identified in Schedule 5 of the LUOR Order.

In the Sunshine Coast Natural Resource District (SCNRD) portion of the SMCCR, the minimum habitat threshold required by the Order is 38 605 hectares. In that same area there is currently a total of 44 735 hectares of suitable habitat. As the Sunshine Coast TSA only makes up a portion of the SCNRD, the proportion of total suitable habitat required for retention under the Order within the TSA is 86 percent or 26 264 hectares.

The analysis showed that in the Sunshine Coast TSA there is approximately 30 540 hectares of suitable Marbled Murrelet habitat within the AFLB of which 6067 hectares remains in the THLB. The difference, an amount of 24 473 hectares of suitable habitat is already unavailable for harvest as it overlaps with other constraints. To reach the proportional target of 26 264 hectares, an additional 1791 hectares of suitable habitat from the THLB is required to be set aside.

A sensitivity analysis was completed assessing the timber supply impact of retaining the suitable habitat required by the LUOR Order, showing a 5.1 percent reduction in short-term timber supply. An error was noted after the sensitivity analysis was completed where 80 percent of the LUOR Order target was used instead of the full target amount. When the full target amount is used an additional 1791 hectares of habitat is required to meet the LUOR, resulting in a short-term timber supply reduction of 5.5 percent.

I note that the legal requirement for habitat protection has been defined but it has not yet been spatially located. I conclude that the approach used to model Marbled Murrelet habitat in the analysis was a reasonable approximation. As discussed under '**Reasons for Decision**', I will consider that the current practice base case timber supply was overestimated by 5.5 percent.

- Ungulate winter range

Ungulate winter ranges (UWR) are established to provide habitat for wildlife species that are at risk or are of regional importance. As with all wildlife, ungulates rely on well distributed quality habitat throughout the year to meet their life requisites. The focus for habitat management has been on winter ranges which are critical for their survival.

A FPPR Section 7 Notice for the winter survival of ungulates in the Sunshine Coast TSA was issued in December 2004. The notice requires a total habitat area of 54 096 hectares to be identified, with a maximum of 2849 hectares coinciding with the THLB. The Notice specified winter range management practices for ungulates in the TSA, with management objectives preventing harvest or setting conditions under which harvesting can occur.

There are three applicable GAR Orders for Mountain Goat that contribute to the target established in the Section 7 Notice. These areas were identified and removed from the THLB in the current practice base case analysis. The remaining allowance for overlap with THLB of 1244 hectares from the Section 7 Notice will be used in developing a Black-tailed deer winter range plan.

Candidate UWR for Black-tailed deer were first drafted in 2014. The provincial government and shishálh Nation have recently refined the draft UWR within the shishálh Nation swiya. I was

presented with a sensitivity analysis which removed the draft UWR within the swiya from the THLB, reducing the timber supply by 0.5 percent compared to the current practice base case.

A public comment stated that there should be a sensitivity analysis that excludes Black-tailed deer UWR throughout the TSA, not just inside the swiya. Comments were also received that analyses should be conducted that also consider the management of Elk and Blue Grouse. District staff noted that there are no immediate plans to develop GAR orders for these species. If UWR or other wildlife habitat protections for Elk and Blue Grouse become legally established, they will be accounted for in future timber supply reviews.

In the current practice base case legal UWR were appropriately modelled. I recognize however that the shishálh Nation is in the process of preparing their Modernized Land Use Plan and licensees are currently respecting the draft Black-tailed deer UWR within the swiya. As discussed under '**Reasons for Decision**', I will consider that the current practice base case timber supply was overestimated by 0.5 percent to account for the draft UWR within the shishálh Nation swiya. I will not make reductions for draft UWR polygons located outside the swiya as I hope these areas will be defined and approved through a Modernized Land Use Plan or the FLP.

- Landscape-level biodiversity

In the Sunshine Coast TSA, landscape-level biodiversity objectives for old-seral forest types originate from the *Order Establishing Provincial Non-Spatial Old Growth Objectives* (NSOGO). Following the NSOGO Order, spatial OGMAs were established through Ministerial Orders for Land Use Objectives. Some LUs have legally established OGMAs, some have non-legal draft OGMAs (meeting the intent of the NSOGO), and others continue to follow the NSOGO using either aspatially or with licensee draft OGMAs. OGMAs are usually comprised of old forests but may also capture younger forests or rare features that have importance to the landscape.

For this analysis, all legal and non-legal OGMAs were removed from the current practice base case THLB. Full targets from the NSOGO were met in these LUs. In the remaining LUs that did not have legal or non-legal OGMAs the timber supply model dynamically reserved old forest to meet the full targets established under the NSOGO. A sensitivity analysis was completed that applied the licensee draft OGMAs where they were available, instead of the aspatial approach, to meet the NSOGO targets for the landscape unit. The timber supply was reduced by 0.2 percent in the short-term compared to the current practice base case but there was no difference in the mid- and long-term. It is reasonable that the timber supply impact is negligible since the draft OGMAs were established to achieve the objectives of the NSOGO.

In September 2020, the Province implemented 10 Part 13 deferrals in partnership with First Nations on 196 000 hectares of old growth forests throughout BC under Old Growth Designated Area No. 1. The Part 13 deferrals suspended forestry activities, which included the Upper Southgate River part of the Sunshine Coast TSA. As the deferral was temporary and expired on March 1, 2024, the Upper Southgate River was not removed in the current practice base case THLB.

The government convened an independent Old Growth Technical Advisory Panel (TAP) to identify at-risk old growth ecosystems and prioritize areas for temporary deferral from harvesting. The TAP identified 2.6 million hectares of BC's most at-risk old growth forests for deferral, including priority old forest with large trees (1.7 million hectares), ancient forest (400 000 hectares), and rare forest (500 000 hectares). As long-term measures have not yet been identified for old growth, the TAP polygons contributed to the current practice base case THLB.

A Nation suggested that there is very little old growth in the entire Sunshine Coast TSA, and measures must be put in place immediately to prevent further degradation of ecosystem health. It is expected that the FLP table will develop a long-term plan for managing old forests in the

TSA. A Nation also expressed concern that the current practice base case harvest flow suggests maximizing the harvest level of old growth forest for a final decade before switching to second growth.

I acknowledge the concern that the age profile harvested in the first decade of the current practice base case does not match the age profile of the current harvest performance. Over the past decade 34 percent of the harvest in the TSA has come from forests older than 120 years, whereas in the current practice base case scenario, approximately 53 percent of the harvest came from stands greater than 120 years old. I was presented with a sensitivity analysis that approximated the age profile harvested over the past decade by limiting harvest of forests older than 120 years to no more than 34 percent annually. This reduced the short-term timber supply by 0.8 percent.

There was significant public input regarding the harvesting of old forests. An abbreviated summary of concerns and recommendations includes:

- The *Data Package* does not adequately prepare the Sunshine Coast TSA to implement the strategic review for old forests.
- There is no reduction in the AAC necessary to recruit old forest.
- Young forests, under 150 years old, will not have the resilience of older forests, due to the dangerous, unknown effects of climate change and the multiple use of the forest by other industries.
- By letting older age class forests develop into true old growth you will also help make up for the deficit of old growth forests and help preserve biodiversity.
- Implement the 14 recommendations from the Old Growth Strategic Review.
- The AAC should include a moratorium on harvesting any old and mature forests (100 years plus).
- Conserve the remaining old growth forests, particularly the Coastal Western Hemlock zone.
- Ensure old growth recruitment in identified ‘at risk’ ecosystems.
- Old growth percentages are well into ‘the high-risk red zone’ for lower elevation and drier forest types (CDFmm, CWHxm, and CWHdm).
- All the old growth in the THLB will be cut in the next 20 years. Cutting the remaining pockets of ‘productive’ mountain hemlock/yellow-cedar is not consistent with the recent government commitments to retain old growth.
- Highly productive forests are dangerously under-represented among our remaining old growth.
- Existing OGMAs are mostly low productivity forest and do not represent the range of site indices that exist across the land base.
- Remove old growth trees from all harvest plans.

As indicated in ‘*Public engagement*’ I have reviewed all the comments and concerns received during the public engagement process and any responses provided by Ministry staff. I note that in the current practice base case, the composition of stands on the AFLB greater than 250 years old remains constant throughout the 300-year planning horizon.

It is my expectation that there will be changes to the way that old forest is managed in the TSA. While the paradigm shift has begun with the TAP identifying priority at-risk forest,

implementation of long-term measures for old forest management, including TAP polygons and other old forest, is expected to occur through the FLP and other processes, in collaboration with First Nations and input from the public. During that transition I expect that some of the old forest contributing to the current practice base case harvest projection may be deferred from harvest.

I do not have the authority to make land use decisions regarding the amount of area protected for old forest management in the province. My concern is to ensure there is flexibility for the implementation of appropriate long-term measures for old forest management that reflect the evolving management expectations around old growth. I will implement short-term measures in my decision to ensure that harvest deferrals in mature and old forest, and any associated accumulated unused volume, do not unintentionally result in the overharvest of young forests within the remainder of the TSA.

In the sensitivity analysis that limited the harvest of stands greater than 120 years old to 34 percent, consistent with current practice, the age class breakdown showed stands older than 140 years old (age classes 8 and 9) contributed 25 percent of the harvest in the first decade. I will limit the harvest of stands older than 140 years to 25 percent, understanding that a proportion of this volume will likely be deferred in the short term. Limiting the harvest of old forest may unintentionally lead to overharvesting the younger forest. To prevent the unintentional overharvest of young forest that may result from old and mature forest deferrals, I will specify a limit of 75 percent on the harvest of stands 140 years (age classes 1 to 7) and younger.

As discussed under ‘**Reasons for Decision**’, I will specify partitions limiting the harvest in both the older forests as well as the younger forests. In choosing the partition contributions, I have referenced the sensitivity analysis that approximated the age profile harvested over the past decade by harvesting no more than 34 percent annually from forests older than 120 years. While the sensitivity analysis results in an overall 0.8 percent reduction in the short-term timber supply, I have decided not to make any reductions to the current practice base case timber supply projection, as it has been accounted for through my other adjustments as outlined throughout this document.

Under ‘**Implementation**’, I request Ministry staff to work with First Nations and licensees to monitor and assess harvest performance within the partitions and report to me annually.

- Archaeological sites and cultural heritage resources

Archaeological sites are defined in the *BC Archaeological Resource Management Handbook* as sites that “consist of the physical remains of past human activity”. Archaeological sites which include culturally modified trees, pictographs, petroglyphs, and burial sites that pre-date 1846, are protected under the *Heritage Conservation Act* (HCA). Archaeological Overview Assessments (AOA) have been completed for portions of the Sunshine Coast TSA. These are the basis for determining areas and sites that may require further assessment through Preliminary Field Reconnaissance studies carried out as part of operational planning.

A cultural heritage resource is defined in the *Forest and Range Practices Act* 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". Indigenous cultural heritage, however, is broader in its definition. Indigenous cultural heritage encompasses land, resources, creation stories, histories, knowledge, practices, relations, and language. It also includes all the places, spiritual areas, and objects that are linked to Indigenous history and traditions: transformer places, archaeological sites, trails, hunting grounds, gathering areas, burial grounds, artifacts, and cultural objects and materials.

The province keeps track of registered archaeological sites in their Remote Access to Archaeological Data (RAAD) application. Archaeological sites in RAAD were mapped, buffered

by 50 metres, and excluded from the THLB in this analysis. A total of 261 hectares were identified as archaeological sites in the AFLB. After accounting for overlaps with areas removed earlier in the netdown process, a net area of 155 hectares was removed from the THLB. No other land exclusions were made to account for cultural heritage resources, as it was assumed that their protection would be addressed through the management of other values such as wildlife tree retention and riparian areas.

There is interest from the Nations holding licences to harvest timber in the TSA to utilize the licences predominately in their own territories, but this interest was not considered in the current practice base case. I was presented with harvest projection contributions from each of the FLP core Nations' territories and note that individual timber supply contributions remain relatively stable over time. This indicates that the impacts to rights and title are distributed evenly through time in the current practice base case scenario.

In the Sunshine Coast TSA, there is demand from First Nations for cultural cedar. First Nations harvest cultural cedar from both the THLB and the AFLB, and accessibility is important. I was informed by the Nations that there is currently a management plan for cedar in development. I look forward to reviewing the plan once it is finalized and incorporated into the FLP.

If a new potential archaeological site is identified, the licensee, along with an archaeologist, operationally assesses the identified area, follows-up with Ministry staff and with First Nations, and where required, apply for an alteration permit under the HCA. While these potential areas are not modelled directly in the analysis, they are expected to be operationally captured under other modelling considerations, such as existing and future wildlife tree retention areas (WTRA), and riparian reserves.

A Nation indicated that the number of archeological and cultural sites used in the analysis seems underestimated. They also stated that the proposed approach of co-locating archaeological sites within WTRAs, and riparian reserves may fail to offer adequate, permanent protection for sites.

I conclude that there are likely unmapped additional archaeological sites not accounted for in the timber supply analysis and under '**Reasons for Decision**' I will account for a small unquantified overestimation of the current practice base case timber supply.

I ask licensees to engage with First Nations when they encounter culturally modified trees and other large cedar trees so that First Nations have access to large cultural cedar trees. For this determination I will not make any adjustments to the current practice base case harvest projection to account for cultural heritage resources. The management plan for cedar will be reflected in subsequent AAC determinations once it is incorporated into the FLP.

- Recreation resources

Recreation areas are associated with special features on the land base that are important for public and commercial recreation activities, such as wildlife viewing areas, hiking trails, biking trails, camp sites, and sheltered moorage areas, which can result in the exclusion of harvest activities. The Sunshine Coast TSA has significant recreational use and there is substantial public interest in the impact of the forest industry on recreation, especially near urban areas.

In the AFLB of the Sunshine Coast TSA there is 791 hectares of recreation areas, with a net area of 226 hectares excluded from the THLB.

District staff identified four urban interface zones totaling 9423 hectares of THLB adjacent to communities located along the Strait of Georgia, where licensees work closely with users to ensure timber harvesting and trail rehabilitation are adequately addressed. To reflect reduced harvest rates expected within the urban interface zones, the current practice base case applied a

forest cover requirement where a maximum of 25 percent of the THLB could be below the height of five metres over the planning horizon.

A public comment stated that Mt. Elphinstone is probably the most heavily used recreation area in the TSA and should be protected. District staff recommended a rate of harvest restriction be applied to the 4166 hectares of THLB in the Mt. Elphinstone area. Data showed that between January 2004 and the end of 2021, the average annual harvest in this area was 19.3 hectares. The current practice base case was adjusted so that the harvest rate within the Mt. Elphinstone area was set to a maximum of 27 hectares per year to align with the commitment made to address public concerns in the area.

There were additional comments from the public that forestry is having a negative impact on tourism, recreation trails need larger buffers, and the approval process for new trails needs to be much quicker. I note that the analysis correctly identified and removed active recreation sites and trails and forest recreation areas from the THLB. The decision to create larger buffer widths on recreation sites and trails is determined by forest tenure holders, as the TSR does not prescribe a particular plan of harvesting activity.

For this determination, I will not make any adjustments to the current practice base case harvest projection to account for recreation resources.

- Environmentally sensitive areas and unstable terrain

Different terrain data exists for different areas of the Sunshine Coast TSA. Terrain stability mapping (TSM) has replaced environmentally sensitive area (ESA) mapping and was available for two licensee operating areas. ESA mapping identifies areas potentially susceptible to disturbance (e.g., difficult to reforest, avalanche hazard, and water values). Areas classified as (1) very sensitive or (2) moderately sensitive to disturbance, were both entirely removed from the THLB.

In the current practice base case, where TSM was absent, ESA mapping was used. TSM class V and ESA class ES1 areas were 100 percent removed from the THLB, while a 30 percent THLB removal was made for TSM class 4 and ESA class ES2. Where neither mapping was available, an aspatial reduction of 32.3 percent was applied to the THLB on slopes greater than 60 percent, as per the methodology utilized in the last TSR. Any area that had been previously harvested remained in the THLB.

A licensee commented that the ESA dataset is quite old, and that the *Data Package* indicated the ESA mapping would only be used where better or more recent data is unavailable. Given the uncertainty around the age of the ESA data, a sensitivity analysis was completed. The sensitivity analysis removed stands from the THLB that were not previously logged, did not overlap with existing TSM, and were on slopes greater than 70 percent. Excluding these steep slopes reduced the short-term timber supply by 3.0 percent.

I was provided with licensee harvest performance from 2011 to 2020. Harvesting on slopes greater than 70 percent is occurring at less than one-third of the rate that would be expected if harvesting was conducted proportional to the steeper slope profile of the THLB. I conclude that removing two-thirds of the THLB on slopes greater than 70 percent matches licensee performance and reflects the best available information given the age of the ESA data. Under '**Reasons for Decision**', I will reduce the current practice base case timber supply by 2.0 percent.

- Economic and physical operability

The amount of productive forest land that is economically and physically accessible by forestry operators is a key consideration in evaluating the available timber supply. Operability is the

presence or absence of physical barriers or limitations to harvesting, applicable logging methods, and the merchantability of stands.

Operability mapping in the Sunshine Coast TSA was completed by the BC Forest Service in 1992, with portions updated in 1998, and again in 2010 by licensees. The operability classification for the area formerly within TFL 10, was recently included to develop consolidated operability mapping for the current Sunshine TSA administrative boundary. Areas within the consolidated operability mapping that were previously harvested and areas that overlap with near-term harvest plans were included in the THLB as operable.

In the AFLB of the Sunshine Coast TSA 156 690 hectares were classified as inoperable, while the net area excluded from the THLB was 58 057 hectares.

District staff expressed concern that the operability mapping may overstate the current operable land base, given the age of the mapping, current technology, and markets. The configuration of the TSA makes the timing and logistics to access remote areas favorable only under certain operational and economic conditions that may not align with the minimum harvestable criteria applied in the analysis. In addition, larger volumes need to be available to access certain woodsheds to cover mobilization and demobilization costs.

A Nation indicated that the optimization model used to complete the analysis is overly optimistic and may not capture operational reality. I agree with the concerns that operability mapping may be overstated and optimistic. As discussed under '**Reasons for Decision**', I will consider that the current practice base case timber supply was overestimated by an unquantified amount to account for optimistic operability.

After the analysis an area of concern was identified. A forest service road that accesses 533 hectares of THLB in the McNair watershed, is currently being assessed by Engineering Branch. The road is likely to be decommissioned and closed, approximately halfway up the watershed. District staff confirmed that half of the THLB in the McNair watershed should be removed, as once the road is closed, there is no plan to reopen it.

Therefore, I conclude that the current practice base case overestimated timber supply by about 0.1 percent. I will account for this overestimation in my determination as discussed under '**Reasons for Decision**'.

- Deciduous forest types

In the Sunshine Coast TSA, the AAC has included a deciduous and/or red alder partition since 1989. The AAC in place prior to this determination included a partition of 95 000 cubic metres for red alder-leading stands with at least a 50 percent deciduous species by volume, and a further 3000 cubic metre partition attributable to all other deciduous-leading stands.

In the current practice base case, birch and aspen-leading stands were removed from the THLB, while cottonwood/maple and red alder-leading stands remained in the THLB. Cottonwood/maple and red alder-leading stands contributed on average 83 434 cubic metres per year over the first 50 years of the current practice base case projection equating to 7.1 percent of timber supply on average.

The full red alder partition volume was tenured under a Non-Replaceable Forest Licence (NRFL), but that licence expired on July 3, 2016, and the red alder apportionment has been unharvested since. Currently there are several deciduous NRFL tenures held by First Nations in the TSA. Discussed further under '*Undercut and unused AAC disposition plan*', 1.13 million cubic metres of deciduous volume has been generated from the uncommitted deciduous apportionment, along with issued tenures that have underperformed.

Issued red alder-leading licences require deciduous volume to comprise at least 50 percent of a sale. In the past, there has been occurrences where these licences maximized the harvesting of coniferous volume, such as Douglas-fir, and disposed of the deciduous volume rather than utilize it. Over time these blocks have become orphaned, as accessing these areas would require re-developing roads and evaluating if the deciduous timber is still viable. Additionally, for a deciduous partition to be feasible, there needs to be intentional management for the partition by replanting stands with deciduous species, ensuring viable stands remain on the land base into the future.

After discussions with staff, I conclude that it is unlikely that there will be harvesting from red alder-leading and deciduous-leading stands. I am concerned that if the partitions remain in place, more desirable coniferous timber could be targeted under the deciduous tenures, potentially creating sustainability issues in the coniferous profile. As discussed under '**Reasons for Decision**', I will reduce the current practice base case harvest projection by 7.1 percent to account for the removal of deciduous-leading and red alder-leading stands and I will discontinue the partition. I am aware that there are licences in place and there remains substantial unused deciduous volume. If licensees are successful in harvesting any of the existing deciduous volume, I will revisit whether there is a need for a partition in future AAC determinations.

- Riparian management

Riparian areas are transition zones between aquatic areas such as streams or wetlands, and drier upland areas. Riparian areas provide habitat for various plant and animal species and provide for habitat connectivity. Riparian management objectives have been established to minimize or prevent impacts of forest and range practices on these aquatic resources. Riparian areas along lakes, wetlands, and streams provide key habitat for fish and wildlife and help conserve water quality and biodiversity. The FPPR requires protection of riparian areas.

The FPPR defines riparian classes and specifies default minimum widths of reserve and management zones for streams, wetlands, and lakes. In the current practice base case, once riparian features were classified, they were buffered according to FPPR, Forest and Range Evaluation Program (FREP) data, and riparian management practices as outlined in licensees' Forest Stewardship Plans.

Stream classification is dependent on variables such as stream width, fish presence, and community watershed status. In the Sunshine Coast TSA there is some operational data available which assigns a classification to specific portions of streams, but there is no single dataset which provides a classification for each stream. In the analysis, a modelled fish passage dataset, created for strategic level analysis to prioritize sites for culvert assessment and remediation by the Ministry of Environment (MoE), was used to classify streams, in combination with stream order data, and the community watersheds. The MoE dataset is based on the Freshwater Atlas stream network which is derived from the Terrain Resource Information Management (TRIM) I stream data. The area of riparian within the AFLB for the Sunshine Coast TSA is 15 135 hectares while the net area excluded from the THLB is 8802 hectares.

The TRIM I documentation notes a common under-representation of the number of streams in the wetter, coastal areas of the province and remarks that field surveyors may regularly find small streams which do not exist in the data. A licensee inquired if there would be an allowance made for streams that do not exist in the TRIM database but are found and dealt with during operational planning. I acknowledge that there is a known under-representation of small streams in the dataset that results in a small unquantified overestimate of timber supply.

Wetlands classified as W1 to W4 had buffers applied individually with the assumption that identified buffers when merged, would approximate the retention required for W5 wetlands.

The analysis did not factor in the outer perimeter of the wetland complex, resulting in a negligible overestimate of timber supply.

Streams that are less than three metres wide and are non-fish bearing are classified as S6 streams. No buffer was applied to S6 streams in the analysis as a one metre buffer was too small resolution to be considered in a strategic landscape-level analysis. Analysis staff estimate that employing buffers on S6 streams would reduce the current practice base case THLB by 401 hectares, not considering the overlap with aspatial wildlife tree retention areas.

I note that the number of small streams in the dataset is likely underrepresented, W5 wetlands were not appropriately modelled, and S6 streams were not buffered due to the scale of the analysis. I conclude that these elements combine to overestimate the current practice base case timber supply by 0.2 percent, which I will discuss further under ‘**Reasons for Decision**’.

- Stand-level biodiversity

Managing for stand-level biodiversity provides important structural attributes in managed stands such as coarse wood debris, tree species diversity, and wildlife trees. The FPPR requires that enough suitable trees be retained at the stand level to provide wildlife habitat and biodiversity. Specifically, the FPPR requires licensees to retain seven percent of the total area harvested over a twelve-month period as WTRA with a minimum of 3.5 percent retained for each cutblock. There are 25 landscape units within the Sunshine Coast Natural Resource District. Plans for sustaining biodiversity have been established for some of these landscape units, with legal WTRA targets defined by landscape unit and BEC zone, superseding the FPPR requirement of seven percent.

In the current practice base case, existing WTRAs were spatially excluded from the THLB as identified in Reporting Silviculture Updates and Land Tracking System (RESULTS) for blocks harvested between 2011 and 2020. Overlaps with other forest values such as riparian reserve zones, were accounted for through the netdown process. For future WTRAs, the THLB was reduced to meet the legal targets identified in the landscape-unit plans.

Through the period of 2011 to 2020, actual WTRA percentages have exceeded the legally established targets. Analysis to compare the impact of future WTRA levels based on licensee practices instead of the legal minimums indicated that the current practice base case timber supply is overestimated by 0.8 percent.

The ‘*Guiding principles for AAC determinations*’ state my decision must reflect current licensee management practices. Under ‘**Reasons for Decision**’, I will consider a decrease of 0.8 percent to the current practice base case timber supply projection to account for the underestimation of areas removed for future stand-level retention.

- Volume estimates for managed stands

Managed stands are those stands that have already been harvested and reforested. An ecological framework was used to develop analysis units for managed stands. An analysis unit is a grouping of similar forest area with the objective of simplifying the analysis and the interpretation of analysis results.

For this analysis, managed stands were defined as those stands established after 1977, with the addition of Douglas-fir leading stands established between 1957 and 1976 in BEC units where most of the previous juvenile spacing and/or fertilization occurred. Managed stand yield projections were produced using the Tree and Stand Simulator (TASS) model. TASS version 3.0 was used to generate yields for pine and spruce while all other species used TASS version 2.07.

To verify that managed stand growth aligns with the TIPSYS volume projections FAIB uses a Young Stand Monitoring (YSM) sampling program across the province. There are 15 YSM plots in the Sunshine Coast TSA, with only eight plots overlapping the THLB. On the THLB, the

average TSR yield projection is within the 95 percent confidence interval of the average YSM TASS yield projection throughout the age range. On the full range of 15 samples (within and outside the THLB), the average TSR yield projection falls below the 95 percent confidence interval of the average YSM TASS yield projection above 90 years.

I note that YSM sample data suggests that the MSYT are within the 95 percent confidence interval of the YSM projection on the THLB, but because of the small sample size, the difference in volume cannot be quantified with statistical rigor. Under '**Implementation**', I ask FAIB staff to establish more YSM plots in the TSA to better quantify the difference in yield between projected managed stand yield tables and actual measured volume.

- Minimum harvestable criteria

Minimum harvestable criteria are used to define the age at which existing and future managed stands become merchantable and available for harvest. Most stands will not be harvested until well past the minimum criteria in order to meet forest level objectives where different resource values take precedence such as old forest retention for biodiversity.

In the current practice base case, the minimum harvestable criteria for stands established prior to 1977, referred to as natural stands, was set to age 40. For managed stands the minimum harvestable criteria was set to the age when a stand meets both of the following criteria:

- Minimum volume of 300 cubic metres per hectare for conventional harvesting and 400 cubic metres per hectare for helicopter harvesting. The minimum volume for alder leading stands was 250 cubic metres per hectare.
- The age at which 95 percent of its culmination of mean annual increment (CMAI) is achieved.

The managed stands minimum harvestable criteria assumptions were derived from operational practices, as over the past decade less than one percent of the total harvest was taken from stands below the minimum volume criterion described above.

With the natural stand minimum harvestable age set to 40, approximately 1.2 percent of the short-term harvest in the current practice base case came from younger natural stands that were previously harvested. Incorrect stand attributes, particularly crown closure, led to relatively low yields for these areas. The forest estate model interpreted these stands as good candidates for harvesting and establishing a new crop of trees with superior managed stand yields. In addition, there was no requirement in the current practice base case for younger natural stands to meet the CMAI age or minimum volume criteria that were required for the managed stands. This allowed any natural stand over 40 years to be immediately available for harvest in the model, which does not align with licensee current practice.

An additional sensitivity analysis was developed to address these issues, by altering the minimum harvestable criteria for natural stands by the following:

- Applying age at 95 percent of CMAI and minimum volume criteria.
- Revised the minimum harvestable age of previously logged natural stands with problem low yields from 40 to 85 years.

Implementing the revised criteria reduced the timber supply by 4.3 percent in the short term (years 1 to 10), 1.4 percent in the mid term (year 11 to 50), and 0.3 percent in the long term (year 51 to 300). I note that the reductions shown in the sensitivity analysis are overstated as the yields projected for the stands with problem data remained uncorrected in the sensitivity analysis.

A licensee questioned if a lower volume threshold for helicopter harvesting in managed stands limited to Douglas-fir and cedar volume would be a more realistic way to select viable helicopter harvesting opportunities. I recognize that there are multiple ways to reflect helicopter harvesting opportunities. The increase in volume to 400 cubic metres per hectare was intended to reflect the larger piece size requirements, since larger piece sizes with higher value are required to offset expensive harvest systems. I conclude that the method used in the analysis to identify the minimum harvestable criteria for helicopter accessible stands was appropriate.

I also conclude that I need to account for the short-term impact of the additional sensitivity analysis. The sensitivity accounts for two issues; the first was stands with uncorrected problem low yield data. In the base case these would have been harvested in the first decade, and mostly offset by uncorrected low volume attributes. The second impact results from applying the CMAI and minimum volume criteria to natural stands, harvested in the short- and mid-term. I conclude the mid-term impact of 1.4 percent is a reasonable estimate to account for the second issue, and that the impact from the first is minimal, 0.1 percent. Under '**Reasons for Decision**', I will consider an approximated reduction of 1.5 percent to the current practice base case timber supply projection to account for errors in the modelling of minimum harvestable criteria in natural stands.

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

As noted in Table 1, I have considered factors related to regeneration delay and backlog not satisfactorily restocked and I find them to have been appropriately accounted for in the current practice base case, with no further comment required.

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

As noted in Table 1, I have considered factors related to silviculture systems and incremental silviculture and I find them to have been appropriately accounted for in the current practice base case, with no further comment required.

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

- Dead potential volume – 2006 coastal log grade changes

The current practice base case analysis for the Sunshine Coast TSA did not account for dead potential volume, as growth and yield projections do not account for the volume of dead trees that could potentially be used as sawlogs. In 2006 the Ministry of Forests released a report titled, *Summary of Dead Potential Volume Estimates for Management Units within the Coast Forest Region*. Data sources for the report came from inventory audit plots, VRI Phase II ground samples, permanent sample plots, and temporary sample plots.

Utilizing 76 VRI samples, the report indicated that the component of dead potential could be up to 4.2 percent of the green volume for the forested land base over 60 years of age within the TSA. This value represents the maximum amount of volume from dead timber, but it is not clear how much dead volume is actually recovered.

I have decided that the dead potential volume will be prorated to only include western redcedar, which comprises approximately eight percent of the volume on the THLB. Western redcedar is rot resistant and I consider that this volume is likely economical to harvest. Accounting for western redcedar dead potential volume results in a 0.3 percent underestimation of the current practice base case timber supply and I will discuss this further in '**Reasons for Decision**'. If

endemic dead volume is utilized from other species, it will result in incremental timber supply that I did not include in my determination and will generate a more robust timber supply.

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

- Scenic resources - visual quality objectives

Visual quality objectives (VQO) prescribe the extent of forest alteration that can result from the size, shape, and location of cutblocks and roads. On May 16, 1997, scenic areas and VQOs were established in the Sunshine Coast Natural Resource District, under the provisions of the Operational and Site Planning Regulation. A small portion of TFL 39 was added to the Sunshine Coast TSA in 2012. On June 19, 2009, scenic areas and VQOs were established in TFL 39 under a GAR Order.

In the current practice base case, the VQOs were modelled according to the 2003 *Bulletin – Modelling Visuals in TSR III* for each visually sensitive area. The VQOs were modelled by specifying a percentage of forest land within each visual area that could be below a given visually effective green-up height. The percentage modelled was the maximum of the permissible range of alteration of forested area.

A sensitivity analysis replaced the existing visual landscape inventory and associated VQOs with a set of visually sensitive areas that were being proposed in a GAR Order. When the proposed visually sensitive areas were used, short-term timber supply was reduced by 7.5 percent compared to the current practice base case.

On September 15, 2022, after the analysis was completed, an updated GAR Order cancelled the previous designations and established new scenic areas and VQOs. The final GAR Order was a modified version of the proposed visually sensitive areas that were used in the sensitivity analysis. Generally, the VQOs within the shísháhl swiya were adjusted back to the previously approved VQOs until the shísháhl Nations Modernized Land Use Plan is completed.

In the sensitivity analysis the amount of AFLB and THLB overlapping with the visually sensitive areas in the draft GAR Order was 23 percent greater than the overlap in the current practice base case. The visually sensitive areas from the final GAR Order overlap with the AFLB and THLB by an increase of 12 percent compared to the current practice base case. FAIB staff estimated that the final GAR Order would reduce timber supply by 3.9 percent. Under **‘Reasons for Decision’**, I will account for a 3.9 percent overestimation of timber supply in the current practice base case harvest projection.

- Community watersheds

The FPPR sets out objectives for water management in community watersheds. Within the Sunshine Coast TSA, 23 of the 26 designated community watersheds overlap with the AFLB for a total of 14 923 hectares. Forest practices within community watersheds are typically guided by hydrological assessments, with licensees abiding by the recommendations of the hydrologist.

In the current practice base case, a forest cover requirement maintained a maximum of five percent of the AFLB within each community watershed less than five metres in height over the planning horizon. This was intended to mimic a harvest restriction of one percent per year, as over the past decade, less than one percent of the harvested area in the TSA has come from within community watersheds.

During the engagement period members of the public brought forward the following suggestions and concerns:

- Protection of water supply must be given priority over the economic benefits of logging.
- We request that the 10-year logging plan consider stopping all logging activities on Mt. Elphinstone in and above the Chaster Creek watershed until such time as a full watershed assessment has been completed.
- Maintaining forests slows the movement of water downslope which, in turn, helps to recharge the aquifers. Keeping the high elevation forests intact delays the rate at which snow melts, also a benefit to the aquifers.
- Logging has led to siltation and risks to both water quality, quantity, and reliability.
- Clearcutting forests at the top of our watersheds combined with emergency weather events, generates more water than usual that needs to be absorbed.
- Protect drinking water source and recharge areas.
- Research has repeatedly shown that the hydrology of watersheds is much more sensitive to upstream logging than traditionally believed.
- Protect communities from the downstream impacts of flooding.
- Watershed resilience and drinking water protection are not part of the analysis. We would like to see variables associated with climate change and watershed resilience included in a sensitivity analysis.

Reducing or eliminating harvesting in community watersheds are land use decisions which are beyond the scope of the deputy chief forester. I also do not have the authority to direct where and how harvesting occurs. Forest practices within community watersheds are legislated by FRPA community watershed objectives, and are typically guided by hydrological assessments completed, as required by a FSP, for each watershed.

I recognize the significant importance of hydrology, but for this determination, I am satisfied that the forest cover constraint limiting the rate of harvest in community watersheds was appropriate. I will not make any adjustments to the current practice base case harvest projection to account for community watersheds.

- Strategic land use plan for the shíshálh Nation

The shíshálh Nation Strategic Land Use Plan is a high-level strategic plan developed in 2007 that expresses the land use interests of the shíshálh Nation. The plan designates eight conservation areas that cover approximately 70 491 hectares, 14 cultural emphasis areas that cover 140 212 hectares, with the remaining land base designated as a stewardship area.

In October 2018, the shíshálh Nation and the BC government signed the Shíshálh-BC Foundation Agreement that provides direction for the development of a Modernized Land Use Plan within the shíshálh territory. As the Modernized Land Use Plan is in progress but has not yet been legally established, only the portions of the shíshálh Nation Strategic Land Use Plan that are currently being implemented in the TSA were considered in this TSR.

As discussed in ‘*Base case for the Sunshine Coast TSA*’, the current practice base case scenario, following the Strategic Land Use Plan, removed conservation areas, stands older than 140 years, and coastal Douglas-fir biogeoclimatic zones within the shíshálh swiya from the THLB. These areas remained in the THLB of the established base case scenario. Removing the areas specified

in the Strategic Land Use Plan from the current practice scenario THLB resulted in a 14.2 percent reduction in short-term timber supply compared with the established scenario.

Another Nation and a licensee also stated a preference for the current practice base case scenario where the shíshálh Land Use Plan was considered. I agree and have referenced the current practice base case scenario throughout my decision.

A licensee commented that stands greater than 140 years old should not be removed entirely from the current practice base case THLB, as the current process is to review old forest stands with the shíshálh Nation to determine whether harvest can proceed. They also indicated that the spiiyus swiya conservation area should not be excluded from the current practice base case scenario as timber harvesting is occurring in this area under specific conditions.

I met with the shíshálh Nation, and they confirmed that timber harvesting has been occurring within the spiiyus swiya conservation area under enhanced stewardship measures and within the confines of maintaining conservation values. I have made adjustments under ‘*Stand-level biodiversity*’, ‘*Northern Goshawk wildlife habitat areas*’, ‘*Ungulate winter range*’, and through referencing the current practice scenario as the base case to account for the various enhanced stewardship measures being practiced in the spiiyus swiya conservation area.

The Nation also confirmed that there are agreements that will allow timber harvesting in the future. Over the past decade, 5.9 percent (683 hectares) of the timber harvest in the TSA has occurred within the shíshálh conservation areas, nearly all of it (5.8 percent) from the spiiyus swiya conservation area. This level of harvest is directly proportional to the rate of harvest within the rest of the TSA. Retaining the 9259 hectares of THLB in the spiiyus swiya conservation area results in a 5.5 percent increase in timber supply compared to the current practice base case.

As harvesting is occurring within the conservation zone, proportionally to the THLB profile of the TSA, I will account for a 5.5 percent underestimation of timber supply, as discussed under ‘**Reasons for Decision**’. I request that harvest levels within the spiiyus swiya are monitored so that their contribution to timber supply can be re-evaluated during the next timber supply review.

I am cognizant of the importance of coastal Douglas-fir biogeoclimatic zones located outside of the swiya and I anticipate that the management of these areas will be resolved through the FLP process.

As a licensee noted, there has been occasional harvest occurring in stands greater than 140 years. I note that the general approach is to not harvest in these stands. Though my decision does not preclude harvest in these areas, I will not make any adjustments for incremental harvesting for stands older than 140 years in the swiya.

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

- Avoidance areas

Avoidance areas were identified by District staff and licensees as areas where there is either agreement to not harvest or there has not been any harvest occurring. The avoidance areas are generally tied to First Nations areas of interest. Harvesting at reduced rates in the urban interface zones is discussed under ‘*Recreation resources*’.

In the Sunshine Coast TSA, avoidance areas total 14 863 hectares of the AFLB. The established base case scenario retained the avoidance areas in the THLB, while the net area excluded from the current practice base case scenario THLB was 7568 hectares. Removing avoidance areas

from the current practice scenario THLB resulted in a 4.1 percent reduction in short-term timber supply compared with the established scenario.

There has been a small amount of harvest in the avoidance areas since 2014, which amounts to approximately three percent of the AFLB within the avoidance areas. A total of 417 hectares of harvesting has occurred in the THLB defined in the established scenario, which amounts to approximately 5.5 percent of the total avoidance area THLB. District staff inform me that any harvest that has occurred in the last 10 years within avoidance areas was most likely done via a First Nation partnership or under a First Nation Licence.

A member of the public stated that all the Sunshine Coast TSA THLB on Gambier Island should be removed. Staff informed me that the intent was to exclude Gambier Island from the current practice scenario THLB as an avoidance area, but an error was found after the analysis was completed, noting that it had not been excluded. Removing Gambier Island from the current practice scenario THLB results in a 0.1 percent overestimation of timber supply.

I conclude that the small amount of harvesting occurring in avoidance areas balances out the error of not excluding Gambier Island from the THLB. For this determination, I will not make any adjustments to the current practice base case harvest projection to account for avoidance areas.

- Undercut and unused AAC disposition plans

In January 2018, the Ministry introduced a *Policy Regarding the Administration of Unharvested Volumes, Uncommitted Volumes and Unused BCTS Volumes* (collectively referred to as accumulated volume). The current practice base case harvest projection is predicated on the condition of the forest, including the amount of merchantable timber growing stock present, as of the date of the timber supply analysis. The standing forest was not depleted to account for potential harvesting of any accumulated ('undercut') volume in the Sunshine Coast TSA. Therefore, any coniferous volume harvested (including accumulated volume) that is above the AAC set by this determination, constitutes use of the growing stock at a greater rate than projected in the current practice base case, if the AAC was fully utilized.

Regional Tenures staff indicate that 1 829 832 cubic metres of uncommitted volume has accrued in the Sunshine Coast TSA between January 2012, and December 31, 2023. This amount excludes BCTS volume. A total of 1.13 million cubic metres has been generated from the uncommitted deciduous apportionment along with unharvested volume from deciduous tenures that have underperformed. Currently, 5000 cubic metres of deciduous volume is committed to a licence, with 1 829 832 cubic metres of uncommitted volume remaining available for the Minister to consider disposing through new forest tenures.

Within the current business cycle (2019/20 to 2023/24) BCTS has an accumulation of 159 581 cubic metres of unused volume that they will be carrying forward into the next business cycle.

A sensitivity analysis was conducted where the 5000 cubic metres of committed deciduous volume was incrementally added to the current practice base case harvest request over the first 10-year period. Adding the committed volume had no significant impact on the short-, mid-, or long-term harvest flow. A second sensitivity analysis incrementally added the total accumulated volume recorded at the time of the analysis, 1 745 846 cubic metres (669 353 cubic metres of coniferous volume and 1 076 493 cubic metres deciduous volume) to the harvest request over the first 10-year period. The short-term timber supply increased by 13.7 percent, while the mid- and long-term timber supply decreased by 4.7 percent and 2.4 percent, respectively.

Some licence holders within the Sunshine Coast TSA have requested forest tenures that are sourced from the unharvested, uncommitted, and unused volumes. This request is beyond the

scope of my authority. The Minister or delegate, and the Executive Director of BCTS are authorized to dispose of accumulated volume. At the time of this determination, I was not informed of any disposition plans for the accumulated volume beyond the 5000 cubic metre deciduous licence. I note that any allocation and utilization of volume above what is presented in the current practice base case, and above what is provided for within my AAC, puts the sustainable timber supply for the TSA at risk. I will therefore not make any adjustments to the current practice base case harvest projection to account for accumulated volume.

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

As noted in Table 1, I have considered factors related to harvest sequencing and economic and employment implications and I find them to have been appropriately accounted for in the current practice base case, with no further comment required.

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

- Carbon sequestration

The ‘carbon cycle’ refers to the constant movement of carbon from land and water through the atmosphere and living organisms. Forests are a vital part of the carbon cycle, both storing and releasing carbon in a dynamic process of growth, decay, disturbance, and renewal, thus making them important from a carbon and climate change mitigation perspective.

Forests act either as carbon sources or carbon sinks. A forest is considered a carbon source if it releases more carbon than it absorbs. A forest is considered a carbon sink if it absorbs more carbon from the atmosphere than it releases. The net ecosystem carbon balance (NECB) is used to describe the net change between the given ecosystem and atmosphere. If the atmosphere is used as a base, a positive NECB means the atmosphere carbon pool is increasing and the given ecosystem is a carbon source, while a negative NECB means the atmosphere carbon pool is decreasing and the ecosystem is a carbon sink.

Five terrestrial carbon pools have been defined by the Intergovernmental Panel on Climate Change (IPCC): above ground biomass carbon, below ground biomass carbon, dead organic matter, forest floor litter, and soil organic carbon. The sum of all five pools is referred to as total ecosystem carbon (TEC).

A carbon analysis was completed using both the established and current practice base case scenarios as the input data and the output of the first 100 years. Only timber harvesting on the THLB and wildfire on the areas outside the THLB were considered. In accordance with the British Columbia Greenhouse Gas Offset Protocol: Forest Carbon (Draft, 2022), the retention factor for harvested wood product (HWP) in use after 100 years was 0.06, and the HWP in landfill was treated as a one-time emission.

TEC decreased by about 10.4 percent in the established scenario and 7.8 percent in the current practice scenario. The TEC in the areas outside the THLB increased by approximately 2.2 percent in the established scenario and approximately 2.8 percent in the current practice scenario, respectively. The TEC in the THLB decreased by about 25.6 percent in the established scenario and decreased by about 25.4 percent in the current practice scenario.

The TSA is a carbon source, with an annual carbon loss of about 1.02 Mt CO_{2e} for the established scenario and about 0.98 Mt CO_{2e} over the 100-year analysis in the current practice scenario. The largest carbon source is timber harvesting, which releases approximately 1.1 Mt CO_{2e} annually contributing 56 percent of the total green house gas (GHG) emissions in the established scenario

and approximately 0.9 Mt CO₂e annually contributing 54 percent of the total GHG emissions in the current practice scenario. Slash burning accounted for 35 percent and 34 percent of the total GHG emissions in the established and current practice scenarios, respectively. The remainder of the GHG emissions contribution is from wildfire emissions accounting for 9 percent and 12 percent in the established and current practice scenarios, respectively.

There was input from the public that carbon emissions resulting from clearcut logging in BC are a real factor in human caused climate change. Another member of the public indicated their desire to see rotation ages increased by 20 years to help sequester more carbon. There were many comments stating that a significant reduction in harvest rate is required to leave more trees to take up carbon from the atmosphere to help meet the Provincial 2030 goal of reducing our emissions.

The carbon analysis conducted for the Sunshine Coast TSA provides useful information to understand the impact of the base case harvest projections on forest carbon and greenhouse gas emissions. Specifically, I note the significant loss of ecosystem carbon from slash burning and I urge licensees to increase biomass utilization to reduce greenhouse gas emissions. Wildfires were a greater contributor in the current practice scenario, as there is a larger area outside the THLB. I recognize that while the modelled TEC is declining in both base case scenarios, there is less decline in the current practice base case. I will not make any adjustment to the current practice base case harvest projection to account for forest carbon. Other reductions I make to the current practice base case harvest projection will further reduce carbon emissions.

- *Climate change*

As discussed under my ‘*Guiding principles for AAC determinations*’, climate change is a key area of uncertainty for the Sunshine Coast timber supply review. Climate change is predicted to impact forest ecosystems in several ways including a general increase in temperatures, change in precipitation patterns, and an increase in the frequency and severity of disturbances including wildfires, floods, landslides, and occurrences of insects and disease. While the trends are generally consistent, the specific magnitude of these changes, their spatial and temporal distribution, and impacts to timber supply are uncertain.

Utilizing the Pacific Climate Impact Consortium meteorology for northwest North America dataset, trends were evaluated for the Sunshine Coast TSA between the years of 1942 and 2012. There was no significant change in mean annual precipitation, but there was a significant increase of 24.5 percent in spring precipitation. During the same time period, mean annual temperature increased significantly by 1.0° C. For seasonal change in mean temperature, winter (1.6° C) and summer (1.1° C) have warmed the most, followed by spring (0.8° C). There is currently no significant change in extreme annual maximum temperatures in this historical analysis. There was no significant change in extreme annual minimum temperatures in any season except spring, where the extreme annual minimum temperature has increased by 3.0° C.

Future climate change projections for the Sunshine Coast TSA were analyzed using ClimateBC, v7.21. Climate model projections for 2041 to 2070 show minor increases in annual precipitation between the climate modelling period of 2041-2070 and the baseline period of 1961-1990. Fall may see the largest increase (10.0 percent) and summer will likely be drier (-3.1 percent). Mean annual temperatures may increase by 3.0° C with summer mean temperatures likely to increase the most (3.7° C), followed by fall (3.0° C), then spring (2.7° C), and least in the winter (2.5° C). Extreme annual maximum temperatures may increase by 3.1° C and extreme annual minimum temperatures may increase by 4.4° C. Seasonal mean maximum temperatures may increase the most in summer months (3.4° C) and least in the spring (2.6° C). Seasonal mean minimum temperatures may increase the most in summer (4.1° C) and the least in winter (2.2° C).

Multiple derived climate variables are available in the ClimateBC model and were analyzed for their change between the climate modelling period of 2041-2070 and the baseline period of 1961-1990. Annual precipitation as snow is projected to decrease by 46.8 percent. Larger declines may occur in non-winter months such as spring and summer (modelling accounts for all elevations in the TSA) and these values likely indicate a shorter snow season. Growing degree days and frost-free periods may both increase, however, so will demands for moisture as indicated by a 34.8 mm change in climate moisture deficit.

The significant projected increases in temperature change coupled with a decline in summer precipitation are concerning for increasing wildfire and drought risk. The current warming trends are conducive to forest pest survival as well as some insects can shorten their life cycles and therefore increase populations. Warmer and wetter spring conditions are conducive to increasing rust incidence or other pathogens. Experts indicate that for the Sunshine Coast TSA, the most likely short-term risk would be dieback of western redcedar and an increase in Hemlock Looper.

For this review, I was presented with a sensitivity analysis that examined the impact on timber supply of western redcedar dieback. Based on the Forest Health Officer recommendations, all the redcedar on existing stands on very dry to fresh sites within the CDFmm, CWHdm, and CWHxm subzones was removed from the THLB. In addition, half of the redcedar volume was removed on existing stands for remaining dry and zonal sites of the same subzones. Future managed stand yield projections on these sites replaced redcedar with other acceptable species such as Douglas-fir and western white pine. The area impacted by these changes amounted to 5.3 percent of the current practice base case THLB. Only minor changes were observed in the harvest level throughout the entire planning period.

There was substantial public input regarding climate change during the TSR process. The following is an abbreviated summary of the comments received:

- The climate crisis requires a government committed to conserving forests and protecting watersheds.
- Need to preserve as much forest as possible for carbon sequestration and wildlife protection.
- Continuing forestry based on current practices is clearly not the way to go as the changing climate does not allow this.
- Conduct an in-depth socio-economic review of the Sunshine Coast TSA, which focuses on the short- and long-term potential effects of climate change.
- Account for effects of climate change on forest health and resilience, biodiversity, and water supply.
- Protect communities from wildfire.
- The TSR does not consider the anticipated effects of climate change on forest health, resilience, and biodiversity.
- Resilient, biodiverse forests should be left alone and considered a ‘bridging technology’, buying time for other sectors to decarbonize.
- Our plantations are not growing at the rates predicted by our growth and yield models, because of climate change and pest damage.
- The chief forester must consider the likelihood of natural disturbances due to climate change and be cautious in setting the AAC.

- Retaining intact forests is the best solution to mitigate impacts from increasing temperatures. Intact forests, not clearcuts and tree farms, are more resilient in withstanding changes to hydrology from climate change.

A Nation expressed the concern that the TSR does not adequately predict the impacts of climate change. They stated that, at a minimum, estimates of the increased stress and mortality on trees and forested ecosystems must be factored in and precautionary estimates included in the determination process.

An alternative perspective was provided by a licensee regarding the potential positive effects a changing climate could bring:

- Increased productivity of forests at mid-elevations through reduced snow pack;
- Longer growing seasons;
- Warmer soil temperatures; and
- Upslope species migration such as Douglas-fir.

In response, I note that while the increases in growing degree days and frost-free period may mean some vegetation will see enhanced growth, moisture availability may limit that potential.

I acknowledge the substantial concern regarding climate change. Given the uncertainty about the rate and specific characteristics of climate change, and the uncertainty around the impact to the forest and how forest managers will respond, it is not possible to quantify climate change impacts on timber supply with confidence. New tools are currently being developed to account for ecosystem carbon, assess the risks associated with drought and natural disturbances, and develop an appropriate response. A recent paper was prepared for FAIB and the Forest Carbon and Climate Services Branch entitled, *Approaches to Advance Climate Change Considerations in Timber Supply Reviews: A Discussion Paper*. This paper provides useful ideas for the Ministry to understand options for better incorporating climate change in timber supply analysis.

As these tools are validated and as more information becomes available, they will be incorporated into future timber supply reviews. In the absence of clear, climate adaptive management responses that would mitigate the likely climate change impact, this timber supply review incorporated climate change as follows:

- Assessing the impacts of natural disturbance on the landscape;
- Understanding more general impacts in the short- and long-term (increase and decrease in yields, and increase and decrease in THLB areas); and,
- Assessing the impact of possible western redcedar dieback on very dry to fresh sites.

I agree that the climate is changing and that this introduces uncertainty to the harvest projections presented to me. Under '**Reasons for Decision**', I will account for an unquantified overestimation of the current practice base case timber supply due to projections of climate change.

- *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 provincial cumulative effects team has developed a framework, the cumulative effects framework (CEF), for assessing cumulative effects on high priority values and implementing cumulative effects assessments across the province.

Currently, the CEF in the South Coast Region has developed assessment protocols for aquatic ecosystems, forest biodiversity, old growth, forest visual quality, Grizzly Bear, Roosevelt Elk, and Marbled Murrelet that are approved by the natural resource sector for implementation. The Howe Sound Cumulative Effects Project is the primary project in the South Coast Region. However, the project area covers only a small portion of the TSA, therefore, no additional practices to address cumulative effects were modelled in the current practice base case.

I conclude that the current practice base case reflects current management, the 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 not make any adjustment to the current practice base case harvest projection to account for projected cumulative effects to forest values. As further information becomes available it will be incorporated into future AAC determinations.

- Forest landscape plan

Under Section 8 of the *Forest Act* the chief forester must consider information about the land base that includes forest composition and management, and the objectives for that land base, the region, and the province. A TSR is based on the current legal framework, legally established land use objectives, and demonstrated forest management practices. The TSR process was initiated in the Sunshine Coast TSA to set an updated AAC in order to maintain a sustainable harvest level while the FLP process is completed in partnership with First Nations.

FLPs will replace current forest stewardship plans as part of changes to BC's forest management regime, including the *Forest and Range Practices Act*. The key goals of FLPs are to:

- Identify where and how forest management activities can occur (i.e., timber harvesting, road layout, silviculture activities).
- Provide clarity on overlapping direction from strategic plans and land use objectives including wildfire risk reduction plans and access management plans.
- Efficiently address changing conditions (e.g. climate change, wildfires).
- Address the potential environmental impacts of timber harvesting activities.
- Consider cumulative effects to prepare for possible future forest conditions.

FLPs will not set new land use direction, but rather will help to align forest management direction from existing land use plans to the conditions and associated emerging issues specific to the plan area. FLPs may also include recommended planning guidelines to achieve outcomes associated with each of the plan's objectives. FLPs are intended to be iterative with a term of approximately 10 years.

FLPs align with the *B.C. Declaration on the Rights of Indigenous Peoples* and the *United Nations Declaration on the Rights of Indigenous Peoples*. They provide opportunities for Indigenous Nations to participate in forest planning and decision-making and must be developed in consultation and cooperation with Indigenous peoples whose rights may be affected and to reflect the right of self-government and self-determination of Indigenous peoples.

I am keenly aware of the FLP and the associated values being prioritized, and I have considered those values to the extent I am able to in this TSR. In subsequent AAC decisions I will account for management practices stipulated in the FLP and I am committed to determining a new AAC once the FLP is completed.

- Public engagement

The *Sunshine Coast TSA Data Package* (December 2021) was made available on the FAIB website for a comment period from December 13, 2021, to February 25, 2022. A total of

37 responses were received during the engagement period. On February 15, 2022, a presentation was given to the qathet Regional District by Ministry staff. On February 17, 2022, a two-hour virtual public information session was held. Approximately 20 members of the public attended the session. The most frequently expressed concerns were for climate change, ecosystem health, local citizens having increased input on land-use decisions, and forestry's negative impact on watersheds and downstream values.

The *Sunshine Coast TSA Discussion Paper* (March 2023) was made available on the FAIB website for a comment period from March 1, 2023, to May 1, 2023. On March 29, 2023, a 1.5-hour virtual public information session was held, with seven members of the public in attendance. A total of 927 written letter responses were received during the *Discussion Paper* engagement period, with 829 of those letters submitted using a template letter that was created on a local website. The responses contained concerns on the following topics:

Old growth:

- Preserve ancient forest.
- Remove all old growth from the THLB.
- Recruitment of mature forest to become old growth.
- Implementation of the Old Growth Strategic Review recommendations.

Prioritize non-timber values:

- Watershed function and drinking water.
- Biodiversity.
- Wildlife.
- Ecosystem function.
- Tourism/recreation.
- Species at Risk.

Climate change:

- Extreme weather events (fire/flood).
- Carbon.

I have reviewed all the comments and concerns received during the public engagement process and any responses provided by Ministry staff. For those factors where public input indicates contention regarding the information used, modelling, or some other aspect under consideration, I have provided an explanation of how I considered the essential issues raised and reasoning that led to my conclusions under the relevant sections of this document. From the significant number of public responses received, I have noted a strong theme for preservation and for taking a precautionary approach. I also note the limited feedback received from the public regarding concerns for the economy. Comments that were received during the *Data Package* and *Discussion Paper* engagement periods have been shared with the FLP team and I am pleased to hear that there has been significant public engagement at the FLP open houses.

- *Data concerns*

While completing the Sunshine Coast determination I have identified several factors where the best available data used in the analysis consisted of dated information sources. Factors with data

concerns previously discussed consist of ‘*Environmentally sensitive areas and unstable terrain*’, ‘*Economic and physical operability*’, and ‘*Volume estimates for managed stands*’.

In addition to the factors listed above, I note that the forest inventory and site productivity estimates used in the analysis also add uncertainty. The forest inventory is dated, as it is a combination of older forest cover inventory converted to the current vegetation resources inventory standard between 1991 and 1993. A re-inventory began in the summer of 2023, and is expected to be available by early 2027. Site productivity estimates for managed stands were sourced from TASS inputs from the Integrated Stewardship Strategy by analysis unit. I note that the site index may be skewed due to the aggregating of site index by analysis units.

I acknowledge that the above-mentioned data sources represented the best available information for use in the analysis. However, the age and quality of the data adds uncertainty to the current practice base case timber supply. I have identified these data uncertainties to ensure the planning table currently working on the FLP is aware of the data limitations.

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

As noted in Table 1, I have considered factors related to forest health and non-recoverable losses and I find them to have been appropriately accounted for in the current practice base case, with no further comment required.

Reasons for Decision

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

The current practice base case scenario shows that an initial harvest level of 1.272 million cubic metres can be maintained for 10 years before declining to a long-term harvest level of 1.224 million cubic metres.

I am satisfied that the assumptions applied in the current practice base case, for most of the factors applicable to the Sunshine Coast TSA, were appropriate including those detailed in Table 1 or as previously discussed in this rationale. However, I have identified some factors, which, considered separately, indicate that the timber supply may be either greater or less than that projected in the current practice base case. Some of these factors can be readily quantified and their impact on harvest projections assessed with reliability. Others may influence timber supply by adding an element of risk or uncertainty to the decision but cannot be reliably quantified at this time.

I have identified the following factors in my considerations as indicating that the timber supply projected in the current practice base case may have been overestimated, to a degree that can be quantified:

- *Northern Goshawk wildlife habitat areas*: Since the analysis was completed six WHAs have been approved, with an additional five WHAs that are moving imminently to decision. Exclusion of these areas from the THLB reduces the current practice base case timber supply by 0.8 percent.
- *Marbled Murrelet*: A Ministerial Land Use Objectives Regulation Order for the Recovery of Marbled Murrelet took effect on December 2, 2021. Retaining the suitable habitat required under the Order reduces the current practice base case timber supply by 5.5 percent.

- *Ungulate winter range*: There is Section 7 Notice UWR budget remaining, and licensees are respecting the draft Black-tailed deer winter range areas within the shíshálh Nation swiya. Removing the draft UWR polygons within the swiya from the THLB reduces the current practice base case timber supply by 0.5 percent.
- *Environmentally sensitive areas and unstable terrain*: There is uncertainty with the ESA mapping given its age. A sensitivity analysis evaluated the uncertainty of the ESA mapping by removing stands from the THLB that were on slopes greater than 70 percent with no harvest history and no overlap with the existing TSM. Matching licensee performance in these areas reduces the current practice base case timber supply by 2.0 percent.
- *Economic and physical operability*: District staff indicate that half of the THLB in the McNair watershed will become inaccessible due to the closure of the forest service road that accesses this drainage. Accounting for this access issue results in an overestimate of the current practice base case timber supply by 0.1 percent.
- *Deciduous forest types*: There has been poor performance in the partition for red alder-leading stands and the partition for all other deciduous-leading stands in the past decade. Removing these stands from the THLB results in a 7.1 percent overestimate of the current practice base case timber supply.
- *Riparian management*: The riparian dataset underestimates the number of small streams, the analysis did not factor in the outer perimeter of W5 wetland complexes, and a one metre buffer was not applied to S6 streams due to the resolution of the analysis. These elements combine to reduce timber supply by 0.2 percent.
- *Stand-level biodiversity*: Licensees have been consistently retaining a greater percentage of wildlife tree retention than the legal minimums that were modelled in the current practice base case. When future wildlife tree retention levels are based on licensee practices instead of the legal minimums the current practice base case timber supply is overestimated by 0.8 percent.
- *Minimum harvestable criteria*: Accounting for errors in the modelling of minimum harvestable criteria in natural stands results in a 1.5 percent overestimate of the current practice base case timber supply.
- *Scenic resources – visual quality objectives*: On September 15, 2022, after the analysis was completed, an updated GAR Order canceled the previous designations and established new scenic areas and visual quality objectives. Accounting for the new Order reduces the current practice base case timber supply by 3.9 percent.

I have identified the following factors in my considerations as indicating that the timber supply projected in the current practice base case may have been underestimated, to a degree that can be quantified:

- *Dead potential volume*: The volume from dead trees that could potentially be used as sawlogs was not accounted for in the current practice base case. Western redcedar is rot resistant and I consider that this volume is likely economical to harvest. Accounting for dead potential western redcedar volume results in a 0.3 percent underestimation of the current practice base case timber supply.
- *Strategic-land use plan for the shíshálh Nation*: The current practice base case removed conservation areas within the shíshálh swiya. However, harvesting is occurring and will continue to occur within the spipiyus swiya conservation area. Allowing the

9259 hectares of THLB within the spipiyus swiya to contribute to the current practice base case increases timber supply by 5.5 percent.

I have identified the following factors in my considerations as indicating that the timber supply projected in the current practice base case may have been overestimated, but are not quantifiable at this time:

- *Estimates for roads, trails, and landings:* The current practice base case did not account for future permanent access structures associated with roads, trails, and landings. This will reduce the long-term timber supply by a small unquantifiable amount.
- *Archaeological sites and cultural heritage resources:* Known archaeological sites in the Ministry's database have been removed from the THLB. However, there are likely unmapped additional archaeological sites that were not accounted for resulting in a small unquantified overestimate of the current practice base case timber supply.
- *Economic and physical operability:* The operability mapping in the TSA may be overstated and overly optimistic given the age of the mapping, current technology, markets, the geographic configuration of the TSA, and the optimization model. Accounting for these uncertainties results in an unquantified overestimate of the current practice base case timber supply.
- *Climate change:* There is substantial scientific agreement that the climate is changing, and the changes will affect forest ecosystems. The magnitude of the impact is difficult to quantify but climate change will result in an unquantified overestimation of the current practice base case timber supply.

In considering the above-mentioned influences, I find that the combined effect of accounting for the quantifiable factors represents a net overestimation of timber supply by about 16.6 percent. In addition, there were several factors mentioned above (*Estimates for roads, trails, and landings; Archaeological sites and cultural heritage resources; Economic and physical operability; and Climate change*) where I considered the impacts to the current practice base case timber supply to be overestimated by unquantified amounts. I conclude that taken together, these unquantified overestimations add some uncertainty to the current practice base case timber supply projection.

It is my expectation that there will be changes to the way that old forest is managed in the TSA. While the paradigm shift has begun with the TAP identifying priority at-risk forest, implementation of long-term measures for old forest management, including TAP polygons and other old forest, is expected to occur through the FLP and other processes, in collaboration with First Nations and input from the public. During that transition I expect some of the old forest contributing to the current practice base case harvest projection may be deferred from harvest.

When making AAC determinations, the chief forester can specify portions of the harvest attributable to different timber types, geographic areas, or types of terrain. This is referred to as an AAC partition. The purpose of a partition is to ensure that the harvest attributable to certain types of timber, terrain, or geographic areas of the TSA is not taken from another (potentially higher value) area or type of forest. A partition may also be applied to encourage use of the timber from different areas and timber types that may not be otherwise harvested.

As discussed under '*Landscape-level biodiversity*', I decided that there should be a partition specifying the maximum amount of the AAC I determine that may be harvested from older forests (older than 140 years), as well as from younger forests (140 years and younger). In the sensitivity analysis limiting the harvest of stands greater than 120 years old to 34 percent to reflect current practice, the age class breakdown showed stands older than 140 years old (age classes 8 and 9) contributed 25 percent of the harvest in the first decade. I will limit the

harvest of stands older than 140 years to 25 percent, understanding that a proportion of this will likely be deferred in the short term. Limiting the harvest of old forest may unintentionally lead to overharvesting the younger forest. To prevent the unintentional overharvest of young forest that may result from old- and mature-forest deferrals, I will specify a limit of 75 percent on the harvest of stands 140 years (age classes 1 to 7) and younger.

Since 1989, the Sunshine Coast TSA AAC has included a deciduous and/or red alder partition. As discussed under '*Deciduous forest types*', district staff have recommended that this species partition is no longer necessary as there has been very little harvest performance. If licensees are successful in harvesting any of the existing deciduous volume, I will revisit whether there is a need for a partition in future AAC determinations.

Following the comprehensive public review of the analysis results for the Sunshine Coast TSA, I have considered the many comments and concerns regarding harvest levels expressed by First Nations, licensees, and residents of the TSA. I heard from First Nations the importance of the forest sector to their communities and their desire to find the appropriate balance between timber harvesting and the protection of the environment. The factors where the impact to timber supply were quantifiable indicate that short-term timber supply in the current practice base case should be decreased by 16.6 percent. However, after considering the factors discussed above indicating that the current practice base case timber supply was overestimated but unquantified, I decided that the AAC for this TSA should be 1 050 000 cubic metres. As such, I will specify an AAC of 1 050 000 cubic metres comprised of two partitions, which is 17.5 percent below the current practice base case harvest projection. No more than 262 500 cubic metres (25 percent) may be harvested from stands older than 140 years old, and no more than 787 500 (75 percent) cubic metres may be harvested from stands 140 years and younger. I expect my decision, including my choice to reference the current practice base case and the further reductions I have made to the harvest projection, along with the partitions, will address the concerns raised by First Nations, licensees, and residents of the TSA.

Determination

I have considered and reviewed all the factors as documented above, including the risks and uncertainties of the information provided. It is my determination that a timber harvest level that accommodates objectives for all forest resources until the next AAC determination, reflects current management practices, as well as the socio-economic objectives of the Crown, can be best achieved in the Sunshine Coast TSA by establishing an AAC 1 050 000 cubic metres of which a maximum of 262 500 cubic metres may be harvested from stands older than 140 years, and a maximum of 787 500 may be harvested from stands 140 years and younger.

This new AAC is 12.3 percent below the current AAC of 1 197 466 cubic metres. This determination becomes effective on June 6, 2024, 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. As discussed under '*First Nations engagement*' and '*Forest landscape plan*', I have committed to determining a new AAC once the Sunshine Coast FLP is completed.

Implementation

In the period following this decision and leading to the subsequent determination, I encourage Ministry staff, other agencies, and licensees (as appropriate) to undertake or support the task noted below, the particular benefits of which are described in greater detail in appropriate sections of this rationale.

I recognize that the ability of all parties to undertake or support this project is dependent on provincial priorities and available resources, including funding. However, this project is

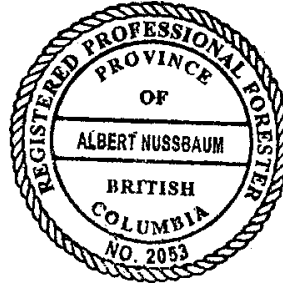
important to help reduce the risk and uncertainty associated with key factors that affect the timber supply in the Sunshine Coast TSA.

1. I request Ministry staff to work with First Nations and licensees to monitor and assess harvest performance within the partitions and report to me annually.
2. I ask FAIB staff to establish more YSM plots in the TSA to better quantify the difference in yield between projected managed stand yield tables and actual measured volume.



Albert Nussbaum, RPF
Deputy Chief Forester

June 6, 2024



Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (current to May 28, 2024), reads as follows:

Allowable annual cut

- 8** (1) The chief forester must determine an allowable annual cut at least once every 10 years after the date of the last determination, for
- (a) the Crown land in each timber supply area, excluding the Crown land in the licence areas of area-based licences, 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 respect of an allowable annual cut determined under this Act, the chief forester may, at any time, 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.]

(5.1) The chief forester may, at any time, amend or cancel a specification made under subsection (5).

(6) The minister must determine an allowable annual cut for each woodlot licence area in accordance with the woodlot licence for that area.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) each tree farm licence area

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

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

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

Section 4 of the *Ministry of Forests and Range Act* (current to May 28, 2024) reads as follows:

Purposes and functions of ministry

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

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

Appendix 3: Minister's letter of November 24, 2021



Reference: 268022

November 24, 2021

Diane Nicholls, R.P.F.
Assistant Deputy Minister and Chief Forester

Dear Diane Nicholls:

The *Forest Act* gives you the authority to determine an allowable annual cut (AAC) for each timber supply area and tree farm licence in the province and specifies what you must consider when determining an AAC. Included in these considerations are the economic and social objectives of the government, which are provided below. These government objectives are to be considered as part of the comprehensive timber supply review process that your office has developed and implemented to ensure that your AAC determinations consider many forest management objectives and aligns with provincial statutes and regulations. They replace the objectives provided to you by the former minister, Doug Donaldson, on October 30, 2017.

British Columbians expect a government focused on building a strong sustainable economy that works for everyone, providing a path for lasting and meaningful reconciliation with Indigenous peoples, and developing strategies to address climate change. Government has committed to delivering on these priorities while recognizing that healthy, resilient forests are essential to the social, economic, and environmental interests of current and future generations. To advance these commitments, natural resource ministries, Indigenous partners, and stakeholders are collaborating to develop and implement forest management strategies and policies that will be relevant to your AAC determinations. I ask that you remain mindful of these commitments and as government approves related objectives, that you ensure they are fully considered within the timber supply review process.

The British Columbia (BC) government has committed to full and lasting reconciliation with Indigenous Peoples. As the provincial government implements the *Declaration on the Rights of Indigenous Peoples Act* and works toward aligning provincial laws with the United Nations Declaration on the Rights of Indigenous Peoples, I ask that your AAC determinations fully consider relevant outcomes of that work. For greater certainty, please continue to ensure that your AAC determinations are consistent with relevant agreements that are in effect between First Nations and the BC government, and court decisions that define Aboriginal title and rights. I expect you to continue to find ways to advance engagement and collaboration with Indigenous Peoples throughout the timber supply review process. In making your AAC determinations, I also ask that you continue to carefully consider Indigenous knowledge and other input that could have implications for your AAC determinations from First Nations and organizations whose traditional territories overlap the management unit under consideration.

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

BC's forests provide fibre for forest products, habitat for plants, fish and wildlife, and many other benefits essential to diverse and resilient communities. The capacity of these forests to support economic and environmental sustainability and reconciliation with Indigenous peoples is challenged by insect infestations, increasing levels of wildfire activity and other risks related to climate change. As healthy forests are essential for a healthy industry and province, I ask you consider how your determinations may encourage economic recovery and forest revitalization, improve forest health, and support approved strategies to reduce wildfire.

Since a sustainable and resilient timber supply supports BC's goals for a better, cleaner future and environmental sustainability, your AAC determinations should continue to incorporate, as appropriate, the best available information on climate change and forest health. When making your AAC determinations, please consider ways to encourage management practices that reduce greenhouse gas emissions and support forest resiliency. Practices that are consistent with established climate change strategies, adaptation, and mitigation practices, including practices that result in better fibre utilization and sector diversity, should be explored.

As new land use policies are developed and implemented to support BC's goals for economic activity, environmental sustainability, and reconciliation with Indigenous peoples, I ask that your determinations continue to incorporate, as appropriate, the best available information on the cumulative effects of multiple activities on the land base. Where the cumulative effects of timber harvesting and other land-based activities indicate a risk to natural resource values, your determinations should identify those risks for consideration in land-use planning. I also ask that you consider ways in which your AAC determinations could encourage actions or practices to mitigate the identified risks to natural resource values.

Forests are essential to build a strong, sustainable economy that supports people, communities and competitiveness and this government is focused on transitioning the forestry sector from high volume to high value production. As part of the timber supply review process, I ask that you consider ways to foster and encourage the value-added sector and increase the use of fibre. Please identify timber types that may not be reflected in harvest choice, and in your AAC determinations, examine opportunities for these timber types to sustain clean-energy jobs and value-added products or enhance ecosystem health and resiliency.

In making your AAC determinations, I ask that you consider the needs of local communities as expressed by the public during timber supply review process. This includes input that contribute to the economic recovery and sustainability of communities and is consistent with the government's broader objectives. To ensure a sustainable future for BC's forest-dependent communities, I also ask that when faced with necessary reductions in AAC's that wherever possible those reductions be no larger than necessary to avoid significant longer-term impacts.

Thank you, Diane, for your service and your care and attention to these important matters.

Sincerely,



Katrine Conroy
Minister

Appendix 4: Information sources used in the AAC determination

The information sources considered in determining the AAC for the Sunshine Coast TSA include the following:

- 2021. *Forest and Range Practices Act*. See http://www.bclaws.ca/civix/document/id/complete/statreg/02069_01;
- 2021. *Forest Act*. See Section 8 Allowable Annual Cut http://www.bclaws.ca/civix/document/id/complete/statreg/96157_02;
- 2021. BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Electronic Commerce Appraisal System (ECAS). See <https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/electronic-commerce-appraisal-system>;
- 2021. BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Reporting Silviculture Updates and Land Status Tracking System (RESULTS) Application. See <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/silviculture/silviculture-reporting-results>;
- 2021. BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. The BC Geographic Warehouse. See <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/bc-spatial-data-infrastructure/bc-geographic-warehouse>;
- 2021. BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Archaeology in British Columbia. February 2, 2021. Victoria, BC. See <https://www2.gov.bc.ca/gov/content/industry/natural-resource-use/archaeology>;
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