

**BRITISH COLUMBIA
MINISTRY OF FORESTS**

Kispiox Timber Supply Area

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

July 2, 2026

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Objective of this document

This document provides an accounting of the factors I considered, and the rationale I employed in making my determination of the allowable annual cut (AAC) for the Kispiox Timber Supply Area (TSA). This document also identifies where new or better information should be incorporated in future determinations.

Acknowledgement

I would like to acknowledge and thank the staff of the BC Ministry of Forests (the 'Ministry'), in particular the Skeena Stikine Natural Resource District (DSS) and the Forest Analysis and Inventory Branch (FAIB). I am also grateful to the First Nations, forest industry ('licensee') representatives, local residents, 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 TFLs. Section 8 of the *Forest Act* is reproduced in full as Appendix 1 of this document.

Description of the Kispiox TSA

The Kispiox TSA is located in northwestern BC in the Skeena Region and is administered by the Skeena Stikine Natural Resource District office based in Smithers. It covers an area of approximately 1.3 million hectares and lies in the transition zone between coastal and interior climates. Major biogeoclimatic zones are Engelmann Spruce-Subalpine Fir (ESSF), Interior Cedar-Hemlock (ICH), Coastal Western Hemlock (CWH), and Sub-Boreal Spruce (SBS). Forests are dominated by hemlock and subalpine fir, with lesser amounts of spruce (Engelmann, white and hybrid), lodgepole pine, western redcedar, amabilis fir and cottonwood. The topography is mountainous, with both wide and narrow forested drainages between mountain ranges and a high density of streams. Major rivers in the TSA include the Skeena, Bulkley, Babine and Kispiox.

Historically, forests of the Kispiox TSA have been relatively unaffected by natural disturbance events such as fires and mountain pine beetle. As a result, 75 percent of the forested land base is older than 140 years, and 45 percent of that same land base is 250 years of age or older.

Many wildlife species depend on the availability of the mature and old forest ecosystems in the TSA, and the Skeena River and its tributaries provide important spawning habitat and migration routes for salmon. Significant species include grizzly bear, moose, mule deer, mountain goat, raptors, bull trout and sockeye salmon. Cultural heritage resources are abundant in the TSA and include traditional use sites, major trading trails and archaeological features.

Approximately 6,000 people reside in communities in the TSA, primarily along the highway 16 and 37 corridors. Major communities in the TSA include Hazelton, New Hazelton, South Hazelton, Hagwilget, Two Mile, Gitanyow, Glen Vowell (Sik-e-dakh), Kispiox (Anspayaxw), Kitwanga, Cedarvale and Kitsequecla.

The Kispiox TSA overlaps the territories of the following First Nations: Gitksan Nation (Gitksan), Gitanyow Nation (Gitanyow), Kitselas First Nation, Lake Babine Nation, Tsetsaut Skii Km Lax Ha Nation, Witset First Nation and Wet'suwet'en Nation. The Kispiox TSA also overlaps partially with the Nass Wildlife Area and the Nass Area, defined in the Nisga'a Treaty.

One timber processing facility is located in the TSA in Kitwanga. Timber harvested from the TSA is also processed at facilities in Smithers and Burns Lake, and a portion is exported offshore.

History of the AAC

The AAC for the Kispiox TSA was set at 1 100 000 cubic metres in 1981. Effective December 30, 1996, the AAC was determined at 1 092 611 cubic metres, which included an adjustment to account for the exclusion of issued woodlot licences. Effective January 1, 2003, the AAC was determined at 977 000 cubic metres and this AAC was maintained in a subsequent determination effective January 1, 2008. The 2008 determination included a partition of 177 000 cubic metres attributed to geographically remote areas of the TSA.

On March 31, 2009, the adjacent Cranberry TSA was consolidated with the Kispiox TSA adding approximately 76 000 hectares to the Kispiox TSA. The AACs for the two TSAs were combined, resulting in an AAC for the Kispiox TSA of 1 087 000 cubic metres. The partition to geographically remote areas was maintained in that administrative process at 177 000 cubic metres.

On May 19, 2026, the Kitwancool Cranberry Forest Products Inc. First Nations Woodland Licence N3A was issued. As a result, the AAC for the Kispiox TSA was reduced to 987 636 cubic metres, which is the AAC currently in effect.

New AAC determination

Effective July 2, 2026, the new AAC for the Kispiox TSA will be 496 000 cubic metres.

This AAC is 49.8 percent below the current AAC and will remain in effect until a new AAC is determined, which must take place within 10 years of this determination.

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. The AAC determination is a strategic-level decision for which the Crown maintains a duty to consult and accommodate, as necessary, those First Nations for whom it has knowledge of claimed Aboriginal Interests that may be impacted by a proposed decision. The chief forester must consider the information provided by First Nations through engagement and the consultation process.

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 this AAC for the Kispiox 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 land base supporting timber harvesting 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 found to be substantial, 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 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 Minister of Forests mandate, which provides instructions ensuring 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 our climate is changing and that the changes will affect forest ecosystems. Forest management practices will need to be adapted to mitigate these changes 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 altering 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 forests considered to be at greatest risk of climate influence, 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 adaption 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* 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 containing data and information from three categories: land base inventory, timber growth and yield, and management practices. Using this set of data and a computer model, a series of timber supply projections can be produced to reflect different starting harvest levels, rates of decline or increase, and potential trade-offs between short- and long-term harvest levels.

From a range of possible harvest projections, one is chosen in an attempt 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 of several theoretical projections, coupled with the inherent uncertainty associated with future looking predictive modeling, 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 reliability 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 based on informed judgment using currently available information about forest management; information that may well have changed since the original data package was assembled. Forest management data is 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 mathematical calculation. Even though the timber supply analyses I am provided are integral to those considerations, the AAC determination is a synthesis of judgment and analysis in which numerous risks and uncertainties are weighed against potential conclusions. 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, AACs are determined frequently to incorporate new information and reflect changing management practice to minimize uncertainty over time.

Base case for the Kispiox TSA

The base case for the Kispiox TSA was prepared by Forest Analysis and Inventory Branch (FAIB) staff using the Ministry's Spatial Timber Supply Model version 2022 (STSM). STSM is run using the Spatially Explicit Landscape Event Simulator (SELES) modelling framework. STSM is approved for use in timber supply analysis by the FAIB and the results of the analysis were peer reviewed. The model was set to examine spatial forest inventory data on a one-hectare grid level.

The data and assumptions used in the base case are intended to reflect the best available information, which includes current legal requirements, demonstrated forest management practices and current conditions in the TSA.

Timber supply projections are not predictions because many unforeseeable events will occur, and practices and knowledge will continue to change and evolve. Changes in practices and information will be incorporated into future AAC determinations. 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 base case for the Kispiox TSA analysis projects an initial harvest level of 654 200 cubic metres per year which can be maintained for 160 years before increasing by five percent to the long-term harvest level of 686 600 cubic metres per year. The modelling approach used in the base case was a non-declining even-flow strategy, which did not attempt to maximize the short-term timber supply but rather to ensure a stable and consistent timber supply over time. The short- and mid-term harvest levels projected in the base case are 33.8 percent below the current AAC of 987 636 cubic metres.

An analysis known as a robustness test was conducted on the base case harvest projection, which showed sufficient volume was available during the first decade to support five decades worth of projected harvest. This analysis indicates significant flexibility in the location of harvest to support the short-term timber supply.

Two alternative harvest flows were explored prior to the selection of the base case. One examined the feasibility of maintaining the 2009 AAC for as long as possible before declining to a stable long-term harvest level. The 2009 AAC was first adjusted to reflect major land base changes since the previous TSR such as the exclusion of remote areas. This initial harvest level of 910 000 cubic metres per year could be maintained for one decade before a series of three incremental reductions to the base case harvest level. This elevated initial harvest followed by a decline is an option explored in some management units that is intended to facilitate a transition for the forest industry to a lower and sustainable harvest level in the future.

In the second alternative harvest flow, the base case harvest level from the 2008 determination (which did not include the contribution from the area of the former Cranberry TSA), was also adjusted to exclude the assumed contribution of the remote areas. This initial harvest level of 800 000 cubic metres per year could be maintained for 20 years before a series of three incremental reductions to a stable long-term harvest level.

In the Kispiox TSA, from 2008 to 2018, an average of 19.5 percent of the AAC or 210 515 cubic metres per year was harvested. Between 2019 to 2023, an average of 32.8 percent or 356 378 cubic metres per year of the AAC was harvested. Since the last AAC determination in 2008, the harvest performance has been substantially below both the current AAC and the non-declining even-flow projection. As a result, the non-declining even-flow was selected for the base case as it is the best representation of current operational conditions in the TSA.

The base case is used as a reference point to assess the timber supply in the Kispiox TSA, including exploration of the potential impacts of uncertainties through sensitivity analyses. I have reviewed all inputs to the base case, including how the objectives of several land use plans covering portions of the Kispiox TSA were incorporated into the analysis. I also reviewed in detail the modelling assumptions

and methodology incorporated in the base case, as well as the model output, including projections of species distribution, growing stock, age class distribution, and the age, area, and volume of stands harvested annually. I also considered alternative harvest flows and other factors as described in my considerations below. For this determination I am satisfied that the base case harvest projection and the sensitivity analyses have provided a suitable basis for my assessment of timber supply for the Kispiox TSA.

First Nations Engagement

The Kispiox TSA overlaps the territories of the following First Nations: Gitanyow Nation, Gitxsan Nation, Kitselas First Nation, Lake Babine Nation, Tsetsaut Skii Km Lax Ha First Nation, Wet'suwet'en Nation and Witset First Nation. The TSA also partially overlaps with the Nass Wildlife Area and the Nass Area, as defined in the Nisga'a Treaty.

Gitanyow Nation

Gitanyow territories occupy an area of over 600 000 hectares in northwestern BC. Approximately 16 percent of the Kispiox TSA lies within their territory. Gitanyow people are known as the Gitanyow Nation, which is comprised of two clans, under which there are eight Wilps or house groups. Each Wilp has authority over its respective territory.

Gitxsan Nation

Gitxsan territories occupy an area of over 2.8 million hectares in northwestern BC. Approximately 83 percent of the Kispiox TSA lies within their territory. There are approximately 8000 members of the Gitxsan Nation within four clans that are comprised of 52 Wilps. Each Wilp has authority over its respective territory, known as Lax'yip.

Kitselas First Nation

Kitselas territory covers over 800 000 hectares of northwestern BC. Approximately 1.5 percent of the Kispiox TSA lies within their territory. Kitselas territory stretches from the Pacific Ocean to 200 kilometres inland to the Skeena River Valley. The territory surrounds the City of Terrace and the Skeena River.

Lake Babine Nation

Lake Babine Nation territory covers over 1.3 million hectares of northwestern BC. Approximately 11 percent of the Kispiox TSA lies within their territory.

Nisga'a Nation

The Nisga'a Treaty Area occupies an area of 2.6 million hectares in northwestern BC. Approximately 8.5 percent of the Kispiox TSA lies within Nisga'a territory, specifically the Nass Wildlife Area and the Nass Area, defined in the Nisga'a Treaty.

Tsetsaut Skii Km Lax Ha Nation

The Tsetsaut Skii Km Lax Ha Nation territories cover over 1.9 million hectares of northwestern BC. Approximately 2.0 percent of the Kispiox TSA lies within their territory.

Wet'suwet'en Nation

Wet'suwet'en territory covers over 2.0 million hectares of northwestern BC. Approximately 0.2 percent of the Kispiox TSA lies within their territory.

Since initiating the Kispiox TSR in 2017, Ministry staff contacted all First Nations with territories overlapped by the Kispiox TSA to discuss their perspectives on timber supply within their respective territories. First Nations were provided with the data, analysis results, and the *Kispiox TSA Timber Supply Analysis Discussion Paper* (2024) to inform their discussions with Ministry staff.

Witset First Nation

The Witset First Nation territory spans 2.2 million hectares in northwestern BC. Approximately 0.18 percent of the Kispiox TSA is within this territory.

The formal consultation on the *Kispiox TSA Timber Supply Review Data Package* (2023) and *Discussion Paper* for the Kispiox TSR followed the *Updated Procedures for Meeting Legal Obligations when Consulting First Nations, 2010* except where agreements exist between the Province and a First Nation. Several First Nations in the Kispiox TSA have formal consultation agreements, such as Strategic Engagement Agreements, Recognition and Reconciliation Agreements, and Forest Consultation and Revenue-Sharing Agreements. These agreements establish protocols for engagement, define consultation expectations, and may include provincial commitments and economic supports to enhance First Nations' capacity to participate.

Engagement with the Kitselas First Nation followed the provisions outlined in their Strategic Engagement Agreements. During the TSR process, Kitselas submitted comments on wildlife habitat, wildlife tree retention, minimum harvestable criteria, and First Nations land use plans.

Engagement with the Nisga'a Nation followed the established *Nass Stewardship Protocol Agreement*. During the TSR process, Nisga'a Nation provided comments on old growth management areas and core ecosystems, cultural heritage resources, hydrological integrity, cumulative effects, and natural disturbance events.

Lake Babine Nation, Tsetsaut Skii Km Lax Ha Nation, the Wet'suwet'en Nation and Wiset First Nation did not respond to consultation on the *Data Package* or the *Discussion Paper* for the Kispiox TSA TSR.

The Ministry moved beyond a consultation-only model and undertook a collaborative approach with the Gitanyow and Gitxsan Nations. This included multiple opportunities to work together collaboratively during the TSR process, such as preliminary review of draft AAC decision support materials, facilitated dialogue with technical staff, opportunities to clarify input, and participation in key decision-preparation meetings. These steps aimed to deepen the level of engagement and reflect a shift toward shared decision-influencing processes.

Gitanyow Nation

In accordance with the Gitanyow Huwilp Recognition and Reconciliation Agreement, the Province and the Gitanyow Nation created the *Gitanyow Level 4 Timber Supply Review Agreement for TFL 1 and the Nass and Kispiox TSAs* in 2016.

Ministry staff met with Gitanyow on August 2, 2019, to review the Kispiox TSA preliminary draft *Data Package*. On August 6, 2019, and September 12, 2019, Gitanyow representatives submitted reports providing input. In July 2020, Gitanyow commissioned a Gitanyow Timber Supply Report *Toward Sustainable Timber Harvesting in Gitanyow Territory* that assessed the potential timber supply attributable to all three of the management unit areas on Gitanyow territory. On July 15, 2021, Gitanyow submitted additional comments on the draft *Data Package*.

On January 30, 2024, Ministry staff met with Gitanyow to review the *Kispiox TSA Timber Supply Analysis Discussion Paper* prior to public release.

In alignment with the Level 4 Engagement Agreement, I participated in a video-conference call on September 3, 2025, where I met with representatives from the Gitanyow Nation. Several key points were raised during the meeting, including Gitanyow analysis and recommendations on sustainable harvest levels, cumulative effects, old forest retention, wildlife tree retention, Northern Goshawk, hydrological integrity, forest carbon, silvicultural systems, and growth and yield for managed stands.

Gitxsan Nation

On June 30, 2021, Gitxsan submitted comments on the Kispiox TSA draft *Data Package* and delivered draft reports titled *Cedar Management Strategy* and *Review of Protection of Fish Resources in Gitxsan Territory*.

On January 30, 2024, Ministry staff met with Gitxsan to review the *Kispiox TSA Timber Supply Analysis Discussion Paper* prior to its public release. Following the meeting, Gitxsan requested additional information and submitted a list of topics where clarification was required.

In April 2025, Gitxsan met with Ministry staff and provided input on the AAC decision support materials. Key topics discussed were cultural heritage resources, old forests, Northern Goshawk, cedar sustainability, hydrological integrity, and sustainable harvesting practices. Additionally, representatives from Gitxsan participated in the AAC determination meeting that took place in June 2025. I would like to extend my appreciation to the representatives of the Gitxsan Nation for their participation in the multi-day determination meeting and for providing valued input to this AAC determination.

Overall, in my considerations for the Kispiox TSA, I am mindful of the significant interest shown by First Nations in the harvest level and the effect of past and present harvesting on their interests and ability to meaningfully practice their rights. I am also aware of the government's desire for reconciliation with First Nations and the government's intention to change the way forests are managed as described in the June 2021 document titled *Modernizing Forest Policy in British Columbia: Setting the intention and leading the forest sector transition*.

Where information or concerns are raised that fall outside the chief forester's statutory authority under Section 8 of the *Forest Act*, they are documented and referred to the appropriate agencies or processes (e.g., wildlife management, water stewardship, revenue sharing, tenure adjustments, or higher-level reconciliation agreements). This approach ensures a whole-of-government response where cumulative effects or broader accommodation needs exist.

Additionally, the Province acknowledges the precedent set by *Yahey v. British Columbia*, which underscores the limits of the chief forester's authority in addressing cumulative effects and the need for stronger cross-government coordination. To manage uncertainty in the timber supply review process, the analysis includes an assessment of key risks associated with available data and explores a range of timber supply projections. AACs are also re-determined regularly to incorporate the most current information, with greater frequency where short-term timber supply is unstable or significant changes in management or data occur.

I have reviewed the First Nations consultation record in detail, and considered the comments received on the various factors in this decision, as well as in meetings with First Nations. In some cases, I have made reference in this document to comments and input received.

Licensee Engagement

The *Data Package* and *Discussion Paper* were made available to the licensees operating in the Kispiox TSA, and they had the opportunity to review the information and provide comment. Comments and recommendations from licensees were presented to me during the determination meeting, and I have

considered these comments and discussed them with staff as each factor was considered. In some cases, I have addressed these comments in this document.

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

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

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

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) Composition of the forest and its expected rate of growth	• Non-forest and non-productive • Roads, Trails, Landings, Railway and Transmission Lines • Provincial parks and Miscellaneous Reserves • Recreation Sites and Trails • Terrain Stability and Environmentally Sensitive Areas • Sites with Low Timber Growing Potential • Non-merchantable Timber Types • Ecosystem Networks • Floodplains • Other Geographically Defined Exclusions • Volume Estimates for Natural Stands • Operational Adjustment Factors
8(8)(a)(i) Existing Forest Inventory	
8(8)(a)(ii) Expected time that it will take the forest to become re-established following denudation	• Planting Delay • Genetic Gain • Not Satisfactorily Restocked/Backlog
8(8)(a)(iii) Silvicultural treatments to be applied	
8(8)(a)(iv) Standard of timber utilization and allowance for decay, waste, and breakage	• Utilization Standards and Compliance • Decay, waste and breakage • Grade 4 Credit
8(8)(a)(v) Constraints on the amount of timber produced by use of the area for purposes other than timber production	• Grizzly Bear • Moose • Mountain Goat • Mule Deer • Other Wildlife Species of Importance • Patch Size Distribution • Ecosystem Networks - Cover Constraints • Visual Quality • Other Special Management Zones • Pine Mushrooms

Forest Act section and description	Factors accepted as modelled and not discussed further in the rationale
	• Landscape Level Biodiversity • First Nations Strategic Plans
8(8)(a)(vi) Other information	• Harvest Performance
8(8)(b) The short- and long-term implications to British Columbia of alternative rates of timber harvesting from the area	• Alternative Harvest Flows
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	
8(8)(e) Abnormal infestations in and devastations of, and major salvage programs planned for, timber on the area	• Disturbance Outside of the Timber Harvesting Land Base

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

Land base contributing to timber harvesting

- general comments

The timber harvesting land base (THLB) is the area where timber harvesting is considered to be economically and legally feasible, in consideration of the objectives for various forest values, markets and available technology. The THLB is a theoretical, strategic-level estimate specifically for the purposes of the timber supply analysis, and as a result the estimate may include area where stands will never be harvested and could exclude some area where stands will be harvested. Its assumptions do not directly impact operations.

The total area of the Kispiox TSA of 1 301 337 hectares, which includes approximately 76 000 hectares that were added when the Cranberry TSA was amalgamated into the Kispiox TSA in 2009. Deductions for non-provincial lands, treaty lands, community forests, woodlot licences, non-forest and non-productive lands, and roads, trails, landings and transmission lines result in an analysis forest land base (AFLB) of 762 961 hectares or 58 percent of the total area of the TSA.

To determine the THLB, a series of deductions are made from the AFLB to account for biophysical, economic, or ecological factors that reduce the forested area available for harvesting. These exclusions include provincial parks, low productivity sites, uneconomical areas, wildlife habitat and riparian areas. The THLB available after these deductions were applied is 265 619 hectares, which represents about 20 percent of the total area of the TSA and about 35 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, care was taken to avoid any potential double-counting 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 in the analysis under another classification.

I have reviewed the information provided regarding the approach and deductions applied in the estimation of the THLB for the Kispiox TSA, and I am satisfied that the approach used was appropriate and provides a suitable basis for this determination, subject to any comments and considerations in the factors below.

Section 8(8)(a)(i) the composition of the forest and its expected rate of growth on the area

Forest composition and growth

- non-provincial lands

Section 8 of the *Forest Act* applies only to the timber supply available from provincial lands within specified forest management units. Area-based tenures such as Tree Farm Licences, Community Forest Agreements, First Nations Woodland Licences and Woodlot Licences have their AACs determined independently of the AAC determination for the Kispiox TSA. In the analysis, all non-provincial lands and existing area-based tenures were excluded from the analysis forest land base (AFLB), resulting in a reduction of 41 644 hectares.

At the time of the timber supply analysis, a new First Nations Woodland Licence (FNWL) had been offered to Kitwancool Cranberry Forest Products Inc. but had not yet been issued. The proposed FNWL overlaps 26 318 hectares of the Kispiox TSA THLB. The associated reduction attributable to that area indicated that the base

case timber supply would have been overestimated by 9.9 percent if the new FNWL was issued before the next AAC determination was completed.

On May 19, 2026, FNWL N3A was signed and the licence was issued by the Regional Executive Director for the Skeena Region. As a result, the associated area is no longer part of the TSA.

In consideration of the change in area of the Kispiox TSA, recognizing the subsequent issuance of FNWL N3A, on May 19, 2026, the land base as modelled in the base case has been reduced. Accordingly, the THLB has been overestimated by 9.9 percent or 26 318 hectares. In the '**Reasons for Decision**', I will account for an overestimation of 9.9 percent in the base case projection.

- inoperable areas

Areas are considered inoperable where there are physical barriers or limitations to timber harvesting, where logging methods appropriate to the stand and terrain conditions are not available or determined to be too costly, or where stands are not considered to be merchantable due to low value of the timber or high cost of access or harvest.

In the Kispiox TSA, inoperable areas include remote areas, physically inoperable or inaccessible areas and economically inoperable areas.

Remote areas are comprised of stands that were, at the time of mapping, located one kilometer or more beyond all existing cutblocks and resource roads. In the preparation of information for the 2008 determination, district staff mapped 479 312 hectares of stands in remote areas in the TSA. In 2008, these stands were included in the THLB and the chief forester, in his determination, assigned a partition of 177 000 cubic metres per year, to encourage development in those areas.

Ministry staff note that negligible harvesting has been recorded in remote areas since 2008. As a result, while preparing the information for the base case of the current analysis, these areas were assumed to not contribute to timber supply and were excluded in the derivation of the THLB.

Areas identified as physically inoperable, such as forested areas on rugged terrain, or inaccessible, such as severely isolated and hanging valleys, were broadly mapped in the TSA in the 1990s. For this timber supply analysis, 163 025 hectares of physically inoperable areas were excluded during the derivation of the THLB.

Staff note that in the physical operability assumptions, the maximum accessible slope percentage for operable stands was set at 90 percent. Stands on slopes less than 90 percent that were otherwise operable were included in the THLB.

However, a staff review of the ECAS data found that 99 percent of harvesting in current practice occurs on slopes of 50 percent or less, and thus the 90 percent

slope criteria does not reflect current practice. Staff indicate that 2640 hectares or approximately one percent of the THLB is comprised of stands on slopes greater than 50 percent and less than or equal to 90 percent.

In 2004, economic operability was informed through a harvest method mapping (HMM) project conducted by forest licensees and Ministry staff for the TSA. Two key variables were used to describe operability: harvest method, which considered operational limitations of slope, and stand quality, which considered the implications of variables from the inventory, including tree species composition, stand age, stand height, stand volume, site occupancy and site productivity, compared to the predicted grade profile of volumes potentially available from that site. A GIS-based HMM methodology classified the TSA forested land base into combinations of Harvest Method and Stand Quality Types. Stands that were not classified due to data gaps were assigned codes through a methodology derived by district staff.

This approach and methodology was reviewed during the preparation of information for the data package of the current timber supply review. District staff confirm that the assumptions for economic operability appropriately reflect current practices in the TSA. A total of 218 971 hectares of economically inoperable stands were excluded in the derivation of the THLB.

Overall, a total of 871 107 hectares were identified as remote, physically or economically inoperable, and 372 611 hectares were excluded on this account after other deductions.

In preparation for this determination, staff reviewed data from the Electronic Commerce Appraisal System (ECAS) that captures areas harvested by harvest method between 2007 and 2019. This review shows a trend of increased harvest in areas mapped through the HMM methodology as Cable-Pulp, Cable-Marginal Sawlog and Ground-Low Productivity types, with four percent of total area harvested in this period from these three categories.

Cable-Pulp, Cable-Marginal Sawlog and Ground-Low Productivity types were assumed non-economic in the base case and excluded during the derivation of the THLB.

District staff conducted further analysis to explore the economic operability assumptions. First, staff compared the HMM classifications against actual harvest methods used and confirmed that the classifications by harvest method in the mapping were reasonable. Staff then used a GIS-derived dataset that overlaid blocks from 2008 to 2023 from the BC Consolidated Cutblocks database with the HMM database. Staff note that they consider HMM types that contribute more than one percent to overall utilized harvest methods to be economically operable. This suggests that area classified as GT (ground sites with density problems), GL (ground sites of low productivity) and CP (cable pulp) may be economically

operable, at least to some degree. The review results showed harvesting in these types contributed more than 10 percent to the total area harvested during the 2008-2023 period. Harvesting in the GT classification on its own contributed five percent of total harvested area.

An additional analysis was done to assess the proportion of the more valuable species such as spruce, pine or cedar shown in the forest inventory data are present in the areas associated with GT, GL and CP methods harvested during that period. The review showed that spruce, pine and cedar occur within 98 percent of the GT classification stands, with the average proportion of those species at 75 percent of the stand composition. For the GL classification, these species only occur in 75 percent of the stands and compose an average of 34 percent of the stand composition. Spruce, pine or cedar were not typically found in the CP classified areas.

Therefore, staff indicate a total of 21 626 hectares classified as GT in the TSA may contain spruce, pine or cedar. These areas were excluded in the derivation of the THLB in the base case. In consideration of overlap with other exclusions applied, it is estimated that approximately 1858 hectares may be economically viable for timber harvest and could be assumed to contribute to timber supply.

In reviewing the information available about economic operability, I am aware that licensees in current practice are harvesting in stands classified as GT but these stands contain a higher percentage of more valuable species of spruce, pine and cedar that are likely to enable economic harvesting. It is estimated that 1858 hectares of these stands were excluded and should be considered to contribute to timber supply. I accept that the timber supply projected in the base case is underestimated by 0.7 percent on this account and discuss this further under **'Reasons for Decision'**.

I have also reviewed the information on physical operability assumptions. I accept that the lack of current performance in stands on slopes between 51 and 90 percent that were assumed to contribute to timber supply in the base case indicates a timber supply overestimation of approximately one percent. I will discuss my considerations of this further under **'Reasons for Decision'**. I note that should licensees begin to operate in these steeper slope areas, it will be factored into a future determination for the Kispiox TSA.

- old growth management areas and core ecosystems

The *Biodiversity Guidebook* defines old growth management areas (OGMA) as areas that contain or are managed to replace specific structural old growth attributes and that are mapped and treated as special management areas.

Legal objectives for seral stage distribution and old growth retention are established for each Sustainable Resource Management Plan (SRMP) area within

the Kispiox TSA, as one of several approaches employed for maintaining ecological diversity at the landscape level over time.

The base unit used for the analysis was the set of landscape units with assigned Biodiversity Emphasis Options (BEO) that were included in the 2004 *Order Establishing Provincial Non-Spatial Old Growth Objectives*.

For the Kispiox SRMP area, the 2006 *Order to Establish the Kispiox Landscape Units and Objectives* established OGMA's. There are provisions that up to 10 percent of the overall area can be harvested providing that an area of equal size and equal or greater ecological value is identified as a replacement. For the Cranberry SRMP area, a March 4, 2016 Order established OGMA's pursuant to Section 32 of the *Environmental Protection and Management Regulation*. Similar provisions for replacement exist as for the Kispiox SRMP area, except to individual OGMA's rather than groupings. A total of 81 612 hectares of OGMA's in the Kispiox and Cranberry SRMP areas were identified and excluded during the derivation of the THLB.

There are no OGMA's established in the West Babine SRMP area and old forest is protected within Core Ecosystems, totaling 19 664 hectares. Core Ecosystems provide a representative cross section of ecosystems, retain representative examples of old growth forest and provide interior forest conditions. Core Ecosystem objectives permit small scale harvest to address forest health issues. Licensees in their Forest Stewardship Plans (FSP) consistently commit to avoiding harvest in the areas and as a result they were excluded during the derivation of the THLB.

On April 30, 2020, an independent panel appointed by the BC Government submitted a report *A New Future for Old Forests: A Strategic Review of How British Columbia Manages for Old Forests Within its Ancient Ecosystems*. Recommendation 6 in this report states 'defer development in old forests where ecosystems are at a very high risk of irreversible biodiversity loss'. The BC Government consulted an independent Old Growth Technical Advisory Panel (TAP) in June 2021 to help identify priority, at-risk old growth ecosystems and prioritize areas for temporary deferral from harvest. The TAP mapped rare, at risk and irreplaceable forest types recommended for temporary deferral. In November 2021, government announced its intent to work in partnership with First Nations to defer the harvest of ancient, rare and priority large stands of old growth within BC's most at-risk old-growth forests. It is not yet known how many of these deferred areas might in the future become permanent reserves.

The Province is engaging with First Nations about how the recommendations from the report will be implemented, within the context of a provincial strategy for management of old forests. Within the Kispiox TSA there is support for the deferrals from Gitanyow, three Gitxsan Simgigyet (Gwis Gyen, Antgililbix, Gwinin Nitxw) and for the Gitwangak Watershed.

FAIB staff prepared a summary of the supported deferral areas as of July 2023, using the THLB area assumed in the 2008 timber supply review. The summary showed a total of 21 103 hectares of supported deferral areas, 18 442 hectares of which are not currently protected. Staff note that GAR orders or other legal harvest restrictions put in place since the 2008 analysis have not been incorporated into this reviewed dataset. Additional analysis conducted by FAIB staff showed that 58 percent of the stands in the Kispiox TSA are in an old forest condition, and 25 percent of those stands are within the THLB. Overall, approximately 30 percent of the old forest within the THLB falls within the TAP areas.

Staff note that harvest is occurring in some portions of TAP areas within Gitxsan Territory.

In the base case, as long-term measures have not been identified for the TAP priority deferral areas, they were included in the THLB. Sensitivity analysis was conducted to explore the timber supply implications if all TAP priority deferral areas were excluded from the THLB, showing a 6.9 percent reduction in timber supply compared to the base case.

The Gitxsan have brought forward independently created Land Use Plans (LUP) with no external stakeholder involvement and would like to see these legalized by BC. Independent LUPs are in place for the Gitsegukla and Gitwangak watersheds, the Upper Nass and Kispiox are in development, and remaining watershed and Wilp-level LUPs are likely to follow. These will likely guide conversations on long-term old growth management until a forest landscape planning process is undertaken in the Kispiox TSA.

The Province implemented *Forest Act* Part 13 deferrals covering old growth forests in September 2020 in partnership with First Nations. The Seven Sisters Part 13 deferral area is within the Kispiox TSA. This deferral expired in March 2024, and licensees whose tenure overlaps with the area have been willing to voluntarily not harvest in the area. The area was retained in the THLB in the base case.

Operationally, staff note that harvest deferrals supported by First Nations will remain in place until a new management approach is implemented and local discussions on management of old growth values are concluded through initiatives such as LUPs and forest landscape plans.

I have reviewed the information regarding old growth management on the Kispiox TSA and discussed it with Ministry staff. I consider that the assumptions around OGMA and Core Ecosystems applied in the base case, appropriately reflect the legal requirements for this determination. I am aware that observations of areas classified as old forest within the TSA, as seen elsewhere in the province, suggest they cannot be assumed to remain in the form of static representative old growth forest given the impact of various agents including insects, disease, drought and wildfire. There is a need to develop a strategy for the areas that may

include some management activities to maintain the desired structural conditions for habitat and other values.

In consideration of the information regarding TAP deferral areas, I expect that the management of old forest in the province will change and long-term measures for old growth deferral areas will be determined through future land use planning processes, in collaboration with First Nations and input from the public. Land use decisions that result in long term protection of areas of old growth forest are outside of my statutory authority as chief forester. In my determinations, my goal is to ensure there is sufficient timber supply flexibility to support the eventual long term management decisions for these areas.

I am aware from the sensitivity analysis results mentioned above that there are potential timber supply implications if it were appropriate to assume all TAP priority deferral areas will be excluded from contributing to timber supply, a 6.9 percent reduction compared to the base case projection may result. However, as noted under '*Base case for the Kispiox TSA*', review of the initial decade of the analysis horizon demonstrates an abundance of timber to support the base case harvest projection in the short term, which suggests little risk at the current time to timber supply on this account. Until such time as a decision is made regarding the legal status of the TAP deferral areas, I am satisfied that the base case assumptions for the TAP areas as well as the expired Part 13 Deferral were appropriate and provide sufficient flexibility for the future. Operationally, I note that licensees are voluntarily working with district staff and First Nations in support of the deferral of these areas from harvest, which provides assurance that these areas will be protected from harvest until such time as a new management approach is agreed upon and implemented.

- red- and blue-listed ecological communities

The term ecological community has been adopted by the BC Conservation Data Centre to represent the variety of unique ecosystems in BC. The term ecological refers to the inclusion of non-living factors and community refers to the interactions of living organisms and the relationships between the living and non-living factors in the system.

Red-listed ecological communities are those that the province considers to be at risk of being extirpated, endangered or threatened. Blue-listed ecological communities are areas of special concern. Legal objectives are established for certain red- and blue-listed ecological communities within all three of the land-use planning areas in the Kispiox TSA for areas greater than 0.25 hectares in size, or greater than one hectare if the ecological community is the dominant component of an ecological complex.

In the base case, data from the Conservation Data Centre was used as the primary data source to delineate red- and blue-listed ecological communities that met the

criteria within the TSA. The data was used to select polygons exceeding 0.25 hectares in size, with matching site classifications, from the Predictive Habitat Mapping spatial layer. These areas, totaling 1231 hectares, were excluded during the derivation of the THLB.

Following the analysis, district staff reviewed the Predictive Habitat Mapping layer and concluded that it lacked ecological communities and had very few occurrences of red- and blue-listed plants and animals.

Although there are legal objectives established for red- and blue-listed ecological communities under higher level plans, there are no legal objectives for the management of individual red- and blue-listed plants and animals in the Kispiox TSA. District staff note that licensees in their FSPs make commitments to review planned harvest areas for the occurrence of red- and blue-listed ecological communities and preserve them within retention areas where found.

Having considered the information presented and discussed it with both district and FAIB staff, I acknowledge that licensees commit to protecting ecological communities as and when they are located operationally, consistent with the legal objectives under the SRMPs for the Kispiox TSA. This gives me confidence that these communities are appropriately managed for in the Kispiox TSA.

With consideration of the area excluded during derivation of the THLB in the base case, I accept it was excluded in error, given that it did not contain ecological communities. As a result, the THLB has been underestimated by 0.5 percent or 1231 hectares. As a result, my determination will take into account that the timber supply has been underestimated by 0.5 percent, and I will discuss this further under '**Reasons for Decision**'.

- riparian reserve and management zones

In general, riparian areas are adjacent to streams, lakes and wetlands. They are biologically diverse ecological linkages throughout the forest landscape, frequently containing the largest variety of plant and animal species found in forests and providing critical habitat for wildlife.

Riparian areas consist of riparian reserve zones (RRZ) and Riparian Management Zones (RMZ). The RRZ and RMZ comprise the Riparian Management Area (RMA) for a particular riparian feature. Objectives are identified under the Forest Planning and Practices Regulation and incorporated into licensees' FSPs. Complete retention of trees within the width of the RRZ is required, and RMZs have minimum basal area retention requirements intended to protect the integrity of RRZs.

Licensees also in their FSPs identify increased levels of retention for smaller S4, S5 and S6 stream classes that have an alluvial substrate, that flow into fish-bearing waters or are within watersheds identified as having high historical levels of natural or human caused riparian disturbance.

To determine the retention for riparian values that constitutes current practice, Ministry staff conducted a mapping project in which each stream, lake and wetland was spatially identified, and adjacent area exclusions were applied by riparian class. RMZs were delineated and the appropriate basal area reduction applied and added to RRZ widths to determine RMA area. A total of 33 148 hectares was identified as RMAs adjacent to riparian features and a net area of 4865 hectares was excluded in the derivation of the THLB.

Input received from the Gitxsan First Nation noted they have a draft report *Review of Protection of Fish Resources in Gitxsan Territory* and made recommendations to increase RMA widths to ensure the protection of fish resources. They note that of particular concern is the integrity of the RMA alongside S4 streams and its ability to support sustained salmon populations. District staff indicate that as noted above, commitment to retention practices around small streams has increased in recent years in licensees' FSPs.

I have reviewed the information about riparian management in the Kispiox TSA and the modelling of current operational practices designed to meet legal requirements in the base case. I am satisfied that the assumptions applied in the base case are a good reflection of current practice and that as a result, riparian management was modelled appropriately. However, I acknowledge the concern about the integrity of these important features and note that monitoring of the effectiveness of our riparian practices at protecting valuable riparian habitat would provide us with valuable information moving forward. The Forest and Range Evaluation Program (FREP), an existing monitoring framework currently in use, could be leveraged to provide that data, and I provide an implementation instruction to that effect under **'Implementation'**.

I recommend that First Nations, licensees and district staff focus and intensify their work together and explore opportunities to use available tools and conduct collaborative monitoring on this issue, in particular, in relation to the concern raised regarding the capacity of S4 streams to support salmon populations.

- wildlife habitat

A Wildlife Habitat Area (WHA) is an area mapped to meet the requirements of a species under the 2004 Identified Wildlife Management Strategy (IWMS), which can include species at risk or regionally important wildlife. WHAs are intended to conserve the habitat considered to be most limited for an identified wildlife species. General Wildlife Measures (GWM) are management practices that restrict or modify forest and range activities within designated areas, like WHAs, to protect identified wildlife and their critical habitats.

Ungulate Winter Ranges (UWR) are areas containing habitat necessary to meet the winter habitat requirements of ungulate species such as mountain goat, deer and

moose. Sections 9 and 12 of the Government Actions Regulation (GAR) of the FRPA outline the regulatory authority for establishing UWR.

I have reviewed the information about how legal requirements and current practices for managing wildlife habitat in the Kispiox, including UWRs and areas managed for grizzly bear, were incorporated into the base case assumptions and discussed it with Ministry staff. I am satisfied that the analysis appropriately modelled the habitat requirements for all species with the exception of mountain goat, as discussed here.

In the Kispiox TSA, GAR UWR Order U-6-006 for mountain goat winter range, established in 2007 and amended in 2014, requires the retention of 100 percent of the forested area within the mapped areas. To account for this in the base case, these areas were excluded in the derivation of the THLB.

The GWMs for mountain goat also apply seasonal and access management constraints within 500 to 1000 metres of goat habitat areas. District staff note that as an accommodation to referral concerns expressed by First Nations, some licensees have additionally committed in their FSPs to no harvest within 500 metres of the canyon-dwelling goat areas specified by the Order where their operating areas overlap the Cranberry SRMP or the draft Gitwangak Local Use Plan in the Lower Skeena Landscape Unit.

Staff have assessed the additional area where no harvesting is expected to occur. The total area is 2343 hectares, 778 hectares of which is in the THLB. This constitutes 0.3 percent of the total THLB.

I have reviewed the information regarding current practice for managing mountain goat habitat and discussed it with staff. As a result of commitments in FSPs to increase the no-harvest areas within 500 metres of mountain goat winter range, beyond the legal requirement of the GWM, the THLB has been overestimated by 0.3 percent in the base case. This correlates to a 0.3 percent overestimation of timber supply in the base case. I take this into account in this determination as discussed in **'Reasons for Decision'**.

- wildlife tree retention

One objective under the FRPA is to maintain structural diversity in managed stands by retaining wildlife tree patches in each cutblock. In the Kispiox LRMP, West Babine and Cranberry SRMPs, targets for stand-level wildlife tree retention are legally established, with the objective of maintaining a range of structural attributes of old forest ecosystems within forest stands throughout the rotation.

To identify existing wildlife tree retention areas (WTRA) reserved through past harvesting, data from the Reporting Silviculture Updates and Land Status Tracking System (RESULTS) was used. It was assumed that these areas would continue to be reserved in perpetuity through future harvests of the regenerating managed

stands. A total of 10 979 hectares were identified as existing WTRAs, with a net area of 7927 hectares excluded on this account during the derivation of the THLB.

For future WTRAs, the West Babine and the Kispiox LRMP specify the levels of wildlife tree retention to be established during harvest, by planning area, unit, BEC subzone and relative cutblock size. The West Babine SRMP has a specification for higher levels of retention in cutblocks that exceed 80 hectares.

To account for future wildlife tree retention in the base case, the THLB area of all natural stands was reduced by the target retention percentage at the time of first harvest in the modelling. The target percentages used were the weighted midpoint of the expected range of patch sizes identified in the relevant land-use plan requirements. A total of 7775 hectares were excluded from the THLB over the analysis horizon to account for future wildlife tree retention.

Licensees in the Kispiox TSA note that typically, stand-level retention is 10 percent per cutblock, well above the FPPR and land-use plan targets. District staff confirm that commitments within FSPs around other values managed for at a stand level, such as cultural heritage resources, riparian habitats, rare and endangered ecosystems, and habitat for pine mushrooms or grizzly bear often result in additional wildlife tree retention beyond the legal minimums required. Ministry staff advise that between 2008 to 2023 stand-level retention averaged 15 percent.

The Gitanyow provided input that current levels of in-stand retention in Gitanyow Territory are 7 percent in the Nass and 12 percent in the Cranberry areas of the TSA. They expressed concern that these levels were insufficient to maintain structural attributes of old forest and would not support maintenance of mature-forest communities within harvested stands. They comment that species relying on mature and old forest, the highest conservation priority species in these rarely disturbed forests, rely on areas reserved from harvest.

I have reviewed the information regarding existing and future stand level retention in the Kispiox TSA and the assumptions in the base case to reflect legal requirements and current practice. I acknowledge the input from the Gitanyow and note that the stand-level retention modelled in the base case reflects legally established levels of retention.

Overall, I am satisfied that the existing WTRAs were appropriately accounted for in the base case, as the areas excluded were identified directly through operational RESULTS data.

With regard to the accounting for future WTRAs, I am aware that the stand retention percentages assumed in the base case underestimate expected retention as demonstrated through current practices as licensees are, on average, retaining 4.9 percent more of stands than reflected in the base case. It is reasonable to assume that this level of retention will continue into the future, as the forest management objectives for retention within stands can meet a multitude of values,

including cultural heritage resources, riparian habitats, pine mushroom habitats, rare and endangered ecosystems and critical grizzly bear habitat.

I commend the licensee practices around stand level retention and their ongoing work with First Nations to meet a variety of values operationally. I will discuss my considerations of this factor further in '**Reasons for Decision**'.

- cultural heritage resources

A cultural heritage resource is an object, site or location of a traditional societal practice that is of historical, cultural, societal, or archaeological significance to the province, community or a First Nation. In the Kispiox TSA, cultural heritage resources include culturally modified trees, cultural trails, traditional ceremonial and spiritual use sites, historical resource use and habitation sites, cultural plants and monumental cedar.

Traditional use sites are sites used by one or more groups for ceremonial or sustenance purposes, such as berry picking sites, herb and medicinal plant sites, culturally modified trees, spiritual sites, traditional trails, traplines, fishing stations and hunting areas.

Archaeological sites are sites that contain physical remains of past human activity that predate 1846 and are protected under the *Heritage Conservation Act*. In current practice, licensees engage professional archaeologists to assess areas and provide guidance on harvesting activity consistent with provisions for site alteration permits under the *Heritage Conservation Act*, which may or may not permit some level of harvest on the site.

In the Kispiox TSA, 329 archaeological sites covering approximately 1937 hectares have been identified to date. These known sites were entirely excluded during the derivation of the THLB in the base case as it was uncertain whether any harvest would be permitted on these sites.

During the course of future forest development, newly discovered archaeological sites that predate 1846 will also be protected under the *Heritage Conservation Act* and recorded within the archaeological database. To address unknown archaeological sites, a predictive model was developed for the TSA that provides a rating for the potential of finding a site. Licensees are required to use this tool to determine when field assessments are needed prior to harvest or road construction.

The Dominion Telegraph Trail is a provincially significant cultural heritage feature in the Kispiox TSA that is protected under the *Heritage Conservation Act*, with specific management plan guidance. To reflect the guidance in the base case, 25 percent of a 200-metre corridor centered on the trail was allowed to contribute to the THLB to represent small-scale harvest of bark beetle infestations. The remainder of the

area was excluded in the derivation of the THLB. The management guidance for the Gitanyow Grease Trail was modelled in the same manner.

A total of 4149 hectares of archaeological resources protected under the *Heritage Conservation Act* were identified in the base case and excluded during the derivation of the THLB. In the base case, no specific accounting for potential but not yet known archaeological sites was made. As new features are identified and recorded, they will be excluded from the THLB in future timber supply reviews.

Cultural heritage resources that are determined to originate after 1846 are not regulated under the *Heritage Conservation Act* and are instead managed for at the local level. The objective set by government under Section 10 of the FPPR is to conserve, or if necessary protect cultural heritage resources that are the focus of a traditional use by an Aboriginal people and of continuing importance to that people. In addition, the Kispiox and Cranberry SMRPs provide direction to maintain and preserve cultural heritage resources.

The district maintains the Skeena Cultural Heritage Resource Inventory Mapping Project (SCHRIMP), a cultural heritage database that is shared with licensees for planning operations. Staff note that most of the documented areas can be avoided or managed for under current practices, such as being included in riparian management areas or in wildlife tree retention areas.

No explicit exclusions were applied for post-1846 cultural heritage resources in the base case.

The Gitxsan provided input that they believe cultural heritage resources are under-represented in the timber supply review process and expressed concern that no accounting was made for the cultural features originating since 1846. They note that not all features are located near riparian areas. In addition, they recommended that Wilp boundaries be treated as cultural sites with a surrounding 50-metre reserve, as Wilp boundaries often have existing generational cultural features such as tree marks and culturally modified trees.

District staff indicate some of the Wilp areas are captured in the SCHRIMP database shared with licensees. They also note that measures are taken by some licensees to work with the Gitxsan to protect Wilp boundaries operationally.

Two sensitivity analyses were completed to assess the timber supply implications of the concerns expressed by the Gitxsan. In the first, a 30-metre reserve zone was applied to cultural heritage feature points and trails identified in the SCHRIMP database. Results showed the timber supply projected in the base case would be reduced by 0.2 percent on this account.

In the second sensitivity analysis, a 50-metre reserve was applied to all Wilp boundaries within the TSA, which showed a 1.6 percent reduction to timber supply.

Having reviewed the information about cultural heritage resources and discussed it with staff, I make the following observations. In my assessment, the higher levels of WTRA in current practice than assumed in the base case, as discussed in '*wildlife tree retention*', likely provides accounting operationally for the protection of the resources identified as originating since 1846. However, it is reasonable to expect that some cultural heritage resources will not be able to be accounted for in this manner, and therefore I take into account an unquantified overestimation of the timber supply projected in the base case and discuss this further under '**Reasons for Decision**'.

I acknowledge the concerns from the Gitxsan regarding protection of Wilp boundaries, and I am aware that some licensees are avoiding these areas operationally and that the base case did not provide accounting for this practice. I do not believe the majority of Wilp boundaries are accounted for in the additional WTRA because of geographical considerations. The sensitivity analysis in which no harvesting was assumed within 50 metres of Wilp boundaries shows a 1.5 percent reduction in the timber supply projected in the base case.

I am satisfied that this 50-metre no harvesting zone around Wilp boundaries is reflective of current practices in the TSA and I take into account a 1.5 percent overestimation of timber supply, and I discuss my considerations further under '**Reasons for Decision**'.

- permanent sample plots

The Ministry of Forests maintains a network of permanent sample plots (PSP), begun in the 1920s, to provide information about forest growth across the province and to provide data to calibrate growth and yield models. Plots were established in natural stands that had no influence from harvesting. These plots are intended to be maintained until the stands reach 120 to 150 years of age. Historically the program focused on healthy stands only, but the importance of understanding forest dynamics in damaged stands led to the incorporation of damaged stands into the program in 1994.

District staff indicate that licensees commit in their FSPs to avoid harvesting in active PSPs as well as within a reserve zone around each plot. There are 128 PSPs in the Kispiox TSA.

Other types of research ground plots not protected from harvest in the Kispiox TSA were established to monitor changes on the landscape. In 2018, 22 Change Monitoring Inventory (CMI) plots were established in stands older than 50 years of age, and 17 Young Stand Monitoring (YSM) plots were established in stands between 15 and 50 years of age. These plots provide additional data to validate growth and yield models. CMI and YSM plots are considered permanent plots to monitor the growth of harvested stands but are not protected from harvest

because they are established to monitor standard forest activity, which may include harvest.

In the base case, a total of 29 hectares that were identified within protected PSPs were excluded in the derivation of the THLB, resulting in a 10-hectare exclusion after other deductions. No exclusions were applied for the other types of plots to reflect the fact that they are not protected from harvest.

I have considered the information regarding research plots established in stands in the Kispiox TSA and I am satisfied that the assumptions in the base case appropriately reflected current practices as well as Ministry guidance. I note that PSPs and other forms of research plots are an important part of a large, coordinated ground-sampling effort that provides forest practitioners with valuable information for decision making. As climate change and other factors affect forest conditions, best practices for management of these plot areas would be to maintain them to allow continued information collection to support informed decision making moving forward. I am confident that the licensees in the Kispiox TSA will continue to work with district staff to ensure the research investment is protected.

- forest inventory

The forest inventories for the original Kispiox TSA and the Cranberry TSA were completed in 1992 and 1990, respectively. Both of these inventories were completed before the Vegetation Resources Inventory (VRI) standard was put in place.

A 1996 inventory audit for the Kispiox TSA suggested the volumes in the mature component of the inventory, or in stands greater than 60 years of age, were overestimated by 13 percent. The number of audit plots did not permit exact identification of the source of the overestimation, but it was considered to be attributable to both the classification of the forest cover attributes and the volumes generated by the Variable Density Yield Projection (VDYP) model.

An audit completed in 1995 for the Cranberry portion of the TSA suggested the volumes projected for the mature component of that inventory were statistically acceptable.

The forest inventories were converted to the VRI format in 2002.

In the 2003 and 2008 Kispiox TSA AAC determinations the decision makers concluded that the volumes for existing natural stands were at significant risk of having been overestimated in the base case analysis, by an amount approximating the mid-range value of the 1996 audit or 6.5 percent. The 1996 audit applies to 90.4 percent of the stands on the current Kispiox TSA THLB, as the Cranberry TSA was amalgamated into the Kispiox TSA in 2009.

In the current timber supply review, the 2002 VRI was used in the base case and updated with new harvesting, silviculture and natural disturbance data from the RESULTS database in 2017. Stand growth and ages were projected to 2017.

FAIB staff explored the implications of the uncertainty in natural stand yields through a sensitivity analysis that assessed the implications of overestimates in natural stand yields to timber supply. The results showed that if natural stand yields had been overestimated by 10 percent, timber supply would be reduced by 6.4 percent.

Alternatively, if the same approach was taken as in the 2003 and 2008 determinations, a 6.5 percent reduction in natural stand yields would suggest an overestimate of timber supply of 4.2 percent. This overestimation would be applicable to the stands on the portion of the THLB not within the Cranberry supply block, or 90.4 percent of the total THLB. FAIB staff indicate timber supply projected in the base case is potentially overestimated by 3.8 percent if this approach was determined to be applicable in this determination.

FAIB staff inform me that the Kispiox TSA is currently prioritized for the acquisition of Light Detection and Ranging (LiDAR) data. This is the first critical step in a new and improved inventory.

I have reviewed the information about the forest inventory and discussed it with Ministry staff. I note that a forest inventory dating back to 1990 and 1992 and for which an inventory audit suggests overestimation of natural stand volumes for the bulk of the land base introduces a significant amount of uncertainty to this determination. This uncertainty has implications for several factors of relevance to this determination as I have noted elsewhere in this document.

Given the uncertainty in the natural stand yields, and the likelihood it is predicated on both forest cover attributes and the volumes projected, it is reasonable to take into account that the timber supply projected in the base case has been overestimated. I accept the assessment of staff that indicates this overestimation is in the range of 3.8 percent, and I discuss this further under **'Reasons for Decision'**.

Under **'Implementation'**, I note my recommendation that a new inventory be developed for the Kispiox TSA over the term of this determination to enable better inventory information to be available for the next timber supply review.

- site productivity estimates

Site index is defined as the average height in metres that the dominant and codominant trees in a stand will attain at 50 years of age and is used as an input in growth and yield models for estimating the growth capability of forested sites.

For the stands in the Kispiox TSA, two different sources for site index values were used in the base case. For stands 30 years of age or older, the VRI estimated site

index (VRI-SI) value was used. The VRI-SI estimate is derived from site index curves using the stand heights and ages of existing stands in the inventory.

For stands less than 30 years of age, a biophysical model from the Provincial Site Productivity Layer (PSPL) was utilized. The biophysical model estimates are produced by a simple regression model of existing site index data related to BEC zone, slope, aspect, elevation, and various climate variables.

For some management units, the PSPL is updated using ecosystem data from existing Predictive Ecosystem Mapping (PEM) or terrestrial ecosystem mapping (TEM) datasets, coupled with site index estimates from a project that correlates site index to biogeoclimatic ecosystem classification site series (SIBEC). Although some TEM data has been collected in the Kispiox TSA, it did not sufficiently meet the criteria to permit its incorporation into the PSPL and therefore was not used in the timber supply review process.

I have reviewed the information regarding the assumptions for site productivity for stands in the Kispiox TSA and discussed it with staff. I am satisfied that the best available information for site productivity was used in the base case and it is appropriate for this determination.

However, I am aware that TEM and PEM are valuable tools that can enhance our information about site productivity, and these tools have not been applied yet to a degree that enables them to provide us with more refined information for timber supply review in the Kispiox TSA. As mentioned under '**Implementation**', I request that prior to the next determination, TEM and PEM projects be completed to improve our understanding of site productivity in these forest stands.

- volume estimates for managed stands

Managed stands include stands with a silviculture record in the RESULTS database and may include both planted and naturally regenerated trees. The Table Interpolation Program for Stand Yields (TIPSY) is used to generate yield tables for single species and even-aged stands using yield tables generated by the individual tree growth model Tree and Stand Simulator (TASS). In this timber supply analysis, BatchTipsy Composer version 5.0 was used which generated yield tables from TASS III for lodgepole pine and white spruce and tables from TASS II for all other species.

Input information for TIPSY is based on stand initiation characteristics including species, initial density, regeneration method (planted or natural), genetic gains and potential site index. TIPSY also allows for considerations for various silviculture treatments, forest health, and general operational adjustment factors.

For existing managed stands regenerated prior to 1987, it was assumed trees regenerated naturally as there are limited planting records before that time and

stands were frequently regenerated without the use of stocking standards. For stands regenerated after 1987, it was assumed trees were planted.

The regional pathologist for the Skeena Region has developed the Stand Health and Growth Monitoring (SHAGM) protocol as a tool to collect critical information on mid-rotation plantations. The SHAGM objectives are to collect data on forest health, stand volume, and First Nations values over a large sample population using a standardized mid-rotation assessment that can be completed by multiple parties and can be compared to the current standardized yield projection for stands 20 to 40 years of age.

This protocol can address the question of which forest health agents are having the greatest volume impact on a stand at the time. It can also provide a snapshot of how well the stand is meeting its expected volume trajectory, considering the forest health agents present.

The pathologist notes that a stand monitoring project in the adjacent Bulkley and Morice TSAs suggests TIPSy underestimates volumes in pre-1987 managed stands, although no projects have been completed within the Kispiox TSA.

As discussed under '*permanent sample plots*', YSM monitoring plots have already been established in the Kispiox TSA. One of the objectives of YSM program is to provide reliable data for the validation of estimates of yields projected by growth and yield models. FAIB staff conducted an analysis that produced managed stand yield projections using the attributes recorded in each YSM plot as inputs to TIPSy. These yield projections were then compared to the base case managed stand yield projections representing the plot locations. The results suggest that the projections are within the acceptable statistical variance.

Sensitivity analysis that evaluated the impact of under- or overestimating managed stand yields in the base case by 10 percent showed that timber supply would increase by 6.4 percent or decrease by 6 percent, respectively. These results are an indication that managed stands do not contribute proportionately to the base case timber supply projection in the short term of the analysis.

Input from the Gitanyow questioned the assumption that the growth in managed stands is better than in natural stands, noting that in their territory the model results suggest volume growth in managed stands is twice that in natural stands. Ministry staff acknowledge the concern and note that trees grow most vigorously when they are younger and the rate of growth declines as they reach maturity. Also, over time, stands experience losses due to pests, disease and natural disturbance that accumulate and offset the incremental gains in tree growth in later years. Conversely, higher volumes may also be expected in managed stands due to silviculture practices such as prompt reforestation, improved growing stock, more optimal levels of stocking and stem distribution, and the possibility of fertilization or vegetation management.

Gitanyow further commented that the effects of climate change on tree growth and natural disturbance are not considered in timber supply analysis.

I have reviewed the information regarding the assumptions for managed stands and discussed it with Ministry staff. The results of the YSM program indicate that modelled yield projections are reasonable, and I take further confidence in the yield model from the results of the SHAGM program in the adjacent TSAs where yields were observed to be underestimated. I am satisfied that the information and approach used to project yields for managed stands in the base case is based on the best available information and is appropriate for use in this determination.

I am aware that there is a level of uncertainty associated with the influence of forest health agents on this factor, as highlighted by the information provided by the SHAGM project in the adjacent TSAs. I also acknowledge the Gitanyow concern about the implications of climate change and natural disturbance on stand yields and note that SHAGM could provide additional information to reduce the uncertainty. The timber supply analysis included modelling to assess implications of both climate change and natural disturbances and my consideration of these influences has been discussed elsewhere in this document.

I recommend that, over the term of this determination, the YSM program continues and a SHAGM project similar to that conducted in the Bulkley and Morice TSAs be undertaken in the Kispiox TSA, in a manner that meets the requirements for the timber supply review process, and I note this in **'Implementation'**.

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

Forest re-establishment

I have no concerns regarding the analysis assumptions for forest re-establishment except as discussed under various factors in this document.

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

- silviculture systems

Silviculture systems most frequently used in the Kispiox TSA are clearcut and clearcut with reserves. The use of these systems produces a range of opening sizes containing even-aged forests. Clearcut with reserves results in the maintenance of older forest patches within harvested areas that are intended as wildlife trees, riparian reserves and management zones and island remnants conserving old growth characteristics.

Limited use of partial harvest silviculture systems has occurred in the TSA, for a total of 6000 hectares since 1990. District staff indicate most of the use of this

system occurred between 1995 and 2005, with very limited application of partial harvesting since that time.

In the base case, it was assumed that harvesting was through clearcut with reserves as this was determined to best reflect current practice.

The provincial Date Creek Research Forest, located in the ICHmc2 BEC zone in the Kispiox TSA, was established to examine how ecosystems function, how they change over time and the impacts of timber harvesting on various ecological factors. The Date Creek Silvicultural Systems Study is a 340-hectare ongoing operational research installation in which alternatives to traditional clearcut systems are examined. Harvesting at Date Creek has been occurring since 1992 and includes application of a Femelschlag or expanding gap silvicultural system with single tree and small group selection from skid trails.

To date, no commercial thinning has occurred in the Kispiox TSA, although one cutting permit has been issued. District staff completed an analysis to estimate the potential for commercial thinning in stands over the next decade. Stands were considered to be feasible for thinning if they met the following set of criteria: had existing road access, were between 30 and 45 years of age with site index greater than or equal to 16 metres, had a current basal area equal to or greater than 20 square metres per hectare and were on slopes equal to or less than 25 percent. Stands on a total of 10 616 hectares or four percent of the THLB met these criteria.

Public comment noted that clearcut and even-aged silviculture management may reflect past practices but cannot be expected to continue and made some recommendations for alternative systems citing the Date Creek research installation. Additional comments requested that I promote a variety of partial cutting approaches that retain significant old forest structure.

I have considered the information about silviculture systems in the Kispiox TSA and discussed it with Ministry staff. I acknowledge the comments made regarding exploration of alternative systems and I agree that leveraging the Date Creek research is beneficial in understanding how alternative systems can be effectively applied in the forest stands in the Kispiox TSA.

Overall, the comments regarding the need to shift away from clearcutting to other silviculture systems are aligned with current provincial aspirations to move towards a more holistic approach to stewarding the land and water resources and making sure they are healthy and resilient for future generations under the draft Biodiversity and Ecosystem Health Framework. However, the nature of the timber supply review process is to reflect current practices in an area and not speculate on future trends, and therefore the base case cannot include accounting for practices not yet in use. I commend the ongoing research trails in the Date Creek area to explore the use of partial harvesting systems in the TSA and encourage broader

application of the learning from these trials to stands in the TSA as it becomes available.

I also acknowledge the work of staff to examine the potential for commercial thinning in stands in the TSA and note that as the use of this silviculture practice increases in the TSA, the implications for timber supply can be evaluated in future determinations.

- incremental silviculture

Incremental silviculture practices are activities that provide benefit to managed stands beyond the practices required to meet basic silviculture obligations, and include juvenile spacing, fertilization, pruning or other enhanced stand treatments.

Spacing is the cutting of undesirable trees within a young stand to reduce competition among the retained trees for water, nutrients, and sunlight. The cut trees are usually not removed from the site. Spacing objectives can include controlling density to meet tree growth objectives, meeting biodiversity or wildlife habitat resource objectives, maintaining or enhancing forest health, managing species composition or stand structure and increasing stand value.

Between 2008 and 2010, under the Job Opportunities Program and the Northwest Revitalization Program, approximately 560 hectares of spacing occurred in the Kispiox TSA. Dense juvenile stands between 15 and 35 years of age in previously harvested areas with moderate or higher site classes were targeted. District staff note that no additional spacing has occurred since that time.

Any incremental silviculture activities that have occurred to date were captured in the RESULTS database through updates to inventory labels and were modelled in the base case.

I have reviewed the information about incremental silviculture activities in the Kispiox TSA and discussed it with staff. I note that spacing, such as in the projects conducted between 2008 and 2010, is considered a valuable option to increase the capability of forests to adapt to climate change. As such, I recommend that opportunities continue to be explored to determine suitable stands that could benefit from these practices. If additional activities occur over the term of this determination, the implications will be incorporated into future timber supply reviews.

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

On April 1, 2006, new log grades were implemented for the BC Interior establishing that the grade be based on the log's size and quality at the time the log is scaled or

assessed, without regard to whether the tree was alive or dead at the time of harvest. As a result, logs formerly graded as 3 and 5 (characterized as 'dead potential volume') that were previously excluded may now contribute to the AAC and be included within a licensee's harvested volume.

Also in 2006, the report *Summary of Dead Potential Volume Estimates for Management Units within the Northern and Southern Interior Forest Regions* was released, which used data from inventory audit plots, VRI Phase II ground samples, permanent sample plots and temporary sample plots to estimate the dead potential volumes. For the Kispiox TSA, dead potential volume was estimated at an additional 16.3 percent of the green volume in stands. This represents the maximum amount of volume that could be available from dead stems in stands but does not consider its utilization potential.

Growth and yield projections from VDYP and TIPSy do not account for dead potential volume. As a result, the base case did not assume any contribution to timber supply from dead potential stems.

A review of data from the Harvest Billing System for the previous AAC determination indicated that the volume from dead logs taken by licensees to mills at their discretion between 1995 and 2004 totalled about 11.4 percent of the cut accountable volume.

Staff indicate that the utilizable volume from dead stems in harvested stands is unlikely to be near the maximum suggested by the report in the Kispiox TSA, in part due to the overall quality of the hemlock and balsam stems once dead. However, western redcedar is a species that is generally rot resistant and likely to remain a viable source of merchantable volume longer than other species.

To assess the potential recoverable volume from dead western redcedar stems, staff evaluated the contribution of cedar volume in the base case. In the first decade of the base case harvest projection, 2.8 percent of the volume contribution came from cedar in natural stands. Assuming that total dead potential volume is an additional 16.3 percent of the green volume shown in the inventory and that cedar represents 2.8 percent of this dead potential volume, the short-term harvest level in the base case may be underestimated by up to 0.5 percent.

I have reviewed the information regarding the dead potential volume in this TSA and discussed it with staff. I concur with staff that the potential of the dead volume from balsam and hemlock is unlikely to be a significant source of merchantable volume in the Kispiox TSA due to the nature of those species once dead. I am also aware that there is significant uncertainty in the TSA inventory in general, as discussed elsewhere in this document, and I make recommendations to obtain better information over the term of this determination to be available for the next timber supply review.

I do, however, consider that dead stems of western redcedar, with their innate resistance to rot, are quite likely to remain merchantable for an extended period of time and this volume which has not been accounted for in the base case will contribute to timber supply. I do consider it uncertain as to whether all volume from dead cedar stems would be merchantable, and therefore I believe it unlikely that timber supply has been underestimated by a full 0.5 percent on this account.

In conclusion, I consider that timber supply as projected in the base case has been underestimated by a small unquantified amount and I discuss this further in

'Reasons for Decision'.

- minimum harvestable criteria

Minimum harvestable criteria determine the earliest age at which a stand is considered to be economically viable for harvest within the timber supply model. While harvesting may occur in stands at or near the minimum ages to meet forest level objectives, most stands will not be harvested until well past the minimum ages due to management objectives for other resource values.

District staff reviewed harvest appraisal records in the Kispiox TSA from 2008 to 2019 and found that stand harvest volumes ranged from 142 to 791 cubic metres per hectare. This information was used to determine minimum harvestable age (MHA) criteria for existing natural stands that would reflect current practices. After elimination of outlier data, the MHA for existing natural stands in the base case was set at the youngest age at which an individual stand achieved a merchantable volume of 200 cubic metres per hectare.

The mean annual volume increment can be calculated for each age in a yield projection and the maximum value is referred to as the culmination mean annual increment (CMAI). The age at which CMAI is achieved is considered the biologically optimal rotation age for maximizing long-term volume yields. Although the yields are optimal, the incremental gains in the years prior to CMAI can be very small. Retaining stands longer for these small gains introduces additional risk that these stands may be lost to pests, disease or wildfire in that time. Therefore it is anticipated that future foresters will harvest slightly earlier than CMAI to minimize this risk. For managed stands, the MHA was set at the age at which each stand reaches 95 percent of its CMAI.

The Kitselas First Nation expressed concern that second-growth stands in the TSA would be potentially assumed to be harvested at too young an age and requested sensitivity analysis that explored the implications of increasing the MHA for managed stands to the age at 100 percent of CMAI. The results of this sensitivity analysis showed that timber supply would be decreased by 11.5 percent on this account.

I have reviewed the information about the assumptions for MHA for both natural and managed stands and discussed it with ministry staff. I agree with the importance of harvesting stands as close as possible to the age of CMAI to ensure we are maximizing the biological productivity of stands on the THLB. I am satisfied that the assumptions in the base case appropriately reflect current practices in the Kispiox TSA, and I make no adjustments in this regard.

However, acknowledging the concern expressed by the Kitselas First Nation, I request that licensees continue to reflect best practices in their selection of second-growth stands for harvest. Further, as included in 'Implementation', I request that stand harvest ages be monitored to ensure operations continue to reflect best forest management practices.

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

Integrated resource management objectives

- *Northern Goshawk*

Accipiter gentilis atricapillus, or Northern Goshawk, is a key indicator species of forest ecosystem health. Goshawks favour mature- and old-conifer stands with closed canopies and open understories, and their breeding territories are typically found in lower elevation ICH, CWH and SBS BEC zones.

The Northern Goshawk has two subspecies, the interior and coastal, and the Kispiox TSA is situated in a transition zone where the two overlap. The interior and coastal subspecies are blue-listed and red-listed, respectively, and the coastal subspecies is currently classified as threatened under the *Species at Risk Act*. The interior Northern Goshawk has experienced a 95 percent decline in recent years in the Skeena Region, largely due to habitat loss and fragmentation. Successfully breeding for a pair requires 2400 hectares of contiguous mature/old forest. Goshawks are highly territorial and breeding pairs nest approximately six kilometres apart in suitable conditions.

Legal objectives established for the area of the Cranberry SRMP require that all known Goshawk nests and post-fledging areas be maintained with operations only allowed outside of the critical use period between February 15 and August 15, and that more than 60 percent mature and old forest structure and function be maintained within determined foraging areas around known nests and post-fledgling areas. In the West Babine and Kispiox SRMP areas, the needs for Northern Goshawk are assumed to be met through maintenance for other values, such as wildlife tree retention and old growth management, and there are no separate legal objectives for goshawk.

District staff indicate that licensees follow the legal guidelines established for the Cranberry SRMP area. One licensee, NorthPac, has committed to applying the same approach in all their operating areas throughout the TSA. For goshawk habitat management outside the Cranberry SRMP area, licensees typically refer to FSP commitments for landscape and stand level biodiversity, riparian habitats, and habitats for key indicator species such as grizzly bear, mule deer and moose. In addition, in their FSPs, licensees typically commit to conducting professional assessments of breeding and foraging areas for known nest sites.

In the base case, active and historic nests or nest clusters and foraging territories within the Cranberry SRMP area and Northpac's operating areas were identified with a buffer area around them and excluded in the derivation of the THLB.

District staff note that a goshawk stabilization project initiated in 2017 by the Ministry of Water, Lands and Resource Stewardship in collaboration with forest licensees mapped breeding territories in five TSAs including the Kispiox TSA. This work was used to inform a goshawk strategy developed as part of the Skeena cumulative effects implementation project. The strategy identified suitable breeding territories of 2400 hectares in size and prescribes variable retention harvesting levels as per the Northern Goshawk breeding habitat requirements. The strategy also prescribes no harvesting in the core breeding habitat and sets targeted retention of mature- and old-seral in the breeding area buffer and breeding home range for each nest. District staff are engaging with licensees around implementing aspects of this project into FSPs for the Kispiox TSA.

A sensitivity analysis was completed which assessed the timber supply implications of a management strategy that restricts harvest within known and potential Northern Goshawk nest sites and reserves a minimum of 60 percent mature and old seral forest within known and potential foraging territories. Applying this strategy across the entire TSA showed timber supply would be reduced by 4.8 percent.

I have reviewed the information regarding Northern Goshawk in the Kispiox TSA and discussed it with Ministry staff. I acknowledge the importance of this species, particularly given its prevalence in the TSA, its status under the *Species at Risk Act* and its importance as an apex species. I accept that the habitat exclusions and cover constraints modelled in the base case for this species reflect legal requirements and current practices. As practices for the management of Goshawk are incorporated into FSPs, this will be reflected in future timber supply reviews.

I acknowledge the steps in operational practice that licensees are taking to protect habitat for this important species, in the absence of more formal direction coming forward. As noted under '**Implementation**', I request that licensees, district and First Nations continue to work together to assess if and where increased mature and old-seral forest structure might be required to protect goshawk.

- *hydrological integrity*

Hydrological recovery is the process by which regeneration restores the hydrology of an area to conditions prior to disturbance. Each of the three planning areas in the Kispiox TSA has objectives set by government that require protection of the hydrological integrity of the watersheds as well as the maintenance of water quality and quantity, within the range of natural variability. The Kispiox TSA contains the Skeena River and its tributaries, which provide important spawning habitat and migration routes for salmon.

A Kispiox Expert Water Panel (KEWP) comprised of representatives from several provincial ministries, the federal government, the Gitanyow Fisheries Authority and the Gitksan Watershed Authority, developed a strategic plan in 2007 that included agreement that watershed sub-basins, or 4th Order Watersheds, would be the base unit for assessment. Other elements of the plan included baseline level 1 assessments for each sub-basin, direction to licensees on required future assessments, and risk thresholds for various important indicators, including Equivalent Clearcut Area (ECA), peak flow index, road density and stream density.

In the base case, ECA maximums were modelled within the individual watershed base units as the maximum percentage of the watershed base unit permitted to be occupied by cleared forest at any one time. ECA maximums were determined using recovery curves from the Interior Watershed Assessment Procedure. ECA maximums for mid-sized watersheds reflected those in the West Babine SRMP, and those for 4th Order Watersheds and community watersheds were consistent with the KEWP recommendations.

Ministry staff indicate that licensees in the Kispiox TSA have committed to do the required assessments and perform actions to address the recommendations that arise from assessments for all sub-basins in the TSA. In addition, they commit to complete and abide by the results of hydrological assessments for all 4th Order Watersheds in the Cranberry SRMP area, and all mid-sized watersheds in the West Babine SRMP area, prior to undertaking development that exceeds ECA thresholds. Within community watersheds, licensees commit to ensure operations remain below the high-risk threshold for ECA and road density by important elevation or soil sensitivity class.

Overall, staff advise that the base case assumptions for hydrological integrity reflect current practices.

Input was received on hydrological integrity from several stakeholders, including the Babine River Foundation and SkeenaWild Conservation Trust, First Nations and members of the public. In particular, the Wild Salmon Policy Habitat Indicator assessment reports from 2020 and 2021 were cited as an information source that has important bearing for the watersheds in the TSA. The Babine River Foundation noted the high sensitivity to forest clearing in the Babine River and Gail Creek

Watersheds, and the potential of damaging effects coupled with climate change trends on summer water flow and water temperatures, in particular for steelhead trout.

The Gitxsan referred to the Wild Salmon Policy Habitat Indicator analysis, noting the reports suggest some watersheds are potentially in critical states and need to be addressed. The Gitxsan support progress on this issue through Ministry of Forests expectations to the forest licence holders, continued monitoring and meaningful change to current practices that will see restoration to these impacted watersheds. The Gitxsan emphasized the cultural significance of riparian and terrestrial habitat that support salmon, and the importance of healthy watersheds and healthy salmon to their interests.

Ministry staff note the habitat indicator assessment reports were intended to be used as a coarse filter in identifying watersheds potentially at risk of exceeding thresholds for the four risk indicators of riparian disturbance, road density, stream crossing density and total land cover alteration. In the reports, results were presented from a GIS-based assessment that used standardized provincial datasets and did not include field-based information or data from industry assessments. Comparison of the report results against the assumptions applied in the base case was difficult due to differences in base units, scale and assumptions.

The Gitanyow provided input expressing concern about hydrological integrity and the assumptions used in the analysis. Staff confirm that the Gitanyow Land Use Plan was incorporated into the Cranberry SRMP and was fully modelled in the base case, including its requirements for watersheds, water management units, and floodplains and alluvial fans. The modelling assumptions applied in the base case for maximum ECA thresholds were consistent with the KEWP strategic plan.

I have reviewed the information regarding hydrological integrity in the TSA and discussed current practice and the base case assumptions with staff. I am satisfied that current practice in the TSA is consistent with legal requirements and the results of collaborative planning, and that the base case appropriately reflected both legal requirements and current practice.

I am aware that in the 2008 determination, the chief forester of the time recommended in his implementation instructions that work to continue identification of Fish Sensitive Watersheds and Critical Fish Streams in the TSA be completed. This work was not completed.

I acknowledge that watershed hydrological integrity is of great importance to First Nations as well as the public and the Ministry and I understand from staff that licensees and other forest practitioners are working together to manage for hydrological integrity within the scope of best practices and current knowledge. Should additional information become available over the period of this determination that enables further enhancement of management practices for this

important value, it will be incorporated into future determinations. This includes any information from the Wild Salmon Policy Habitat Indicator analysis that can inform licensee practices and be incorporated into FSPs.

I emphasize that it is an important operational responsibility to manage the watershed in a way that incorporates the best science and protects hydrological integrity. For the Kispiox TSA, the THLB encompasses only 20 percent of the overall forested land base. If we continue to focus on best management practices, I am optimistic that the hydrological integrity of watersheds in the TSA can be maintained.

- *cedar management*

Western redcedar (*Thuja plicata*) is a valued species in the natural and managed stands of the Kispiox TSA and is an important cultural and spiritual resource for First Nations.

The *Cranberry SRMP Land Use Objectives Regulation Order* established a legal objective to maintain mapped areas of western redcedar as a source for traditional, cultural and subsistence use for First Nations. There are no explicit objectives for western redcedar in the Kispiox or the West Babine SRMPs.

In the base case, for the Cranberry SRMP area, the objectives described in the Order were modelled. Approximately 697 hectares of Gitanyow Cedar Stand Reserves were retained in the THLB and modelled by assuming a multi-pass harvest using seral-stage requirements, wherein no more than 15 percent of the stands with cedar reserves were permitted to be less than 40 years of age at any time. District staff indicate that the areas are associated with a recently issued First Nations Woodland Licence, and the Gitanyow's current FSP specifies intent for both traditional use and small-scale harvest in these stands.

Both the Gitanyow First Nation and the Gitxsan First Nation are concerned about the potential of unsustainable harvest of cedar, negatively impacting their ability to acquire cedar of suitable size and quality to meet current and future cultural and domestic needs. In March 2008, *A Plan for a Long-Term Sustainable Supply of Cedar for Gitanyow Cultural and Domestic Use* was completed for Gitanyow Traditional Territory within the Kispiox TSA. In 2021, the Gitxsan First Nation produced their *Cedar Management Strategy* as part of the data package review for the current timber supply review. Both documents contain recommendations for the volume of cedar necessary to meet cultural and domestic needs. The Gitxsan emphasize it is important to ensure cedar is available at all life stages, including that it be part of planting and regeneration plans.

Data available for the Kispiox TSA indicate that for the period from 2018 to 2022, cedar contributed approximately nine percent of the annual harvested volume, or 33 500 cubic metres per year. A comparison of these scaled volumes to the cedar

volume in the inventory suggests that cedar is being disproportionately harvested. However, staff indicate it is difficult to confirm as western redcedar often exists as an understory species within stands, making it difficult to capture the presence of the species during Phase I VRI photo interpretation. Another possible contributing factor in the discrepancy may be that the VRI underestimates cedar volume at the block level.

Staff reviewed the cedar volume contribution to the base case harvest projection and it indicates the Kispiox TSA can sustain a harvest level of cedar of approximately 15 000 cubic metres per year, based on the current inventory information and using the assumptions of current management.

The Gitxsan Nation's 2021 *Cedar Management Strategy* identifies 4989 polygons covering 75 485 hectares within their territory and proposes these areas be set aside for exclusive use of the Gitxsan and not be included in the THLB. They further noted that the areas have shifted over the past few years as the strategy continues to be developed and should not be used as a final analysis.

A sensitivity analysis to assess the impact of excluding these areas from the THLB showed a 2.4 percent increase in timber supply. FAIB staff indicate that this unusual outcome resulted from two factors. Firstly, deferring cedar stands resulted in the model directing harvest to stands with higher productivity, which increased the merchantable growing stock in the short- to mid-term. Secondly, the resulting harvested stands were located in management units with more restrictive visual quality objectives and the areas achieved green-up requirements more quickly.

Another sensitivity analysis which assessed the impact of excluding all cedar volume from contributing to timber supply showed a 2.2 percent reduction in timber supply.

Several stakeholders commented on the disparity between the cedar volume stated by the inventory and the scaled volume, and that given the cultural, spiritual and economic significance of cedar to stakeholders, full and transparent data is required about past harvest for meaningful consultation.

I have reviewed the information about western redcedar and discussed it with Ministry staff. I am satisfied that the base case reflects current practices with regards to cedar management as well as current legislation. However, I am concerned about both the uncertainty in the inventory regarding actual cedar volumes as well as the possibility that current harvest is exceeding the available and proportionate contribution in forested stands. As noted elsewhere in this document, the inventory information in the Kispiox TSA, while the best available information at this time, is dated and provides a significant source of uncertainty as illustrated in this factor.

As noted under '*forest inventory*', the Kispiox TSA is currently prioritized for the acquisition of LiDAR data. This is the first critical step in developing a new and improved inventory. As part of a new inventory, enhanced assessments can be directed toward specific forest types or species which can include cedar.

I am satisfied that the acquisition of better data and a new inventory for the Kispiox TSA will reduce the uncertainty in this factor and provide First Nations, stakeholders, licensees and Ministry staff with better information upon which to base the management of this critical resource. I make no adjustments to the projected harvest in the base case in this determination. I request that all parties continue to work together to ensure practices are aligned with ongoing sustainability of western redcedar in the TSA.

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

Other information

- unharvested volume carry forward

In January 2018, the Ministry introduced the *Policy Regarding the Administration of Unharvested Volumes, Uncommitted Volumes, and Unused BCTS Volumes*, collectively referred to as accumulated volume. The policy aims to provide a consistent decision-making process for the disposition of these volumes, aligning them with current and future AAC determinations and promoting meaningful consultation with First Nations and other stakeholders.

The total accumulated volume in the Kispiox TSA, as of 2022 is 10 320 027 cubic metres.

The base case harvest projection is based on the condition of the forest including the amount of merchantable timber growing stock present, as of the date of the commencement of the timber supply analysis. The inventory growing stock volume has not been depleted to account for future potential harvesting of accumulated volume. Any volume harvested, including accumulated volume that is above the AAC set in this determination, results in depletion of the growing stock at a greater rate than projected in the base case.

District and North area staff have consulted with licensees, First Nations and stakeholders regarding the retirement of accumulated volume and proceeded with the retirement of the volume in the Kispiox TSA in August 2025.

Input received from NorthPac requested that all unharvested volume accumulated since the previous timber supply review be retired and absorbed into the inventory rather than disposed of through issuing new tenures. The Gitxsan Laxyip Management Office also expressed its support for the retirement of the volume.

Ministry staff have informed me that the retirement of the total accumulated volume has been completed and it is no longer available for disposition.

I have considered the information regarding the retirement of unharvested volume in the TSA and discussed it with Ministry staff. The information about accumulated volume in the Kispiox TSA is an important consideration for me in my AAC determination to ensure I am aware of any potential risk posed to the sustainable harvest level projected by the base case on this account. Having reviewed the information, I am satisfied that there are no implications for timber supply and I make no adjustments on this account.

- climate change

Scientific studies support that climate conditions such as temperature, rainfall and snow levels are shifting and these changes will have implications for forest ecosystems. It is necessary to adapt forest management practices to the expected shifts in climate to help mitigate negative impacts.

Climate change adds complexity to the AAC determination framework by introducing risks and uncertainties to conditions of forest health (biological agents and their behavior changes), site productivity (biophysical changes of forest sites affect growth and yield), stand development (successional changes, stand mortality and growth under changing climate) and forest genetics (i.e., incorporation of climatically suitable and resistant seed sources).

The 2017 technical report, *Adapting Forest and Range Management to Climate Change in the Skeena Region: Considerations for Practitioners and Government Staff*, summarized baseline climate trends and projections for the region including the Kispiox TSA. Predictions include shorter and warmer winters and hotter summers, which combined are expected to increase drought and fire hazard. Drought stress increases the susceptibility of trees to insects and disease. More frequent natural disturbances, including hydrological events, are also expected to occur. The median annual temperature is expected to increase by 1.7 degrees Celsius by 2050 compared to 2015 levels. Expected shifts in precipitation include a one percent increase of rainfall in summer, a range of -10 percent to 8 percent change in winter snowfalls, and a decrease in spring snowfalls of 59 percent.

BEC zones are expected to shift, with increased area in the future classified as ICH mc1 and mc2 and decreased area in ESSF and Alpine. This suggests improved conditions for tree growth at higher elevations as the climate becomes warmer and wetter. The Ministry's *Climate Based Seed Transfer Guidelines* are a tool for forest practitioners to adapt to climate change patterns, through planting species suitable for future climate, using genetically improved seed with higher levels of drought tolerance and pest resistance and supporting a diversity of species and age classes.

The base case did not explicitly model climate change. Sensitivity analysis was completed to explore the implications of climate change for timber supply. Staff applied a 'risk tranche' approach, a method of structured analysis in which risk from a specific factor is modelled as an increasing function over time from the lowest risk to higher risk in terms of the timber supply implications.

The risk factor modelled in the sensitivity analysis was western bark beetle (WBB), the most destructive pest of mature subalpine and amabilis fir ('balsam') in British Columbia, and one that is expected to increase in prevalence and severity as the climate warms. Current aerial overview mapping indicates that WBB is now widespread through balsam-leading stands in the ESSF and MH BEC zones in the Kispiox TSA. Balsam-leading stands comprise 41 percent of the AFLB and 27 percent of the THLB in the Kispiox TSA. This indicates that the potential of increased WBB prevalence resulting from climate change poses a risk to timber supply.

Five different risk class scenarios were modelled. Risk Class 1 assumed no harvest contribution from the balsam-leading stands and a relatively frequent WBB outbreak return interval of 100 years, nearly double the current frequency. In this scenario, the harvest projection was reduced by seven percent compared to the base case. Staff note that given the balsam-leading stands were fully excluded from contributing to timber supply, the results show that the base case harvest projection does not depend heavily on volume from those stands.

Risk Classes 2 through 5 allowed harvest contribution from the balsam-leading stands but assumed different WBB outbreak frequencies, ranging from double the current rate to no future outbreaks. An outbreak frequency nearly twice the current rate resulted in a harvest projection two percent higher than the base case. Results from the other three risk class scenarios showed that if outbreaks were to remain the same or decline, timber supply is greater than in the base case. Staff note that, when compared to the volume losses attributed to WBB modelled in the base case, discussed under '*natural disturbance*', these sensitivity analyses demonstrate that the shifts in WBB outbreak frequency and severity explored here pose a lower risk to the base case timber supply.

Eleven stakeholders provided input at the data package requesting transparency in the assumptions and modelling for climate change implications. A comment questioned the assumption in the 2017 technical report that growing conditions could improve for some tree species, noting the expected influence of future extreme weather events. Staff note that the results of the risk tranche approach were published in the *Discussion Paper*, and the base case did not include any assumptions about improved growing conditions.

Gitanyow expressed concern about the impacts of climate change on hydrology and fish habitat. Ministry staff have provided Gitanyow with detailed information about the analysis assumptions for climate change and other related variables.

I have reviewed the assumptions and modelling completed to explore the implications to timber supply of the uncertainty around future climate conditions in the TSA. I am aware that this modelling explored one risk factor and climate changes will influence many other factors posing risk to forest growth, such as the *Dothistroma* discussed elsewhere in this document. I commend staff's work to investigate the timber supply implications of WBB outbreak trends, as WBB does represent an immediate expression of climate change implications, given its increasing prevalence in the Kispiox TSA. I note that my decision sets an AAC that is appropriate for the current conditions and practices in the TSA.

I am satisfied that the results of the risk tranche sensitivity analysis demonstrate low risk to the base case harvest projection from the uncertainty assessed in this modelling. There is sufficient growing stock to maintain the timber supply in the short- to mid-term in the Kispiox TSA should WBB outbreaks increase in frequency and severity. There are ongoing efforts to mitigate and adapt to climate change in the Kispiox TSA and elsewhere in the Province, including use of the *Ministry's Climate-based Seed Transfer Guidelines* to plant species suitable for future climates, use of genetically improved seed that increases pest resistance and drought tolerance, and promotion of a diversity of species and age classes.

In conclusion, I am satisfied that the timber supply projected in the base case is sufficiently resilient to the uncertainty represented in the sensitivity analysis and I make no adjustments on this account. I request that district staff continue to monitor the implications of climate change in forest stands and note that new information can be considered in a future determination.

- carbon sequestration

Forest carbon is of emerging importance in forest management in BC, with strong interest in it as part of broader sustainable forest management, old growth and biodiversity management, forest landscape planning processes and initiatives, and forest offset projects among First Nation communities.

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 can act either as carbon sources or carbon sinks. A forest is considered a carbon source if it releases more carbon from the atmosphere than it absorbs, and a sink if it absorbs more carbon than it releases. The net ecosystem carbon

balance (NECB) is used to describe the net change between a given ecosystem and the 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. The principle objective from a climate change mitigation perspective, is to reduce greenhouse gas (GHG) emissions into the atmosphere.

The Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) was used to model forest ecosystem carbon dynamics. In accordance with the British Columbia Greenhouse Gas Offset Protocol: Forest Carbon (2024), the retention factor for harvested wood products in use after 100 years was assumed to be six percent, with the remainder treated as an emission.

To make different GHGs (e.g., carbon dioxide and methane) comparable in carbon accounting, the global warming potential (GWP) over 100 years is used to convert each GHG into carbon dioxide equivalent (CO₂e).

Carbon modelling of the base case harvest projection was completed to project carbon dynamics over the first 100 years. Base case rates of harvesting (with slash burning), wildfires, non-recoverable losses due to insects and disease and road building were modelled to estimate GHG emissions in megatonnes (Mt) of CO₂e. The base case harvest projection of 654 200 cubic metres per year equated to an annual harvest of 1813 hectares. Other disturbances with direct GHG emissions included an average of 63 hectares per year from wildfires on the THLB and 148 hectares per year outside the THLB and 66 hectares per year of future road building. Indirect annual GHG emissions assumed from insect damage with no salvage was approximately 662 hectares per year on the THLB and 1545 hectares per year outside the THLB.

The results of the carbon analysis indicate that the Kispiox TSA will be a net carbon source with an annual carbon emission of about 0.32 Mt CO₂e per year over the 100-year projection period. The largest source of carbon emissions was wood removed by timber harvesting with emissions of 0.56 Mt CO₂e per year or 81 percent of the total emissions. The second largest emission source was wildfires, releasing 0.07 Mt CO₂e annually or nine percent of the total emissions. Slash burning, future road building, and non-recoverable losses account for the remaining 10 percent of total emissions. Insects, primarily WBB, heavily influence the carbon dynamics outside the THLB. The analysis estimated that WBB moves 6.7 Mt CO₂e annually from living trees into dead material, 1.6 Mt CO₂e of which was from the THLB.

I have reviewed the information provided in the carbon analysis for the Kispiox TSA and discussed it with staff. I note that this analysis provides valuable information to understand the forest carbon dynamics in the TSA and the implications of

various human and natural disturbances. The incidence of WBB is not only the THLB but also the non-THLB, and the corresponding implications of its impacts as a source of carbon, is of concern to me, in particular given so much of the impact is outside the THLB. I am aware that the GHG emissions that result from natural disturbances such as insects and wildfire are expected to increase with climate change. Although largely not within our control, there are steps we can take to improve the resilience of our forests to insects and disease, as discussed earlier in this document.

There are shifts that can be made in forest practices to reduce loss of carbon, such as reducing or eliminating the use of slash burning, increasing salvage in WBB-damaged stands and shifting harvested wood products into longer-lived products. Deactivating roads that are no longer needed and reforesting these areas also can have beneficial implications.

Carbon modelling is a complex emerging science that provides valuable information for forest practitioners and decision makers. I note that approaches continue to be refined as our understanding increases. In March 2025, the BC Office of the Auditor General produced a report that requested greater consistency and clarity in the advanced techniques employed by staff with this expertise. The Ministry of Forests responded to this recommendation through releasing the April 2025 *Carbon Modelling Guidance for Timber Supply Review*.

I have considered the information regarding carbon sequestration in my determination for the Kispiox TSA. I request that Ministry staff and licensees continue to look for opportunities operationally to reduce GHG emissions through forest management practices.

- cumulative effects

Cumulative effects are changes to environmental, social and economic values caused by the combined effect of past, present and potential future human activities and natural processes.

BC established the *Cumulative Effects Framework* in 2014, a set of policies, procedures and decision support tools to help identify and manage cumulative effects consistently and transparently across all natural resource sectors. A protocol is under development for Northern Goshawk, and I note that this species is discussed elsewhere in this document.

In the timber supply analysis for the Kispiox TSA, values of peaceful enjoyment, grizzly bear habitat, moose and Northern Goshawk were assessed in relation to the timber supply projections.

Peaceful enjoyment is a measure under the provincial Recreation Opportunity Spectrum that reflects the likelihood of encountering other individuals while out on the land base, and is negatively correlated with road density, linear features and

other human disturbances. A cumulative effects assessment project in the Skeena District has developed guidance for assessing peaceful enjoyment disturbance using a decision key. The guidance attempts to minimize the increase of roads on the landscape through a mandate of no new net roads and requirements to deactivate roads when a permit is requested to build new roads. Categories for peaceful enjoyment range from urban, rural, roaded-modified, roaded-natural, semi-primitive motorized, semi-primitive non-motorized and primitive. Evaluation of the categories relevant to the forested land base indicate the majority of the primitive category falls within the areas classified as remote and outside the THLB and meeting the requirements for other categories could potentially impact operating costs but would not impact access to stands on the THLB.

Legal objectives for mapped high value grizzly bear habitat are established in the West Babine and Kispiox SRMP areas. In the Kispiox SRMP area, forest management expectations include no alteration of critical habitats and no alteration within forested area within 100 metres of non-forested critical habitat, and mature-seral requirements within mapped access management zones. In the West Babine SRMP area, expectations include the same requirements as well as road density limits wherein a maximum of 20 percent of the area in the Shedin and Hanawald mid-sized watersheds are permitted to have a road density greater than 0.6 kilometres per square kilometre.

For the area of the Cranberry SRMP, no legal objectives for grizzly bear are established and none were modelled in the base case. Staff note that a WHA for Cranberry/Nass Grizzly Bear is pending finalization and enactment. Licensees consistently commit in their FSPs to manage for grizzly bear in accordance with the draft objectives.

WHA Order 6-005 which came into effect in 2019 contains a conditional harvest zone for the Shenismike West within the West Babine SRMP area. The requirements of this order were modelled in the base case through the approach used for WTRA.

Road density and high-quality habitat were cumulative effect variables explored through sensitivity analyses for grizzly bear. A sensitivity analysis was completed that applied the road density requirement under the West Babine SRMP to all grizzly assessment watersheds, defined as Fresh Water Atlas assessment watersheds that have greater than or equal to 100 hectares of secure grizzly habitat, and greater than or equal to 100 hectares of THLB more than two kilometres from existing roads. This requirement was applied to 63 watersheds, comprising 65 807 hectares of THLB, or about 25 percent of the total THLB for the TSA.

Staff note that the road density criteria did not prevent harvesting in the modelling once the maximum density threshold was met but did prevent the creation of new

roads to access timber. When the road density maximum was met and all timber accessed by already existing roads was harvested, harvest activity was prevented in the modelling. The sensitivity analysis results showed that limiting road density in this manner reduced the timber supply projected in the base case by 13.7 percent to 564 500 cubic metres per year.

A second sensitivity analysis was completed using classification of landscape units according to food capability as per Section 4.9 of the *Skeena Sustainability Forum's State of Value Report for Grizzly Bear*. In this sensitivity analysis, a seral retention requirement where a maximum of 30 percent of stands in high quality grizzly habitat were permitted to be mid-seral in seven landscape units classified as having high food capability. The results of this sensitivity analysis showed that timber supply would be reduced by 14.3 percent to 560 500 cubic metres per year.

UWR 6-040 Xadda Moose – Cranberry, Kitwanga, Nangeese within the Kispiox TSA was approved on March 20, 2025. The moose habitat requirements of this Order were not reflected in the base case as it had not yet been approved. Instead, the requirements were explored through sensitivity analyses in support of this determination as well as the development of the Moose General Wildlife Measure requirements for the Order.

Moose habitat objectives were modelled in three successive sensitivity analyses. In the first, core winter habitat was excluded during the derivation of the THLB, which showed a reduction in timber supply by 3.7 percent compared to the base case harvest projection. In the second, the core winter habitat was excluded, and additional forest retention requirements were applied to moose stream, river and wetland areas, resulting in a 4.2 percent reduction in timber supply compared to the base case. In the third, in addition to the two modelled objectives above, the yields for managed stands within the area of the Order were reduced to reflect lower stocking standards. This resulted in a reduction to timber supply of 6.9 percent.

I have reviewed the information regarding the important values assessed through the cumulative effects lens and discussed it with Ministry staff. Regarding peaceful enjoyment, I acknowledge the analysis completed to assess this measure and I am satisfied that the land base of the Kispiox TSA that lies outside of the THLB provides valuable areas for the achievement of this value.

With regard to grizzly bear, I note that the assumptions modelled in the cumulative effects sensitivity analyses do not reflect current legal requirements nor current practices for grizzly bear in the TSA. I acknowledge the importance of effective management for this species, and I am hopeful that practices undertaken for the management of other resource values, including consideration of road densities and stocking standards, may benefit management of this species in operational practices. I am satisfied that current forest management practices for this

important wildlife species were appropriately reflected in the base case modelling. Future changes in how we manage for grizzly bear operationally can be captured in future timber supply reviews.

I am aware that the recently approved UWR for Moose was not reflected in the base case, and I appreciate the analysis completed to assess the implications to timber supply. Staff confirm that the assumptions in the sensitivity analysis will result in impact to timber supply if requirements cannot be co-located with those for other values. In particular, the application of a reduced stocking standard for moose habitat areas contributed 2.7 percent of the full 6.9 percent impact to timber supply.

District staff indicate that so far, there has been little apparent impact in applying the new moose requirements to cutblock applications. I encourage the district to continue to use operational tools to reduce timber supply implications as feasible. Information regarding the actual implications for operations as the order is implemented can be collated and the effects on timber supply assessed for future determinations.

For this determination, I accept that the base case assumptions did not include modelling of the requirements for the legally approved UWR 6-040, and as result the base case has overestimated available timber supply. I accept the results of the sensitivity analyses, which indicate that the base case harvest projection has overestimated timber supply by up to 6.9 percent on this account. I discuss this further under '**Reasons for Decision**'.

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

- harvest scheduling priorities

In timber supply analysis, harvest priorities can be set in the modelling for geographically defined areas to reflect current practices in response to forest health issues, operational pressures or conflicts or licensee requirements.

District staff note that areas in the TSA that are restricted for harvest evolve over time. To inform the base case, staff developed a summary of areas where access is currently restricted or where there are high infrastructure costs that outweigh the profitability of operations. These areas were grouped into two categories. In Category 1 were Gitxsan Wilp areas currently being avoided due to First Nations established access restrictions or checkpoints, totalling 16 708 hectares of THLB.

Category 2 contained areas where high infrastructure costs currently outweigh profitability of harvesting stands. Staff note the majority of this area is 2349 hectares of THLB in the northernmost portion of the Iltzul chart area, located behind the Madii Lii blocked access point. These stands are isolated and it is unknown whether they will ever be profitable to harvest.

In the base case for the Kispiox TSA, two harvest priority rules were modelled to reflect current operations. One rule prioritized harvest over the first decade in the accessible low- and medium-burn severity areas from two wildfires that occurred in 2018. These two fires, known as the Pope and Gail fires, have been the focus of salvage logging efforts operationally. The associated THLB area is 738 hectares.

Another rule deferred any harvest in the Madii Lii Wilp area in the Gitxsan Suskwa Administrative Watershed for at least one decade, to reflect a current road access issue that prevents access to 12 745 hectares of THLB. District staff confirm that licensees are currently unable to operate in the Suskwa Watershed.

I have considered the assumptions in the base case regarding harvest scheduling and had discussions with Ministry staff. I am confident the priority rule to reflect wildfire salvage activity was an appropriate reflection of current practice and operational needs. With regard to the priority rule deferring harvest in the Madii Lii Wilp area, I am aware that the Kispiox TSA has a long history of First Nation and public engagement with extensive and at times prolonged discussions between licensees and First Nations on various resource values. I am hopeful that the initiation of a forest landscape planning process in the Kispiox TSA would provide the forum for conversations to support improved agreement and collaboration for the next timber supply review. I am mindful that as discussed under '*Base case for the Kispiox TSA*', a robustness test on the base case projection demonstrated sufficient volume available during the first decade to support five decades worth of harvest. I accept that the conditions in the Suskwa watershed were appropriately reflected in the base case through the harvest rule applied on that account and that there is no risk to short-term timber supply.

With regard to the Category 2 areas assessed by district staff as unavailable for harvest because high infrastructure costs, I consider it quite possible that these areas may never be harvested. I will therefore in this determination take into account that the base case overestimates timber supply by a small, unquantifiable amount, and I discuss this further in '**Reasons for Decision**'.

- partitions

When making AAC determinations, the chief forester can specify a partition, which is identifying that a portion of the harvest be attributable to different timber types, geographic areas, or types of terrain. An AAC partition is intended to support sustainable use of the timber resource within the context of all applicable legislative objectives. A partition can help ensure that the allowable timber harvest attributable to certain types of timber, terrain or areas of the TSA is not taken from another (potentially higher value) area or type of forest. It may also be applied to encourage use of the timber volume of different areas and timber types assumed to contribute to the AAC.

Information was provided to me to consider the applicability of partitions in different contexts in the Kispiox TSA, including for cedar management, old growth management and core ecosystems, and sawlogs. As well, the 2009 AAC included a partition set by the chief forester to harvest volume in remote areas. I have considered the value of partitioning the harvest during these discussions and am satisfied that I will not include a partition in my AAC determination.

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

Economic and social objectives

- Minister's letter

On October 31, 2025, the Minister of Forests wrote me a letter expressing the economic and social objectives of the government to be considered in AAC determinations. This letter is attached in Appendix 3.

The letter asks that I do the following when making an AAC determination:

- promote the full utilization of the harvest profile, including harvesting of wildfire and insect damaged timber and the use of innovative forestry practices such as commercial thinning and partial harvesting. These practices will support improvements in forest health as well as reduce wildfire risks and strengthen sustainable forest management;
- consider the knowledge of Indigenous people and incorporate this where applicable and continue to ensure my determinations are consistent with government's ongoing implementation of the *Declaration on the Rights of Indigenous Peoples Act* as well as applicable government to government agreements and current case law defining Aboriginal rights and title.

The letter also requests that when faced with necessary reductions in AAC, that I ensure these are no larger than what is necessary to avoid potentially significant long-term timber supply impacts.

In this determination during my considerations of the factors required under Section 8 of the *Forest Act*, I have been mindful of the objectives articulated in the Minister's letter. I have reviewed consultation processes with First Nations and the public review process and am satisfied that they were appropriately conducted, and I have considered the feedback received in the applicable factors in this determination.

I also am aware that the Minister has requested that reductions in AAC, when determined to be necessary, be no larger than necessary to avoid significant long-term impacts. In this regard, I am mindful that the harvest levels in the Kispiox TSA have been well below the previous AAC for some years. Overall, I am

satisfied that this determination accords with the objectives of government as expressed by the Minister.

- regional economy and socio-economic analysis

In timber supply review processes, the implication of changes in the harvest levels for communities is an important consideration. The forest sector plays a role in local economies, providing direct employment opportunities, indirect opportunities through businesses that purchase goods and services, and what is known as induced impacts through forest sector employees spending income on local goods and services. The implications are not limited to the communities within the TSA as logs or lumber may be shipped to or produced in mills in other parts of the province. One mill is located within the TSA in Kitwanga. Timber from the Kispiox TSA is processed in Smithers, Burns Lake, Prince George as well as other parts of the province. A small portion of the volume is exported offshore.

The Ministry's Economics and Trade Branch completed a socio-economic analysis (SEA) as part of the timber supply review for the Kispiox TSA. In the SEA, the implications of three possible timber supply harvest levels were evaluated: the base case harvest level of 654 200 cubic metres per year, the 2009 AAC level of 1 087 000 cubic metres per year (excluding the 177 000 cubic metres per year contribution from remote areas), or the base case level with the addition of volume from the remote areas totalling 741 100 cubic metres per year (from the sensitivity analysis discussed in '*inoperable areas*'). The analysis assessed the socio-economic impact of the volume harvested at year 10 of each of these options compared to the socio-economic contribution from the current harvest level.

The analysis of all three scenarios suggested no detrimental socio-economic impact relative to the current harvest levels in the TSA. Economics and Trade Branch staff state this is because the current harvest activity in the Kispiox TSA is well below the harvest volume projected in all three of these scenarios. Harvest levels in the Kispiox TSA have been significantly below the 2009 AAC, averaging 394 100 cubic metres or 36.2 percent of the 2009 AAC between 2018 and 2022. Since 2008, harvest volume billed in the Kispiox TSA has averaged approximately 256 000 cubic metres per year.

I note that socio-economic impacts are an important part of my considerations as the chief forester in making an AAC determination. I have reviewed the information and analysis conducted for the Kispiox TSA and discussed it with Ministry staff. I am aware that recent average annual harvest performance in the TSA has been 394 100 cubic metres, and that all three scenarios in the SEA evaluated harvest volumes above this level of demonstrated harvest performance. For this reason, I believe it is possible and indeed likely that this AAC determination will not negatively alter socio-economic conditions within the TSA.

- *public input*

The *Data Package* for the Kispiox timber supply review was made available on the Forest Analysis and Inventory Branch website from Feb 18 to April 19, 2021, and stakeholders were notified through email by District staff. Input received during that time frame was incorporated as appropriate into a revised *Data Package* published in January 2023.

Several meetings were held with First Nations, licensees, interest groups and members of the public in January 2024 regarding key elements of the draft *Discussion Paper*. The document was publicly released in February 2024, with a comment period from February 16 to April 13, 2024. Stakeholders were notified through email from District staff and an advertisement was placed in local newspapers. During the comment period, input was received from several licensees and stakeholders including Pacific Inland Resources, BC Timber Sales, the Babine River Foundation, SkeenaWild and several individual members of the public.

I have reviewed the information received during the engagement review of both documents and have discussed the input with Ministry staff while making my considerations in this determination. I have included some of this input in this document under various factors. I acknowledge the importance of public input during timber supply review processes and appreciate the effort made to offer input and comments during the engagement periods. I am satisfied that the public input received has been appropriately represented and considered during this determination.

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

Infestations and salvaged losses

- *Dothistroma and Tomentosus*

Forest health agents present within the Kispiox TSA with the potential to cause loss of timber include insects, pathogens and animals. Two pathogens of particular concern are *Dothistroma* needle blight and *Tomentosus* root disease.

Dothistroma

Dothistroma needle blight is a significant agent that affects the health of young pine stands in the TSA. It is present in the CWH, ICH and transitional ICH/SBS zones. It causes premature loss of needles over successive years, which can significantly impact the growth of the pine. In the worst cases, regenerating stands have experienced 100 percent mortality of pine. *Dothistroma* persists in infested stands, becoming dormant during dry years and active in wetter years. Individual trees seldom recover as a result.

The district implemented a Dothistroma Management Program, using detailed aerial survey data from a 2002 project that assessed the severity and extent of Dothistroma in pine-leading second-growth stands and assigning management classes based on the results. Stands covering 1653 hectares were assigned 'action imperative' and targeted for immediate silviculture action to assist the survival of non-pine species and achieve stocking standards. Another 5681 hectares of stands were assigned 'wait and see'; these stands had marginal stocking of non-pine conifers and low to moderate Dothistroma severity and were to be reassessed every two years. An additional 17 278 hectares of stands were expected to meet stocking standards without pine, with no silvicultural or reassessment actions scheduled.

The timber supply implications of the stands afflicted with Dothistroma were modelled in the base case. It is expected that the majority of Dothistroma affected stands will become restocked through either natural or artificial regeneration and the primary effect on timber supply will be a delay in achieving full stocking. For the stands delineated as 'stocking likely without pine' where the young non-pine conifers present below the main pine canopy are likely to grow once the pine trees die, the managed stand yields were reduced using an adjustment equivalent to a regeneration delay of 10 years. For the 'action imperative' stands where immediate fill planting is required to increase the number of existing non-pine conifers in these stands, the yield tables were reduced by an adjustment equivalent to a 20-year regeneration delay, down to a minimum volume of 0 cubic metres.

In both cases, the species composition of the two groups of stands were adjusted so that the proportion previously considered pine in the inventory was assigned to the next leading species.

The regional forest pathologist notes that this modelling approach to reflect the impact of Dothistroma in pine-leading plantations, including the assumed conversion to other conifers from pine, uses the most current information available from the ongoing Dothistroma modelling project.

Tomentosus

Tomentosus root disease is frequently found in spruce and pine stands in northern and central BC, including the Kispiox TSA. It can result in reduced annual growth and lead to volume losses over the stand rotation in infected stands. The disease can persist in stumps and infect the new stand regenerating on the site.

Two studies have been completed in the TSA to assess the impact of Tomentosus in mature natural stands. In the first study, 50 mature spruce-leading stands older than 80 years of age were evaluated and 84 percent of those stands were found to have endemic losses from the root disease, with volume losses in spruce and pine stems estimated to be 4.29 cubic metres per hectare per year. A comparison of measured stand volumes with VDYP volumes for those same stands showed actual

stand volumes to be 22 percent greater than model estimates because it was found that the spruce and pine volume losses were offset by the volume gains in hemlock stems, which are not affected by *Tomentosus*.

As the overall volume for the stands was not impacted according to the study data, no adjustments were made in the base case to account for *Tomentosus* in mature natural stands.

In the second study, a small sampling of spruce-leading managed stands in the ICH BEC zone randomly selected from the total population of 50 stands was assessed. It was found that as the stands approached 50 years of age, their volumes were 30 percent lower than projected for these stands by the TASS II growth and yield model. Total merchantable volumes in these stands were found to be 17 percent lower. The difference between the TASS II projections and the measured stand volumes was determined to be due to a combination of root disease impacts and uneven natural distribution of trees in typical operational plantations.

In the base case, to account for these expected losses, the volumes of the spruce component of existing spruce-leading managed stands within the ICH BEC zone were reduced by 30 percent. The ICH zone comprises 69 percent of the THLB in the Kispiox TSA.

The regional forest pathologist notes that YSM plots also observed volume losses in spruce as a result of *Tomentosus* root disease, and that volume losses from *Tomentosus* in managed spruce stands in the Kispiox TSA are well supported by science.

Three sensitivity analyses were completed to study timber supply implications of *Tomentosus* root disease in managed stands. In the first, the base case reduction for *Tomentosus* was removed, and the results showed a 1.1 percent increase in the harvest projection.

In the second, the base case 30 percent volume reduction applied to the spruce component of existing managed stands was also applied to future managed spruce-leading stands within the ICH BEC zone, which resulted in a 2.4 percent decrease in timber supply compared to the base case.

In the third, the 30 percent volume reduction was applied to the spruce component of all existing managed stands throughout the TSA regardless of BEC zone. The results showed no impact to timber supply.

Staff note that the results of the sensitivity analyses reflect the non-declining even-flow strategy used in the base case, which does not attempt to maximize short term-timber supply. As a result, additional stand volume is available in the short term that may mitigate the effects on timber supply resulting from the changes applied in the sensitivity analyses.

Input received from both NorthPac and Northwest BC Timber Resources questioned the 30 percent volume adjustment applied to spruce in the base case, given the small sample size of the Tomentosus study.

I have reviewed the information on both Dothistroma and Tomentosus occurring in stands in the Kispiox TSA and discussed the implications with Ministry staff. I acknowledge the concern with respect to the small sample size of the Tomentosus study in managed stands. However, although a small sampling, the assessment included 20 percent of this stand type within the TSA and therefore in my assessment, constitutes a valuable indication of the conditions in this stand type. I am also aware that in general, studies to assess the implications of many forest health agents affecting our managed stands are small datasets and my reliance on what is the best available information will continue to evolve as additional data is collected and available. I am confident that the adjustments applied in the base case to approximate the impacts on growth and volumes in these stands were a good approximation of likely impacts.

I am aware that the majority of stands afflicted with Dothistroma eventually become sufficiently stocked through either natural or artificial regeneration, and thus the implication of this forest health concern is primarily a delay in the time it takes for the stands to achieve full stocking. I am satisfied that the base case assumptions appropriately reflected the impact of this forest health agent.

Regarding Tomentosus root rot, I am pleased that an attempt to model the implications in managed spruce stands has been made and commend staff's efforts in this regard. I am satisfied that the yield reductions applied in the base case for the spruce component of spruce-leading existing stands was an appropriate measure to account for volume losses in these stands operationally. I recommend that the necessary resources are committed and that research and monitoring is prioritized in these stands prior to the next determination, so as to have the best possible estimates for the growth potential of these stands.

I accept that the significant forest health agents impacting stand growth in the Kispiox TSA have been accounted for appropriately in the base case and I make no adjustments in this regard.

- natural disturbance

Non-recoverable losses are timber volumes that are destroyed or damaged on the THLB by natural causes such as insects, fire, wind and disease, that are not recovered through salvage operations and remain unutilized.

These volumes are not already accounted for in growth and yield models or epidemic losses that are specifically modelled in the base case.

Specific forest health agents of note for the Kispiox TSA are WBB, mountain pine beetle, spruce beetle, wildfires, drought, windthrow, aspen leaf miner and satin moth.

WBB is a chronic, endemic pest in mature and old balsam-leading stands in the ESSF biogeoclimatic zone. Staff indicate that the beetle tends to kill the largest and highest volume trees, and this volume is typically not recovered. The gaps created in the forest canopy fill in over time with younger trees and the stand volumes typically stabilize at 70 percent of the site potential.

Mountain Pine Beetle is a destructive pest afflicting mature lodgepole pine. Although the Mountain Pine Beetle epidemic impacted stands in the Kispiox TSA, it is currently of relatively minor concern as the beetle has declined to low levels since 2011 and mature pine-leading stands comprise less than 10 percent of the THLB.

Spruce Beetle is currently causing widespread damage in mature spruce forests in neighbouring TSAs and is of concern in the Kispiox TSA because spruce has high economic value and mature spruce-leading stands comprise about 15 percent of the THLB.

Satin moth and aspen leaf miner are agents that impact deciduous trees in the TSA; however, these stands were excluded in the derivation of the THLB and therefore were not assumed to contribute to timber supply.

In the base case for the Kispiox TSA, to reflect the implications of natural disturbance in both merchantable and non-merchantable stands, individual stands were randomly disturbed and stand ages reset to 0 years, at an annual rate derived from aerial overview survey data from 1999 to 2018. The disturbance regime model also assigned disturbance to specific stand types at rates that reflected the agents identified in the aerial overview surveys. Drought and fire losses were included in the regimes along with the beetles noted above.

District staff note they are satisfied with the modelling of natural disturbance in the base case for the forest health agents described in this factor, with the exception of WBB.

Sensitivity analysis was conducted to assess the implications of WBB for timber supply. A recent study in southern BC found on average up to one percent annual balsam mortality, and in excess of 30 percent cumulative mortality, occurring in mature and old balsam-leading stands in the ESSF BEC zone. In the sensitivity analysis, a yield reduction of two percent per decade was applied to naturally regenerating balsam-leading stands in the ESSF, beginning at stand age 100 years. The volume reduction reached 30 percent by age 250 in these stands. The results showed that timber supply was reduced by three percent compared to the base case projection. The natural disturbance regime modelled in the base case for

other forest health agents was deactivated for WBB in this sensitivity analysis to prevent duplicating the impact.

Pacific Inland Resources questioned the significant increase in assumed non-recoverable losses in this analysis, noting that past mortality from WBB would have been captured in the inventory and the inclusion of the losses from 2001, which were 1.2 million cubic metres, in calculating the average would overestimate the impacts. Staff noted that using 20 years of data rather than 10 years to calculate the average was considered to be the best available information.

The Nisga'a Nation requested information regarding windthrow and were invited to discuss this concern in greater depth with District staff. Gitxsan expressed concern regarding potential underestimation of wildfire losses, a concern that was also expressed by a member of the public. Gitxsan note that drought, wildfire, and landslides tend to be in relationship to one another and this presents a complication of 'cumulative stress/damage' relating to these natural disturbance factors over time. Staff reviewed the approach in the analysis and are confident that the assumptions for non-recoverable losses in the base case reflect the best available information at the current time.

I have reviewed the information about the various forest health agents with the potential to impact stands in the Kispiox TSA and discussed it with Ministry staff. I am satisfied that the assumptions applied in the base case have appropriately reflected the impact of the majority of the agents except for WBB. Our understanding of this beetle's impact is evolving and discussions with a regional entomologist suggest to me that WBB is expected to have a more severe impact for our forests in the future which introduces uncertainty for timber supply. I note that the base case assumptions used historical levels of impact which may not continue moving forward. The sensitivity analysis evaluated timber supply implications based on a study conducted in southern BC and suggested an up to three percent overestimation of timber supply in the base case on this account. However, in my assessment, assuming the same impact as the southern study may likely overestimate the impacts for the more northerly forests in the Kispiox TSA.

In consideration of all the above, I conclude that assuming the base case has overestimated timber supply by 1.5 percent is appropriate for this determination, and I will discuss this further in '**Reasons for Decision**'.

I am aware that district staff and the regional entomologist are working with provincial specialists to better understand how stand-level balsam mortality from WBB is captured by VDYP loss factors for balsam in the ESSF and MH BEC zones, and I look forward to the results of these studies for future determinations.

Reasons for Decision

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

The base case for the Kispiox TSA analysis projects an initial harvest level of 654 200 cubic metres per year which can be maintained for 160 years before increasing by five percent to the long-term harvest level of 686 600 cubic metres per year. The modelling approach used in the base case was a non-declining even-flow strategy, which did not attempt to maximize the short-term timber supply but rather to ensure a stable and consistent timber supply over time. The short- and mid-term harvest levels projected in the base case are 33.8 percent lower than the current AAC of 987 636 cubic metres.

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

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

- *non-provincial lands* – reflecting the issuance of a new FNWL since the base case timber supply analysis, the base case is overestimated by 9.9 percent.
- *inoperable areas* – as a result of no harvest performance on slopes greater than 50 percent, the timber supply projected in the base case is overestimated by one percent.
- *wildlife habitat (mountain goat)* – as a result of a lack of accounting in the base case for the 500 metre no harvest zones that licensees apply adjacent to known mountain goat habitat totalling 778 hectares of THLB, timber supply in the base case has been overestimated by 0.3 percent.
- *forest inventory* – as a result of the inventory data overestimating yields from natural stands, timber supply in the base case has been overestimated by 3.8 percent.
- *cumulative effects* – as a result of the lack of accounting in the base case for the requirements of a recently approved Ungulate Winter Range for Moose, timber supply has been overestimated by 6.9 percent.

- *natural disturbance* – as a result of not accounting for the full impacts of Western Bark Beetle in the base case, timber supply has been overestimated by 1.5 percent.
- *cultural heritage resources* – as a result of no harvest reserve zones applied in current practice adjacent to Wilp boundaries that was not accounted for in the base case, timber supply has been overestimated by 1.5 percent.

As well, I identified the following factors in my considerations as indicating that the timber supply projected in the base case may have been **overestimated**, to a degree that cannot be quantified:

- *cultural heritage resources* – as a result of the expected occurrence of additional cultural heritage resources to those that were accounted for in the base case, timber supply has been overestimated by an unquantifiable amount.
- *harvest scheduling priorities* – the additional exclusion of two geographic areas where high infrastructure costs preclude harvesting activities that were assumed to contribute to timber supply in the base case indicates an unquantified overestimation of timber supply.

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

- *inoperable areas* – as a result of harvesting occurring in economically marginal stands classified as GT and the exclusion of these stands from assumed contribution in the base case, timber supply has been underestimated by 0.7 percent.
- *red- and blue-listed ecological communities* – as a result of the exclusion of 1231 hectares in the derivation of the THLB that did not contain red- and blue-listed ecological communities, the timber supply projected in the base case has been underestimated by 0.5 percent.

In my determination, I have also identified the following factor as indicating the timber supply projected in the base case may have been **underestimated** to a degree that cannot be quantified:

- *dead potential volume* – as a result of no assumed timber supply contribution from dead potential volume in natural stands in the base case, and recognition that a portion of this volume is from cedar, timber supply has been underestimated by a small unquantified amount.

In consideration of the various factors above, I am aware that the various factors indicating the harvest levels projected by the base case have either been overestimated or underestimated could suggest an overestimation in the range of

24 percent. However, in my estimation these factor adjustments alone do not fully capture the considerations necessary in determining an allowable annual cut for the Kispiox TSA. The short-term harvest level chosen for the base case is 33.8 percent lower than the current AAC, and alternative harvest projections demonstrated that the 2009 AAC could have been achieved for the first decade before a series of reductions would be required. Analysis showed the short-term harvest level projected in the base case was supported by very robust timber supply, providing a great deal of flexibility in short-term timber supply.

I am mindful that licensees are currently practicing higher levels of retention in WTRA than was assumed in the base case. These retained areas will serve to meet objectives for a variety of resource values and likely provide protection for some cultural heritage resources. I expect that the higher retention reflects operational needs on the land base. I am aware that there is sufficient growing stock to support the continuation of these best management practices which I encourage. Therefore, I am not making an adjustment to reflect that timber supply has been overestimated on this account. As an example, retention levels are likely meeting needs for red and blue listed ecological communities which provides assurance that these are being managed for operationally.

As well, I note that the timber supply analysis conducted in support of this determination used assumptions that reflected as best as possible current forest conditions on the land base, operational practices and legislation, and First Nations considerations and has vastly improved our understanding of the available timber supply in the Kispiox TSA.

For a number of reasons, licensees operating in the TSA have been unable to meet the current AAC of 987 636 for some time. It is my intention in this determination to set an AAC that allows for flexibility of operations and encourages licensees to find opportunities to work with First Nations and achieve harvest levels that are supported by science, provide appropriate management of other values and are representative of what is possible from the forests in this TSA.

I also note that the prioritization of LiDAR work for this TSA will significantly aid in reducing uncertainty around the forest inventory. Investments in the inventory as well as in monitoring forest health and growth trends will enable further enhancements in the available information for the next timber supply review.

Determination

I have considered the factors as documented above, including the risks and uncertainties of the information provided. It is my determination that a timber harvest level that accommodates objectives for all forest resources during the next 10 years and that reflects current management practices as well as the socio-economic objectives of the Crown, can best be achieved in the Kispiox TSA by establishing an AAC of 496 000 cubic metres.

This new AAC, 49.8 percent below the current AAC and 24.2 percent below the base case harvest projection, becomes effective July 2, 2026 and will remain in effect until another AAC is determined, which must take place within 10 years of the effective date of this determination.

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

Implementation

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

I recognize that the ability of staff and licensees to undertake projects is dependent on available resources, including funding. I have highlighted the projects that in my view are most critical to reduce the risk and uncertainty associated with factors affecting the timber supply in the Kispiox TSA.

1. *Monitoring* – I encourage the exploration of ways to improve monitoring and evaluating the condition of resource values, including tools and approaches such as the provincial FREP program, to assess and measure the effectiveness of forest and range practices in the Kispiox TSA.
2. *Riparian* – I request that district staff and First Nations collaboratively explore available tools and conduct monitoring to provide better baseline data on riparian areas, in particular adjacent to S4 streams.
3. *Forest inventory* – I request that a new forest inventory for the Kispiox TSA be prioritized so that better information can be made available for the next determination, and that this informs cedar management in the TSA.
4. *Old Growth Management Areas and Core Ecosystems* – I encourage licensees to continue to honour voluntary deferrals in Technical Advisory Panel (TAP) identified and supported deferral areas.
5. *Volume Estimates for Managed Stands* – I recommend continuation of the Young Stand Monitoring (YSM) program and implementation of a Stand Health and Growth Monitoring project similar to the approach used in the Bulkley TSA so that field data can provide more robust information for future timber supply reviews.
6. *Silvicultural Systems* – I encourage the district and licensees to incorporate learning from the use of alternative silvicultural systems in the Date Creek Research Forest for application in the Kispiox TSA.

7. *Incremental Silviculture* – I request that the district explore opportunities to use commercial thinning to offset climate change implications continue to be pursued where appropriate.
8. *Minimum Harvestable Criteria* – I request that the district monitor harvest in second-growth stands to ensure that is not occurring significantly below the age at which stands reach Culmination Mean Annual Increment.
9. *Northern Goshawk* – I encourage licensees, district staff and First Nations to continue to work together to determine where increased mature and old-seral forest structure is required to protect goshawk habitat.
10. *Water – Hydrological Integrity* – I request that district staff continue monitoring practices that support hydrological integrity.
11. *Forest Health* – I recommend that the ministry commit the necessary resources and prioritize continued research and monitoring on forest health agents impacting the forests of the TSA.



Shane Berg, RPF
Chief Forester



July 2, 2026

Appendix 1: Section 8 of the *Forest Act*

Section 8 of the *Forest Act*, Revised Statutes of British Columbia 1996, c. 157, (current to June 16, 2026) 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 June 16, 2026) reads as follows:

Purposes and functions of ministry

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

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

in British Columbia;

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

Appendix 3: Minister's letter



File: 280-30
Reference: 281918

October 31, 2025

Shane Berg, R.P.F.
Assistant Deputy Minister, Chief Forester
PO Box 9532 Stn Prov Govt
Victoria, British Columbia
V8W 9M1

Dear Shane Berg:

The *Forest Act* grants you the authority to determine the allowable annual cut (AAC) for each timber supply area (TSA) and tree farm licence (TFL) in the province; a role that carries significant implications for British Columbia's economy, forest communities and workers, natural environment and for achieving provincial objectives for lasting and meaningful reconciliation with Indigenous peoples.

In keeping with the government's 2021 vision document *Modernizing Forest Policy in British Columbia*, this letter outlines the social and economic objectives that are to be considered in AAC determinations and replaces prior ministerial guidance. "Ministerial guidance" includes the letter of November 24, 2021, issued to the Chief Forester by the Minister of Forests, Lands, Natural Resource Operations and Rural Development.

As you know, B.C.'s forests provide a wide range of benefits. Healthy, biodiverse forests, active forest management and a stable timber supply underpin thriving communities, a robust industry, and strong regional and provincial economies. At the same time, forestry in B.C. is undergoing a significant transition, shaped by the end of mountain pine beetle salvage, major losses from wildfires, insects and disease, global economic pressures, shifting public expectations, the impacts of climate change on B.C.'s forests and evolving land use decisions related to species at risk and old growth conservation.

As such, British Columbians and First Nations expect a provincial government that understands these dynamics, and remains committed to building a strong, sustainable economy that benefits everyone, and a path forward for lasting and meaningful reconciliation in partnership with Indigenous peoples.

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Ministry of Forests

Office of the Minister

Mailing Address:
PO BOX 9049 Stn Prov Govt
Victoria, BC V8W 9E2

Tel: 250 387-6240
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Website: www.gov.bc.ca/for

Shane Berg, Assistant Deputy Minister and Chief Forester

In this complex and dynamic environment, and in addition to all current legal policy and best practice considerations that your office incorporates into AAC decision-making, I ask that your AAC determinations do the following:

- Promote the full utilization of the harvest profile. This involves the harvesting of wildfire- and insect-damaged timber, in addition to innovative forestry practices such as commercial thinning and partial harvesting. These practices will assist in improving forest health, reducing wildfire risk, and strengthening sustainable forest management.
- Consider the knowledge of Indigenous peoples whose traditional territories overlap with the management unit under consideration and incorporate this where applicable, as the Government of B.C. continues implementing the *Declaration on the Rights of Indigenous Peoples Act* and working to align provincial laws with the United Nations Declaration on the Rights of Indigenous Peoples. For greater certainty, please continue to ensure your AAC determinations are consistent with the outcomes of that work, with applicable government-to-government agreements and with current case law defining Aboriginal rights and title.
- In order to ensure efficient and accurate determinations, I ask that you critically review how determinations are made, employ cutting edge technology, and create measurable improvements in the delivery of results.

Finally, when faced with necessary reductions in AACs, determinations should consider that these should be no larger than is necessary to avoid potentially significant long-term impacts on the timber supply that underpins B.C.'s forest economy.

Thank you, Shane, for your continued service as well as your care and attention to these important matters. I look forward to working with you in inspiring and guiding the Forest Service through the transition ahead and in ensuring practical solutions to maximize timber supply while preserving other forest values.

Yours truly,



Ravi Parmar
Minister

pc: Makenzie Leine, Deputy Minister of Forests

Appendix 4: Information sources used in the AAC determination

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

Title, author, publisher/agency/department, location and date. Weblink if applicable.

Legislation

Forest Act and Regulations, R.S.B.C. c.157 (1996). Available: http://www.bclaws.ca/civix/document/id/complete/statreg/96157_02 (current to June 16, 2026);

Forest Planning and Practices Regulation. (2004). Available: http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004 (current to June 16, 2026);

Government Actions Regulation. British Columbia. 2014. Available: www.bclaws.ca/civix/document/id/complete/statreg/582_2004 (current to June 16, 2026);

Approved Government Actions Regulation – Ungulate Winter Ranges. See http://www.env.gov.bc.ca/wld/frpa/urp/approved_urp.html;

Approved Government Actions Regulation – Wildlife Habitat Areas. See http://www.env.gov.bc.ca/cgi-bin/apps/faw/wharesult.cgi?search=show_approved;

Approved Legal Orders. Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions>;

Government of Canada. S.C. 2002, c.29. *Species at Risk Act*. Ottawa, Ont. See <https://laws-lois.justice.gc.ca/eng/acts/S-15.3/> (current to May 26, 2026);

Heritage Conservation Act Order-In-Council #467. See [http://www.bclaws.ca/civix/document/id/oic/arc_oic/0467_1991/search/CIVIX_DOCUMENT_ROOT_STEM:\(Dewdney%20Heritage%20Trail\)?6#hit1](http://www.bclaws.ca/civix/document/id/oic/arc_oic/0467_1991/search/CIVIX_DOCUMENT_ROOT_STEM:(Dewdney%20Heritage%20Trail)?6#hit1) (Accessed June 23, 2026);

Wildlife Act. See http://www.bclaws.ca/civix/document/id/complete/statreg/96488_01 (current to June 23, 2026).

Licence Holder Plans and Timber Supply Review Documents

Kispiox Timber Supply Area Data Package, prepared by Timberline Forest Inventory Consultants Ltd. for the Kispiox TSA DFAM Group, January 2007;

Kispiox Timber Supply Area Analysis Report, prepared by Timberline Forest Inventory Consultants Ltd. for the Kispiox TSA DFAM Group, March 2007;

Kispiox Timber Supply Area Rationale for AAC determination, effective January 1, 2008, Ministry of Forests, Victoria, BC.

Land Use, Forest Practices and other Documents

Archaeology in British Columbia. Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/natural-resource-use/archaeology>;

Biodiversity Guidebook. Ministry of Forests. See <https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/frep-docs/biodiversityguidebook.pdf>

Guiding principles and considerations when planning the harvest of second growth. See https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/district-contacts/kalum_2nd_growth_guidelines.pdf, Kalum Resource District, 2011;

Forest Carbon Strategy. Ministry of Forests, Lands and Natural Resource Operations. 2016. 2016-2020, Victoria BC;

Ministry of Environment and Climate Change Strategy. 2024. British Columbia Greenhouse Gas Offset Protocol: Forest Carbon (FCOP);

Ministerial Order Land Use Objectives Regulation Order Cranberry Sustainable Resource Management Plan, Ministry of Forests, Lands and Natural Resource Operations, March 2016;

Cranberry Sustainable Resource Management Plan, Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/crown-land-water/land-use-planning/regions/skeena/kispiox-lrmp/cranberry-srmp>;

Pine mushroom habitat in the Prince Rupert Forest Region. Prince Rupert Forest Region. Extension Note # 34. March 1999;

Kranabetter, J.M., et al. 2002. Ecological descriptions of pine mushroom (*Tricholoma magnivelare*) habitat and estimates of its extent in northwestern British Columbia. Ministry of Forests, Smithers, BC. Forest Ecology and Management 158 (2002) 249-261;

L.P. Atherton and Associates. 2000. Forest Management Opportunities in Non-merchantable Forest Types;

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Ministry of Forests. 2001. Summary of Backlog NSR and Impeded Forest Land - 2001. Forest Renewal BC., Victoria, BC;

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Ministry of Forests and Range. 2005. Provincial Logging Residue and Waste Measurement Procedures Manual. Revenue Branch, Ministry of Forests and Range, Victoria, BC and amendments to October 2013;

Mitchell, K.J., M. Stone, S.E. Grout, M. Di Lucca, G.D. Nigh, J.W. Goudie, J.N. Stone, A.J. Nussbaum, A. Yanchuk, S. Stearns-Smith. R. Brockley. 2000. TIPSy version 3.0. Ministry of Forests, Research Branch, Victoria BC;

West Babine SRMP 2004. https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/skeena-region/westbabine-srmp/west_babine_srmp.pdf;

Pojar, J. 2000. Internal Review of the Northern Regeneration Difficulties and Bartlett Report. Ministry of Forests, Smithers, BC;

Symmetree Consulting Group Ltd. 1997. ICH Reforestation and Brushing Review - 1996 Provincial Report. Ministry of Forests, Forest Practices Branch, Victoria, BC;

Ministry of Forests. 2000. Age to green-up height: using regeneration survey data by region, species and site index, B.C. Ministry of Forests, Victoria, BC;

Electronic Commerce Appraisal System (ECAS). Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/electronic-commerce-appraisal-system>;

Riparian Management Area Guidebook. Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/silviculture/training-resources/silviculture-guidebooks/riparian-management-area-guidebook> (Accessed June 23, 2026);

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Seed Planning and Registry Application (SPAR). Forest Improvement and Research Management Branch, Ministry of Forests. See <https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/seed-planning-use/spar>

Policy Regarding the Administration of Unharvested Volumes, Uncommitted Volumes and Unused BCTS Volumes. Ministry of Forests, Lands and Natural Resource Operations and Rural Development. See https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/timber-tenures/timber-tenure-bulletins-policies-procedure/policy_regarding_the_administration_of_unharvested_volumes_uncommitted_volumes_and_unused_bcts_volumes.pdf

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First Nations

Gitanyow Huwilp Recognition and Reconciliation Agreement between Gitanyow Nation and Her Majesty the Queen In Right of the Province of British Columbia, 2012, amended 2016;

Haida Nation v. British Columbia (Minister of Forests), [2004] 3 S.C.R. 511, 2004 SCC 73. See <https://decisions.scc-csc.ca/scc-csc/scc-csc/en/item/2189/index.do>

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Updated Procedures for Meeting Legal Obligations when Consulting First Nations. See <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first-nations> (Accessed June 23, 2026);