

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

**Mackenzie
Timber Supply Area**

**Rationale for
Allowable Annual Cut (AAC)
Partition Amendment**

Effective February 14, 2019

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Chief Forester**

Objective of this Document

This document provides an accounting of the factors I have considered and the rationale I have employed as Chief Forester of British Columbia (BC) in making my decision, under Section 8 of the *Forest Act*, of the amendment of the allowable annual cut (AAC) partition for the Mackenzie timber supply area (TSA).

Acknowledgement

For preparation of the information I have considered in this determination, I thank staff of the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (herein referred to as “the Ministry”) in the Mackenzie Natural Resource District, Omineca Natural Resource Region and the Forest Analysis and Inventory Branch (FAIB). I am also grateful to the First Nations and licensees who have provided input.

Statutory Framework

Section 8(5.1) of the *Forest Act* states that the chief forester may, at any time, amend or cancel a specification made under subsection 5 of the *Forest Act*. Subsection 8(5) states that 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;

Specifications under the *Forest Act* Section 8(5)(a) are commonly referred to as AAC partitions.

Description of the Mackenzie TSA

The Mackenzie TSA is situated in north-central interior of British Columbia (BC) and encompasses approximately 6.4 million hectares of land. The administration of forest management activities within the Mackenzie TSA is the responsibility of the Mackenzie Natural Resource District.

The municipality of Mackenzie is the largest community in the TSA with a population of 3262 based on 2016 Statistics Canada census results; other settlements include Germansen Landing and Manson Creek. Indigenous populations are centred around Tsay Keh Dene, Kwadacha and McLeod Lake which is just outside the TSA boundary. Indigenous and non-Indigenous community members also live throughout the TSA. The Mackenzie TSA falls within the territories of the Tsay Keh Dene, Kwadacha Nation, McLeod Lake Indian Band, Takla Nation, Nak’azdli Whut’en, West Moberly First Nation, Sauteau First Nation, Tahltan, Gitksan, Blueberry River First Nation, Halfway River First Nation, Doig River First Nation, Prophet River First Nation, Fort Nelson First Nation and Yekooche First Nation.

The forest industry is an important source of employment and income for Indigenous and non-Indigenous residents of the Mackenzie TSA. Mackenzie has two large lumber mills, one pulp mill, one bioenergy facility, one cant mill, and two value-added facilities. Other economic activities include recreation, trapping, guide-outfitting, mining and tourism; with forestry providing approximately 70 percent of local employment.

Allowable Annual Cut Determination, November 2014

The current AAC was determined on November 14, 2014. At that time the AAC was determined to be 4 500 000 cubic metres per year. The determination included the following partitions:

1. a maximum of 950 000 cubic metre partition attributable to non-pine leading coniferous stands;
 - 1a. of this, a maximum of 300 000 cubic metre partition attributable to non-pine-leading coniferous stands from the southwest portion of the TSA, west of Williston Lake and south of Omineca Provincial Park and Omineca Arm.

The AAC determination rationale included implementation instructions which stated the expectation that District staff would work with licensees to ensure that salvage operations remained focussed on pine-leading stands in which 70 percent or more of the total volume is pine. In addition, the rationale included the expectation that in the event that licensees can no longer locate such stands, District staff were expected to bring this to the attention of FAIB and the chief forester.

Refer to *Mackenzie Timber Supply Area, Rationale for Allowable Annual Cut Determination (Effective November 14, 2014)* for information regarding the current AAC determination.

Changes to Management Assumption in AAC Determination

As Chief Forester of British Columbia it is my role to ensure timber supply across the Province and within timber management units is managed in a manner that is both environmentally and economically sustainable. Each timber management unit has management goals, objectives and targets which are monitored by the Office of the Chief Forester. I rely on these reports to provide a strategic assessment of whether management practices are consistent with the assumptions on which the AAC was determined. Concurrently, District staff and licensees also monitor harvest, and report to the chief forester if/when issues are identified which may affect sustainability of the timber supply. Both of these processes inform how and when the chief forester may make changes to a management unit AAC.

Monitoring of timber harvest within Mackenzie TSA has indicated harvest patterns which are not consistent with the assumptions on which the 2014 AAC determination was based. In particular, monitoring indicates that significantly more spruce volume has been harvested than I prescribed in my determination. Discussions with Ministry staff, licensees, BC Timber Sales and First Nations have identified two primary factors which are contributing to this variance: shelf life of mountain pine beetle impacted timber and the spruce beetle outbreak.

In response to this development, I have decided to amend the AAC partitions which were set in 2014. To support my considerations for amendment of the AAC partition timber supply analysis was completed by FAIB to test the sensitivity of the harvest projection to changes in management assumptions for these two factors. This analysis was based on the land base and analysis assumptions which supported the 2014 AAC decision, and incorporated updates to the vegetation inventory data, including depletions, up to summer 2018. A full reassessment of the Mackenzie TSA land base, inventory and current management practices will be conducted in the next timber supply review.

Information regarding the factors and analysis considered in my decision is included in the following sections.

- *Pine shelf life*

The 2014 AAC determination was supported by the assumption that salvage of mountain pine beetle impacted timber would remain economically operable for 15 years following attack. It was assumed that after 15 years the dead pine would decline in quality and not be sufficient for the production of sawlogs. In the base case after 15 years the dead pine volume no longer contributed to the harvest projection.

Since the AAC decision, merchantable sawlog volume loss curves have been developed by FAIB in collaboration with licensees to estimate shelf life of dead pine. The application of volume reductions for shelf life in combination with secondary stand structure growth and yield modelling has improved the ability of timber supply modelling to represent the impacts of mountain pine beetle to timber supply. Subsequent timber supply reviews for the Mackenzie TSA will apply these improved assumptions.

I have heard from licensees that in the Mackenzie TSA mountain pine beetle impacted timber is declining beyond the point where it is economically operable throughout the majority of the land base. Licensees indicate that the long road-haul distances combined with water transport mean that sawlog recovery factors need to be higher than in other management units to ensure economic viability. Licensees express that volume loss due to waste and breakage of dead pine currently is very high. Waste and breakage occurs at the time of harvest, during log transport (road and water) and at the time of processing.

I have reviewed harvest monitoring information from the Electronic Commerce Appraisal System (ECAS) and the Harvest Billing System (HBS), as well as cutting permit monitoring completed by District staff. All monitoring methods demonstrate a downward trend in harvest of pine-leading stands. However, pine continues to contribute substantively to the annual harvested volume within the TSA.

I heard from First Nations that their community members are concerned regarding concentration of salvage harvesting activities within the southwest partition area. I also heard concerns regarding size and distribution of harvest openings, as well as road density. The First Nations linked their concerns to negative impacts to their Indigenous rights to hunt, trap, fish and gather. I also heard concerns regarding harvesting pressure on pine-leading stands which traditional knowledge holders indicate have been used seasonally by caribou. First Nations expressed

concerns regarding future harvest concentration on areas elsewhere within their territories and also expressed worries about their abilities to exercise harvesting rights for their own non-replaceable and replaceable forest licences which are located with their territories.

In order to support my decision regarding the AAC partition amendment FAIB provided me with sensitivity analyses which assumed that all dead pine volume no longer contributed to the harvest projection. In all scenarios which were investigated, the current AAC could be maintained until a new AAC is required by legislation. Detailed analysis will be required in the next timber supply review to assess the potential implications to the mid-term and long-term harvest projection of discontinuing salvage of dead pine.

I have reviewed the comments from licensees, First Nations and Ministry staff and I have considered the sensitivity analyses presented by FAIB. I conclude that it is reasonable to assume that some harvest of mountain pine beetle impacted stands will continue over the short term. I have considered this information in my decision regarding the AAC partition amendment.

- *Spruce beetle*

In 2010 there were large wind throw events in the Omineca Region, including within the Mackenzie TSA. The spruce wind throw, in combination with subsequent drought seasons has resulted in conditions under which spruce beetle (*Dendroctonus rufipennis*) populations have expanded significantly. The infestation was detected in 2014 and on October 31, 2015 a spruce beetle outbreak was declared in the Omineca Region.

In the Mackenzie TSA the Province's aerial overview survey (AOS) shows that the spruce beetle outbreak is centred in the area east of Williston Reservoir and south of the Peace Arm. Spruce beetle infestations have also been identified elsewhere within the TSA.

In April 2018 I met with licensees to review harvest monitoring for the Mackenzie TSA. Monitoring of submitted cutting permits conducted by District staff indicated that significant harvesting activities are occurring in spruce-leading stands with little to no impact from spruce beetle. Licensees maintained that harvesting efforts in non-pine stands were being focussed on timber impacted by spruce beetle.

In July 2018 I released *Omineca Region – Harvest Prioritization in Response to Spruce Beetle Outbreaks*. In this guidance I express my expectations that harvest within the outbreak areas should be focussed on salvage of high mortality spruce beetle impacted stands and on pest reduction in stands with sizable active spruce beetle infestations. The guidance also included my expectation that timely ground survey information be collected to support forest management decisions.

I have heard concerns from licensees and BC Timber Sales that the spruce beetle outbreak is not equally distributed across the TSA or across historical operating areas. Licensees indicate that the uneven distribution of spruce beetle impacted stands, in combination with seasonal constraints for harvest operations and/or log transport, limits their ability to balance spruce beetle management response with maintaining log inventories for their mills. In this partition amendment, I have also considered information presented by BC Timber Sales' from their

Spruce Beetle Action Plan, Mackenzie Operations (focussed on the southeast portion of the TSA).

In order to support my decision regarding the partition amendment FAIB provided me with sensitivity analyses which explored options to focus the harvest on the spruce beetle outbreak area. The underlying assumption is that a focus of harvesting horsepower on the outbreak area could minimize the non-recoverable losses and recover economic value in impacted stands before the timber quality deteriorates. The analysis assessed several scenarios, including catastrophic loss scenarios. The results indicate that, based on the known extent of the spruce beetle outbreak, and conservative assumptions about stand shelf life, a focussed harvest during the short term could reduce non-recoverable loss, and remove a significant portion of the stands which have been impacted by spruce beetle. In all scenarios which were investigated the current AAC could be maintained until a new AAC is required by legislation. Detailed analysis will be required in the next timber supply review to assess the potential implications to the mid-term and long-term harvest projection of spruce beetle focussed harvest.

I have reviewed the 2018 AOS information and discussed the results with Ministry forest health experts. Although the total outbreak area decreased in size from 2018 to 2019, I have been advised that it is too early to determine if the outbreak is abating. Additionally, research regarding shelf life of spruce beetle killed timber is being conducted collaboratively between the Ministry and other research institutes. This information collection is ongoing, improved data will be available for use in the next timber supply review.

I have reviewed the comments from licensees, First Nations and Ministry staff and I have considered the sensitivity analyses presented by FAIB. It is reasonable to assume that a significant portion of harvest within the Mackenzie TSA will be focussed on spruce beetle management over the short term. I have considered this information in my decision regarding the AAC partition amendment.

Determination

As chief forester, in making an AAC decision I must determine a harvest rate that appropriately protects timber and non-timber values, sufficiently mitigates impacts to constitutionally protected rights and title of Indigenous peoples, supports the regional economy and supports government's commitments to industry. In 2014, following a timber supply review, the chief forester determined an AAC of 4 500 000 cubic metres per year.

As chief forester it is also my responsibility to monitor implementation of the AAC and condition of the land base and inventory to identify changes which may impact the stewardship of timber and non-timber values and/or sustainability of timber supply. When major changes occur to the management assumptions upon which an AAC determination is made my statutory authority allows me to: (a) initiate a timber supply review sooner than the 10 years required by legislation, and/or (b) amend or cancel an AAC partition.

Having considered the information in *Changes to Management Assumptions in AAC Determination*, including risks and uncertainties of the information provided and my obligations as chief forester, I have determined that it is appropriate to amend the partitions for the AAC for the Mackenzie TSA.

The AAC that was set in 2014 is 4 500 000 cubic metres per year, this AAC remains in place and will not change until a new timber supply review is completed and a new AAC is determined. I specify, under Section 8(5)(a) of the *Forest Act*, the following geographic and timber profile partitions to the current AAC:

1. A maximum of 2 000 000 cubic metres per year is attributable to live, uninfested coniferous timber;
 - a. Of this, a maximum of 500 000 cubic metres per year is attributable to the southwest portion of the TSA, the area that is west of Williston Lake and south of Omineca Provincial Park and Omineca Arm.

I expect that harvest will be focussed on dead, dying and damaged timber throughout the TSA. I set an additional limit on the harvest of live, uninfested timber in the southwest portion of the TSA to encourage harvesting of spruce beetle affected stands and salvage of dead volume.

I heard concerns from First Nations regarding risks to non-timber values and Indigenous rights and interests which may result from cumulative effects of concentrated harvest. By limiting incidental harvest of live, uninfested timber in the southwest it is reasonable to assume that the risk of further concentration of harvest within this geographic area will be reduced.

I expect that licensees and BC Timber Sales will incorporate guidance from *Chief Forester Expectations – Harvest Prioritization in Response to Spruce Beetle Outbreaks*; *Guidance on Landscape and Stand level Structural Retention on Large-scale Mountain Pine Beetle Salvage Operations*; and *Omineca Region - Guidance on Stand and Landscape-level Retention for Harvesting in Response to Spruce Beetle Outbreaks* in order to achieve the AAC partitions.

I am aware that access and log transport play a significant role in operational decision making within the Mackenzie TSA. It is my expectation that licensees and BC Timber Sales will work collaboratively to ensure that all parties are able to exercise their harvesting rights within the Mackenzie TSA, considering the limitations of access and timber transport which may be constrained by external factors such as seasonal water levels within the Williston Reservoir.

This partition amendment is effective February 14, 2019 and will remain in effect until a new AAC is determined which must take place within 10 years of the effective date of the AAC determination, November 14, 2014.

Implementation

In the period following this decision and leading to the subsequent AAC determination, I expect Ministry staff, licensees and BC Timber Sales to undertake the tasks noted below. These expectations are the result of my collaboration with Ministry staff, licensees and BC Timber Sales and engagement with First Nations. I recognize that the ability of staff to undertake these projects is dependent on available time and funding. These projects are important to reduce the risk and uncertainty associated with key factors that affect the timber supply in the Mackenzie TSA.

To support the chief forester in subsequent AAC determinations it is my expectation that:

1. Ministry staff to work with licensees and BC Timber Sales to maintain the focus on harvest of dead, dying and damaged timber. This includes salvage harvest of mountain pine beetle impacted stands, salvage harvest of spruce beetle impacted stands and pest reduction harvest of spruce beetle infested stands. I have stated my expectations in *Chief Forester Expectations – Harvest Prioritization in Response to Spruce Beetle Outbreaks*.
2. Ministry staff to continue to work with licensees and BC Timber Sales to monitor spruce beetle management responses. This should include information regarding:
 - a. Rate of spread of the spruce beetle outbreak;
 - b. Tree mortality and beetle life stage information;
 - c. Harvest of spruce beetle impacted timber for the purposes of salvage and/or pest reduction; and,
 - d. Shelf life of spruce beetle impacted timber.
3. Ministry staff, licensees and BC Timber Sales to collaboratively monitor and report to the chief forester regarding performance and utilization in the following timber profiles:
 - a. Pine-leading stands and live and dead pine fibre;
 - b. Spruce-leading stands and live and dead spruce fibre;
 - c. Balsam-leading stands and balsam fibre; and,
 - d. Deciduous-leading stands and deciduous fibre.
4. Ministry staff, licensees and BC Timber Sales to work collaboratively to develop a plan for retention during salvage and pest reduction harvest which considers stand- and landscape-level biodiversity and includes strategies to meet recommended stand-level retention as provided in *Guidance on Landscape and Stand level Structural Retention on Large-scale Mountain Pine Beetle Salvage Operations* and *Omineca Region - Guidance on Stand and Landscape-level Retention for Harvesting in Response to Spruce Beetle Outbreaks*.

It is my expectation that instructions included in the *Mackenzie Timber Supply Area, Rationale for Allowable Annual Cut Determination (Effective November 14, 2014)* will also continue to be implemented.

I am aware that the Province's initiatives related to caribou recovery, modernized land use planning and collaborative stewardship with First Nations may result in changes to the timber supply of the Mackenzie TSA in the near future. As is consistent with my guiding principles, I believe that to consider potential impacts of future decisions by other decision-makers at this time is not within the scope of my statutory authority. I will monitor land use decisions by other statutory decision-makers and include new information in subsequent AAC determinations.

Given the short-term and mid-term impacts of both the spruce beetle outbreak and the significant decline in the quality of mountain pine beetle impacted timber within the Mackenzie TSA I agree that changes have occurred which differ significantly from the management assumptions which supported the 2014 AAC determination. This, in combination with other information that has been provided to me by Ministry staff, indicates that a new AAC determination is needed sooner than the 10 years required by legislation. As such, I intend to initiate a new timber supply review for the Mackenzie TSA before April 2019.



Diane Nicholls, RPF
Chief Forester



February 14, 2019