Alberta Wilderness Association
"Defending Wild Alberta through Awareness and Action"

July 17, 2020

Jason Mogilefsky
Environment & Safety Supervisor, Spray Lake Sawmills
Via e-mail: jason.mogilefsky@spraylakesawmills.com

AWA Response: Spray Lake Sawmills Draft 2021 Forest Management Plan

Dear Jason Mogilefsky,

Alberta Wilderness Association (AWA) would like to offer the following comments (attached) for Spray Lake Sawmills (SLS) as part of the consultation period for the draft 2021 Forest Management Plan (FMP).

Founded in 1965, AWA works throughout Alberta to achieve more representative and connected protection of the vital landscapes that are the source of our clean water, clean air and wildlife habitat. With over 7,000 members and supporters in Alberta and across Canada, AWA remains committed to ensuring the conservation of wildlife and wild places in Alberta for generations to come.

AWA has long advocated for ecosystem-based management of Alberta's forests, and our objective is to ensure that the landscapes and habitats located within the SLS Defined Forest Area (DFA) are managed to maintain their pristine condition for the benefit of Albertans and Alberta's wildlife species.

Following previous submissions by AWA, we have outstanding concerns regarding a number of timber and non-timber values, foremost the removal of cold water fish from SLS' Values, Objectives, Indicators and Targets (VOITs) and the expected deviations for Equivalent Clearcut Area (ECA) in the 10 and 20-year spatial harvest sequences (SHS).

Related to the draft FMP, AWA also requests that SLS detail if and how the May 4, 2020 announcement by Alberta Forestry[1] has impacted annual allowable cut (AAC) within the SLS DFA.

We look forward to your written response detailing how SLS will address each of AWA's comments.

Sincerely,
ALBERTA WILDERNESS ASSOCIATION

Grace Wark
Conservation Specialist

Cc: Honourable Devin Dreeshen, Minister, Alberta Agriculture and Forestry, af.minister@gov.ab.ca
Honourable Jason Nixon, Minister, Alberta Environment and Parks, aep.minister@gov.ab.ca
Daniel Lux, Executive Director, Forest Stewardship and Trade, daniel.lux@gov.ab.ca
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Chris Breen, Director, Forest Tenure, chris.breen@gov.ab.ca

[1] https://www.alberta.ca/release.cfm?xID=71253CB1DD3E5-AF97-D91F-972ED430583647B9

Alberta Wilderness Association Review and Recommendations:
Spray Lake Sawmills Draft 2021 Forest Management Plan
July 2020

Alberta Wilderness Association (AWA) submits the following comments as part of the consultation period for Spray Lake Sawmills (SLS) draft 2021 Forest Management Plan (FMP). The sections that follow detail timber and non-timber values identified by AWA that require further attention by SLS in the management planning process, including the relevant chapters and annexes in the draft 2021 FMP.

SPECIES AT RISK

Cold Water Fish

As detailed in the draft FMP (Chapter 7), SLS is well-aware of the current condition of threatened native trout in the southern eastern slopes region, within which the SLS defined forest area (DFA) resides. AWA has outstanding concerns regarding the removal of cold water fish, in particular SARA-listed populations of westslope cutthroat trout and bull trout, from the listed species in the FMP's Values, Objectives, Indicators and Targets (VOITs; Chapter 5).

Although SLS has drafted a *Westslope cutthroat trout and bull trout recovery strategy* (Chapter 7), AWA has found that the recovery strategy, and additional measures included in SLS' 2020 Operating Ground Rules, do not provide sufficient detail on how native trout population recovery will be monitored and reported over the 10 and 20-year spatial harvest sequences (SHS). Monitoring and reporting are necessary components of native trout population recovery to ensure that populations are stable and unaffected by timber harvest processes. They also are essential to ensure the effectiveness of mitigation and avoidance strategies proposed by SLS. AWA believes excluding cold water fish from VOITs means there are no measurable targets in place to assess fish habitat recovery.

AWA requests a written explanation as to why the Planning Development Team (PDT) removed cold water fish from the VOITs, AND that SLS detail how monitoring and reporting will take place to ensure that SARA-listed native trout species are not impacted negatively by timber harvest over the 10 and 20-year SHS.

AWA requests that monitoring requirements be included within the *Westslope cutthroat trout and bull trout recovery strategy* (Chapter 7), in addition to reinstating cold water fish (including westslope cutthroat trout and bull trout) within VOIT 14 (Chapter 5).

Further to AWA's concerns, the *Recovery Strategy for the Bull Trout (Salvelinus confluentus), Saskatchewan-Nelson Rivers populations, in Canada* has been drafted and is currently pending final approval. Consistent with AWA's recommendations for the federal bull trout recovery strategy, **AWA recommends that SLS implement a minimum riparian buffer of 100m.** Internal records obtained by Fluker and Mayhood (2020) indicate that federal fisheries officials believe the minimum riparian buffer for westslope cutthroat trout (which have similar habitat requirements and occupy many of the same watercourses as bull trout) should be 100m. [2]

[2] Fluker, S.C. and Mayhood, D. W. 2020. *Environmental Stewardship of Public Lands? The Decline of Westslope Cutthroat Trout along the Eastern Slopes of the Rocky Mountains in Alberta.* Public Land & Resources Review 42: 39-79.

Relevant sections/recommendations:

- **Chapter 2, Section 3.13 (Non-Timber Assessments)**: Cold water fish excluded.
  AWA recommendation: Add cold water fish to the non-timber assessment.
- **Chapter 3, Section 6.9.1.3 (Fisheries Hydrologic Unit Code)**: FSIs are developed and selected for cold water fish species based on the HUCs.
  AWA recommendation: Publish the Fish Sustainability Indexes (FSI) in the 2021 FMP.
- **Chapter 5, Table 2-1 (VOIT Summary Table), VOIT 14 (Species at Risk), and Section 4.1.8 (Species at Risk)**: Cold water fish removed from the High Value Species in VOIT 14
  AWA recommendation: Reinstate cold water fish within VOIT 14 and add measurable objectives and targets for monitoring and reporting westslope cutthroat trout and bull trout recovery.
- **Chapter 7, Westslope cutthroat trout and bull trout habitat recovery strategy**
  AWA recommendation: Add measurable objectives and targets for monitoring and reporting westslope cutthroat trout and bull trout recovery.
- **Annex III, Water Quality/Quantity and Fisheries Resources**:
  AWA recommendation: Water quality monitoring of Fish Creek, Fisher Creek, Mclean Creek, Prairie Creek, Quirk Creek, and Silvester Creek should continue during the 10 and 20-year Spatial Harvest Sequences (SHS); reports of these studies should be published regularly on the SLS website.

Grizzly Bears

As noted in the SLS FMP, Grizzly bears are designated as a threatened species in Alberta. A substantial portion of the SLS DFA (88 percent) falls within grizzly bear core and secondary habitat (Chapter 3, Table 6-8), which underscores SLS' responsibility to support the recovery of the species.

AWA supports SLS' approach to **implement access management protocols** along active resource roads and maintain road densities below the thresholds prescribed by the Alberta *Grizzly Bear Recovery Plan*. However, **AWA requests clarification on whether the total reported road densities (Chapter 5, Table 4-12) include roads and linear features not owned by SLS.** Cumulative road disturbance needs to be measured and reported in order to assess the full impacts of forestry roads to grizzly bear populations.

While not listed within the FMP, AWA does not support the proposed deviations from VOIT 14 (Chapter 5, Table 2-1), where SLS intends to decrease grizzly bear secondary habitat and increase primary sink habitat over the 10 and 20-year spatial harvest sequences (SHS). AWA believes that creating more primary sink habitat will increase mortality risk within the populations located within the DFA and significantly contribute to declining population trends. **We request that SLS avoid primary and secondary grizzly bear habitat entirely. Where that is impossible, SLS should implement measures to achieve no-net loss[3] of primary and secondary grizzly bear habitat by restoring primary and secondary sink habitat**.

Relevant sections/recommendations:

- **Chapter 5, Table 2-1 (VOIT Summary Table)**
  AWA recommendation: AWA does not support the proposed deviation from VOIT 14 in the

[3] Nielsen, S.E. Stenhouse, G.B. and Boyce, M.S. 2006. *A habitat-based framework for grizzly bear conservation in Alberta*. Biological Conservation 130: 217-229.

10 and 20-year SHS to decrease grizzly bear secondary habitat and increase primary sink habitat.

- **Chapter 5, Section 4.1.8.1 (Grizzly Bear)**: Grizzly Bear Habitat: Total road densities, including closed and temporary operational roads, in the portions of the grizzly bear population units overlapping the DFA, were between 0.285 and 0.412 km/km2.
  AWA recommendation: AWA requests clarification on whether the total reported road densities (Chapter 5, Table 4-12) include roads and linear features not owned by SLS. Cumulative road disturbance needs to be measured and reported in order to assess the full, cumulative impacts of forestry roads to grizzly bear populations.
- **Chapter 7, Section 8.2.1 *Grizzly Habitat Management Strategy***
  AWA recommendation: SLS should remove the excerpt citing personal communication with Gordon Stenhouse (June 03 2020). The statement "that there is no evidence of Grizzly Bears being limited by habitat supply" does not cite peer-reviewed literature, and diminishes the importance of high quality grizzly bear habitat and the impacts of cumulative land-use on habitat loss.

STRUCTURE RETENTION

AWA believes the 3 to 5 percent structure retention target set by SLS and Alberta Agriculture and Forestry (AAF) is considerably below what the best available evidence on adequate structure retention levels maintains is needed for biodiversity and increasing connectivity within regenerating stands.[4] AWA is also concerned that windthrow and edge effects of smaller patches may considerably reduce the potential biodiversity benefits of current structure retention measures.

In 2016, Alberta Agriculture and Forestry proposed that retaining at least 10 percent of the harvest area would ensure that forest management planning "demonstrates Alberta's clear commitment to using sound science and implementing sustainable management principles."[5] That government conclusion was based on an "extensive body of scientific evidence" citing International and Alberta-based research, including the EMEND experiment and the Healthy Landscapes Program.

AWA requests that SLS and Alberta Forestry undertake a review of the requirements for structure retention, and respect the scientific justification behind the minimum 10% target set by the 2016 *Structure Retention Directive* (Appendix I).

Relevant sections/recommendations:

- **Chapter 1, Section 4 (Forest Management Issues & Values)**
  AWA recommendation: This section should be revised to adequately capture concerns raised around structural retention by AWA and other stakeholders on multiple occasions (Chapter 2, Table 6-3).
- **Chapter 5, Section 2.4.4, VOIT 10 (Structure retention)**
  AWA recommendation: Increase structure retention target to a minimum of 10 percent by area.

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[4] Gustafsson, L., *et al*. 2012. *Retention Forestry to Maintain Multifunctional Forests: A World Perspective*. BioScience 62(7): 633-645

[5] Alberta Agriculture and Forestry. March 24, 2016. *Structure Retention Directive*. (See Appendix I)

WATERSHED PROTECTION

AWA has outstanding concerns regarding the forecasted hydrologic impacts to watersheds exceeding 30 percent Equivalent Clearcut Area (ECA) in the 10 and 20-year Spatial Harvest Sequences (SHS). AWA is especially concerned that 15 watersheds are expected to deviate from VOIT 25 (Water Yield Impacts) as detailed in SLS' March 2020 *Milestone 2 FMP Information Package*. **AWA requests that SLS take action to prevent all watersheds in the SLS DFA from exceeding 30 percent ECA in the 10 and 20-year SHS.**

Relevant sections/recommendations:

- **Chapter 5, 4.2.1 (VOIT 25 – Water Yield Impacts [forecasted])**
  AWA recommendations: 1) AWA requests that SLS take action to prevent all watersheds in the SLS DFA from exceeding 30 percent ECA in the 10 and 20-year spatial harvest sequences (SHS).
  2) In this section, AWA requests that SLS draw greater attention to the watersheds forecasted to exceed 30 percent ECA and the impacts of exceeding this threshold. More focus is applied to the watersheds forecasted to exceed 50 percent, which SLS states are unlikely to occur.
- **Chapter 7, Section 7.2 (Watershed Management)**
  AWA recommendations: In this section, SLS should draw greater attention to the watersheds forecasted to exceed 30 percent ECA and the impacts of exceeding this threshold.

ANNUAL ALLOWABLE CUT

Related to the draft FMP, **AWA requests that SLS detail if and how the May 4, 2020 policy changes announced by Alberta Forestry[6] have impacted annual allowable cut (AAC) within the SLS DFA**.

BIODIVERSITY

Relevant sections/recommendations:

- **Chapter 7, Section 8 (Biodiversity)**:
  AWA recommendation: SLS should add the "protection and recovery of species at-risk within the DFA" as a biological diversity goal.

LINEAR FOOTPRINT

Relevant sections/recommendations:

- **Chapter 7, Section 4.10 (Seismic Lines)**: "The decision is a precautionary approach as several of the linear features are used by ATVs when the Public Land Use Zone (PLUZ) permits motorized recreation. Operationally, SLS will evaluate seismic lines on a case-by-case basis and reforest seismic lines that are not active trails as practicable."
  AWA recommendations: SLS should recover all seismic lines regardless of active trail use, given the ongoing contributions of seismic lines to forest fragmentation. SLS can work with the Government of Alberta and recreational groups to establish more enjoyable and less ecologically damaging trail systems (within the regional thresholds for linear disturbance).

[6] https://www.alberta.ca/release.cfm?xID=71253CB1DD3E5-AF97-D91F-972ED430583647B9

REFORESTATION

Relevant sections/recommendations:

- **Chapter 7, Section 5.2.1 (Silviculture Systems): "**The amount of light, moisture, and frost exposure of the forest floor following harvest are key factors that can affect reforestation success."
  AWA question: Is the amount of wind exposure considered in planning harvest areas and future reforestation success?

RESEARCH

Relevant sections/recommendations:

- **Chapter 8, Section 1.1 (Activities)**
  AWA recommendation: Are the results of SLS' research publicly available to view and download online? Studies such as the Aquatic Ecosystem Baseline Studies would be a beneficial public resource.

SALVAGE LOGGING

Relevant sections/recommendations:

- **Chapter 5, 2-1 (VOIT Summary Table), VOIT 8 (Landscape Scale Biodiversity)**
  AWA recommendation: AWA does not support salvage logging on lands affected by natural disturbances, including wildfire and blowdown. The target to leave a minimum of 10% unsalvaged in areas of significant blowdown, allowing up to 90% salvage, will likely impair ecosystem recovery[7], contradicts Objective 1.1.1.5, and evades any plans to maintain unique successional habitats created by wildfire.

[7] Lindenmayer, D.B., Foster, D.R., Franklin, J.F., Hunter, M.L., Noss, R.F., Schmiegelow, F.A. and D. Perry. 2004. Salvage harvesting policies after natural disturbance. Science 303: 1303

Alberta Agriculture and Forestry

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March 24, 2016

To Distribution List

Subject: Structure Retention Directive

The department is proposing to release a new directive providing the department's expectations on structure retention within harvest areas. This directive will provide clarity on establishing the structure retention objective in forest management plans.

The directive will ensure continuous improvement in Alberta's forest management planning and operations and demonstrates Alberta's commitment to using sound science and implementing sustainable forest management principles. One key component of this directive is the specifying of the minimum allowable target for merchantable area retention at 10% of the harvested area.

The department anticipates implementation of this directive on May 1, 2017 subject to consultation.

If you wish you may provide written comments to the department by Tuesday May 31, 2016. A backgrounder document is also attached to provide additional context.

Comments and questions may be directed to:

John Stadt (John.Stadt@gov.ab.ca)

Yours truly,

Darren Tapp, MBA, MF, RPF
Executive Director

Digital attachments:
Structure Retention Directive
Backgrounder to Structure Retention Directive

cc: Barry White, Director, Forest Program Management Section, FMB

Backgrounder to Structure Retention Directive

What is "Structure Retention"?

Structure Retention is the forest management practice of retaining trees and larger shrubs within harvest areas. Structure Retention is a stand-level strategy that focuses on what is retained within harvested areas and does not refer to landscape-level strategies such as those addressing amounts of old and young forest and species composition.

What is the purpose of "Structure Retention"?

The purpose of structure retention is to provide legacies of the pre-harvest forest in the young forest that will be established following harvest. Natural disturbances in forests such as fire leave a wide range of structural attributes from patches or clumps of live trees to standing dead trees. These structural attributes include wildlife trees, tree cover and shelter, and sources for future dead and dying trees that will eventually contribute to coarse woody material on the ground. This structural complexity following disturbance provides habitats for many species of plants and animals. Forest harvesting without retention of this structural complexity results in a young forest with fewer habitats for species dependent on tree cover, old and large trees, and coarse woody material. Structure retained within harvested areas allows these species to continue to live in and move through harvested landscapes. Therefore structure retention is a key component of "sustainable forest management" which strives to ensure that biodiversity values and ecological integrity of forest landscapes are maintained in the context of forest harvesting.

What is the existing policy relating to Structure Retention?

The *Alberta Forest Management Planning Standard* (hereafter "Planning Standard) provides Alberta's expectations for forest management planning and what needs to be included in a Forest Management Plan. The "Performance Standards" in Annex 4 of the Planning Standard provides the management objectives that must be included in a forest management plan. These objectives focus on maintaining biological diversity, ecosystem productivity, soil and water, and social values and were derived from the Canadian Council of Forest Ministers definition of sustainable forest management.

Objective 1.1.2.1 in the Performance Standards requires a forest management plan to set a target for retaining stems, clumps and islands of trees within harvested areas. The percent volume or area that will be retained as structure retention not prescribed in the Planning Standard, but instead is determined through the planning process and is informed by science, local knowledge, and consideration of social, economic, and ecological factors.

In addition to the Planning Standard, the *Alberta Timber Harvest Planning and Operating Ground Rules Framework for Renewal* (hereafter "Operating Ground Rules") provides standards for Structure Retention that applies in the absence of direction from a forest management plan.

What new direction is provided in the Structure Retention Directive?

The directive for the first time clarifies expectations of setting the structure retention objective and introduces the following key requirements:

- Specifies the minimum allowable target for merchantable area retention at 10% of the harvested area over a five year period. No minimum target level was specified in the Planning Standard.
- Specifies the minimum level of merchantable area retention within any individual harvested area at 5%. Previously no minimum individual harvest area level was required as long as the overall retention target was achieved.
- Allowance of proximal retention patches, in which a retention patch is connected to the harvested area boundary. Limits proximal retention to no more than 25% of the structure retention in the harvested area. Previously, proximal retention patches were usually not permitted.
- Allowance of contribution of merchantable trees in required riparian buffers to structure retention target with the provision that no more than 25% of the total structure retention target can be within required riparian buffers. Previously, contribution from riparian buffers to structure retention targets was not permitted.

Clarifications include:

- A clear description of the purpose and objectives of structure retention.
- Clarifies that the structure retention target is expressed as a spatial area percentage of the merchantable harvest area. Previously target could also be expressed as volume, and the Planning Standard was not clear that the retention target referred to merchantable retained trees only.
- Clarification that the annual allowable cut will be reduced by the merchantable volume retained within the structure retention target. Previously, in some areas the volume associated with structure retention was charged as timber production annually.
- Requirement that a “Structure Retention Strategy” be submitted with the Forest Management Plan. This was already common practice.
- Clarification that structure retention shall not be harvested for one forest rotation. This was already common practice.
- Clarification on how to convert single tree retention to area.
- Clarification on how structure retention is monitored and reported.

What is the basis for the 10% structure retention target?

The retention of merchantable structure within harvest areas reflects an intentional strategy to manage for biodiversity values as it requires reducing potential harvest levels. Therefore setting an appropriate retention level requires considerations of what is required for the maintenance of biodiversity while still allowing harvesting to occur. This consideration has led to extensive research internationally and both Alberta and forest companies operating in Alberta have significantly invested into this research over the last few decades. Examples of Alberta-based research initiatives addressing structure retention questions include the EMEND experiment in northwest Alberta and the Healthy Landscapes Program of fRI Research coordinated out of

Hinton. Nationally, the Sustainable Forest Management Network, of which Alberta was the largest provincial funder, supported many projects and studies addressing structure retention. Recently several international studies examined structure retention practices in many countries, provinces and states and made recommendations on best practices to maintain biodiversity. For more details on these research programs and studies, see the "Supporting References" section at the end of this document.

On the basis of this extensive body of scientific evidence, and with the goal to ensure that Alberta's management of its forests continues to address Albertan's values, a minimum target of 10% merchantable area was selected. This value is explicitly recommended in several international assessments (for example see Gustafsson 2012) and is also consistent with studies examining the range of variation of retention following natural disturbances.

Why specify only merchantable trees in the structure retention target?

Biodiversity and habitat values are enhanced through many forms of retained structure in harvested areas including both merchantable and non-merchantable trees. This Directive requires the submission of a "Structure Retention Strategy" in which many aspects of retention can be described including the retention of non-merchantable trees. However, since forest harvesting targets merchantable trees for removal, the availability of the biologically beneficial attributes of these trees could become significantly reduced within harvested areas unless specific provision is made to retain them. The generally greater height and diameter of merchantable trees provide unique habitat attributes while the trees are standing, and after they die and becomes snags, and even later when they fall and become coarse woody material.

Supporting references and research programs:

D'Eon, R. 2006. Variable retention: maintaining biodiversity through planning and operational practices. SFM Network Research Note Series No. 25. Sustainable Forest Management Network. Edmonton Alberta.

EMEND experiment. 1998-present. Ecosystem Management Emulating Natural Disturbances. Website: http://www.emendproject.org/

Fedrowitz, K., et al. 2014. Can retention forestry help conserve biodiversity? A meta-analysis. Journal of Applied Ecology 51(6): 1669-1679.

Gustafsson, L., et al. 2012. Retention Forestry to Maintain Multifunctional Forests: A World Perspective. BioScience 62(7): 633-645

Healthy Landscapes Program at fRI Research. 1996-present. (Previously known as "Natural Disturbance Program"). Website: https://friresearch.ca/program/healthy-landscapes-program

Mori, A. S. and R. Kitagawa 2014. "Retention forestry as a major paradigm for safeguarding forest biodiversity in productive landscapes: A global meta-analysis." Biological Conservation 175(0): 65-73.

Serrouya, R. and R. D'Eon 2004. Variable Retention Forest Harvesting: Research Synthesis and Implementation Guidelines. Sustainable Forest Management Network, Edmonton, Alberta, Canada.

Title:	**Structure retention directive -DRAFT**
Number:	**Agriculture and Forestry 2016_01___**
Program Name:	**Forest Management Branch**
Effective Date:	**Upon approval**
This document was updated on:	**March 14, 2016**

Purpose

- This document provides direction on establishing the Alberta Forest Management Planning Standard indicator and target for standing residual structure (hereafter referred to as Structure Retention) within Objective 1.1.2.1 (Annex 4) to "Retain stand level structure".

Policy Context

- In the hierarchy of objectives in the Alberta Forest Management Planning Standard, Structure Retention is one of two indicators supporting Objective 1.1.2.1 to "Retain stand level structure". The other supporting indicator relates to "Downed Woody Debris" and is not addressed in this document.
- The "Retain stand level structure" objective contributes to the Value of "Local/stand scale biodiversity" which in turn contributes to the "Ecosystem Diversity" element of Criterion 1, Biological Diversity, established by the Canadian Council of Forest Ministers in defining Sustainable Forest Management.
- This objective contributes to the 'coarse filter' approach to conserving biological diversity which attempts to manage a broad range of habitats necessary to maintain the natural diversity of species, ecosystems, and ecosystem processes.
- Structure retention is a stand level indicator and relates to residual structure within harvested areas only. Structural attributes in forests outside of harvested areas contribute to landscape scale objectives such as cover types and seral stages. Structure retention patches that meet the minimum AVI polygon requirement and which are spatially mapped may contribute to landscape scale objectives.
- Structure Retention target required by Alberta Forest Management Planning Standard Annex 4 refers only to merchantable area to be retained within harvested areas. The more comprehensive Structure Retention Strategy, submitted with the Forest Management Plan, includes all aspects of structure retained in harvested areas including merchantable and non-merchantable retention levels, composition and distribution of retention, and monitoring and reporting methodology.

Procedures

1. Objectives of Structure Retention

The provision within harvested areas of the pre-disturbance legacies present in natural disturbances including:

- Structural complexity and old growth attributes at the stand level;
- Snag recruitment in the short and long-term as some of these trees die throughout the rotation;
- Temporary Refuge and habitat for some biota associated with naturally disturbed habitat;
- Wildlife Thermal, Hiding, and Line of Sight cover in harvested areas;
- Variability of shapes, sizes, amounts and forms of retention across the landscape to contribute towards emulating natural disturbance; and
- A continuum of deadwood structure for habitat and site nutrients.

2. Target Level (amount of retention)

2.1 The Forest Management Plan shall have a structure retention target expressed as a spatial (area) percent of the merchantable harvest area. A Structure Retention Strategy must be submitted with the Forest Management Plan which will apply to the entire FMA defined forest area, including embedded operators, and which includes the following:

2.1.1 Merchantable retention area percentage (see minimum acceptable target below)

2.1.2 Non-merchantable tree retention strategies

2.1.3 Spatial patterning of retention

2.1.4 Monitoring, Measuring and Reporting protocol (see 4.1)

2.2 The annual allowable cut (AAC) will be reduced by the merchantable volume retained in the structure retention target.

2.3 The target for merchantable retention area shall be a minimum of 10% of the harvested area over a five year period. Higher merchantable retention targets may be established to address ecological considerations and social values.

2.4 A minimum of 5% merchantable area retention is required within any individual harvested area.

2.5 Single tree retention can be converted to an area by using the following formula. Single tree retention should be determined following site preparation treatments.

Area = (number of live trees/piece size) / (average volume/ha)

where piece size = number of trees equaling 1 m^3 net merchantable volume

Eg. # live trees = 54, piece size = 3 trees /m^3, average volume/ha = 180 m^3/ha.

Area = (54 trees/3 trees/m^3) / (180m^3/ha) = 0.1 ha of structure retention

3. Composition and distribution of retention

3.1 While provision of deadwood through time is one of the goals of structure retention, the objective is to ensure retention remains standing for the first few decades of the new stand. This will allow recruitment of deadwood during the pole stage of the new stand when the existing deadwood legacies from the previous stand have begun to disappear. Therefore, the distribution and placement of retention should consider windfirmness to ensure the majority of the retention remains standing in the years following harvest. This consideration may influence how much retention is in patches and islands versus being distributed in small clumps and single trees.

3.2 Structure retention shall be representative of the pre-harvest condition of the overstory trees, including the full range of species and size classes in the harvested area

3.3 Structure retention shall be left in any of the following arrangements:

a) Dispersed (single tree/clumps)

b) Island remnants – undisturbed patch within the harvest unit boundary but not connected to the edge. No harvesting is permitted in island remnants.

c) Proximal retention – patch within the harvested area which is connected to a portion of the harvested area boundary. No harvesting is permitted in proximal retention patches.

3.4 All island and proximal structure retention patches must be spatially mapped and removed from the contributing landbase for one rotation. Dispersed retention shall not be harvested for one rotation.

3.5 Structure retention patches larger than the minimum AVI polygon size requirement (currently 2 ha) and which are spatially mapped may contribute to landscape scale objectives such as species composition and seral stages.

3.6 Proximal structure retention can be left as per the following:

3.6.1 Where a waterbody described in Operating Ground Rules Section 6.0 Table 2[1] runs into or along the harvested area boundary and structure retention is left in addition to the required buffer.

3.6.2 Where sensitive sites defined for "Species of Special Management Concern" in the Operating Ground Rules are within 100m of the harvested area boundary.

3.6.3 The width to depth ratio of the proximal retention dimensions must be at least 1:1 (i.e. patch adjacency to harvested area boundary must be less than patch width perpendicular to harvested area boundary).

3.6.4 Proximal structure retention may only represent up to 25% of the structure retention target in a harvested area.

3.7 Merchantable trees in riparian buffers required by the Operating Ground Rules Section 6.0 Table 2 that are within the harvested area contribute to the structure retention target with the following provisos:

3.7.1 No more than 25% of the total structure retention target can be composed of merchantable area within required riparian buffers.

3.7.2 Riparian buffer strips connected to the harvested area boundary are considered as proximal structure retention and contribute to the proximal structure retention allowance in 3.6.4.

3.7.3 Where a watercourse requiring a buffer is adjacent to the harvested area boundary, only the merchantable area within the riparian buffer strip on the harvested-area side of the watercourse contributes to the structure retention target.

3.8 Placement of structure retention patches should consider location of natural features (e.g. wildlife features such as mineral licks and den sites, streams and waterbodies).

3.9 Structure retention strategies utilizing pre-harvest assessment and design are preferred over strategies that use logging contractor discretion. Where available use Alberta Vegetation Inventory, aerial photography, digital elevation mapping, lidar-enhanced inventories, and wet areas mapping to identify potential sites.

3.10 Existing non-merchantable structure can be an important part of the Structure Retention Strategy. Non-merchantable structure retention does not contribute toward the merchantable area target.

4. Monitoring, Measuring, and Reporting Structure Retention

4.1 A structure retention Monitoring, Measuring and Reporting protocol must be submitted with the Forest Management Plan and must be easily audited by Alberta with digital information submitted. This protocol will apply to all operators on the FMA or FMU defined forest area.

4.2 Area retained as structure retention will be reported annually in the Timber Production and Revenue System (TPRS) and reported in Stewardship Reports every five years.

4.3 Final harvested area boundaries of island and proximal structure retention shall be submitted according to the requirements described in the Spatial Data Directive.

Authorities

Alberta Forest Management Planning Standard

Contact Information

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Approved:

Original signed by _____

Date _____

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