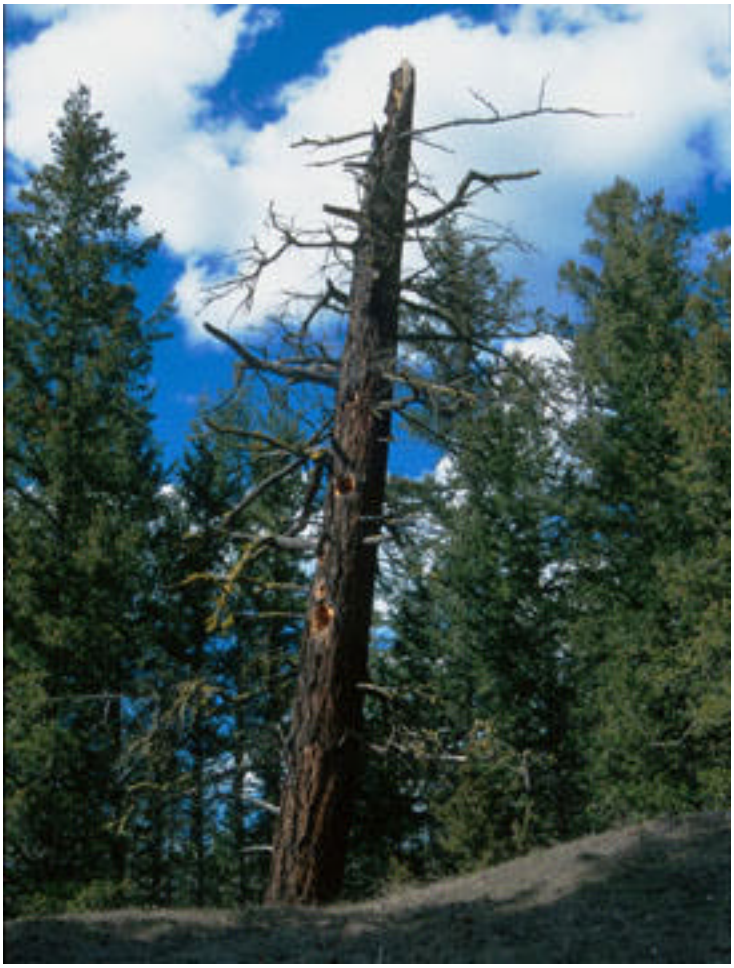
Cariboo-Chilcotin Land Use Plan

Regional Biodiversity Conservation Strategy

UPDATE NOTE #6

Procedures for Implementation of the Mountain Pine Beetle-Biodiversity Strategy to Address Current Attack During the Outbreak Phase



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Prepared for:

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Biodiversity Conservation Strategy Update Notes are prepared by the Cariboo-Chilcotin Biodiversity Conservation Strategy Committee for purposes of technical clarification or technical additions to the Biodiversity Conservation Strategy report, submitted to the Cariboo-Mid Coast Interagency Management Committee in July 1996. These notes are prepared in response to issues and questions presented to the Biodiversity Committee or recognized by the members of the Committee.

Introduction

The Integrated Mountain Pine Beetle–Biodiversity Conservation Management Strategy (BCC Update #5) established procedures for addressing forest health and biodiversity. Although the strategy is still considered to be a valid approach to management in ecological features, proponents are reluctant to conduct intensive probes in order to support clearcut harvesting. Furthermore, the ability to find and maintain stable replacements areas for damaged ecological features is increasingly difficult during the current severe phase of the MPB outbreak.

Consequently, a modified approach has been developed. The new approach is expected to deliver a level of land stewardship equivalent to the strategy, promote economic utilization of damaged stands, and address the concerns described above. **It should be noted that this approach is intended to apply to sanitation of current attack stands only.**

This document consists of three major sections: the first describes criteria for sanitation harvest, the second describes assessment requirements to support harvesting proposals and the third describes replacement procedures for OGMAs.

Sanitation Harvesting Criteria

The strategy, as described in Update #5, is still regarded as the most appropriate procedure for addressing strategic harvesting choices pertaining to MPB and biodiversity and for low levels of MPB attack (<10%), where single tree and patch cutting is appropriate, the strategy should be followed. Consistent with the approved strategy, there must be compelling reasons to warrant clearcut harvesting within an ecological feature. The ecological feature must constitute a major threat to forest health at the landscape level or the ecological attributes of the feature must be so compromised that replacement is warranted. In the latter case, the high level of susceptibility of older pine stands leaves few options for replacement.

The biological value of a stand is not governed solely by the level of tree mortality, but rather by its aggregate condition (all attributes considered). Even stands with high mortality contain snags, coarse woody debris, understory characteristics and recruiting forest, which all contribute to biodiversity. Consequently, the biodiversity value of these stands can only be assessed relative to other candidate stands in that area and such assessments are most meaningful once the MPB epidemic has subsided.

The strategy, including the modified approach, represents a **strategic** approach to decision-making. It is best not to prepare silviculture prescriptions until the strategic assessment has shown that harvesting is warranted. Efficiencies and cost savings will not accrue unless this procedure is followed.

The following textbox represents a summary of recommended procedures for different levels of MPB attack and harvesting approaches. For more detail on sections 1 and 2a), consult the MPB-Biodiversity Strategy.

For ecological features that address a **site-specific value such as riparian protection or ungulate winter range, no replacement areas are available** and very sensitive practices must therefore be undertaken to address MPB current attack within the feature. Some OGMAs are not replaceable because of embedded ecological or cultural features as well.

Criteria for Implementing Sanitation Harvest of Current MPB Attack within OGMAs

1. Current attack levels =10%. Single tree and patch cutting of infected pine only consistent with the approved strategy

2. Current attack levels >10% and clearcutting is proposed:

a) Conduct comprehensive probes using a fixed grid over the OGMA and harvest grid cells with >10% attack consistent with the MPB-Biodiversity Conservation strategy (Update #5),

OR

b) Where comprehensive grid probes are **not** conducted:

Clearcut harvesting of the pine component within OGMAs can occur only when the following criteria are met.

i) The outbreak is within the **Suppression MPB zone** and the OGMA is deemed to represent a **major** threat to the surrounding landscape because:

- ? Current pine attack level within the OGMA is greater than 10%, and
- ? Adjacent pine stands within the normal flight distance (2km flight distance at 11-20% attack; 5 km flight distance at >20% attack) are common and highly susceptible to attack, and
- ? Sanitation of all infected, adjacent pine stands within the normal flight range of the MPB can, and will be implemented before the next beetle flight,

OR

ii) The outbreak is within the **Maintain Low MPB zone** and the OGMA is deemed by the District Manager to be a **leading** infection center within the zone, representing a **major** threat to the surrounding landscape because:

- ? Current pine attack level within the OGMA is greater than 20% and
- ? Adjacent pine stands within the normal flight distance (5km) are common and highly susceptible to attack and
- ? Sanitation of all infected, adjacent pine stands within the normal flight range of the MPB can, and will be implemented before the next beetle flight.

Note: Where OGMAs occur inside Tree Farm Licenses, green attack can be addressed using the above approach regardless of MPB zonation. This is based upon the expectation that harvesting capacity within the TFL is not limiting and all infestations can therefore be addressed.

Where proposals do not meet the above criteria, clearcutting of the pine component should not occur within OGMAs. Even stands with high levels of attack may represent the best available options for biodiversity and therefore should be left.

Within harvested areas, tree species other than lodgepole pine should be reserved for long term diversity and exceptional care should be taken when logging. Damage should never exceed 10% of the pre-harvest basal area of the non-pine species.

Strategic Assessment Procedures for Clearcut Harvesting within OGMAs

Where clearcutting of the pine component is proposed in an OGMA, the proponent will provide the required *strategic assessments* and, where necessary, a recommended replacement area to the MOF District Manager. Where a replacement area is required, the recommended replacement area will be provided to the MOF District Manager and MSRM. The purpose of this section is to provide additional guidance regarding the strategic assessments.

Harvesting proposed within an OGMA must be consistent with any higher level plan objectives under the Forest Practices Code or the Forest and Ranges Practices Act. Where harvesting is consistent with higher level plan objectives, the MOF District Manager remains the authority for approving forest harvesting and he may consider other factors that lie outside the guidance provided here. Nevertheless, this guidance is provided as a means of best meeting all higher level plan objectives and targets in the face of an extreme natural event. MSRM is the authority for amendments to OGMAs, including substitution of replacement areas for parts of OGMAs that are harvested.

It should be noted that the recommendations included in the MPB-Biodiversity Conservation Strategy and all derivative documents are intended to maintain options for biodiversity without compromising legitimate efforts to reduce spread of MPB. As such, removal of green trees not attacked by MPB is **not** considered appropriate, other than small removals required to access current-attack trees.

Strategic Assessment Criteria

The following strategic assessment procedures are provided to ensure that resources expended by licensees and government are directed appropriately. Preparation of detailed silvicultural prescriptions for clearcutting within an OGMA should not be done until a strategic assessment has demonstrated there is a compelling need to clearcut within an ecological feature. The attached table represents the information requirements for the strategic assessment.

Assessment Procedures Applicable When Clearcutting in OGMAs is Proposed

Assessment Criteria	Method	Required Information
% MPB *current-attack* of pine stands within the ecological feature.	Conduct ground reconnaissance within affected stand(s).	Level of MPB current attack within pine stands (% of susceptible pine) in the ecological feature
10% "salvage" permitted by CCLUP integration	Add proposed harvest area to past harvesting within the OGMA.	Cumulative total of the area within the OGMA that has been harvested.
MPB Management Zone	Review up-to-date, MPB zonation maps.	Mapped confirmation of infection source within the suppression zone or designation by District Manager that that source is a major infection center within the Maintain Low zone.
Hazard rating for pine within the 2 or 5km zone, as appropriate, around the perimeter of the ecological feature.	Review MOF hazard maps/ratings for that beetle management unit (BMU).	Hazard rating for that BMU.
Planned treatment of MPB-infected stands within 2 or 5km, of the perimeter of the ecological feature before the earliest MPB flight.	Review access and harvest plans for operators within the defined 2 km or 5 km zone, as appropriate.	Commitments by licensed professionals on behalf of licensees operating in the defined area that 80-100% of MPB current-attack pine will be treated prior to the earliest MPB flight.
Where harvesting exceeds 10% of the area of the ecological feature, availability of replacement areas for the incremental area over 10%.	For OGMAs not containing a site specific resource value, review forest cover mapping and forest development status (approved and proposed cutblocks) within the affected NDT-BEC subunit of the landscape unit.	Provide a mapped replacement candidate within the same LU NDT-BEC subunit including a summary of key forest cover attributes (specifically tree species composition, age and interior forest) for the area over 10%.

Note 1: Beetle management units are based on current landscape unit boundaries.
Note 2: Hazard indices are the product of four factors:

- Percent of susceptible pine basal area (proportion of the basal area per ha. comprised of pine)
- Age
- Density (stems per ha. of all species)
- Location (latitude, longitude; elevation)

Replacement of OGMAs

The Integration document estimated ten percent salvage would occur in selected ecological features over the harvesting rotation. Where the cumulative area harvested exceeds 10% of the area of an OGMA, that incremental area over 10% must be replaced as a transition OGMA. Licensees will be accountable for selection of suitable OGMA replacements using the criteria provided. MSRM will be accountable for approving the replacement candidates. Consistent with achieving the balance of land uses in the region, socioeconomic considerations will apply to the assessment of harvest and replacement options.

Guiding Principles for OGMA Replacement

1. Minimize the Need for OGMA Replacements

In many landscapes, finding suitable OGMA replacements and avoiding fragmentation is difficult. As a result, harvesting of OGMAs should only be done under the most compelling circumstances. This concern over availability of replacements was a key reason for the modification of the original MPB-Biodversity Strategy. The need for replacements can be minimized by following the procedures outlined previously in this document and by using careful, selective harvest instead of clearcutting wherever possible.

Identification of replacement areas also increases the complexity of monitoring. Replacement areas must be protected from development. Replacement areas would be considered **transition OGMAs**, to compensate for the conversion to early seral in the original OGMA. For **permanent** OGMAs, the boundaries of the original OGMA would **not change** when a replacement is added**.** For **transition** OGMAs, the boundary of the original OGMA would change to reflect the area of older forest lost through harvesting.

2. Licensees identify candidate replacements

As the harvesting proponent, licensees are expected to identify replacement areas. Thus, licensees working in the same landscape can avoid conflicts and cooperate to find common replacement areas. The process of finding candidate areas would logically occur as part of the landscape review done to rationalize harvesting in an OGMA.

Recommended replacement areas must be held in abeyance from harvesting until such time as MSRM approves that area or substitutes another more suitable area. The approved replacement area then represents part of the no harvest area contributing to the old seral target and must be reserved from harvest consistent with meeting SRMP objectives.

3. Extensive partial harvest requires replacement

Consistent with BCC update #5, single tree and patch cuts (1 ha or less) are encouraged if sanitation treatment is deemed necessary, especially at low levels of MPB attack. Since the cumulative effect of partial harvest across a large part of an OGMA can significantly affect its seral condition, replacement areas should be identified where more than 10% of the *basal area* of an OGMA is harvested through partial cutting.

4. Criteria for the selection of replacement areas:

Selection of replacement areas for OGMAs includes several considerations. Judgement is required to optimize the selection given choices available in different landscapes. The criteria below are primary biodiversity considerations. There can be other secondary factors such as the protection of single species values that influence choices as well.

Age: The replacement area should consist of predominantly mature or old stands. In order to best maintain the value for biodiversity, it is important that older stands be used to replace area lost. If mature or old stands are not available in the area, the threat of MPB infecting adjacent stands from the OGMA is much reduced, correspondingly reducing the need to sanitize the OGMA.

Patch size: Single large patches are preferred over several small ones. Harvest of MPB infested or damaged timber usually comprises a portion of an OGMA. Replacement of these individual portions of OGMAs therefore contributes to progressively smaller and more dispersed representation. This can reduce interior forest condition and patch size as well as increase potential for windthrow. As a result, large replacement patches are recommended as compensation for numerous small removals

Patch configuration: Patches that contribute to interior forest are preferred over those that do not. For a given size of replacement patch, the shape and location of that patch can influence the amount of interior forest in the BEC subunit. Where possible, it is desirable to place replacement areas adjacent to other patches of forest managed as no-harvest to increase interior forest condition.

Location: Replacement must be in the same LU NDT-BEC subunit as the OGMAs that were harvested. To ensure ecosystem representation objectives continue to be met, replacement areas must be within the same LU NDT-BEC unit as the OGMA(s) harvested and ideally the replacements should be nearby the harvested areas.

Species mix: Mixed species stands are preferred over stands of pure pine. Due to the high susceptibility of mature and old pine near outbreak centers, replacement with mixed stands is recommended where possible.

Recommended Procedures for Managing OGMA Replacements

1. The licensee identifies a candidate replacement area best meeting the old growth requirements in the same LU NDT-BEC subunit that the harvesting is proposed. The candidate replacement area should be equal to the area harvested above the 10% assumed for "salvage". Single large replacements are preferred over several small ones. Where multiple licensees are working in the same subunit, cooperation is encouraged to assure choice of replacements does not impact other licensees or cause unnecessary fragmentation.
2. The MOF District office receives the harvesting proposal from the licensee including a digital file of the proposed harvest and replacement areas. Where harvesting is approved, the MOF district holds the candidate replacement areas in abeyance. They also maintain records of the area approved for harvest within the OGMA.
3. MOF forwards the maps and information, including the digital files describing the harvesting and proposed replacement area to MSRM. WLAP receives *notifications* of the harvest and replacement proposals. MSRM approves the proposed replacement or chooses another and advises MOF and WLAP.
4. MSRM updates the maps and reports on OGMA status as required.