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To: Regional Executive Directors
District Managers

From: Tim Sheldan
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Chief Forester

**Re: Incorporation of mixedwood and broadleaves into Forest Stewardship Plan
stocking standards, SP amendments and TSR regeneration assumptions**



Interest in the role and use of broadleaf species in the future timber supply and in satisfying silvicultural obligations throughout the province has been increasing. The intent of this memo is to update the previous Chief Forester (CF) memo on *Silviculture Prescription Submissions that Include Broadleaf Species* (August 22, 2000) and provide guidance on the conditions that Delegated Decision Makers (DDM) may consider prior to making a determination that provides for an increase in the use of hardwoods to satisfy silvicultural obligations.

The incorporation or existence of broadleaf species in a stand may be desirable for a number of reasons, including broadleaf timber production, biodiversity, increased resiliency to climate change, wildlife habitat, nurse crops for conifers, reducing the risk of fire and forest health problems, and potentially increasing yield. Some of these benefits are currently promoted, in part, by the practices of retaining low levels of mature hardwoods after harvest, the tolerance of low levels of hardwoods at free-growing as per Appendix 9 of the *Establishment to Free Growing Guidebook* (May 2000), and the management of mixedwood stands in certain management units (e.g., NE British Columbia).

Any change in management direction from conifer to mixedwood or broadleaf production should be preceded by careful analysis and setting of clear objectives before a stand is harvested. Successful broadleaf or mixedwood management is an active process and cannot usually be achieved through default of failed coniferous management.

As part of the ministers consideration of stocking standards identified under *Forest Planning and Practices Regulation* (FPPR) sections 26(3) and (4) stocking standards need to:

- (1) demonstrate that the area will be stocked with ecologically suitable species that address the immediate and long term forest health issues;
- (2) maintain or enhance an economically valuable supply of commercial timber; and

- (3) be consistent with the timber supply analysis and forest management assumptions that apply to the area.

Broadleaf species in the tree species selection guidelines

The species selection guidelines of the current *Reference Guide to Forest Development Plan Stocking Standards* outline those ecosystems where the management of hardwoods may be ecologically appropriate. The footnotes in that guide differentiate as to whether or not a broadleaf species is a feasible regeneration option.

Broadleaves to fulfil silviculture obligations in Forest Stewardship Plan (FSP) stocking standards

Stocking standards specified within a FSP are expected to be consistent with the Timber Supply Review (TSR) and the forest management assumptions for the plan area. Broadleaf or mixedwood stocking standards specified in an FSP in a timber supply management unit (i.e., Timber Supply Area (TSA), Tree Farm Licence (TFL), or Woodlot Licence (WL)) with a TSR that does not assume any broadleaf management may be considered as not being consistent with that TSR. However, that does not mean that broadleaf or mixedwood management standards are inappropriate if they fit with changing management objectives within the management unit.

Where proposed stocking standards are not consistent with TSR and forest management assumptions, FPPR section 26(5) provides the minister or DDM the authority to approve those standards when they do not conform to FPPR sections 26(3) and 26(4). In the case of the incorporation of broadleaves consideration should be given whether it is the intention to **actively manage** for mixedwood or broadleaf stands (e.g., consideration is given to the processes of stand and product development) having reasonable regard to the future timber supply of the encompassing management unit. In these situations the DDM may request additional information to allow the estimation of the potential impacts on timber yield. Also in light of adaptive management it may be appropriate to initially establish limited scope and scale operational trials.

When a broadleaf species is proposed to fulfil silviculture obligations, consideration should be given to the species productivity, reliability and feasibility as a regeneration option for the production of commercially valuable timber along with the species ecological suitability. Also, consideration should be given as to whether the broadleaf species in fulfilling the silviculture obligation satisfies any one of these conditions:

1. Broadleaves are deemed suitable as a new forest crop as either pure or mixedwood stands on the basis of:
 - a. Broadleaf species are currently or will be included in the estimation of volume contributing to a management unit's timber supply. For example, management units in the northeast with broadleaf regeneration assumptions and/or an allowable annual cut, or;
 - b. Broadleaf species are currently included as part of an over-arching Land Use Objective for that area.

2. Their use is consistent with a science based strategy (e.g., TSA silviculture strategy or TFL Management plan) that provides stated management objectives for broadleaves. These science-based strategies should incorporate careful analysis of growth and yield implications and set out viable silviculture regimes that will achieve the management objectives.
3. Broadleaves are to be used to reduce catastrophic fire risk in Wildland Urban Interfaces under the guidance of a Community Wildfire Protection Plan, or;
4. Broadleaves are to be used as a short-rotation interim crop to manage for root rot centres. While research does suggest that, in certain pathosystems, broadleaves can be successfully used to address root diseases, it is critical that prior to undertaking this approach, sufficient analysis of the disease, broadleaf, and conifer interactions be conducted. Therefore, this practice should only be considered as an operational trial and is not recommended for widespread use at this time until more definitive recommendations are produced.

Damage criteria for broadleaf species are not provided in Appendix 5 (Free Growing Damage Criteria for British Columbia) of the *Establishment to Free Growing Guidebook* (May 2000). The different growth habits and pests of broadleaves require a separate set of criteria that are currently being developed. In the interim, damage criteria may need to be established in a district standard operating procedure or similar where broadleaves are proposed in the stocking standards to fulfil silviculture obligations. Regional and branch forest health staff or other forest health experts should be consulted when developing local broadleaf damage criteria.

Where broadleaves are not intended to be part of the future commercial harvest it is anticipated that objectives such as nurse crop, nutrient cycling, general biodiversity, visuals, or other non-timber values will be achieved through free growing criteria that allow for a broadleaf component within the stand, but at a stocking level that will have minimal impact on the growth rate of the commercial timber producing portion of the stand. Examples of such criteria are outlined in Appendix 9 of the *Establishment to Free Growing Guidebook* (May, 2000).

Incorporation of broadleaves into existing approved Site Plans or Silviculture Prescriptions

The regeneration of broadleaves in either pure or mixedwood stands requires active well thought-out strategies and actions. Amending broadleaves into existing under-achieved conifer stocking standards may be a reasonable option when considered as part of a larger broadleaf/mixedwood strategy for that management unit, as part of one of the conditions listed above for FSPs, or when no other practicable options exist.

Broadleaf species and timber supply review regeneration assumptions

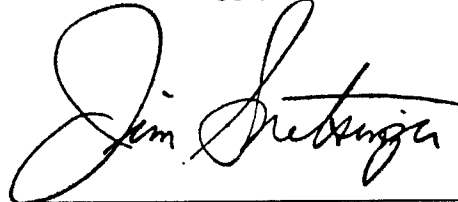
Based on past practices, the current TSR assumption in the majority TSAs and TFLs, is that disturbed areas will regenerate to pure conifer. Where management of broadleaf species is being introduced, the growth and yield projections for future timber supply analysis should reflect this shift. Where FSPs, Forest Development Plan stocking standards, or SPs have been approved that include broadleaves to fulfil silviculture obligations, the species assumptions

for regeneration should be reviewed and modified as required in the next round of TSR if the total area to which this strategy applies, and is carried out, is significant.

We believe that the complex mix of forest resource management issues in British Columbia requires a diversity of stand and forest conditions across the province. The acceptance and tolerance of broadleaves are an important contribution to this objective. Appropriate decisions with respect to broadleaf management require a clear statement of objectives at the TSA or TFL level. To this end, we encourage joint dialogue between industry and government that will lead to appropriate management unit timber supply objectives and the silviculture regimes required to achieve them.



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