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To: DISTRIBUTION LIST

From: Larry Pedersen, R.P.F.
Chief Forester

Re: Silviculture Prescription Submissions that Include Broadleaf Species

The release of the revised *Establishment to Free Growing Guidebook* (May 2000) which reintroduced broadleaf species into the tree species selection guidelines has raised questions related to the management of broadleaves. Further to the information on page 9 of the *Establishment to Free Growing Guidebook*, this memo provides advice that should be considered when reviewing silviculture prescription (SP) submissions that incorporate broadleaves as preferred and acceptable species. Information is also provided on the background of broadleaves in the tree species selection guidelines.



Broadleaf species in the tree species selection guidelines

The publication *Correlated Guidelines for Tree Species Selection (First Approximation) and Stocking Standards (Second Approximation) for the Ecosystems of British Columbia* was prepared by the Silviculture Interpretations Working Group in July 1993, and included broadleaf tree species. The broadleaf species listed were those known to occur on a given site series and reach tree size.

When the *Establishment to Free Growing Guidebooks* were published in 1995 the decision was made to delete broadleaf species. This was because the information was too general. Data was not available to differentiate site series where broadleaves met the test of productivity, reliability, and feasibility, and could be considered a viable regeneration option within the context of approved broadleaf management strategies. Concurrent with this decision, a commitment was made that broadleaves would be reintroduced into the tables once sufficient data was collected to enable identification of where broadleaves are a feasible regeneration option.

For the past several years Forest Practices and Research Branch and regional ecology staff have worked at compiling the data required to address this deficiency. In the revised *Establishment to Free Growing Guidebooks* (May 2000) broadleaf species have been reintroduced back into the species tables. The ecological footnotes now differentiate as to whether or not a broadleaf species is a feasible regeneration option.

Prescribing broadleaves as preferred or acceptable species in the SP

Broadleaf species should be used to fulfil silviculture obligations (i.e., preferred or acceptable well-spaced trees) only if they are:

- Deemed acceptable as a new forest crop as either pure broadleaf or mixedwood stands on the basis of:
 1. 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 Peace with broadleaf regeneration assumptions and/or allowable annual cut.
 2. Long term management objectives set out in a forest development plan (or in some instances a land use plan).
 - Consistent with an explicit strategy that provides stated management objectives for broadleaves. These strategies should incorporate careful analysis of growth and yield implications and set out viable silviculture regimes that will achieve the management objectives. FRDA Reports (230, 240, 250) provide useful background information on paper birch, red alder, black cottonwood, balsam poplar, and trembling aspen.
 - A short-rotation interim crop to manage for root rot centres. The use of hardwood cropping for this purpose is currently considered an operational trial and is not recommended for widespread use at this time.

Submission of SPs listing broadleaf species as *preferred* may be appropriate where operational trials are to be established to **manage** for mixedwood or broadleaf stands (e.g., for enhanced production of high quality wood such as birch veneer). In these situations the district manager may request additional information such as a working plan for the operational trial.

Broadleaf species should not be listed as preferred or acceptable in a SP where the objectives for broadleaf establishment or retention are:

- to provide a nurse crop,
- promote nutrient cycling, or
- for general biodiversity objectives.

It is anticipated that these objectives will be achieved through the revised free growing guidelines, which allow for a broadleaf component, but at a stocking level where the projected impact on conifer crop tree growth is acceptable.

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. The different growth habits and pests of broadleaves require a separate set of criteria that have not been developed as yet. Damage criteria may need to be established in a district standard operating procedure where broadleaves are approved in SPs and there are known forest health agents of concern. Regional and branch forest health staff should be consulted when developing local damage criteria.

Broadleaf species and timber supply review regeneration assumptions

The regeneration regime for each analysis unit defined in a TSR specifies the regeneration assumptions including species composition. This is an input to TIPSYS (Table Interpolation Program for Stand Yields) for projecting future timber yields. In the majority of cases for both TSAs and TFLs, the TSR assumption is that disturbed areas will regenerate to pure conifer. Where management of broadleaf species is being introduced then the growth and yield projections for future timber supply analysis should reflect this shift. When developing the management strategy for broadleaves the potential growth and yield implications must be analyzed.

Where SPs have been approved that include broadleaves as acceptable and the total area to which this applies is significant, then the species assumptions for regeneration should be reviewed and modified as required in the next round of TSR.

Where SPs have been approved that specify broadleaves as preferred, then an additional consideration may arise. Stands with broadleaves as leading species are excluded from the timber harvesting land base in many TSAs and TFLs. Where this is the case and silviculture treatments are aimed at establishing broadleaf dominated stands over a significant area then this will need to be addressed in the next round of TSR.

Any change in management direction from conifer to mixedwood or broadleaf production should be preceded by careful analysis and setting of clear objectives.

I 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 revised free growing guidelines with their increased acceptance of broadleaves are an important contribution to this objective. Beyond this, appropriate decisions with respect to broadleaf management require a clear statement of objectives at the TSA or TFL level. To this end, I encourage joint dialogue between industry and government that will lead to government approved objectives and the silviculture regimes required to achieve them.

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