

Tree Species Composition and Diversity in British Columbia

Prepared by: Tree Improvement Branch and Forest Practices Branch

FREP

REPORT SUMMARY #16

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The Forest and Range Evaluation Report #14, *Tree Species Composition and Diversity in British Columbia* (2008), examines the question: Are British Columbia's forest management practices resulting in a substantial change in the tree species composition of our forests? With increased intensity of silviculture practices, increased use of planting, and decreased reliance on natural regeneration, are forest management decisions affecting change that will result in outcomes that are not well understood? If forest ecosystems are simplified, is biological diversity reduced? Maintaining diversity to manage risk is a practical approach to managing uncertainty. This report provides insight on trends in tree species composition as forest management in British Columbia moves from natural to managed forests.



Photo: Babine Lake by Tracy Coombes

**“ARE FOREST
MANAGEMENT
PRACTICES RESULTING
IN A SUBSTANTIAL
CHANGE IN THE TREE
SPECIES COMPOSITION
OF FORESTS IN BRITISH
COLUMBIA?”**

Silviculture in British Columbia has been undertaken under different policy regimes and it is important to understand the impacts of those regimes. For this reason, information is presented in this report pertaining to three major time periods:

1. Prior to 1987, when government had the primary silvicultural obligation;
2. 1987 to 1995, representing the beginning period of licensee obligation; and
3. After 1995, coinciding with implementation of the Forest Practices Code and before the implementation of the Forest and Range Practices Act.

A primary goal of this report is to provide a comparison of the proportion of single tree species dominated stands (referred to as the monoculture category) and mixed tree species stands, by addressing their species composition before and after harvest. Information in this report came from the *Reporting Silviculture Updates and Land Status Tracking System* (RESULTS) which contains licensee, BCTS and ministry submitted information on the pre-harvest tree species and free growing tree species compositions on cut blocks logged over the past 30 years.

In RESULTS only two species are reported for the pre-harvest tree species labels and up to six species are currently reported under the free growing stand label. For the purposes of this report only the first two species (leading and secondary) are utilized. Any present stand label with a leading species percentage of 81% or greater is assigned to the monoculture category. Conversely, any present stand label with a leading species percentage of less than 81% is assigned to the mixed stand categories. Monoculture and mixed stands are also grouped into conifer and deciduous categories.

RESULTS

Approximately 31% of the forests in the Province are considered a monoculture before any harvesting has occurred. The amount of area across the Province classified as a monoculture at free growing for all reporting years decreased by 4% to 27% since 1987. When summarizing areas based on post-1987 reporting years only, 26% of the forests across the Province are considered a monoculture before any harvesting has occurred. The amount of area that is classified as a monoculture at free growing has increased by 9% on areas harvested since 1987.

The report indicates for all time periods that there are four Timber Supply Areas (TSAs) that have shown a significant increase (i.e. greater than 6%) in monocultures. The report indicates that there are 16 TSAs that have shown a significant increase in monocultures on areas harvested after October 1, 1987. Although the number of TSAs with significant increases in reported monocultures grew, the hectares of these stands relative to the overall TSA land bases are quite small.



Photo: Planted stand, courtesy of FII

In the Coast Forest Region, only 7% of the forests are considered a monoculture before any harvesting has occurred. Overall, there is no significant change in the amount of monoculture prior to silviculture becoming a licensee and BCTS obligation. Overall, when comparing pre and post harvest conditions the amount of area that is classified as a monoculture in the Coast Forest Region at free growing has increased by roughly 2%.

Approximately 27% of the forest in the Northern Interior Forest Region was classified as a monoculture before any harvesting occurred. Overall, there was only a 1% increase in the amount of area that is classified as a monoculture in the Northern Forest Interior Region when areas have achieved their free growing obligations. However, the amount of area that is classified as a monoculture at free growing has increased by 9% on areas harvested since 1987.

The amount of deciduous mixed stands at free growing in the Northern Forest Interior Region has increased significantly, from 2,811 hectares before harvest to 55,614 hectares at free growing.

In the Southern Interior Forest Region, approximately 38% of the forest land base is classified as a monoculture before any harvesting has occurred. The amount of area in the Southern Interior Forest Region that has been identified as monoculture at free growing has decreased by 9%. However, the amount of area that is classified as a monoculture at free growing has increased by 9% on those areas harvested since 1987.

The amount of deciduous mixed stands at free growing in the Southern Forest Interior Region, on the other hand, has increased significantly from 1,202 hectares before harvest to 37,268 hectares at free growing.

RECOMMENDATIONS

District Managers and forest managers need to monitor the trends in species selection and deployment practices to ensure the production of forests that are consistent with forest management objectives and strategies for sustainable timber value, volume, habitat, forest health and resilience.

Where these objectives are not clearly articulated, District Managers and forest managers need to clearly specify them in Future Forest Strategies, Silviculture Strategies and Management Plans. Forest Stewardship Plans and reforestation strategies (stocking standards) need to be aligned with these objectives.

A further recommendation of this report is for Forest Practices Branch to develop a standard protocol for tracking the issue of monocultures at the management unit level to ensure appropriate species, stocking standards and diversity of species mix are planted out on the land base. A report such as this one should be produced on a 5-year basis.

VIEW THE FULL REPORT

[HTTP://WWW.FOR.GOV.BC.CA/FTP/HFP/EXTERNAL/!PUBLISH/FREP/REPORTS/FREP_REPORT_14.PDF](http://www.for.gov.bc.ca/ftp/hfp/EXTERNAL/!PUBLISH/FREP/REPORTS/FREP_REPORT_14.PDF)

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Contact Peter Bradford (Peter.Bradford@gov.bc.ca)

