TREE TIPS

RESEARCH SUMMARIES

Commercial Thinning Opportunities & Work Plan

Forestry Research Partnership Project # 130-208

The Aim

This project was initiated to gather existing background information on commercial thinning (CT), to develop a framework for research and exceptions monitoring, and to provide some best management practices. The benefits from CT include: 1) an immediate source of salable pulpwood to help mitigate current shortfalls; 2) increased tree size; 3) reduced tree size variability and spatial variability at the time of harvest; 4) reduced time to merchantability; and 5) maintenance of wood supply through mid-rotation volume extraction. Although CT is not currently widely practiced in boreal Ontario, this silviculture technique will potentially become more common as the forest industry focuses efforts on intensive forest practices close to mills. From a practical standpoint, CT cannot be readily implemented in boreal Ontario unless the practice is well defined and supported within the OMNR policy and planning framework. CT is currently designated as either a "not recommended" or a "developmental" practice in Ontario's boreal silviculture guides. In order to change these designations, a program is needed to ensure that the treatment is successfully implemented in boreal Ontario through a controlled, structured, and ecologically sound process. Since 2000, the FRP and the MNR have been working on implementing a 4-phase process to move CT from a "not recommended" designation.

An active commercial thinning site

The Approach

Phase 1: The first step was to gain an operational appreciation for CT. A series of workshops and field tours were organized.

Phase 2: A knowledge synthesis document was completed to compile and evaluate existing information relevant to CT of even-aged, pure or nearly pure jack pine, white spruce and black spruce stands in boreal Ontario, and to help identify knowledge gaps.

Phase 3: The third step was to adopt a monitoring program which remains essential to allow guidelines and associated "best bets" for management to be continually updated and refined.

Phase 4: A variety of knowledge transfer activities (from workshops to silvicultural ground rules training) were carried out in different venues to inform a wide audience of forest practitioners in boreal Ontario.

Ontario
Tembec
Natural Resources Canada / Ressources naturelles Canada
Canadian Forest Service / Service canadien des forêts

The Tree Tip

Interest in operational CT in boreal Ontario is currently focused on a single-entry, uniform, moderate intensity thinning from below. This thinning regime is part of a package of regeneration and stand tending techniques used to regulate stand density. Using commercial thinning in conjunction with planting and/or pre-commercial thinning, the growth track of an individual tree can be maintained within the bounds of having adequate neighbouring competition to limit excessive branchiness and taper yet having adequate growing space for good growth. If stocking is initially too sparse then wood quality suffers due to poor form and excessive branching; and if stocking becomes too dense then the time to reach the objective piece size is lengthened. Thus, the primary purpose of this thinning regime is as a stand tending practice to reduce the number of trees in a stand to a density that will produce high quality sawlogs and reach a technical rotation age sooner (grow a big tree faster) thus potentially mitigating future wood supply shortfalls. A secondary benefit is the provision of an immediate source of salable wood. Compared to no thinning, this thinning regime does not increase nor reduce total stand volume over a rotation. Since the stand volume growth curves for thinned and unthinned stands proceed in parallel, the standing live volume in thinned stands at the time of harvest is less than that from an unthinned stand. However, the volume of sawlogs at harvest can be greater with thinning than without.

Red Pine logs obtained from a commercial thinning.

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