



# Branching out

from the Canadian Forest Service ■ Laurentian Forestry Centre

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## Overview of commercial thinning in black spruce forest: 40 years later

In the early 1960s, Gordon Weetman<sup>1</sup>, a silviculture specialist, established some experimental plots north of Baie-Comeau. One of his objectives was to determine the effect that thinning would have on the growth and yield of a 60-year-old black spruce forest. These plots were revisited in 2001 by researchers from the Canadian Forest Service to examine the long-term impact of this management practice.

Commercial thinning is usually done to improve timber production in a forest stand by increasing the average size of stems while maintaining the same merchantable volume (volume harvested during thinning + volume harvested during final harvest). The information available on black spruce stands deals mainly with the short-term effects (under 15 years) of this treatment on the production in total volume. It is also vital to know the effects on the merchantable volume after an extended period (over 30 years) to gain a proper understanding of the scope and duration.



Photo: Michel Soucy (Université de Moncton)

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<sup>1</sup> At the time, G. Weetman was a researcher at Paprican (Woodlands Research Department).





Forty years after the process, the merchantable volume of the section that underwent moderate thinning (25% of the basal area) was equal to that of the section that did not. The section that underwent extensive thinning (50% of the basal area) showed higher production, because the standing volume caught up to that of the section that did not undergo thinning. This treatment apparently increased the strength of the stems and reduced the age-related mortality that primarily affects the largest stems in old stands. Therefore, extensive thinning seems to slow the aging of mature stands.



Photo: Michel Soucy (Université de Moncton)

In black spruce forests, moderate thinning does not seem justified to increase the short-term merchantable volume. Thus, in the longer term, a gain in merchantable volume (volume harvested during thinning + volume harvested during final

cutting) is possible after intensive thinning, because of the increased strength of the stand (increase in growth of remaining stems and decrease in mortality).

agers in assessing the probability of attaining the desired results and cost effectiveness for such an operation.

#### FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

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Although the commercial thinning that was conducted experimentally on these plots is not completely consistent with current thinning methods, this type of thinning is the oldest with respect to black spruce in North America. The data gathered for such long periods will be extremely beneficial to forest man-



Photo: Michel Soucy (Université de Moncton)

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