

Branching out

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Adding value to heterogeneous hardwood stands through a multi-treatment approach

In Quebec, an efficient approach is now available for treating thousands of hectares of hardwood stands previously considered unharvestable because of the low density of mature trees. Researchers with the Canadian Forest Service of Natural Resources Canada and FPInnovations–Feric have developed a multi-treatment shelterwood approach that can be used to achieve this goal.

The new method is suitable for harvesting sawtimber-quality yellow birch in such stands and putting the stands back into production on a sustainable basis.

Managing hardwood stands can present challenges because of the high levels of heterogeneity generated by natural disturbances or past harvest-



Photo: FPInnovations-Feric



Yellow birch.
Photo: Gouvernement du Québec

ing. This situation precludes the use of the usual interventions designed for relatively homogeneous stands.

The multi-treatment shelterwood method, which has been integrated into the operations of the Coopérative

forestière des Hautes-Laurentides in Mont-Laurier, gets around these problems and provides increased efficiency in terms of time and money. The approach is based on a simple precept: “Do what needs to be done, where it needs to be done.”

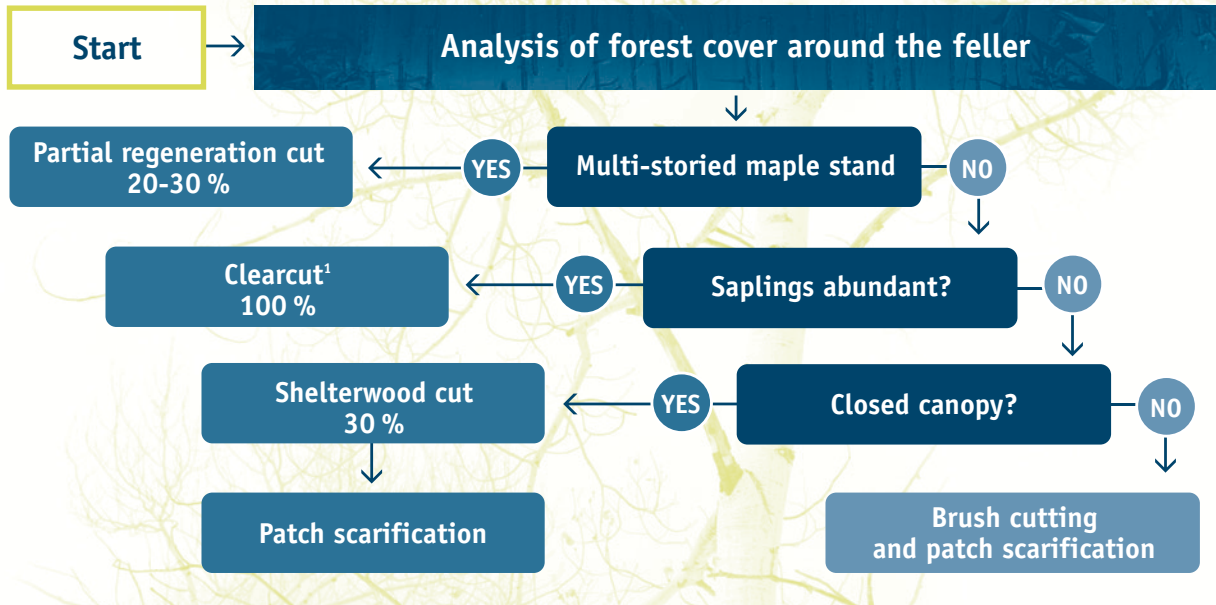
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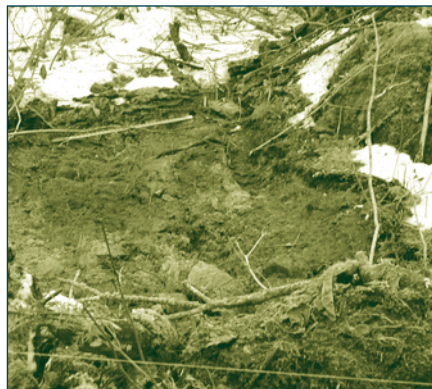
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¹ Clearcut 100%: harvesting of all trees with a dbh of 30 cm or more.

Under the multi-treatment approach, prescriptions are used to guide silvicultural decisions by taking stand characteristics into account (see figure). The originality of this method lies in the increased responsibility given to the operator of the feller-



Mounding formed by the feller to promote yellow birch germination.
Photo: FPInnovations-Feric

buncher. In the forest, the operator must evaluate the area within the machine's reach and choose the most suitable silvicultural treatment. This process is repeated continually as the machine moves farther into the stand. The decision process uses a set of sim-

ple criteria with associated thresholds. The primary goal is to protect advance regeneration, if it exists, or to create conditions favourable to the establishment of regeneration.

For example, sapling density is important in stands where every 4 m there is one stem of the desired species measuring at least 3 m (density of 600 t/ha or more). In such a case, the operator will harvest all the stems with a diameter at breast height (dbh) of 30 cm or more. In a closed canopy (when the crowns are touching), the advance regeneration cannot be seen from the cab of the machine. In this case, the operator will cut every third stem while maximizing the amount of timber harvested. At the same time, the felling head will be used to scarify the soil surface in order to promote adequate germination. The established treatment criteria make the operator's task easier, minimize subjectivity in the evaluation process, and enable the supervisor to promptly inform the feller-buncher operator if adjustments are required.

FOR MORE INFORMATION, PLEASE CONTACT:

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