



Branching out

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Optimizing salvage harvesting and conserving biodiversity

In today's context of diminishing forest potential, the salvage harvesting of burned timber in boreal forests is becoming a significant method of maintaining lumber supplies for the forestry industry. However, strategies for the salvage harvesting of burned timber must also ensure conservation of biodiversity.



Burned area in the Parc des Grands-Jardins.
Photo: G. Pelletier

Burned forests provide habitats for a large number of wildlife species. For example, black-backed woodpeckers take advantage of the sudden overabundance of insects in the burn debris. However, one of the insects these birds are particularly fond of, the white-spotted sawyer, is a cause of concern for the

forest industry. Favourite targets of white-spotted sawyers are large, slightly burned trees with high commercial value. Since the damage to the wood caused by the larvae can greatly reduce the economic value of the trees after a year or two, it is important to quickly salvage burned timber.

Using studies of successive series of insects found after fires have occurred in the black spruce forests of the Parc des Grands-Jardins¹, Canadian Forest Service researchers have drawn up guidelines for a salvage harvesting procedure that would help reduce losses attributable to white-spotted sawyers and conserve biodiversity:

- 1) In the year after the fire, salvage harvesting of burned timber should be focused first on lightly burned stands of trees of large diameter that are easy to access, i.e. on stands that are not only the most profitable, but also the most vulnerable to attack by sawyers.

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1 The Parc des Grands-Jardins is located in the Charlevoix Region, east of Quebec City. In the early summer of 1999, a fire destroyed nearly 51 km² of black spruce forest.





2) Stands that are difficult to access (e.g. road system not developed) and therefore costly to salvage, should be dedicated to the conservation of biodiversity.

3) Timber from stands of large-diameter trees that are severely burned should be salvaged in the second year since these trees are much less affected by wood-eating insects.

4) Salvage harvesting of timber from stands of small-diameter trees (either lightly or severely burned) does not appear problematic for the moment since they are of little interest to the industry. These stands also support epigeic insect fauna similar to that



Entry (right) and exit (left) holes.
Photo: C. Germain

in stands of large diameter trees, which gives them value in terms of biodiversity conservation.

This research work, originally intended to expand our knowledge of the wildlife that colonizes burned forests and the conditions required to promote this colonization, is also being used in applications essential to sustainable forest management. The research findings are being used to improve practices and put forward salvage harvesting solutions that reconcile socio-economic and ecological interests.

Whitespotted sawyers are relentless borers

Whitespotted sawyers have a two-year life cycle. The females deposit their eggs in the natural crevices of bark. The grooves dug along the surface of the bark by young larvae in the initial stages of development have little impact on softwood lumber production because the bark is removed in sawmills. However, the larvae start to burrow into the wood in the fall. The following spring, they burrow into the core of the tree, then return to the surface at the end of the summer. These U-shaped burrowings into the heart of the wood cause much more damage because they cannot be removed in sawmill operations.



Damage under the bark.
Photo: C. Monnier

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