



What's new at the Canadian Forest Service? A log depot!

The Canadian Forest Service (CFS) now has a new research facility adjacent to the Laurentian Forestry Centre in Quebec City. The ever-increasing number of studies being carried out by research teams on insects that proliferate after disturbances required an area where hundreds of logs could be stored in order to collect the insects that develop inside them.



Photo: NRCan



Research team
Photo: NRCan

Recognized research expertise

Since the early 2000s, CFS research on insects that attack dead trees after fire in the boreal forest has become a point of reference in Canada. This research is important to better forecast the damage caused by longhorned beetles and other xylophagous insects that proliferate after fire and reduce the economic value of the wood. In recent years, research on these insects has also been carried out in windthrow areas and in forests infested by the spruce budworm or the hemlock looper.

Wood salvaging after disturbances has become a practice that allows the forest industry to diversify its supply chain. In addition, the emerging bioenergy industry will likely increase

the pressure on salvaging activities. The studies conducted by the CFS aim to better guide salvaging practices in order to maximize profits while also taking into account their impact on ecosystem biodiversity.

CFS researchers are already anticipating the need to establish guidelines for sustainable use of wood sourced from naturally-disturbed forest areas. These forests are a point of reference for ecosystem management, which is central to today's forest management practices.

A facility that meets a need

A log depot is a facility in which logs are stored in cages on a more or less long-term basis and kept for several years in order to allow researchers to

observe insects with long life-cycles. This method generates data that is of great value and complements that obtained with insect traps installed in the forest to choose the best time to salvage wood after a fire or any other type of disturbance. Analysis of the traps' contents does not actually make it possible to determine from where the insects captured come from or the severity of the trees' infestation. The log depot will significantly increase the ability of researchers to support the provinces and the forest industry in the development of efficient salvaging practices.

A visit: just like being there!

The building is divided into three sections: the loading area, the laboratory, and the log depot itself.



Photo: NRCan

The loading area is where the logs arrive. The area includes some carpentry equipment, such as a ribbon saw that is used to cut the logs so that they fit into the cages.



Photo: NRCan

In the laboratory, the research teams will count and identify the insects, among other things. The laboratory is equipped with a powerful ventilation hood to suck up the dust created when bark is being removed from burnt wood during the study of larval-stage insects.



Photo: NRCan

The log depot is the largest section, with a capacity for up to 600 cages mounted on shelves in a controlled-humidity environment, while the temperature will remain the same as outdoors. Researchers will be able to combine samples of different types of woods, as well as various micro-habitats (e.g. soil, fungi, biomass, etc.).



Creativity at work

In order to optimize the use of space in the log depot, the CFS research team custom-designed the cages. The 600 cages are made by hand from plastic buckets, in which two holes were cut out and then covered with mesh to allow air circulation. The cages are set at an angle on the shelves, and a container is attached to the bottom of the buckets to collect the larvae that emerge from the logs. In addition, a spacer is placed between the log and the interior surface of the bucket so that the larvae can crawl out more easily. The cages can contain 45-cm logs, soil, or woody debris.

Photo: NRCan



The construction of the log depot on the Laurentian Forestry Centre site was made possible thanks to the Government of Canada's Accelerated Infrastructure Program.

Longhorned beetle larva emerging from a log.
Photo: NRCan

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