



Branching Out

from the Canadian Forest Service - Laurentian Forestry Centre

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A New Invasive Species in Quebec: The Brown Spruce Longhorn Beetle

Exotic species—whether insects, plants, fungi, or animals—are often accidentally introduced into a region by land, sea, or air. While this introduction does not always result in their successful establishment or in population growth sufficient to classify them as invasive or pests, these exotic species pose a threat and can have significant ecological and economic impacts worldwide. With that in mind, how does the Canadian Forest Service (CFS) prepare for the unexpected introduction of exotic species such as the brown spruce longhorn beetle?

The brown spruce longhorn beetle (*Tetropium fuscum*) is native to Europe, western Siberia, and Japan. In Canada, the species is believed to have been introduced to Nova Scotia around 1990, with its official identification recorded in 1999. Since its introduction, the beetle's distribution has remained primarily confined to Nova Scotia, with isolated populations having been identified in New Brunswick. However, in 2024, its presence was confirmed in Quebec, specifically within the Beauce-Sartigan regional county municipality.



Brown spruce longhorn beetle (adult)

Characteristics of This New Potential Pest

The brown spruce longhorn beetle is a coleopteran measuring 1 cm to 1.5 cm in

Collective Responsibility

Help prevent the spread of the brown spruce longhorn beetle and support its eradication. Learn about infected regions and comply with regulations prohibiting the movement of spruce firewood and logs in restricted areas. Report sightings of the brown spruce longhorn beetle or other invasive species via: [CFIA|Report plant pest sightings](#)



length, primarily targeting mature, weakened spruce trees. Female beetles lay eggs beneath the bark. Once hatched, larvae feed on the cambium layer, especially in the lower trunk, for approximately two months. During this cycle, the larvae cause damage to the tree by interfering with sap flow. Mature larvae then overwinter under the bark before transitioning to the pupal stage. Adult beetles then emerge from the tree between late May and August,

leaving oval-shaped or circular exit holes of 4 to 6 mm in diameter in the bark. This is when the adults, which only live for approximately two weeks, can be observed. Adults are capable of flying long distances, though most flights are limited to approximately 25 m at a time.



First instar larva of brown spruce longhorn beetle

Interactions With the Native Ecosystem

Although the spread of the brown spruce longhorn beetle is ultimately inevitable due to them being such strong flyers, the species has remained geographically confined to Nova Scotia for several decades. This slow progression may be attributed to mating interference with the eastern larch borer, which releases the same

reproductive hormone and has a very similar ecological niche to the brown spruce longhorned beetle. Predators such as woodpeckers and at least two species of native parasitoid wasps, which prey on the eastern larch borer, also feed on the brown spruce longhorned beetle. The *Ophiostoma tetropii* fungus is often associated with the brown spruce longhorn beetle, as it can be found in the galleries in the host. To support brown spruce longhorn beetle eradication efforts, this fungus is being considered as a potential biological indicator for the detection of the brown longhorn beetle, especially when populations are low and difficult to detect.

Identifying the Culprit

In Canada, the brown spruce longhorn beetle coexists with native species, such as the eastern larch borer and the spruce beetle. How, then, is an accurate identification of tree mortality attributed to the brown spruce longhorn beetle rather than to the native spruce beetle? Spruce trees attacked by the spruce beetle produce excessive amounts of resin to expel the insect. This resin appears as popcornlike formations on the bark surface. In contrast, trees infested by the brown spruce longhorn beetle show significant resin flow. However, infestations caused by the eastern larch borer are similar to those of the brown spruce longhorn beetle, necessitating laboratory analysis of the larvae to confirm its identity. When infested by the brown spruce longhorn beetle, spruce showing signs of stress prior to infestation will die within five years.



Resinosis on a red spruce trunk following an attack by brown spruce longhorn beetle

Coordinated Response and Management

Multiple stakeholders—including the Canadian Forest Service, the Canadian Food Inspection Agency, Parks Canada, the governments of Quebec, New Brunswick, and Nova Scotia, the forestry industry, and private woodland owners—are collaborating to monitor and respond to the detection of the brown spruce longhorn beetle.

Forest management efforts, including the removal of weakened, broken, or fallen trees, are one of the most effective strategies to slow its spread. Early detection and continuous monitoring of the insect's spread support a comprehensive strategy that also includes regulatory measures. Once the insect's presence has been detected, pheromone traps can be deployed near the infestation site for rapid confirmation. Felling infested trees, conducting field surveys, extracting larvae, and performing lab testing to support the identification of adult specimens are all measures that can help limit or eliminate this exotic species from a given site.

Useful Links

<https://inspection.canada.ca/en/plant-health/invasive-species/insects/brown-spruce-longhorn-beetle>

<https://www.foretprivee.ca/je-protege-ma-foret/maladies-et-epidemie-dinsectes/longicorne-brun-de-l-epinette/> [in French only]

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