



Saskatchewan Ministry of Environment

Forest Pest Fact Sheet

POPLAR BORER, (*Saperda calcarata*)

BACKGROUND

The poplar borer is a long-horned, round-headed wood-boring beetle that is native to North America. Unlike many long-horned beetles, which usually attack stressed trees, the poplar borer frequently attacks vigorous healthy trees.

DISTRIBUTION

The poplar borer is widespread throughout Canada and the United States. It tends to be present wherever suitable poplar hosts occur.

DESCRIPTION OF LIFE STAGES

Adults are elongate beetles that range from 20 mm to 30 mm in length. They are dark grey with orange striping and small brown spots on the wing covers. The antennae are about as long as their body. The slender eggs are about 3 mm to 4 mm in length and are creamy-white in colour. Larvae are legless and about 30 mm long. They are yellow-white in colour, with a reddish brown head. Pupae, are also a yellow-white colour and 20 mm to 35 mm in length.

Host species

Poplar borer adult



Image: Thérèse Arcand, Natural Resources Canada, Canadian Forest Service

Poplar borer larva



Image: Thérèse Arcand, Natural Resources Canada, Canadian Forest Service

Trembling aspen is the preferred host species in the northern portion of its range and eastern cottonwood is the major host further south. Balsam poplar is also attacked, but less frequently. Other poplar species, poplar cultivars and some willows are hosts to varying degrees. In Saskatchewan, trembling aspen is the main host, with balsam poplar, plains cottonwood and various hybrid poplars being less common hosts.

LIFE CYCLE

Adults emerge in June and July and are active into September. Adults feed on host tree foliage and tender shoots, prior to mating. Females cut crescent shaped notches in the bark and lay one or two eggs in each notch. Eggs are laid predominantly in sunny areas on the lower portion of the stem. Larvae hatch in about two weeks and bore into the wood. Initially, they feed in the sapwood and then bore deep into the heartwood. When larval feeding is complete, pupation occurs in pupal cells constructed near the lower end of larval tunnels. Poplar borers often overwinter in the pupal stage with adults emerging the following spring. The life cycle is two years in the southern United States and three to five years in the northern part of the range.

SIGNS, SYMPTOMS AND DAMAGE

The most obvious symptom of poplar borer is sap mixed with fine frass exuding from points of attack. This sap readily discolours creating a varnish-like stain on the bark. Course feeding frass is present at tunnel entrances, in bark crevices, and at the base of trees. The frass of larger larvae is fibrous and excelsior-like. Wound sites often develop rough growths that appear as swollen blackened areas on trunks and larger branches. Adult exit holes and woodpecker activity, are other signs of infestation.

Poplar borers attack trees of all ages, sometimes as young as three years of age. However, larger limbs or stems greater than eight cm are preferred. Healthy trees under 30 years seem quite vulnerable, but over-mature trees are also attacked. Open growing trees with trunks in partial or full sun are the most likely candidates for attack. In dense better quality aspen stands, attacks tend to occur in individual brood trees, as opposed to being widespread. The poplar borer does not usually kill host trees. However, extensive larval tunnelling in the heartwood weakens stems, making them prone to breakage when subjected to strong winds. Woodpeckers, searching for larvae and pupae, create large holes in the stem that are entry points for decay and other fungi that lead to further tree decline and eventually death.

Varnish like stain on stem



Image: Manitoba Conservation

Poplar borer tunnels with larva, pupa and adult



Image: James Solomon, USDA Forest Service, Bugwood.org

MANAGEMENT PRESCRIPTIONS

- When planting susceptible host trees, poor planting sites should be avoided and trees should be planted in groups to provide shade to trunks, since open-grown and single trees in full or partial sun are more susceptible to attack
- Brood trees are often heavily infested, prone to stem breakage and are a source of infestation for other trees. To prevent breakage and reduce the spread of poplar borer, removal and disposal of these brood trees is advised in woodlots and in urban and park locations.
- Insecticide treatment of feeding adults can be successful, but proper timing of the treatment is essential and is somewhat difficult.
- In a forestry situation, heavily infested stands should be given a high priority for harvesting to prevent significant volume loss due to stem breakage.

REFERENCES FOR ADDITIONAL INFORMATION

Natural Resources Canada, Canadian Forest Service

<http://imfc.cfl.scf.rncan.gc.ca/insecte-insect-eng.asp?geID=991&ind=S>

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<http://extension.usu.edu/files/publications/factsheet/poplar-borers01.pdf>

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From: Ostry, Michael E.; Wilson, Louis F.; McNabb, Harold S., Jr.; Moore, Lincoln M. 1988. A guide to insect, disease, and animal pests of poplars. Agriculture Handbook 677. Washington, DC: U.S. Department of Agriculture. 118 p.

<http://www.forestpests.org/poplar/poplarborer.html>