

Poplar Borer

Attacks stressed aspen

Name and description The poplar borer, *Saperda calcarata*, is a cerambycid, a member of a family commonly known as roundheaded or longhorned boring beetles. The adult beetle is elongate, 20-30mm long and is grayish blue in color with very fine brown dots (Fig. 1). Antennae are about as long as the beetle's body. Larvae are yellowish white, cylindrical and about 30-38mm long (Fig. 1). The head is broader than the rest of the larva's body.

Host selection Within Region 2, the poplar borer typically attacks weakened aspen. Increases in poplar borer activity have been specifically noted in drought stricken, defoliated, sun scalded and partially cut aspen stands. Borers favor large diameter trees, but can infest trees as small as saplings. Brood trees are common, where female borers lay eggs on the same trees from which they emerged (Jones et al. 1985).

Life cycle The life cycle typically takes two to three years (Furniss and Carolin 1977). Adults emerge in July and August and feed on aspen leaves and new shoots. Female beetles chew slits in the bark of aspens (often the same trees they've emerged from) and deposit one or two eggs. Eggs hatch in about two weeks. Young larvae begin feeding on bark tissue

and eventually mine the host's sapwood. Larvae expel frass through enlarged entrance holes along the host's trunk. Pupation occurs in pupal cells constructed near the lower end of larval mines. The poplar borer typically overwinters as a pupa, emerging as an adult beetle the following summer.

Damage Wet spots with oozing sap mixed with frass along the trunk are signs of poplar borer (Fig. 2). Frass becomes coarse and excelsior-like as larvae develop. As larval feeding advances, frass may be seen at tunnel entrances along the trunk, in bark crevices and in piles at the base of trees (Solomon 1995). Galleries (tunnels) typically meander in the sapwood (Fig. 1) and total length may approach 25cm. Adults emerge from entrance sites. Small trees may be killed by larval girdling alone. Large trees are seldom killed by larval feeding alone. Poplar borer egg deposition, excavation and emergence activities provide infection courts for numerous canker and decay fungi. Multiple borer attacks and resulting tunnels reduce the tree's stability and heavily infested trees are prone to wind breakage.

Management Maintenance of high tree vigor reduces the likelihood of attack, as does prevention of mechanical injuries and diseases. Control includes a variety of egg and larval parasites. Fungi and bacteria readily colonize egg niches, often resulting in extensive mortality of larvae (Jones 1985). Woodpeckers are particularly effective predators. Partial cutting of aspen to remove borer-infested individuals is not recommended (Solomon 1995).



Figure 1. Life stages (larva, pupa and adult) and gallery pattern of the poplar borer. Excelsior-like frass is particularly indicative of advanced stages of poplar borer activity. Photo by James Solomon, www.forestryimages.com.





Figure 2. Frass and oozing sap along the trunk of aspens are indicators of the presence of poplar borers. Photo by Jim Worrall, USDA Forest Service.

References

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- Jones JR, DeByle NV, Bowers DM. 1985. Insects and other invertebrates. In: DeByle NV, Winokur RP eds. Aspen: ecology and management in the western United States, General Technical Report RM-119. Fort Collins: USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. p 107-114.
- Solomon JD. 1995. Bronze poplar borer. Guide to insect borers in North American broadleaf trees and shrubs. Agricultural Handbook AH-706. Washington, DC: US Department of Agriculture, Forest Service. p 224-227. <http://www.forestpests.org/borers/bronzepoplar.html>