The poplar borer is a common wood borer in quaking aspen and other poplars in Utah. While large trees are seldom killed by this pest, it can cause tree decline, weakened branches, and allow the introduction of pathogens.

**DESCRIPTION**

The poplar borer, *Saperda calcarata*, is a member of the longhorned beetle family (Cerambycidae), so-named because of the adults’ long antennae. The larvae are known as roundheaded wood borers.

**Adults** are 1- to 2-inch-long beetles with antennae that are about as long as the body. They are gray-blue with fine brown dots overlaying a faint yellow pattern on the wing covers (Figs. 1 and 2). The underside of the adult is somewhat hairy.

**Eggs** are about 3-4 mm in length and creamy-white. Females chew slits into the bark and lay one to three eggs within each slit.

**LIFE CYCLE**

Depending on the location and climate, the poplar borer’s life cycle takes 2 to 5 years (Fig. 3). In Utah, larvae require about 3 years to develop to pupation.

In the fall, larvae plug openings of their galleries with frass (sawdust-like excrement) and spend the winter in diapause. Young larvae continue feeding within the tree during the summer, diapause again in winter, and repeat until mature.

Mature larvae may pupate at any time during the season. Larvae that pupate in the fall spend the winter in the tree and emerge the following spring. Most mature larvae pupate in mid to late spring, which takes a minimum of 2 weeks. Adult beetles emerge through the frass plugs at the lower end of the galleries.

**Quick Facts**

- The poplar borer is an insect native to North America. The adult is a beetle and the young is a grub that bores into trees.
- Hosts include aspens, poplars, and willows.
- Infested trees become weak and less vigorous but are rarely killed.
- Symptoms include wet spots on the bark and oozing sap mixed with fine frass.
- Control includes cultural methods and insecticides.
In Utah, poplar borer beetles are present between early June and early August. Males and females mate a week after emerging from pupation, and a few days later, females deposit eggs within the bark. Eggs hatch within 2 weeks, and the small larvae tunnel into the sapwood (Fig. 2), where they remain for up to 3 years.

Poplar borer mostly attacks aspens and other poplars but is also found in willows. Throughout its northern range, the pest affects quaking aspen more often than other hosts.

During egg-laying, females target trees that are older, under stress, or growing in full sun. Damage occurs mainly on the trunk and larger branches. While branches as small as 1.5 inches in diameter may be attacked, larval feeding is mostly found on limbs or trunks with a diameter of 3 inches or more.

Early symptoms of infestation include oozing sap mixed with fine frass (Fig. 4) and accompanied by a rust-colored stain on the bark (Fig. 5). As the larvae increase in size, the frass becomes more fibrous. Large amounts of coarse frass may be seen at tunnel entrances, in bark crevices, or at the base of the tree. Larvae may feed individually or in clusters. When attacks are clustered, the wood becomes honeycombed under the bark, and irregular patches of bark may fall out. Wound sites may develop rough growth on the bark. Another indication of infestation is woodpecker activity, including excavations in the wood.

Galleries produced by the larvae extend obliquely into the sapwood for a short distance, then usually straight up for another 4 to 7 inches, for a total length of 6 to 9 inches. Larvae avoid each other’s galleries, so the galleries are not always straight.

Larval feeding seldom kills large trees, but the weakened wood is more susceptible to wind breakage. Galleries allow the introduction of plant pathogens, such as
hypoxylon canker and wood-rot organisms. Small trees are occasionally killed by extensive girdling of the trunk.

Natural biological control kills a fairly large percentage of poplar borers, but high-value ornamental trees may require cultural controls and sometimes an insecticide to keep poplar borers in check.

Natural enemies include woodpeckers, parasitic wasps, and nematodes. Woodpeckers may consume up to 65% of larvae in some regions. Climate and sap flow of individual trees also affect larva mortality.

Cultural control practices include selecting appropriate planting sites and maintaining trees in vigorous condition by proper watering and fertilization. Since open-grown and single trees with unshaded trunks are more susceptible to attack, planting trees in groups that result in trunk-shading should minimize the attractiveness of trees for egg-laying. We advise removing and disposing of heavily infested trees since they can source large numbers of poplar borers, which may then attack other nearby trees.

Insecticides to control poplar borer target egg-laying adults and newly hatched larvae. For this reason, properly timing insecticide treatments is essential. For maximum protection, apply the first treatment about June 1 and a second treatment on July 1. Applications should be most thorough on the bark of existing attacked areas, if any, and the trunk and large branches.

Insecticides currently labeled for borer control on poplars include products that contain a pyrethroid or carbaryl. Systemic insecticides, such as acephate or neonicotinoids, do not provide satisfactory control of larvae.

An organic option is insect-attacking nematodes. They are injected into borer holes and partially control poplar borer larvae. These nematodes belong to the genus *Steinernema* and are sold under various trade names.