

Redheaded Ash Borer

Authored by Theresa A. Dellinger, Diagnostician, and Eric Day, Lab Manager, Insect Identification Lab, Department of Entomology, Virginia Tech

Description

Overall, an adult redheaded ash borer mimics a wasp in its size, shape, and coloration. Adults have somewhat cylindrical, elongated bodies ranging 4-13 mm (0.2-0.5 inches) long and tapered towards the tip of the abdomen. The head, thorax, and legs are reddish brown and there are four yellow bands on the darker wing covers. The yellow banding pattern is also visible on the underside of the abdomen. The antennae are somewhat thicker and darker towards the tips. The femurs are enlarged and darker than the rest of the leg. The middle and hind pairs of legs are noticeably longer than the first pair.



Figure 1. Adult redheaded ash borer (Howard Ensign Evans, Colorado State University, Bugwood.org).

Larvae are creamy white with a dark, round head capsule and constrictions between body segments that make them look lumpy. They measure approximately 10-22 mm (0.4-0.9 inches) long when mature. The pupa resembles a yellowish mummy with distinctly noticeable legs, antennae, and head.

Redheaded ash borer, *Neoclytus acuminatus*, belongs to the cerambycid family of beetles. Adult cerambycids are often called longhorn borers in reference to their long antennae. Larval cerambycid beetles are called roundheaded borers.



Figure 2. Redheaded ash borer larva in a gallery filled with frass (Lacy L. Hyche, Auburn University, Bugwood.org).

Life Cycle

Redheaded ash borer has a complete life cycle of egg, larval, pupal, and adult stages. Adults emerge from infested wood in the spring and females lay eggs in the bark of host trees. Newly hatched larvae feed under the bark before tunneling into the wood, where they continue to feed until pupating. Larval tunnels are packed with sawdust-like frass.

Redheaded ash borer may overwinter as either mature larvae or as pupae. Several generations may occur each year in areas with warm winters.

Developmental times are probably drawn out in hardwood cut and seasoned for lumber or firewood as moisture in the wood continues to decrease.

Damage

Redheaded ash borer favors ash, oaks, and hickories, but will attack almost all stressed, dying, or recently dead hardwood trees and even some newly planted trees. Newly-cut, green logs with the bark still attached are very attractive to egg-laying females. Larval tunneling in standing trees may weaken limbs, making them more susceptible to breaking in high winds. Economic damage by redheaded ash borer larvae is largely limited to hardwood intended

for lumber or firewood. Adults may be found in homes after emerging from firewood brought inside over the winter. They may be a nuisance in the home but do not cause structural damage.

Infestation by redheaded ash borer in ash can be confused with the emerald ash borer (*Agrilus planipennis*). Redheaded ash borer tunnels tend to meander and extend deep into the ash tree. The tunnels of the emerald ash borer are tightly S-shaped and restricted to the phloem directly under the ash bark. The exit holes of redheaded ash borer are round while those of the emerald ash borer are distinctly D-shaped.

Habitat and Distribution

Redheaded ash borer is native to the continental United States and much of eastern Canada. It can be found wherever its wide host range occurs.

Control

Trees properly planted in a good site and maintained in good health are less susceptible to redheaded ash borer and similar pests. See the Virginia Pest Management Guide for Home Grounds and Animals (VCE 456-018) for the chemical controls currently recommended for round-headed tree borer larvae, which includes the larval stage of redheaded ash borer. Thoroughly spray the bark of the trunk and larger branches with the selected material in early May, early June, and early July. This spray schedule will kill females laying eggs in cracks and crevices of the bark as well as newly hatched larvae chewing into the tree through the treated bark.

The systemic insecticides dinotefuran and imidacloprid can be applied as a preventative treatment against roundheaded borers before infestation occurs. Applied as soil drenches, these materials move up into the tree through the tree's vascular system. They must be applied when the trees are actively growing and transpiring, and application must be early enough that sufficient quantities are translocated into the tree well ahead of when adults begin laying eggs on the tree. These insecticides may kill both the females chewing on the bark to form notches where they will lay their eggs as well as newly hatched larvae boring into the sapwood. Neither dinotefuran nor imidacloprid will

have little effect on any roundheaded borer larvae in the tree's heartwood.

Prune out infested limbs when borers are not active and dispose them properly so that adults do not emerge and re-infest nearby trees. Newly cut logs should be debarked and stored properly to avoid infestation.

Note

Banded ash borer, *Neoclytus caprea* (Say), is a related species that looks very similar to redheaded ash borer. It occurs over much of the United States and into eastern Canada. It can be distinguished from the redheaded ash borer by the black color with "looping" yellow bands on the upper part of the wing covers. Like redheaded ash borer, banded ash borer attacks stressed, dying, or recently dead ash trees and other hardwoods. Chemical treatments for banded ash borer should be applied to trunks and main branches in late July and early September.



Figure 3. An adult banded ash borer (David Cappaert, Bugwood.org).

Revised

Theresa A. Dellinger, January 25, 2021.

Visit Virginia Cooperative Extension: ext.vt.edu

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in furtherance of Cooperative Extension work, Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Edwin J. Jones, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnie, Administrator, 1890 Extension Program, Virginia State University, Petersburg.