

Biological Control of Hemlock Woolly Adelgid



Hemlock Woolly Adelgid (USFS)

Hemlock woolly adelgid (HWA) is an aphid-like insect that was introduced accidentally from Japan around 1950. It is a serious pest of hemlock trees. HWA can be recognized by wool-like wax filaments that cover the insect found on the new growth of hemlock twigs.

Damage from this insect leads to forest decline and hemlock mortality. Native predators are ineffective against HWA and eastern North American hemlocks lack resistance to this pest.

One way to help manage HWA in the forest is by introducing the insect's natural enemies. This is called biological control. The USDA reviews any control organism before it is approved for release to avoid negative impacts to the environment. To date, predatory beetles that feed on adelgid have been approved.

Through federal grants and partnerships, the Maine Forest Service has released two HWA predators, *Sasajiscymnus tsugae* (St) and *Laricobius nigrinus* (Ln). Beetle releases in Maine state parks have been supported also by a Maine Outdoor Heritage Fund grant and private and community donations.



HWA infested hemlock, Freeport, ME (L),
Uninfested hemlock, Westbrook, ME (R)

Sasajiscymnus tsugae (St)

St, a lady beetle (Coccinellidae), is an important predator of HWA in Japan. Releases of St in Maine against HWA began in 2004. It has since become established at several sites. Unlike some other lady beetles, this insect does not invade homes in the winter.

Color: Black
Shape: Oval
Size: 1/16th inch
Origin: Japan



Image: Dr. Carole Cheah, CAES, bugwood.org

Laricobius nigrinus (Ln)

Ln is a tooth-necked fungus beetle (Derodontidae). It is an important predator of HWA in the Pacific Northwest. This species was first released in Maine in 2006. A second *Laricobius* species is a candidate for future releases.

Color: Black
Shape: Oval
Size: 1/10th inch
Origin: Pacific Northwest



Image: USDA FS, <http://na.fs.fed.us/fhnp/hwa/>

For more information, contact: **Maine Forest Service**

Maine Department of Agriculture, Conservation and Forestry
(207) 287-2431 www.maine.gov/forestpests#hwa

