Science, bugs team up to fight hemlock-eating pest

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This Aug. 18, 2010 photo released by the U.S. Forest Service shows a close-up of hemlock woolly adelgid, cottony egg masses on a hemlock twig in the U.S. Forest Service's Durham, N.H., field office.

CONCORD, N.H. (AP) — For nearly 60 years, scientists have watched helplessly as a war of bug vs. hemlock played out from Georgia to Maine. Now they've got a new weapon in their arsenal — another bug — and say the tide is turning, at least in New England.

The hemlock woolly adelgid, native to Asia, was discovered in Virginia in 1951. Since then, it has spread to suck up the sap of the stately evergreens in at least 16 Eastern states, including in New England, which hasn't lost large numbers of trees yet.

A beetle that eats the adelgid (pronounced uh-DEL-jid) was found in Idaho and was introduced to forests in Massachusetts, New Hampshire, Vermont, Maine and New York in 2007. Since then, entomologists have determined that the predator, which is able to withstand cold weather better than its cousins, is doing its job.

"We're getting ahead of the game, essentially," said Mike Bohne, a U.S. Forest Service entomologist in Durham, N.H.

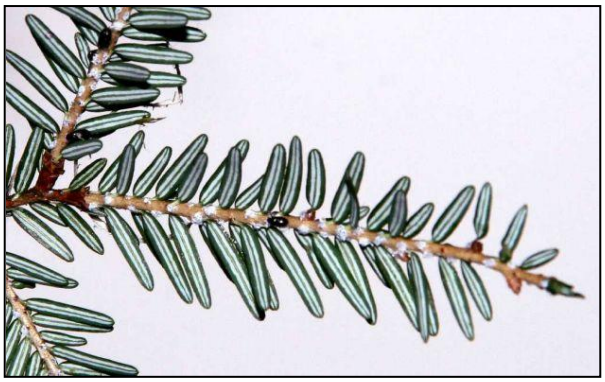
Adelgids can weaken and kill a hemlock over several years. Their eggs appear as white, woolly batches on the underside of branch tips. Sections of hemlock forests in the South, such as in the Blue Ridge, Shenandoah and Great Smoky mountains, have been devastated.

It usually takes years to see results, Bohne said, but entomologists found that the number of beetles had increased after 1½ years in the Finger Lakes of New York, as well as in a couple of state forests in Massachusetts and in Brattleboro, Vt.

"It's very exciting in that the beetles are responding to their new environment and eating adelgids," Bohne said. "It'll take some time before we'll see a huge population, but ultimately, it's a very, very positive sign."

The beetle, called Laricobius nigrinus, appears to be more successful at eating the bad bugs in New England than a similar beetle native to Washington state. Scientists started introducing that beetle to the 16 affected states in 2003, but it has spread significantly only in the warmer South.

"There's no doubt that this beetle has been the favored child of everything we've looked at so far," said Brad Onken, a Forest Service entomologist in Morgantown, W.Va.



This Oct. 29, 2009 photo released by the U.S. Forest Service shows predator beetles, Laricobius nigrinus, searching for hemlock woolly adelgid, on the twig of a hemlock tree, just after being released in the Finger Lakes National Forest.

Saving the hemlocks, which grow near rivers and streams, is critical to the health of forests and wildlife, entomologists say. Dying hemlocks affect water quality and soil erosion and could affect other species, said David Mausel, a University of Massachusetts entomologist. "Many birds, animals, insects and plants depend upon the unique habitat provided by the eastern hemlock," he said.

There aren't very many trees in the Northeast that can survive in the same habitat as a hemlock, Bohne said. "It affects everything from migratory bird patterns to extreme temperatures," he said. "If you see a death of hemlocks, the streams that flow underneath them will receive more sunlight, and that can affect things like native brook trout."

Trees have been treated with insecticides, but some states restrict the chemicals' use near water and are very expensive, Bohne said. That's why a natural predator like the beetle is a great help. "We're never going to eradicate it," he said of the adelgid. "What we're shooting for is just the natural predator-to-prey ratio that keeps other forest pests in check," such as in the Pacific Northwest. In Maine, for example, forest officials say they've detected a new outbreak of the adelgid — it appears to be spreading up the coast — and recently released more beetles to combat it.

Researchers have conducted extensive lab testing to make sure the introduction of the beetle would not harm other species.

"You always have to balance the consequences with the potential benefits," said Mark Whitmore, a Cornell University forest entomologist. "The tests we go through are very rigorous to make sure the predator preys on only this one species of pest."