



# NEWS RELEASE

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## Glimmer of hope for Northeast hemlocks

DURHAM, N.H. – Northeast forest health managers are cautiously optimistic they might be along the path to protecting threatened Northeast hemlock populations.

Like something out of *Jack and the Beanstalk*, their findings include a mere handful of bugs. But to them, these are not just any insects. They represent a powerful weapon in a region-wide clash of invasive species and forest ecosystems.

The eastern hemlock is considered a keystone species, because it is valuable in so many ways to native habitats. "It is part of our forest," said David Mausel, a University of Massachusetts entomologist. "Many birds, animals, insects and plants depend upon the unique habitat provided by the eastern hemlock."

In recent years the tree species has come under attack from a tiny, pencil dot-sized invasive insect called the hemlock woolly adelgid. The insects weaken and often kill hemlocks by sucking out life-sustaining fluids. HWA-infested hemlocks in the north tend to die within 4-10 years; hemlocks down south die even quicker.

Dying hemlocks affect water quality and soil erosion in native ecosystems. A loss of hemlock trees to Northeast forests could affect a variety of other species.

HWA was first detected on this continent in Virginia in 1951. The all-female species is native to Asia. Since its introduction, the adelgid has spread across 16 states from Georgia to Maine. A Japanese strain currently infests Northeast hemlocks.

Since the HWA is an introduced pest, it does not have any natural enemies in the area.

In recent years scientists and forest health managers sought ways to protect local forests from HWA. They found an insect native to our Northwest forests -- the *Laricobius nigrinus* -- that likes to eat the adelgids.

Mark Whitmore, a Cornell University research entomologist, calls the beetle a beneficial insect. "It causes no harm to the environment other than to the HWA. It preys primarily on HWA. It will feed on other adelgids occasionally."

Of the two *L. nigrinus* strains, one is from Seattle and the other is from Idaho. Reflecting their respective climates, the Idaho strain tends to tolerate cold better than the Seattle one.

“This beetle is a possible natural control,” added Whitmore. “All pest populations are controlled by biological controls of some sort. We’re trying to establish those natural enemies, so that they can control those nonnative pest populations.”

More than 60,000 of the Seattle strain of *L. nigrinus* have been released from Georgia to Maine so far since 2003. They have been more successful at increasing their population size down south.

Forest health managers hoped the cold-resistant Idaho strain of the beetle would be introduced to the seasonally frigid Northeast forests. In time, the beetles might help control the hemlock-harming HWA population here.

Researchers conducted extensive lab testing to make sure the introduction of the HWA predator would not harm other species. “You always have to balance the consequences with the potential benefits,” said Whitmore. “As forest entomologists, we are well aware of the risks. The tests we go through are very rigorous to make sure the predator preys on only this one species of pest.”

Officials eventually gave the green light to introduce the *L. nigrinus* into Northeast forests. Since 2007, they released 3,000 Idaho beetles throughout much of New England and New York.

“We released the beetles,” added Mausel. “If they don’t colonize, the project is over. The good news is they are colonizing,” he added. “We recovered Idaho beetles in our sampling in the Finger Lakes of New York, as well as in a couple state forests in Massachusetts and in a Brattleboro, Vt. forest.”

“We recovered the beetles after only one year,” said Whitmore. “It’s a good indicator that we have established colony.”

“It’s fantastic,” said Whitmore. “It’s a glimmer of hope in a desert of despair.”

District Ranger Jodie L. Vanselow, who is assigned to the U.S. Forest Service Green Mountain & Finger Lakes National Forest Hector, agreed. “The loss of Hemlocks across the Forest would have a tremendous effect on our watersheds, so this is great news that the beetle is doing what we wanted it to.”

UMASS has been investigating potential hemlock woolly adelgid biocontrol options since 2005 through a cooperative agreement with the U.S. Forest Service. The Idaho strain of *L. nigrinus* is actually part of a suite of species being looked at by scientists as potential biocontrol options for the invasive adelgid.

“The news of the recovery of the Idaho strain, coupled with successful recoveries of other biocontrol beetles in Maine and other states to the south, shows that the hard work is starting to pay off,” said Mike Bohne, a Forest Service Northeastern Area forest health group leader working out of Durham, N.H.

Now forest health experts here just need to wait and see if the predators’ numbers rise.

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On the Net: <http://na.fs.fed.us/fhp/hwa/>