



## [Rhode Island news](#)

# Pest destroying hemlocks in the wild

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Selective cutting has taken place in the George Washington Management Area to help control the woolly adelgid, which is destroying hemlock trees.

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GLOCESTER — With a signature of New England's shady forests in danger, scientists at the University of Rhode Island are working to find a way to regain ground lost to a pesky foreign invader that for decades has been systematically eating away at Rhode Island's native ecosystem.

Hemlock woolly adelgid, a soft-bodied insect about the size of a pinhead and one of the most destructive invasive species, has been quietly sucking the life out of hemlock stands across southern New England.

Last month, Paul Dolan, deputy chief of the state Department of Environmental Management's Division of Forest Environment, inspected hemlock trees in the George Washington Management Area, in Glocester. Healthy stands of hemlocks stood less than a few hundred feet from groups of decimated trees, mere skeletons compared with the delicately needled conifers still bright green in late fall.

Dolan said the hemlocks are crucial in providing shade to the forest floor and maintaining cool stream temperatures for trout. "The thing about hemlocks is that they are a nice looking tree," he said. "It gives the forest a soft look, [and] they have high wildlife value."

If nothing changes, said URI biology Prof. Evan Preisser, hemlock trees will eventually be wiped out in the wild. The only

surviving trees would be those treated with insecticides or other chemical agents.

“While it hasn’t killed every tree yet, it would be hard to find a healthy tree in Rhode Island and southern Connecticut that hasn’t been sprayed,” Preisser said.

Last month, URI, with studies led by Preisser, received a \$499,994 grant from the National Science Foundation to study invasive species that plague the New England landscape.

Preisser said the money will be used to map how organisms are introduced into the environment and how they continue to survive. With the adelgid as a model, Preisser and his team will trace how invasive species travel, to “follow the bug across the landscape.”

URI scientists are also experimenting with hemlocks that are showing resistance to the adelgid, living healthily among decimated stands in the forest.

Spread by wind, like dandelion seeds, adelgids suck sap until the needles turn gray and the tree eventually dies.

Chemical agents can be used to save hemlocks in urban or residential areas, but are not a practical option for naturally grown trees, Preisser said. Another natural defense rests with winter, but Preisser said the last few winters haven’t been cold enough to hold the bug at bay.

“Whether or not people can admit to it, the winters are not as bad as they were before and it has implications for things like this,” Preisser said. “There is no practical way to do away with flying pinheads.”

That leaves two options: eliminate the bug with a foreign predator or selectively breeding trees that have natural resistance to adelgids. While Preisser prefers the former, he said that finding a predator is a short-term solution — cultivating trees resistant to the pest will save them long-term.

In 2000 and 2002, respectively, Rhode Island forestry officials released 10,000 and 5,000 Asian beetles in the George Washington Management Area to eradicate adelgid, but the attempt had little success.

“Success means you can go back and find [the beetles],” said Catherine Sparks, chief of Rhode Island’s Division of Forest Environment. “I have found a few.”

With the adelgid continuing to proliferate, scientists are still looking for the right predator.

Joe Elkinton, a professor of entomology at the University of Massachusetts in Amherst, is working to restore hemlock stands in Massachusetts, but the results of his research are relevant to Rhode Island’s infestation as well.

He has experimented with the release of a beetle from the Northwest, *Laricobius nigrinus*, with little success, but has hope in the same species of the beetle native to the Midwest. The Idaho version of the bug is more tolerant of cold weather, making it a better candidate to survive New England winters.

Elkinton was to return Sunday from Idaho, where he collected beetles in the woods. Scientists at UMass are hoping to do a release this year, Elkinton said.

Elkinton and Preisser said scientists are very cautious when introducing a biological control such as the Idaho beetle and will test its effects in small, controlled settings before releasing it in the wild.

The most important factor, Preisser said, is finding a predator that is a “specialist,” which eats only the targeted species, as opposed to a “generalist,” which can survive by eating several species.

Historically, introducing a predator has been done with varied success. In the 1880s, the introduction of the vedalia beetle was credited with saving the California citrus industry, which had been devastated by the cottony cushion scale.

But the story of the cane toad, in Australia in 1935, was a disaster.

Imported from Hawaii in an attempt to save the sugar cane crop from a destructive cane grub, the cane toad took hold. Not only did it fail to get rid of the grub, but it bred fiendishly, killed native species and still is a nasty pest in northeast

Australia.

Elkinton said many early attempts to bring in foreign predators to eradicate invasive species were not well thought out and lacked modern respect for native animals.

“That is a new phenomenon that has occurred in the last decade,” he said. “People really care about native insects. We are as concerned as everyone about this.”

But Preisser says bringing in a predator is the best way to save the hemlocks now.

“I think it’s a heck of a lot better to try that than let things burn through the landscape,” he said.

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