



Environment

Scientists seeking help in locating healthy trees

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By TOM MEADE

Journal Sports Writer

Tree scientists at the University of Rhode Island are appealing to hikers, anglers, bird watchers and other outdoors folk to help find healthy hemlocks that can be cloned. The researchers believe that genetic duplicates might save the trees from one alien pest that weakens the trees and another that kills hemlocks.

Eastern hemlocks are important to wildlife. Trout need the trees to provide shade and cover from predators, says Laura Ingwell, one of three graduate students studying hemlocks and two parasites, elongate hemlock scale and hemlock woolly adelgids.

Several species of birds depend on hemlocks, she says, and five birds need the trees to nest: the black thrush, green warbler, Acadia fly catcher, Blackburnian warbler, and hermit thrush.

The two parasites, introduced accidentally from Asia in the early 20th Century, have been killing eastern hemlocks through much of the trees' range, from New England down the Appalachians through Great Smoky Mountains National Park.

Seeking ways to rescue the trees, Ingwell and two colleagues, Mailea Miller-Pierce and Jeff Backer, are working with assistant professor Evan Preisser to find hemlocks that may be resistant to the scale, which weakens hemlocks, and to the woolly adelgid, which kills the trees.

"We don't know whether the scale and the adelgid are working together, with the scale weakening the trees and allowing the adelgid to infect more easily," says Ingwell. Miller-Pierce is studying the relationship between the two pests at URI's East Farm.

Horticultural oil applied to the hemlock's needles will destroy the adelgid as well as beneficial insects that are only passing by. Another pesticide, injected into hemlocks, destroys only the insects that feed on the trees. Scientists are also searching for other insects that feed on hemlock adelgids, Ingwell says.

"Right now, the only thing controlling the spread is the weather," Ingwell says. "You can pretty much walk into any stand of hemlocks and find the adelgid. If you have a really cold winter, or a really long winter, you'll see the population die back a little bit, but it won't go away completely. If you have warmer winters, it will spread. If you go down to the Great Smokey Mountain National Park or the Shenandoah Valley, there aren't many hemlocks left."

The woolly adelgid has also spread to southern New Hampshire and southern Vermont, she says, and it is slowly making its way to Upstate New York.

Some hemlocks seem to be immune to the adelgid, Ingwell says. Resistant hemlocks stand healthy among large stands of trees that the pests have killed.

In coastal Connecticut, URI researchers have found six apparently resistant trees in three stands of hemlocks. "These trees are really green and full, and they're surrounded by trees that are completely dead," she says. Ingwell and her colleagues have taken cuttings from them, and rooted them. She believes that the resulting clones also may be resistant.

Next month, when the woolly adelgids emerge in large numbers, she will apply the pests to the cuttings to test her theory.

Anglers, bird watchers and hikers can help by finding more healthy hemlocks among stands of dead trees, says Ingwell.

“The real key to finding trees that are resistant is to look for a lot of mortality,” she says. “The trees we need have to be at least 10 feet tall and look really green, and relatively free of the adelgid. The trees should not be in a landscape; we’re looking for trees in a forest, trees that haven’t been treated with insecticides or horticultural oils.”

Ingwell and her colleagues plan to lead potential volunteers on a hike in the Long Pond-Ell Pond Natural Area in Hopkinton Saturday at 10 a.m. They plan to meet in the parking area at the head of the Narragansett Trail on Canonchet Road. The area is featured in the book, *Walks and Rambles in Rhode Island*, by Ken Weber. GPS coordinates at the parking area are 41.50610N/071.76482W.

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