

## **Fighting to save S.C.'s majestic hemlocks**

### **Pesticide put in soil might turn tide in death of trees in mountain groves.**

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Forestry technician David Hedden examines one of the oldest Eastern hemlock stands in South Carolina. The evergreen is threatened by a tiny insect, the hemlock woolly adelgid. THE (COLUMBIA) STATE FILE PHOTO

COLUMBIA Arriving at the Coon Branch Natural Area two years ago, arborist Will Blozan saw a forest of spindly hemlock trees that faced an ugly, inevitable death.

A decades-long march of nasty, tree-killing bugs had reached one of South Carolina's most significant stands of hemlocks in the mountains of Oconee County, S.C. - and the insects' voracious appetites were evident.

Hired to try and stop the onslaught, Blozan injected a rarely used pesticide into the soil near 269 of the majestic trees, hoping the 11th-hour rescue effort would pay off.

Today, more than 90 percent of the hemlocks are alive, healthy and, in some cases, growing new branches.

Blozan, an expert on large trees from Asheville, said the pesticide he injected worked better than any chemical treatment he has ever used on a hemlock forest in South Carolina. Known by the trade name Safari, the pesticide previously had been used only for selected trees in peoples' back yards.

"This blew our expectations away," Blozan said of the new treatment. "The trees were in such bad shape, I honestly didn't have real high hopes for them."

The survival of the Coon Branch hemlocks could be a breakthrough in the war to save one of the most significant tree species in the S.C. mountains.

Although some questions have surfaced about water pollution and the chemical's impact on other insects, many agree Blozan's effort was worth the risk to save Eastern hemlock trees from the ever-advancing bugs.

Visitors to the S.C. mountains often marvel at hemlocks, which some say resemble giant Christmas trees. The towering evergreens, found mostly in the mountains along creek banks, have expansive boughs that shade and cool trout streams, while providing habitat for an array of bird species. The ruffed grouse, a chicken-like game bird, seeks shelter in the hemlocks from predators.



*Forestry technician David Hedden examines one of the oldest Eastern hemlock stands in South Carolina. The evergreen is threatened by a tiny insect, the hemlock woolly adelgid. THE (COLUMBIA) STATE FILE PHOTO*

At Coon Branch, near Whitewater Falls along the N.C. border, some hemlocks tower more than 130 feet, among the largest in South Carolina. Thick, cathedral-like groves of hemlocks can be found in an area along the Whitewater River and a trail through Coon Branch, just off the 77-mile Foothills Trail.

Since 2001, however, hemlocks in the Palmetto State have been under siege. Asian insects, which have been spreading south through the Appalachians for decades, have moved into the mountains, causing a dramatic die-off of hemlocks. The puffy white bugs, called hemlock woolly adelgids, attach to the needles and slowly suck the life out of hemlock trees.

Today, vast stretches of Appalachian mountain forests, from New England to Georgia, are littered with brown, needleless hemlocks.

### **Fighting the bugs**

State and federal forest managers have attempted to stop the adelgids by releasing hundreds of thousands of beetles that prey on hemlock bugs. But success has been spotty, leaving chemical treatment as the only other way to save large trees until the predator beetles take effect - if ever, experts say.

The U.S. Forest Service in North Carolina is looking to use the pesticide that Blozan used in South Carolina, a measure that could signal more use of the Safari bug-killer in the region.

The key difference between Safari and other bug killers is that it works faster, making it more effective on the most at-risk trees.

In South Carolina, the Duke Energy Foundation paid about \$10,000 to treat 269 trees at Coon Branch with the Safari chemical. The area, owned by Duke Energy, was picked because the hemlock grove there was in peril and needed rapid attention.

Blozan said the Safari pesticide, a liquid that contains dinotefuran, works more rapidly than the more traditional hemlock treatment, a pesticide containing imidacloprid.

A fast-acting insecticide was needed to save the dying Coon Branch trees, he said. Without the Safari treatments, S.C. Department of Natural Resources officials said the trees probably would have died.

Since the 2008 Safari treatments, imidacloprid has been applied because it will last longer, up to five years, as it moves more gradually into the tree, Blozan said.

All told, only 18 of the 269 trees died after the Safari treatment. One of the trees that died was thought to be the largest hemlock in South Carolina. Blozan said it was too near death to save when he and Natural Resources officials got to Coon Branch in 2008.