

Foresters fight ferocious foe

It takes oil, water, strong men to take down bug half the size of a sesame seed

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CADES COVE - It doesn't require the strength of, say, a weightlifter, or the biggest guy on the block.

But fighting the hemlock woolly adelgid in the Great Smoky Mountains National Park does call for strong hands, a strong back and a steel grip.

The hemlock woolly adelgid (*Adelges tsugae*) has been at work in the Smokies since it was found there in 2002, decimating the Eastern hemlock (*Tsuga Canadensis*).

In the early 1950s, the almost microscopic insect, native to Asia, began slowly working its way west from Richmond, Va.

Without a strong intervention program, the popular hemlock, which can live to be 600 years old and grow more than 165 feet tall, will die off, the National Park Service says in one of its hemlock tree brochures.

The adelgid lodges itself beneath the leaf and begins sucking the life out of the hemlock. Within three to 10 years, an individual tree is dead.

The Park Service in the Smokies has been at war with the bug for years, and one of the several methods it uses in the war against the insect is to spray an oily concoction up into the trees from roadside trucks.

Usually, the fellows doing the spraying are young, in good shape and eager to take on the insects.

And don't forget the grip.

Take Jesse Webster and Michael Zumwalt. It is early morning in Cades Cove. Frost has coated the fields and turned the roadsides into cold lanes that numb feet and hands.

Both men are young, slim forest technicians with the Park Service. On Wednesday, they were with a large forestry crew riding along the Cades Cove Loop Road in trucks loaded with hoses and horticultural oil.

Pumps suck water from a creek to fill the white industrial strength plastic tanks. The oil is mixed with water in the 500-gallon tank.

Once the pump motor starts, Webster, Zumwalt or one of the other crewmembers grabs the fire hose-like nozzle and digs in with both booted feet.

The other forester holds the hose a few feet back, and another forester works the pump on the truck.

As they spray into the forests, they resemble firefighters without a fire. The oily shower is powerful as it washes well up into the hemlocks, casting refracted light.

Soon, their yellow rain jackets and hats begin to drip with mist.

The oil-water spray gushes out at 800 pounds per square inch. It takes a gorilla grip and strong arms to hold the nozzle and then shoot it into the roadside trees like a white laser. The solid stream soars 70 feet up into the top of the canopy.

A fine oily fog reflects against the morning sun and cold. It looks as if a light cloud is moving through the trees with the sun all gauzy and still in the vapor.

Tom Remaley, working with another crew from the roadside, is head forester in charge of the hemlock woolly adelgid crews in the Great Smoky Mountains National Park.

As milky-looking mist dripped from his work helmet, he smiled, licked his lips and answered a question about the spray.

"It's about as thin as the wax on apples you get in the grocery store," he says. "It won't hurt you."

But it does a number on the adelgid, despite being about the half the size of a sesame seed. The adelgid attaches itself to the underside of the leaf and then creates a fine waxy coat of white.

The oil/water spray covers the adelgid and strips off its waxy covering. And then the spray acts to smother and dry out the insect.

In other words, once the spray gets to his part of the world, the adelgid's goose is cooked.

On this day in Cades Cove, the forestry crews were not only working out of large pump trucks, but also small four-wheel-drive gator-like vehicles, which can get off road into the forest and back country.

Carey Jones, a Park Service educator, says that the forestry crews spray the roadsides and also near campgrounds and in the backcountry.

One method is to use another type of insecticide to soak the ground around the base of the hemlock so that when the adelgid takes a bite, it gets more than it bargained for.

By spraying the roadsides, says John Littrell, Park Service forester and lead forester technician, the crews are not only trying to preserve the hemlocks, but park aesthetics as well. It is an effort to keep the trees from falling across the roads.

"We are trying to protect the corridors," says Littrell, "along the side roads. It is safety as well as preservation. One of our priorities is to save the old-growth trees around the campgrounds."

Great Smoky Mountains National Park is host to the largest stand of Eastern hemlock in the United States. And its spraying program for the adelgid is one of the largest in the nation's parks.

The adelgid has already decimated forests from southeastern Canada to South Carolina. Virginia's Shenandoah National Park has lost about three-fourths of its hemlock to the insect.

Without the hemlock along the ravines and streams, native trout as well as the rainbow would not have cold enough water to sustain themselves. In groves, the hemlock also provides habitat for several species of migratory songbirds.

Meanwhile, on Wednesday, Webster, Zumwalt and Littrell, enthusiastic about helping to wipe out the adelgid adversary, have moved on down the Loop Road.

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