TRAIL NATIVES

Eastern Hemlock

Tsuga canadensis

PHOTO BY WILLIAM ADAM COLLINS

BY DONNA SHEARER

The eastern hemlock, also called the Canada hemlock, is the dominant or co-dominant evergreen in Appalachian coniferous and mixed-hardwood forests stretching from Maine through the mid-Atlantic states to Georgia and even into northern Alabama.

These graceful giants are now under threat of possible extinction over the next decade due to a tiny invasive insect, the hemlock woolly adelgid. Research laboratories in the eastern U.S. are rearing several species of beetles (left) that eat hemlock woolly adelgids to help suppress the intensely invasive insects.

A slow-growing, long-lived tree that thrives in shade, the hemlock typically achieves a height of 60 to 80 feet with a diameter of two to three feet and a life span of 250 to 300 years, sometimes much longer. Hemlocks are environmentally vital in providing food and habitat for about 120 species of vertebrates and more than 90 species of birds, shade for native plants, cool temperatures for trout streams, protection for watersheds, and water and air quality. Their beauty contributes greatly to the enjoyment of those who live, work, and play among them, as well as the many people who come to the forests for tourism and recreation, which incidentally support thousands of related jobs and millions of dollars in revenue annually.

But these graceful giants are now under threat of possible extinction over the next decade due to a tiny invasive insect, the hemlock woolly adelgid (HWA), which was accidentally introduced to the eastern U.S. from Asia in the 1950s. Smaller than a grain of pepper, the adelgid is a prolific breeder, producing two generations a year. In one year, the offspring of a single adelgid can multiply to as many as 90,000, and with thousands of them infesting a tree, one can easily see how they can quickly overwhelm it. An adelgid begins its journey as a tiny reddish-brown egg protected inside a white, cottony egg sac that may contain 100 to 300 siblings. Upon hatching, the crawler travels a short distance along the branch, selects a home site at the base of the needles, inserts its long, slender mouth-part, called a stylet, into the tissue, and begins consuming the starches in the tree's branches and twigs that are essential to new growth and, it is thought, injecting a coagulant that prevents sap from reaching the needles. While in the northern states this may result in tree death within five to ten years after infestation, the progression is much faster in the south with many trees succumbing in as few as two to four years.

The bad news for Trail lovers is that HWA has been reported along the A.T. in Georgia, North Carolina, Tennessee, Virginia, West Virginia, Maryland, Pennsylvania, New Jersey, New York, Connecticut, and Massachusetts. News from Maine, New Hampshire, and Vermont indicates HWA is present in those states but not currently found along the A.T. The good news is that individuals, organizations, and government agencies are taking action to avoid total loss of the hemlock and the resulting damage to the diversity and health of eastern U.S. forests. Each state in which the HWA is a serious threat has completed an environmental assessment and developed a management plan for conservation of the eastern hemlock (and Carolina hemlock in the south), including the designation of

specific hemlock conservation areas in some of the national forests. The HWA suppression programs that have been or are being implemented in these areas include releases of predatory beetles that eat hemlock woolly adelgids to establish long-term population control and/or chemical treatment with Imidacloprid to maintain genetic reserves of hemlocks.

Ten research laboratories in the eastern U. S. are rearing several species of beetles for release on the national forest and other public lands, but their valiant efforts face serious challenges. Beetle rearing is scientifically demanding, labor-intensive, and costly, and the beetles released into the wild so far have not kept pace with the prolific reproduction rate of the adelgids. The picture is further complicated by the fact that, as most experts agree, the biological solution involves developing a complex of predators rather than relying on a single species, a process that requires careful work, much testing, and time.

But there is also cause for hope. Hundreds of thousands of beetles have been released in the designated insect areas so far, and researchers have recently documented solid evidence of beetle survival and reproduction in the wild. Chemical treatments in the designated insecticide areas are proving to be highly effective in killing adelgids and providing a period of residual protection averaging five years, and although recognized as a temporary "band aid," this approach buys valuable time for the trees while longer-term, natural solutions are being developed.

In the meantime, private property owners should continue to treat their hemlocks with a combination of cultural controls (such as keeping them watered during times of drought and applying a layer of mulch within the drip line) and chemical controls. Beetles are not yet an advisable option for private property.

Organizations such as the Appalachian Trail Conservancy can help, by taking care of the hemlocks on their own property and spreading the word to their neighbors. They can also contact their local U. S. Forest Service office to participate in forest monitoring efforts and other volunteer opportunities. Mentoring assistance by Save Georgia's Hemlocks — a volunteer, nonprofit organization dedicated to helping north Georgia property owners save as many of their hemlocks as possible for the lowest cost — is available for establishing similar organizations in other states.

Donna Shearer is the chairman of Save Georgia's Hemlocks.

PHOTOS COURTESY SAVE GEORGIA'S HEMLOCKS

For more information visit:

www.savegeorgiashemlocks.org

Greg Stover

How and when did you begin your volunteer work?

I started at the end of October 2007 after an eight-day hike on the Appalachian Trail.

How many hours have you volunteered since you began?

More than 3,000.

How are you able to volunteer so much of your time? And why do you do it?

It's easy to be dedicated when you enjoy something you believe in. One of the most frequent comments on 2,000-miler applications refers to how being on the Trail restored the hiker's faith in his fellow man; it seems the camaraderie of the A.T. hiking community can brighten the outlook of even the most cynical of us.

What do you do/have you done in your professional career?

I was a soldier for over 23 years, 15 of which was on active duty. I was a sports writer for a local newspaper in Kansas for about four years.

Can you list some of the things you do in your work for ATC?

One of my main tasks is processing 2,000-miler applications and preparing the letters and certificates, and preparing the packets for mailing. I've done a variety of administrative projects from basic envelope-stuffing to complicated research and data gathering. I also act as a permanent backup to work the visitor center when no one else is available.

What is your favorite volunteer task? Least favorite?

Processing the 2,000-miler applications, I actually enjoy record keeping, a task most people find dull. My least favorite is acting as the general telephone operator; it's almost to the point where a telephone ringing next to me sends a shiver up my spine.

What do you enjoy most about working at ATC HQ?

The sense of accomplishment I get when something happens, big and/or small, that makes the A.T. a better experience for hikers.

Do you enjoy meeting all the different hikers/visitors who come through the Visitor Center?

Discovering the diversity among hikers is one of the more interesting aspects of working here. Odd things do happen on occasion, like the impromptu "smelly shoe" contest in the hiker room in 2008; five hikers were repacking their gear when the subject of smelly feet came up and within minutes all five were smelling each other's shoes to see which was worse.

What has been the most surprising aspect of volunteering?

That I'm still willing to volunteer seven days a week after two years. Hiking the A.T. has become the high point of so many lives over the years that just be being a small part of it is very fulfilling.

When did you start hiking the A.T. and why?

I took my first step on the A.T. on October 20, 2007 at 11:15 a.m. Even though it rained nearly half the time during that first hike it didn't dampen my enthusiasm (pun intended).

How many miles of the Trail have you hiked so far?

I've hiked 852 miles of the A.T., most of which was this past season during which I lost 62 pounds. Hiking the Trail broke my 20-year addiction to Diet Coke and greatly reduced my apprehension about heights.

What are your plans, hopes and dreams for the future?

Right now I'm just waiting for my military pension to start when I turn 60 then I'll start doing the things I haven't been able to.