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DIRECTOR'S NOTE

This Tennessee-specific section of *Nature Conservancy* magazine finds you as I complete just over five months in my new role. During this time, I have been on a listening tour—making the rounds to meetings, events, field trips and one-on-ones with our team, donors, partners and others who leave me feeling energized and enthusiastic. Almost daily, I am impressed by our projects like our efforts to conserve Tennessee's majestic hemlock trees, featured in these two pages. We couldn't do it without your support, and so I thank you.

To a healthy today and tomorrow,

Laurel Creech

Laurel Creech
Tennessee State Director

SUPPORT OUR WORK

Visit nature.org/tngiving to support hemlock forest restoration and other efforts to conserve critical habitats around Tennessee.



A member of Tennessee's HWA Strike Team studies hemlock trees at Chestnut Mountain. © The Nature Conservancy/Britt Townsend

Helping Tennessee Hemlocks

Treatments against an invasive pest are working

Earlier this year, Tennessee's Hemlock Woolly Adelgid (HWA) Strike Team treated more than 1,800 acres of forest around the state within a few short months—a new record! Their herculean effort included 68 acres and 840 hemlocks at our own Bridgestone Nature Reserve at Chestnut Mountain. During that time, the team—which visits a hemlock conservation area every five years—also reported that previously treated trees at Chestnut Mountain were in excellent health.

The HWA Strike Team was established by the Tennessee Hemlock Conservation Partnership, a collaborative effort between the Tennessee Department of Agriculture and the Tennessee Division of Forestry funded by a grant from the U.S. Forest Service. The team treats hemlocks on state-owned lands and on properties that have secured a conservation easement as part of an integrated pest management plan to conserve these iconic trees in the long term.

Hemlock woolly adelgid (*Adelges tsugae* or HWA) arrived in North America from Japan in the 1920s and was first detected in Tennessee in the early 2000s. Barely visible to the human eye, the invasive pest goes undetected during summer but forms protective white wool casings when cooler weather arrives. Throughout the year, the HWA feeds on the underside of hemlock branches, stealing nutrients and causing buds to die and needles to fall. More and more, research shows that targeted chemical applications effectively suppress adelgid infestations.



Hemlock Woolly Adelgid © Wikimedia/CT Agricultural Experiment Station Archive

100

plant and animal
species are supported
by Tennessee's eastern
hemlock forests.

Creature Feature



Ovenbird © Creative Commons/Rhododendrites

Recently sighted at our Bridgestone Nature Reserve at Chestnut Mountain, the presence of an ovenbird (*Seiurus aurocapilla*) represents a combination of successful conservation actions taken within and outside of the Reserve. Within the Reserve, these ground-dwelling warblers build their covered nests—dome shaped structures resembling a Dutch oven—under the dense canopy of healthy eastern hemlocks, where there is an abundance of insects to consume. Outside of the Reserve, the ovenbirds have access to surrounding protected lands. As a result, Chestnut Mountain serves as an ideal destination for this migrating songbird that requires extensive areas of uninterrupted forests, often more than 2,000 acres in diameter with canopies of 50 to 70 feet above the ground, to support their life cycle. Regardless of where they settle, ovenbird populations have exhibited high mortality and population declines in hemlock stands with hemlock woolly adelgid infestations.



Black-throated Green Warbler @ Creative Commons/Dan Pancamo; Southern Appalachian Brook Trout @ J. Merrill Lynch; A hemlock tree grows out of a rocky outcrop. © The Nature Conservancy/Britt Townsend

The Hemlock Ecosystem

Forest giants regulate surrounding lands and waters

If Tennessee's eastern hemlocks (*Tsuga canadensis*) could talk, what might they say? With the ability to live for hundreds of years and grow to more than 170 feet high, they have seen and heard a lot. Typically found emerging from rocky cliffs and streambanks throughout eastern North American forests, hemlock trees play an important role within a larger and irreplaceable ecosystem that provides important services to surrounding lands, waters and wildlife. In our state, hemlocks have thrived for centuries in shady understories of forests blanketing the Southern Appalachian portion of East Tennessee. Here, established

The Eastern hemlock is a foundation species, meaning it defines the structure of the surrounding forest and influences the local biodiversity.

Britt Townsend, TNC's conservation forester in Tennessee

hemlock roots stabilize streambanks to regulate and filter water. Their branches cool down air and soil temperatures that are key to the survival of unique native plants like pirate bush. Their shade also keeps waters cool, clean and oxygenated to create ideal conditions for brook trout and other aquatic species. Collectively, a healthy grove of mature hemlock trees provides important shelter for wildlife during cooler months, and nourishment for white tailed deer that feed on foliage, and mice and squirrels that prefer seeds from hemlock cones. Cavities in larger trees are coveted by wood peckers, and black-throated green warblers require hemlock trees for nesting, migrating from as far away as Peru and Colombia to settle in and feed on insects in the highest branches. Considered an indicator species for hemlock stands, the presence of these warblers signifies a healthy ecosystem in forests of the eastern United States.