

Appalachians Update

Recognizing the threats and opportunities this region faces, The Nature Conservancy (TNC) has identified the Appalachians as one of the most globally important landscapes for tackling climate change and conserving biodiversity—along with the Amazon, Kenya, and Kalimantan in Indonesia.

Together with partners, TNC is advancing solutions in three interrelated areas. Our work is designed to achieve benefits across all three solutions wherever possible. Look for these icons to see the main impact of the projects included in the update.



Connectivity

Create a 2,000-mile connected network of resilient lands and waters—a biodiversity superhighway enabling plants and animals to adapt to a changing climate.



Climate

Protect and manage forests to store significant amounts of carbon, and accelerate the transition to well-sited renewable energy.



Communities

Support resilient communities with sustainable livelihoods and strong connections to the region's incredible natural landscapes.

Conservation Highlights



Addressing Barriers to Regional Species Movement

The TNC-led transportation and connectivity project Addressing Barriers to Regional Species Movement is officially underway! TNC has held introductory meetings with agency partners in all states. The initial feedback has been encouraging, affirming the importance of this multi-state collaboration. This project will build on the success of the Staying Connected Initiative by enhancing and extending our connectivity work in pursuit of a fully connected Appalachians. TNC aims to provide transportation and natural resource agencies from Maine to Pennsylvania with science and tools to identify opportunities for barrier mitigation and passage enhancement, guidance to optimize connectivity and infrastructure funding through the IIJA, and training and resources to support future connectivity planning and implementation.



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Climate Resilient Grant Program

The Climate Resilient Grant Program (CRGP) is now in its third year of supporting partner organizations to accelerate the pace and scale of conserving resilient places in New York. In 2023, the team received applications from a pool of over 100 land trusts and will award \$550,000 in grants for 14 projects distributed across seven of New York's ten focal areas.

We are laying the groundwork to launch a regional grant program for the Northern Appalachians, based on the successful New York model. This program will aim to help protect 20,000 additional acres of the Resilient and Connected Network in focal landscapes, support partner-led initiatives at a regional scale, and increase organizational capacity in key areas. The program launch is anticipated in fall 2024.

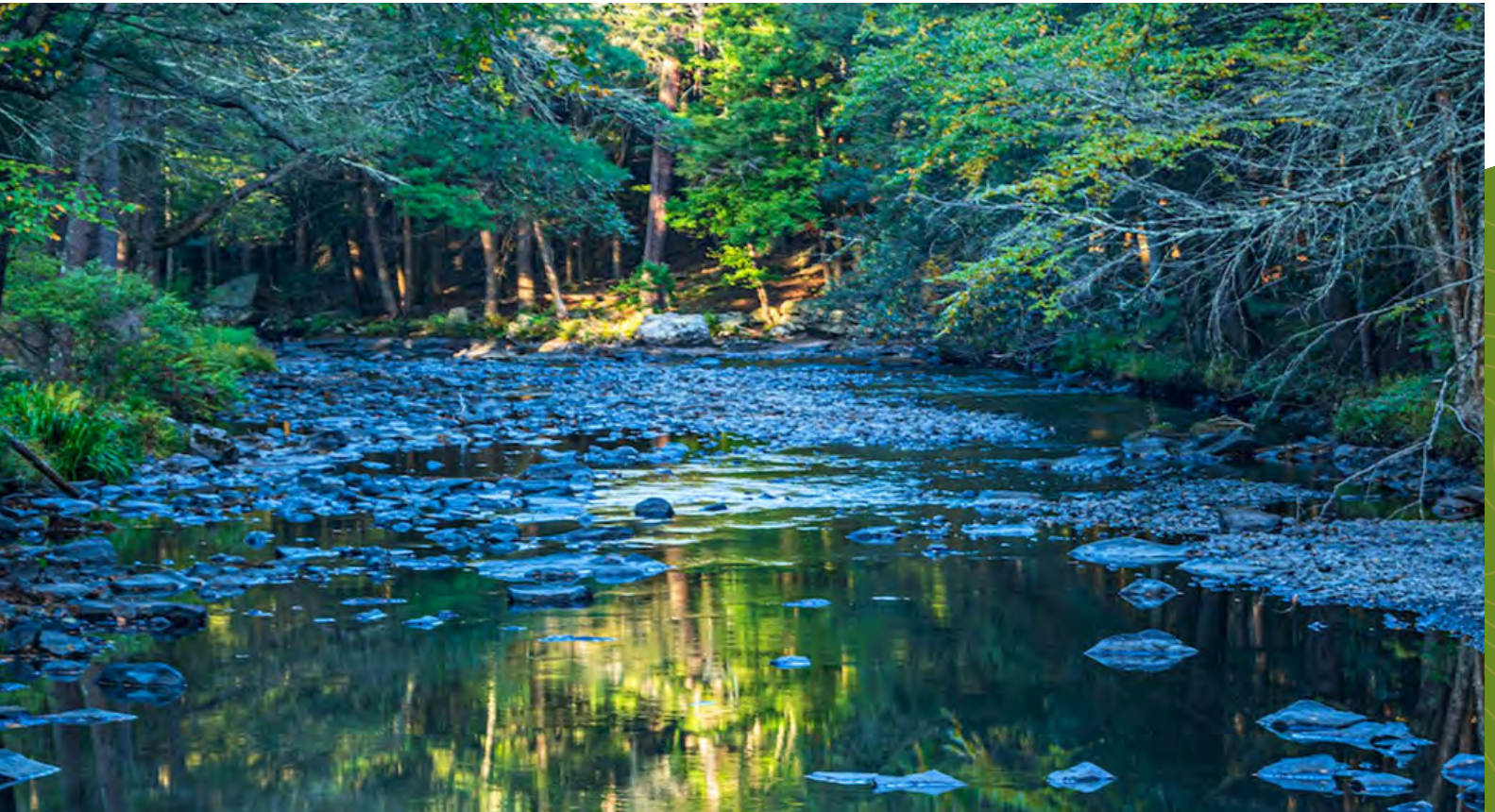


STAYING CONNECTED INITIATIVE

The Staying Connected Initiative (SCI) is an international collaboration to conserve, restore, and enhance landscape connectivity across the Northern Appalachian/Acadian region of the U.S. and Canada.

In early June, many SCI partners gathered for the International Conference on Ecology and Transportation (ICOET) in Burlington, VT. SCI and our partner Berkshire Environmental Action Team (BEAT) received the 2023 ICOET Stewardship Awards in recognition of our efforts to advance transportation and wildlife solutions at the local, state/provincial, and international scale.

In New York, a number of SCI partners will receive TNC funding this year through the 2023 Climate Resilience Grant Program for land protection in key linkages, including the Algonquins to Adirondacks (A2A), the Catskills to Adirondacks, and the New York portion of the Berkshire Wildlife Linkage.



TNC Protects 1,071 Critical Acres in Pennsylvania's Shohola Watershed

The Nature Conservancy in Pennsylvania and Delaware closed on the purchase of 1,071 acres in Pennsylvania's Shohola Township (Pike County), linking two state game lands to create a **43-mile corridor** of protected lands in TNC's Resilient and Connected Network. The new parcel was transferred to the Pennsylvania Game Commission for addition to State Game Land 180, which will increase public access and recreation opportunities while safeguarding critical water resources and biodiversity in the Appalachians.

The property, which lies downstream from Shohola Lake, includes more than a mile of frontage on Shohola Creek and six tributary streams—a resilient freshwater system in the Upper Delaware River watershed. It also encompasses Bald Hill, a landscape that provides habitat for several plant and animal species of concern. The Shohola Creek project was made possible with financial support from two Open Space Institute funds: the Delaware River Watershed Protection Fund and the Appalachian Landscapes Protection Fund.

[Learn more on nature.org.](https://www.nature.org)



TNC Science Driving Conservation Success in the Berkshire Wildlife Linkage

In March 2023, Nature Conservancy partner Berkshire Natural Resources Council (BNRC) completed the protection of 826 acres of forest, wetlands and vernal pools in the heart of the Berkshire Wildlife Linkage. The Linkage is a critical connector in the Appalachian Mountain Chain, and TNC has convened Linkage partners for over 10 years to implement a unified resilient, and connected landscape vision. The coalition members have been enthusiastic adopters of TNC's Resilient and Connected Landscape concepts and data, which is evident in communications around this project.

Rich Montone, director of development for BNRC, was quoted in the Berkshire Eagle: "It was like a once-in-a-lifetime opportunity to forever preserve a green space that is terrific for climate resiliency in the Berkshires," he said.

About 400 acres of the corridor are classified by TNC's data as "a resilient area that contains known locations of species or unique communities." The 826 acres adds to over 14,000 protected acres—almost the size of the area of Manhattan—of highly resilient landscape, also prized for their recreational opportunities. The state's Landscape Partnership Grant supported a portion of the project and uses TNC's resilience data as a criterion for the grant applicants.

"TNC continues to support our partners in understanding and applying these data, as it will take all our efforts to reach national and global 30 x 30 protection goals," says Andy Finton, conservation ecologist for TNC in Massachusetts. "Most recently, TNC incorporated the resilient and connected landscape data into the state's BioMap, a time-tested resource used by agencies, land trusts and municipalities to identify, prioritize and conserve the most critical lands and waters in Massachusetts."

Forest habitat with a large interior wetland. Silas Hall Pond Preserve, Winchester, Connecticut. © MyStateMLS



New Land Donation in Northwest Connecticut

Recently completed deal will protect vital forests in the Appalachians

The Nature Conservancy in Connecticut recently announced a land donation, completed in late 2022, that will expand protection for a critical area in northwest Connecticut. The donation expands protection within TNC's Resilient and Connected Network. Spanning four states, from southern Vermont through Connecticut's northwest corner, the Berkshire Wildlife Linkage includes the most intact forest ecosystems in southern New England and some of its highest carbon stocks. Here, the Appalachians are a migration pathway and breeding habitat for migratory birds and many wide-ranging and iconic mammals; black bear, bobcat, fisher, and moose all move through the landscape.

"The communities of Northwest Connecticut have a long tradition of embracing land conservation," says Connecticut state director Frogard Ryan. "Working with area partners, individuals, and communities, TNC has spent the last several months identifying the best opportunities for land protection in the region. We are thrilled to announce this new land donation, which will help us protect Northwest Connecticut's important forest and wetlands habitats." Holley Atkinson and Stephen Plumlee donated 330 acres of land in Winchester, which will more than double the size of TNC's Silas Hall Pond Preserve.

Silas Hall Pond Preserve is part of a large network of open space, including Winchester town watershed land, land trust and other privately protected land, and Algonquin State Forest. A unanimous town vote in Spring 2022 approved protecting 1,300 acres of Winchester's municipal water company land in the area with easements funded through the Highlands Conservation Act and the Housatonic Valley Association's Greenprint Partners Pledge Fund. This transaction is expected to close by January 2024. Silas Hall Pond Preserve is open to the public for hiking and underwent a significant trail expansion in 2018.



Appalachians NEXGEN Forest Project



▲
LEFT: © Jerry Monkman;
RIGHT: © Ted Watt and Dave
Gott Maple seedling caged to
protect from deer

The NEXGEN project is launching at the end of 2023 to grow the next generation of forest trees while also training the next generation of foresters. Thanks to a generous donation, the NexGen Forest Project is making funds available that will enable family forest owners to remove invasive plants and protect seedlings and saplings from deer browse on Massachusetts, New York, and Vermont forest lands. We are partnering with the Forest Stewards Guild, which will recruit and train an apprentice forestry crew, led by a licensed forester, to do the on-the-ground work. This crew will be trained to treat invasives, install tree shelters and cages, and plant tree seedlings.

The cost of practices that address forest regeneration and build resilience are very high, making these practices financially infeasible for many landowners. This also means that they cannot be funded through the market model used by the Family Forest Carbon Program (FFCP), which must focus narrowly on increasing carbon stocks within 20 years. The NexGen Forest Project will be a pilot program, working with private landowners who are enrolled in or eligible for the Family Forest Carbon Program and are planning or have just completed a climate-smart forest harvest. The goal is to complement the climate-smart practices that are included in the FFCP with two additional practices that focus on reducing the impacts of invasive species and deer in places where they prevent forest regeneration.

By collaborating with landowners to address threats to the next generation of trees, while training the next generation of foresters on skills needed to scale up forest restoration and management work, we hope to give that next generation of both trees and workers a healthy start.





Virginia Elk Herd © Daniel White / TNC



Expanding Conservation Lands in Southwest Virginia

Two recently closed land deals in Virginia will help expand the state's natural area system along the Clinch River and add to TNC's portfolio of lands in the Appalachians protecting core habitat for elk. The Smith Acquisition includes 121 forested acres in Russell County, Virginia, containing a riparian corridor along Weaver Creek, which will be dedicated to the Pinnacle Natural Area Preserve and transferred to the Virginia Department of Conservation and Recreation. This will increase Virginia's conservation efforts in the Clinch River area, adding protection for aquatic habitats and migrating wildlife.

The Breeding Acquisition includes 576 acres in Buchanan County, Virginia, near the site where elk were reintroduced by the Virginia Department of Wildlife Resources. The property will support elk restoration and the associated ecotourism industry and has been recognized by The Nature Conservancy and the Commonwealth of Virginia as an important area for biodiversity and climate resilience. Protection and stewardship of this property help TNC close key connectivity gaps within the Cumberland Forest Project area.

Acquisition and improved management of both properties, especially for elk habitat, wildlife viewing, and other outdoor recreational activities, contribute to a regional strategy to attract more visitors to the area for environmental education and economic development.

[Learn more on nature.org.](https://www.nature.org)



Kim Marotta, Beam Suntory's Global Vice President of Environmental Sustainability, plants a tree on the Cumberland Forest Ataya property. © Mike Wilkinson



Bringing Forests Back to Life

RESTORATION

Along rough, remote roads winding into eastern Kentucky's Appalachian Mountains, the Kentucky program and its partners have hauled hundreds of thousands of trees to reforest former mine lands. On these lands dominated by invasive species and compacted soil, young native forests are coming to life once again.

Our reforestation partnership with Green Forests Work continued this spring with a new 100-acre site in Leslie County. TNC chose this particular site for its healthy soils and to address the presence of an invasive species, autumn olive. As the Kentucky program continues planting new tracts of land on the Cumberland Forest Ataya property, our goals are to connect healthy forested areas for wildlife migration and create climate-resilient new forests.

"We're working with the TNC science team on our connectivity model, identifying the best places to connect forested habitat on this landscape," says Chris Garland, Central Appalachians project director for the Kentucky program. "Working with our partners, we're laying out a roadmap for where our next sites will be."

Professional crews planted approximately **58,000 TREES** on the Leslie County site, with white oak and short-leaf pines dominating the mix of species. Crews also planted forbs, grasses, and wildflowers to provide food and habitat for wildlife and pollinators. "One really special thing about this site is that our partner, Green Forests Work, was able to get a couple thousand American chestnut trees included in the planting," Garland said. "This is an important step in trying to restore a formerly keystone species that has been missing from this system for many decades."

Chestnut blight, a fungal disease native to east Asia, completely wiped out the American chestnut by the 1940s. Scientists have been crossbreeding American and Chinese chestnuts for decades to produce a hybrid that is virtually identical to the American chestnut but with the blight resistance from the Chinese.

"The hope is that there will be enough resistance, and that we're putting enough out there onto the landscape, to re-establish this species," says Garland. "It will take a long time, but getting started on these former mine lands is really exciting."

TNC and Green Forests Work set aside 10 acres of the site for volunteers from Beam Suntory to plant approximately 8,000 trees. This is the second year the company has provided funding and volunteers to plant former mine lands on the Cumberland Forest Project.

"Growing for Good and Giving Back to Society are core values at Beam Suntory, and everything we do is through the lens of our Proof Positive sustainability strategy," says Kyle Day, senior manager of Forest & Field Sustainability for Beam Suntory. "We are proud to help further flagship programs like the reforestation program at the Ataya property in eastern Kentucky and work with our partners The Nature Conservancy and Green Forests Work in support of our ambitions to plant more trees than harvested to make our new barrels and donate one million volunteer hours to our communities by 2030."



Addressing Climate Change in the Southern Appalachians

Making Forests & Streams Resilient

Compared to many areas, the Appalachians are better suited to deal with a changing climate. They have the right stuff—a combination of elevation, soil, connectivity, and biodiversity—that will make them resilient as temperatures rise. The Resilient and Connected Network shows the importance of the Appalachians for resilience and is the guide star for our conservation.

The Appalachians, stretching from Alabama to Canada, allow for a lot of migration. “We need to make sure that we have that longitudinal connection, so that organisms can move,” explains Katherine Medlock, Director of TNC’s Southern Appalachians Program. Megan Sutton, who leads the North Carolina Chapter’s Appalachian work, says we need to be looking to the future. “Restoration implies going backwards in time, but that’s a misnomer,” she explains. “We are really looking at the forests of the future. Where and what are those forests of the future and how do we align our management activities to promote that resiliency into the future?”

TNC is also working with an additional set of maps that show fire-adapted forests. “We’re focusing our efforts on those fire-adapted systems,” says Medlock. “Those forests are extremely resilient in the face of drought and other climate-induced changes.”

Temperatures in the Southern Appalachians are rising at the rate of .5 degrees Celsius every decade. Under these rising temperatures, the most resilient trees will be oaks, hickories, and yellow pines, which store carbon more efficiently and use much less water under hotter temperatures than maple and poplar. However, maples and poplars are becoming the dominant trees in Southern Appalachian forests.

The ideal forest of the future is diverse and includes oak, hickory, and yellow pines as a major component, which is why TNC is devoting much of its energy and funding to controlled burning and climate-informed forestry that will set the stage for rising mountain temperatures by returning them to dominance in Southern Appalachian forests.

Resilience isn’t just terrestrial. For instance, removing maples and poplars will increase stream flow—another plus with climate change when periods of drought are likely. Resilient streams need to be free flowing to allow fish and other organisms to move as climate changes. TNC is working with partners across the range to remove barriers such as culverts and low head dams.

The biggest partner in this effort is the region’s biggest landowner—the U.S. Forest Service, which just completed a study of its freshwater in North Carolina, Tennessee, South Carolina, and Georgia. The Forest Service focused on places where infrastructure like recreational sites, roads or bridges were threatened. At the same time the Conservancy completed a study of the same region focused on aquatic resilience and biodiversity. Despite the wildly different starting points, the studies homed in on many of the same spots.

“I find it fascinating that the prioritized watersheds of both studies converged on approximately the same 50 watersheds out of over 600 analyzed,” says Sutton. “These are places with high biological diversity and resilience where infrastructure is likely to, or already has, been affected by floods.”

There’s also a protection element to ensuring that these places remain resilient. Development will fragment forests, preventing movement across the landscape. The Southern Blue Ridge is in particularly good shape in terms of land conservation. “Forty-two percent of the Southern Blue Ridge is protected,” says Sutton. “That’s why our office focuses so heavily on managing for resilience. We want to make sure that lands are *effectively* conserved – not just set aside without necessary management.”

Both Sutton and Medlock say that addressing climate change in the Southern Appalachians doesn’t require a huge policy shift—actions on the ground now will help the region be more resilient as temperatures rise. There is good reason to feel positive about TNC’s work. “We have a lot of staff with climate anxiety,” says Sutton. “We’ve done enough research to know that the things we are doing on the ground are aligned with the best available scientific information. Noticing the ways that our work is impactful at all scales is part of overcoming that anxiety.”

