



WINTER 2019

Tennessee field notes

CONNECT WITH NATURE: NATURE.ORG/TENNESSEE

CHESTNUT MOUNTAIN

Boots-on-the-ground and state-of-the-art technology combine to advance a wildlife inventory.

Birds, bats and butterflies, oh my! Since acquiring the Bridgestone Nature Reserve at Chestnut Mountain in 2018, The Nature Conservancy has focused on exploring every inch of the property. Scientists representing different disciplines and institutions are supporting this effort with regular visits dedicated to documenting plants, animals and natural habitats from wetlands to areas deep in the forest.

Living Laboratory

The Conservancy's story at Chestnut Mountain began in 2014 with developing a management plan for the property's forests in partnership with its former owner, Bridgestone Americas, Inc. Now TNC is putting these forests to work capturing harmful greenhouse gasses in the atmosphere.

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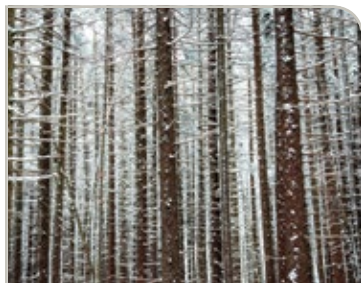
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FROM THE DIRECTOR

State Director's Chat



The Nature Conservancy's mission is to conserve the lands and waters on which all life depends.

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The Nature Conservancy is a private, nonprofit 501(c)(3) international membership organization.



The group of concerned citizens who opened The Nature Conservancy's Tennessee office in 1978 had no idea that 40 years later their legacy would be the protection of nearly 400,000 acres across the state. Today, thanks to your support, we work at a scale and pace well beyond what those committed Tennesseans imagined upon recognizing the need to safeguard and preserve lands and waters upon which all life depends.

The past year has been historic in terms of permanently protecting nature in Tennessee. Some of the highlights include:

- Securing 253,000 acres spanning Kentucky, Tennessee and Virginia in order to safeguard an important wildlife corridor and resilient Central Appalachians landscape that is key to preserving some of the nation's most pristine forests and vital resources like clean drinking water.
- Protecting 557 acres in and around the Cherokee National Forest to buffer valuable public lands that host diverse species like the federally endangered Indiana Bat.
- Adding 341 acres to the Piney River and Walden Ridge state natural areas to connect state-protected lands on the Cumberland Trail State Scenic Trail, Stinging Fork State Natural Area and Soak Creek State Scenic River.

Thank you for making it possible for TNC to pursue projects that elevate and transform how we conserve nature in Tennessee. We are glad to share this important journey that informs our legacies.

See You Outside,



Terry Cook
State Director

P.S. As we wrap up The Nature Conservancy's 40th anniversary in December, we hope you will consider a gift to mark the beginning of our next forty years. Visit nature.org/tngiving to donate today!



Welcome back to Tara Armistead and Jim Williams upon their return to posts on TNC's Tennessee Board of Trustees, and to Tracy Frist, who joins as a new member.



CHESTNUT MOUNTAIN

(CONT'D FROM FRONT PAGE)

The Reserve also serves as a demonstration site for restoring shortleaf pine forest, which has declined in its native range by over 50 percent in the last 30 years. To bring it back, TNC and partners are reintroducing fire, a historic natural disturbance that is critical to the health of this type of forest.

Taking Stock

Over the past year, TNC invited scientists to gather data about the Reserve in an effort to learn more about its species and conservation value. Some of the surveys taking place at Chestnut Mountain include:

- Dr. Danny Bryan and 12 students from Cumberland University set up vegetation plots used to study understory health and timber rattlesnake populations.
- Retired Tennessee Tech University professor, Dr. Stephen Stedman, recorded 24 butterfly species and a healthy population of rare mountain mint, which attracts moths, insects and other pollinators.
- Tennessee Tech University professor Dr. Shawn Krosnick and her students surveyed two stands of shortleaf pine and built research sites on Chestnut Mountain's north and south facing

slopes, the highest elevation in White County.

- Daniel Istvanko, a biologist from the Tennessee Wildlife Resources Agency, confirmed TNC models indicating that Allegheny woodrat and green salamander, species of conservation concern, would likely be documented at Chestnut Mountain.

The Conservancy also hosted local birders and ecologists who identified 63 bird taxa at the property during a single day last spring.

"The passion and excitement we are seeing from researchers, students and land management partners speaks to the amazing opportunities for learning that abound at Chestnut Mountain," says Trisha Johnson, TNC's director of forest conservation in Tennessee. "We look forward to building our knowledge in ways that can be transported beyond this property to other public and private forests."

Caught on Camera

The Chestnut Mountain species inventory received a boost last fall with a grant from the Barbara J. Mapp Foundation to support the acquisition and installation of 35 cameras now located throughout the 5,700-acre Reserve. The cameras are gathering valuable images and videos on the movements and activities of wildlife on the property.

A grant from the Berglund Family Foundation made it possible to install Tennessee's first MOTUS Wildlife Tracking Tower, which uses radio telemetry to gain information about the movement of birds, bats and other species. Data generated by the tower informs TNC and a consortium of partners, within Tennessee and throughout the northern hemisphere, about these species that spend all or part of their life cycle at Chestnut Mountain.

"The Motus tower gives us a window into the lives and behavior of aerial wildlife," says Cory Holliday, TNC's Cave and Karst Manager in Tennessee. "These towers are part of an international network and enable us to study wide-ranging, fast moving animals like never before."

Chestnut Mountain Partners

- Cumberland University
- Panther Creek Forestry
- Tennessee Department of Environment and Conservation (TDEC)
- Tennessee Division of Forestry (TDF)
- Tennessee Tech University
- Tennessee Wildlife Resources Agency (TWRA)
- University of Tennessee-Chattanooga
- University of Tennessee-Knoxville
- University of the South



Big South Fork National River & Recreation Area

TNC helps to expand Tennessee's public lands portfolio.



Last summer, The Nature Conservancy transferred the 17-acre Double Arch tract to the National Park Service (NPS) to expand the 125,000-acre Big South Fork National River and Recreation Area (NRRRA). The property was originally part of a larger development project located adjacent

to the NRRRA. The NPS contacted TNC about acquiring and retaining the parcel until the agency could secure support from the federal Land and Water Conservation Fund (LWCF).

The expansion results from a co-operative effort that began in 2016. "This rare double arch is hidden within the rugged canyons of this 17-acre parcel," says Niki Stephanie Nicholas, superintendent of the NRRRA and the Obed Wild & Scenic River and site manager of the Manhattan Project National Historical Park in Oak Ridge.

This year, the NPS received the LWCF funds required to secure the property's inclusion into the NRRRA. "While small, the property boasts delicate and unique features that are millions of

years old and unique to this region," says Gabby Lynch, TNC's director of land protection in Tennessee. "We jumped at the chance to help with permanently protecting the parcel."

For Lynch, the recent expansion brings this partnership full circle, since TNC played a role in securing 74,900 acres of former timber company lands that expanded the NRRRA in the 1970s and 1980s.

"This tract embodies many of the reasons why the Big South Fork NRRRA is special," adds Nicholas. "It is now protected in perpetuity as a part of the National Park Service due to TNC's foresight and tenacity in purchasing and protecting it."

QUARRY BOG PRESERVE

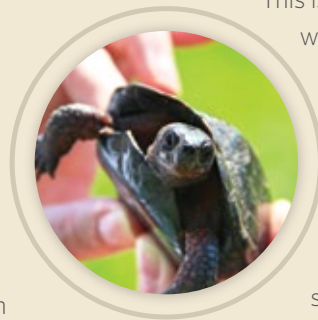
TNC enrolls in a federal program that restores wetlands and protects bog turtles.

In September, the U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) included The Nature Conservancy's 65-acre Quarry Bog Preserve in the Agricultural Conservation Easement Program-Wetland Reserve Easement (ACEP-WRE), which provides participating landowners with wetland protection and restoration assistance in return for an easement that prohibits agricultural production and certain types of development on all or part of the property.

"In 2000, TNC restored wetlands on 48 acres that had been ditched and drained to grow crops back in the 1960s," says Gabby

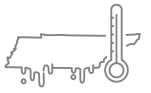
Lynch, TNC's director of land protection in Tennessee. "We look forward to having help with bringing this project up to date, and with additional restoration at the preserve."

The Conservancy acquired Quarry Bog Preserve as part of its larger Shady Valley project. The valley boasts one of only two native cranberry bogs in the state and is one of only a few places in Tennessee that harbor and safeguard state-threatened bog turtles. The Quarry Bog Preserve will also represent a unique project within the ACEP-WRE portfolio.



"This is the first time we are working with TNC in Tennessee, and also the first time we're incorporating livestock as part of a restoration plan," says Allen Persinger, easement program manager with USDA-NRCS in Tennessee. "Project success here hinges on the grazing cattle that will keep saplings and shrubs, and invasive species like reed canary grass, from encroaching on open and sunny areas favored by bog turtles."

With this new demonstration site, Persinger can't help but note the irony, adding, "In the 1960s, our agency was charged with channelizing and draining wetlands to make this land productive. Now we're restoring things to a more natural condition that is conducive to wildlife. Things have come full circle."



FORESTED FUTURE

Forest projects capture carbon, clean air and support wildlife in Tennessee.

Forests are so much more than places for harboring wildlife, harvesting timber and hosting hikers. They store carbon. The Nature Conservancy protects and manages vast stretches of Tennessee forests that are capable of reducing carbon in the atmosphere while generating income for private landowners and local communities.

In July, TNC's investment unit, NatureVest, completed one of the organization's largest-ever conservation transactions in the eastern United States with the Cumberland Forest Project, which protects 253,000 forested acres across two major landholdings—one in Southwest Virginia and one along the Kentucky and Tennessee border. TNC is working with partners to manage the health of these forests. The properties are also enrolled in the California Carbon Market, where industrial polluters purchase credits to offset their climate-warming emissions to meet environmental regulatory requirements.

“The Cumberland Forest Project tackles climate change on two fronts,” says Terry Cook, TNC's state director in Tennessee. “In addition to storing millions of tons of carbon, they form a natural wildlife corridor that scientists believe is critical to North American plant and animal species shifting their ranges in response to a changing climate.”

More Carbon Storage

TNC also sits on the 15-member board of the Doe Mountain Recreation Authority (DMRA) that recently registered the 8,600-acre Doe Mountain Recreation Area, located in the Appalachian Mountains of Northeast Tennessee, as a forest carbon project.

“Managing forests to maximize value beyond timber alone is a growing international strategy used to diversify biological and financial gains,” says Mike Taylor, Johnson County Mayor. “I am excited about this long-term partnership that will ensure a healthy ecological future for Doe Mountain, and vibrant economic growth for Johnson County.”

At Doe Mountain, a North American carbon offset development firm is measuring the forest's carbon storage levels at approximately 100 monitoring plots. The data serves as a benchmark as partners embark on conserving the forest's health and carbon capturing ability over a 40-year period. Along the way, the DMRA will sell carbon credits to corporations seeking to offset emissions, with revenues dedicated to conserving and operating an adventure trails system.

The Conservancy is also working to

improve forest health and harness the carbon sequestering power of forests at its Bridgestone Nature Reserve at Chestnut Mountain, which currently stores about 250,000 metric tons of carbon and, with forest management, will have the potential to sequester as much as 450,000 metric tons. Achieving this includes re-introducing fire to mimic this naturally occurring disturbance in the landscape and treating for pests.

According to Cook, these forest management efforts play an important role in building resilience in the face of a changing climate, adding, “Large swathes of forests like these serve as hotspots for biodiversity and important wildlife migration corridors while cleaning air and water for all living things. Realizing TNC's mission in Tennessee hinges on projects like these.”



OktoberForest

In October, TNC's staff and trustees joined colleagues around the world in promoting the importance of healthy forests to clean and plentiful water—the key ingredient for beer! In Tennessee, we celebrated with a workday and refreshments from Jackalope Brewing Company at Owl's Hill Nature Sanctuary.

95%
of beer is water ←

♥

40%
of the world's water ←
comes from forests



FLOODPLAIN TOOL

THE MISSISSIPPI RIVER BASIN'S HEALTH AND PRODUCTIVITY HINGES ON WORKING AT AN UNPRECEDENTED SCALE.

The Nature Conservancy recently developed a first-of-its-kind Floodplain Prioritization (FP) Tool to identify areas where floodplain conservation or restoration could have the greatest impact on the overall health of the Mississippi River and its tributaries. Drawing from data produced by TNC and partners, the interactive, web-based tool will help guide stakeholders—like federal, state and local governments, county planners, land trusts or businesses—as they make conservation or restoration decisions related to water

HEALTHY FLOODPLAINS CAN HELP:

- ✓ Improve water quality.
- ✓ Reduce flood impacts.
- ✓ Improve wildlife habitat.
- ✓ Enhance tourism and outdoor recreation.
- ✓ Recharge aquifers.

quality, wildlife habitat, flooding and other goals.

“Tens of millions of acres of natural floodplains across the Mississippi River Basin have been converted to other uses,” says Kris Johnson, TNC’s deputy director of agriculture for North America who led the tool’s development. “These changes in land use contribute to degraded water quality, increased flooding, and diminished habitat for fish and wildlife—all of which takes a toll on our economy and quality of life.”

According to Johnson, the FP Tool

will guide decisions that can reverse these trends. Other expected outcomes include more recreation opportunities and the potential for applicability in watersheds located beyond the Mississippi River Basin.

The FP tool will also guide efforts to reduce hypoxic or “dead” zones in the basin’s rivers and in the Gulf of Mexico. Dead zones are caused by excess nutrients from cities and agricultural lands that make their way into waterways, fueling algal blooms that deplete oxygen, impact water quality and cause fish kills, along with other wildlife impacts. In 2019, the Gulf’s dead zone covered 6,952 square miles, marking the eighth largest extent on record.

“We are excited to use this tool to inform wetland and river conservation in Tennessee,” says Alex Wyss, TNC’s director of conservation in Tennessee. “It will play an important role in enabling TNC to better support our partners, including those in the agricultural community, as they strive to improve water quality in Tennessee’s rivers.”



Mississippi River Delta © Bridget Besaw; TNC’s Floodplain tool’s current extent, outlined in red, covers most of the Mississippi River Basin and touches down in 24 states. TNC is working with partners to expand its coverage.



PAUL JOHNSON

A Tennessee-based musician finds inspiration outdoors.

For Paul Johnson, growing up in Fargo, North Dakota meant feeling cooped up during winters known for wind and sub-zero temperatures. The outdoors represented a treat that was especially savored during summertime when his family set out on camping trips to the lakes and mountains of northern Minnesota and Canada.

“Although long before iPhones and other technology, these trips still represented a focused and intentional time for connecting with each other,” says Johnson. “Nature was our playground. I feel fortunate to have a love of the outdoors instilled at an early age through these experiences.”

In adulthood, nature remains a playground for Paul, who likes to explore nature near his home in Chattanooga, Tennessee. It has also

taken on new meanings as Johnson forges his way as a music producer and recording artist known by the moniker Canyon City.

“Today, nature inspires my creativity; it is part of my workflow,” says Johnson, who describes his music as leaning into the Folk space. “The metaphor and imagery connected with nature is so fulfilling. Quite often I find myself trying to capture a feeling, in my song writing, experienced while I was exploring the outdoors.”

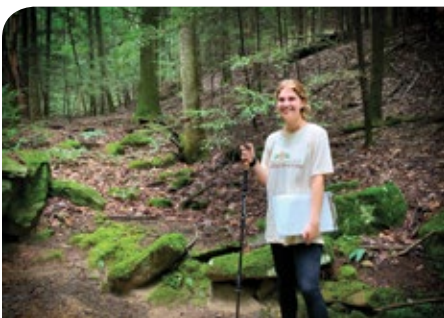
Johnson, who spent more than a decade honing his craft in Nashville, also believes that nature is key to mental health for many who reside in urban areas, adding, “Living in and



around cities, as most of us do, can be good but can also feel crowded. Access to nature greatly benefits our mental and physical health. Not having access can be a strain.”

Eventually, Paul sought a way to secure this source of creativity and health for himself, and for the world and future generations. That is when his path crossed with The Nature Conservancy.

“Once I began looking for an environmental organization to support, I encountered The Nature Conservancy everywhere,” says Johnson. “They are on the forefront of protecting and restoring what I think is essential to humanity, here in Tennessee and around the world. I have become a proud supporter.”



During her summer internship, Mary Moquin helped to install trail cameras in parts of TNC’s Bridgestone Nature Reserve at Chestnut Mountain where there might be activity. She also documented footage obtained from the cameras and kept up with their maintenance.






Friends, neighbors and partners joined us at the Bridgestone Nature Reserve at Chestnut Mountain for our inaugural Community Day where we announced the donation of 1.5 acres to White County to be permanently used by the Eastland Volunteer Fire Department and the local community.



Our staff and trustees welcomed The Nature Conservancy’s chief scientist, Dr. Hugh Possingham, during a listening tour stop in Tennessee. While here, he spoke at the University of Tennessee about his research and spent time outdoors.

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field notes



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More Nature For West Tennessee!

After two years of planning, construction began at the Middle Fork Forked Deer Recreation Area, a large park and wetland restoration project located outside the City of Jackson. Once complete, the area will boast 858 acres of trails, boardwalks, observation decks and a healthy wetland ecosystem.

"In addition to providing a new recreation destination, this project is restoring a diversity of wetlands that will benefit wildlife and the surrounding community," says Alex Wyss, The Nature Conservancy's director of conservation programs in Tennessee. "This unprecedented recreation park will also fuel the regional economy by attracting new businesses and their employees to the Jackson area, it's a real boost to the local economy."

According to Wyss, the site, previously used as marginal farmland that experienced frequent flooding, will provide multiple benefits beyond wildlife habitat once restored to bottomland hardwood forests, marshes and other wetlands. Floodplains and wetlands operate as "nature's sponges," that absorb floodwaters and filter sediment and nutrient pollution to improve water quality and reduce downstream flooding.

Wyss adds, "It was exciting to break ground on this project. All of the partners are working together to return the wetlands to a natural state while providing the community with high-quality outdoor recreation opportunities."



According to the Outdoor Industry Association, outdoor recreation generates **188,000 jobs**, **\$21.6 billion** in consumer spending and **\$1.4 billion** in state and tax revenue for Tennessee each year.