

2019

YEAR IN REVIEW

TVA STEWARDSHIP SUCCESSES



WELCOME TO OUR PROGRESS REPORT

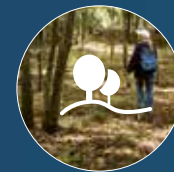
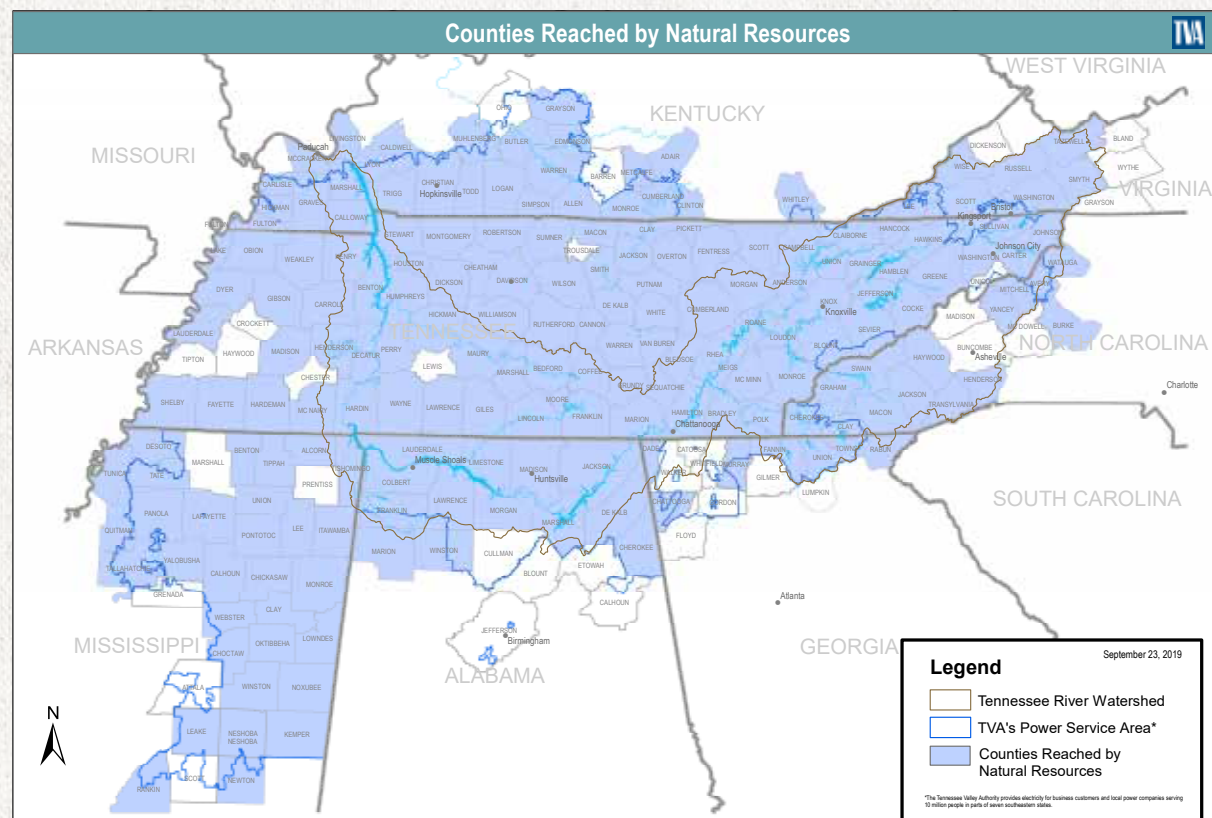
TVA's ongoing stewardship mission includes managing the Tennessee River and the public lands along it for multiple benefits. The Natural Resources group carries out that mission by protecting and enhancing the Valley's resources; managing and caring for recreational facilities, contracts, and permits; crafting strategic policies to balance competing demands; and helping inspire stewardship in all of you by responding to your questions and providing education and outreach.

We had a busy year. Through our cooperative efforts in 2019, we implemented more than 340 stewardship projects. We responded to over 10,000 requests for information and we assessed over 10,000 acres of land – and so much more.

We didn't do this alone! We are thankful to work with so many great community partners and collaborators from local, state, and federal agencies, nongovernmental organizations, and educators. As we look forward to continuing our work with new and ongoing projects, we are proud to share this progress report with you.

Bucky Edmondson
Director, TVA Natural Resources

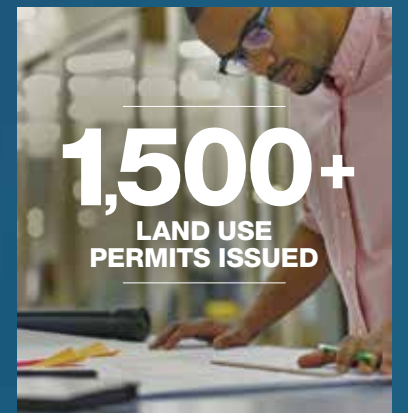
COUNTIES WE'VE SERVED THROUGH STEWARDSHIP PROJECTS



293,000
ACRES OF
PUBLIC LAND



5,000
ACRES OF FOREST
LAND MANAGED



1,500+
LAND USE
PERMITS ISSUED



11,000
MILES OF
PUBLIC
SHORELINE



WE CARRIED OUT
340+
STEWARDSHIP PROJECTS
TO ENHANCE NATURAL RESOURCES
AND PROMOTE ECOTOURISM



650,000
ACRES OF
RESERVOIR
SURFACE WATER

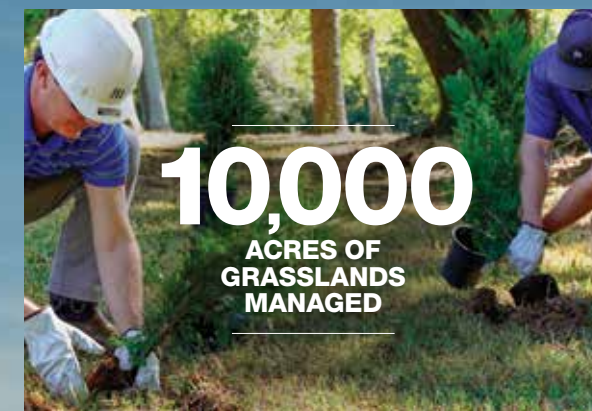


TVA'S INTEGRATED
RESERVOIR SYSTEM
CONSISTS OF
49
DAMS

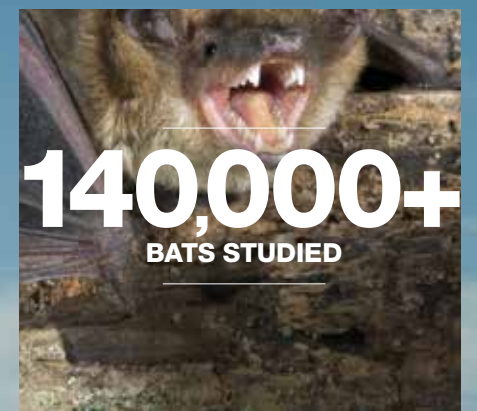
TVA OWNS
80
RECREATION
FACILITIES



\$12 billion
ECONOMIC
BENEFIT FROM
RECREATIONAL
OPPORTUNITIES



10,000
ACRES OF
GRASSLANDS
MANAGED



140,000+
BATS STUDIED

RESERVOIR LANDS PLANNING

Our Natural Resources group at TVA manages 293,000 acres of public lands across the Valley. As a federal agency, we hold these lands in trust for the public. We use our reservoir lands planning process to allocate land into one of seven zones and create reservoir land management plans.



Public lands are used for parks, industrial development, commercial recreation, residential development, tourism, forest and wildlife management areas, and much more.

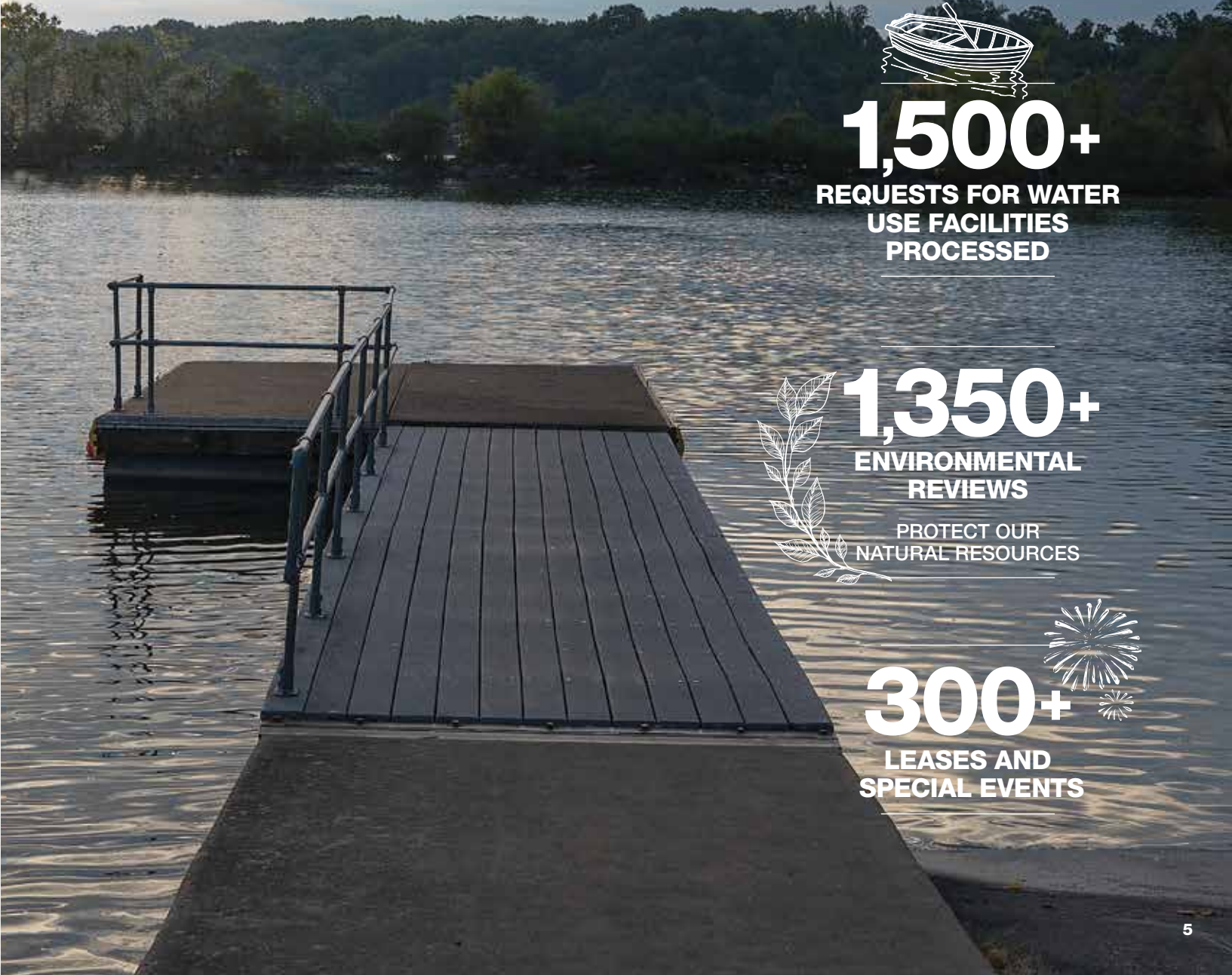
This year's specific initiatives included revising reservoir land management plans for Tellico and Tims Ford Reservoirs to ensure land allocations are balanced for the best use of public lands.



SECTION 26A PERMITTING AND LAND USE

TVA's goal is to protect land and shoreline resources while supporting access to public land and waters according to the purposes laid out in the TVA Act.

Toward this end, TVA developed its Land Policy, Shoreline Management Policy, and Section 26a Regulations. The lands and shoreline along TVA reservoirs are special places, and the Section 26a and land use processes help to ensure that they stay that way.




1,500+
REQUESTS FOR WATER
USE FACILITIES
PROCESSED


1,350+
ENVIRONMENTAL
REVIEWS
PROTECT OUR
NATURAL RESOURCES


300+
LEASES AND
SPECIAL EVENTS

PUBLIC LAND PROTECTION

TVA protects the 293,000 acres of public lands under its care by maintaining clear public land boundaries and managing access sites to prevent damage to cultural and natural resources.



This year, TVA:

- Evaluated **2,340** parcels of TVA public land adjacent to **25** reservoirs, identifying **2,636** assets.
- Partnered with organizations like Keep the Tennessee River Beautiful and local communities to support litter cleanups across the entire Tennessee River system and power service area.



Marked more than
120 miles
of boundary

to help the public easily find
public lands available for
recreation and enjoyment



REMOVED
253
TONS OF LITTER
ALONG 19 RESERVOIRS
AND IN 40 COUNTIES
WITH MORE THAN
4,000 VOLUNTEERS



WE PERFORM
ASSESSMENTS ON

10,000+
ACRES OF PUBLIC LAND
EACH YEAR

LAND AND HABITAT STEWARDSHIP

TVA manages its public lands and natural resources to protect and improve a valued diversity of habitats, including native plant communities. TVA’s management of these lands supports hunting, fishing, camping, hiking, biking, photography, wildlife viewing, and more.



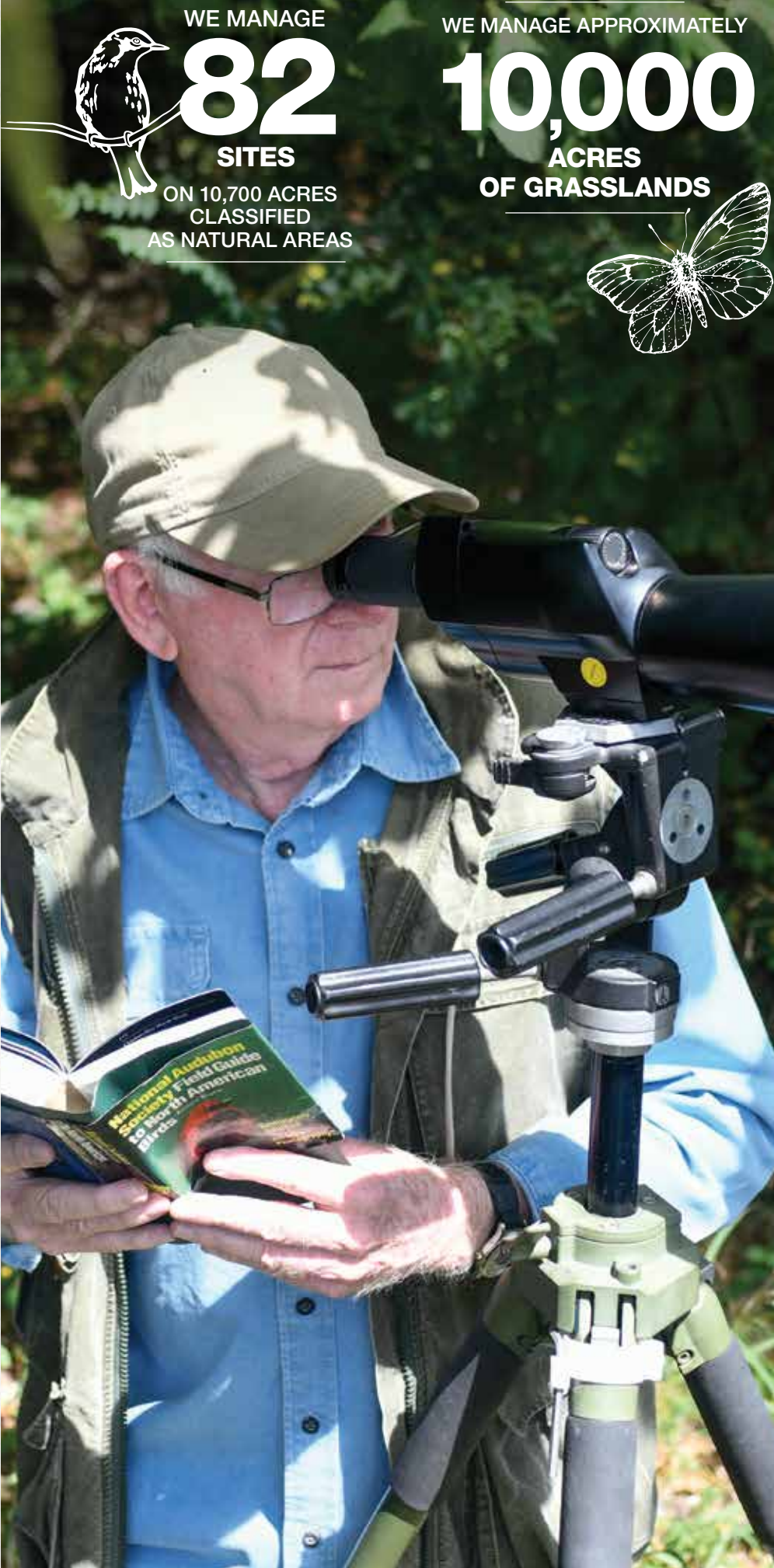
TVA works closely with local, state, and federal agencies, nongovernmental organizations, industries, communities, and stakeholders to develop and support conservation planning strategies.

This year we worked with our partners to:

- Study native habitat management techniques.
- Understand the interaction between osprey and man-made structures such as our transmission towers.
- Restore the shortleaf pine through prescribed burns, invasive removal, and creation of a pine savanna habitat.
- Conduct ongoing bird surveys.
- Collect field data to identify wetlands on both Watts Bar and Norris Reservoirs.
- Restore and enhance native river cane habitat along the Hiwassee River.

Planting trees for the future

With the University of Tennessee at Knoxville, we planted new seedlings in the Norris Dam area to help re-establish seed orchards. The goal is to produce locally adapted tree seedlings for planting all over the eastern part of our service area.



WE MANAGE **82** SITES ON 10,700 ACRES CLASSIFIED AS NATURAL AREAS

WE MANAGE APPROXIMATELY **10,000** ACRES OF GRASSLANDS



Dendrochronology

TVA has partnered with the University of Tennessee on a multiyear project that carries forward groundbreaking research done in the 1930s by Dr. Florence Hawley, a pioneer in the science of dendrochronology. This science uses tree rings to learn about rainfall patterns over decades and centuries. Tree ring data going back hundreds of years is being used to create models of floods and droughts so that TVA can plan for reliable water supplies under a wide variety of conditions far into the future.



Caring about the bats

This year we took on multiple projects to help support the bat population, including:

- Researching and tracking forest-dwelling bats – considered an At Risk Species.
- Installing artificial bat roosts in five locations throughout the Valley with 25 installation points as part of a pilot study on Indiana bats.
- Restoring glades and barrens on Little Cedar Mountain.

140,000+ BATS STUDIED

NUISANCE AND INVASIVE SPECIES MANAGEMENT

Nuisance and invasive species of all kinds represent one of the most significant threats to the Tennessee Valley's natural resources. Some species of plants or animals can be considered acceptable in some circumstances but undesirable in others.



Often, a non-native species will take advantage of its new climate and will flourish too much, crowding out the native species. This can be seen with plants in the water (Eurasian water milfoil, hydrilla, southern naiad), plants on the land (kudzu, privet) and even with certain animals and birds.

Nature needs a careful balance.

TVA works closely with its partner agencies, state and local governments, homeowners associations, and the public to monitor and manage nuisance and invasive species with a number of tried-and-true methods.

Projects this year included:

- Treating invasive plant species along TVA's trails, small wild areas and other access sites that receive a lot of public use including Big Ridge Trail on Chickamauga Reservoir, Highway 33 Bridge on Norris Reservoir, Battle Creek on Gunter'sville Reservoir and Little Cedar Mountain on Nickajack Reservoir.
- Performing insecticide treatments for woolly adelgid on eastern hemlocks at Hemlock Bluff Small Wildlife Area on Norris Reservoir.



Plants Good and Bad

- This year TVA removed kudzu, privet, and other invasive plant species on public lands across Tennessee and Alabama.
- We continued our work to treat invasive aquatic vegetation in selected areas of public access in TVA lakes.
- We stocked and monitored grass carp, which are sterile and can't reproduce, in two reservoirs so they can help eat unwanted aquatic vegetation.



CULTURAL RESOURCE MANAGEMENT

TVA has a rich history in cultural resource management that goes back to its establishment in 1933. As a federal agency, TVA is responsible for identifying, managing, and protecting cultural resources that are found on its property or affected by its actions.



Laws, executive orders, and associated regulations are in place that obligate TVA to protect these important sites and resources. These include the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resource Protection Act (ARPA).

This year TVA participated in several tribal partnership initiatives including:

- NAGPRA inventory for multiple sites excavated at the former Hartsville Nuclear construction site.
- Ongoing projects to curate artifacts at the University of Tennessee and the University of Alabama.
- Evaluation and further work to remove graffiti and manage the Painted Bluff site in Alabama (pictured on next page).
- A NAGPRA Consultation meeting with federally recognized Indian Tribes in May 2019. As part of this, Tribal representatives visited an archaeological site near Fort Loudon Dam.



- TVA is partnering with Federally Recognized Indian Tribes to identify natural resources that are important to the tribes and are also located adjacent to significant cultural resources.
- Trail of Tears Research – Project will focus on documenting the locations and routes for the Trail of Tears on TVA land and waterways and within the power service area. This project will help the agency manage a very sensitive resource that is considered a Traditional Cultural Property by federally recognized tribes.
- Muscle Shoals Animal House – Completed restoration and new roof of insectory building on Muscle Shoals Reservation (pictured at right).
- Stabilized archaeological sites at Watts Bar, Chickamauga, and Wheeler.



WATER RESOURCES STEWARDSHIP

The Tennessee River watershed encompasses parts of seven states in the Southeast and comprises approximately **41,000 square miles**. The watershed is one of the most biologically diverse watersheds in North America.



We all know it: Clean water is vitally important – for people, for plants, and for animals. Year after year, we monitor conditions in Valley streams and waterways with a broad range of clean water initiatives to support aquatic health.

TVA partnered with local, state, and federal agencies and nongovernment organizations this year to improve water quality and protect aquatic habitat by implementing a variety of projects including stream bank stabilization, buffer establishment, in-stream habitat improvements, mussel propagation, and reintroduction and outreach activities.

Our areas of focus this year included:

- Working with the U.S. Fish and Wildlife Service to monitor the snail darter, expected to be removed from the threatened species list.
- Expanding the Shade Your Streams program from North Carolina to the Tennessee River in Georgia and Tennessee.
- Establishing over 150 acres of riparian buffers in the Elk River.
- Working with the Little Tennessee River Native Fish Conservation Partnership on mussel and fish population and reintroduction.



We assessed over
80 stream sites

throughout the Tennessee Valley to examine the quantity and diversity of fish and macroinvertebrates.

TENNESSEE WATERSHED SUPPORTS

240
NATIVE FISH SPECIES



TENNESSEE WATERSHED SUPPORTS

80
FRESHWATER
MUSSEL SPECIES



Many Helping Hands for the Fish

- We worked with partners to help increase the number of lake sturgeon. These spiny, odd-looking prehistoric fish are making a comeback, thanks to these programs.
- We helped propagate and reintroduce sicklefin darters into the Little River in Tennessee.



TVA CONDUCTS

**FISH
SURVEYS**

MONITORING THE AQUATIC HEALTH
OF THE RESERVOIRS



TVA STABILIZED MORE THAN

3,000 FEET

OF SHORELINE ALONG EIGHT
RESERVOIRS IN 10 COUNTIES

RECREATION

As part of its mission of service, TVA manages its public lands and waters to support recreation so that the Tennessee Valley remains one of the best places to live, work, and play. From a primitive hiking trail to a fully developed commercial campground, TVA strives to balance the resources under its care while providing recreational opportunities for everyone.



Throughout the Valley on our dam reservations and other public lands, TVA provides public recreation facilities such as campgrounds, launching ramps, hiking and biking trails, wildlife viewing areas, swim beaches, and picnic areas. TVA's public lands also provide opportunities for hunting and access to some of the best fishing around.

We worked hard this year sprucing up dam reservations in 17 counties across the Valley.

- This included building or refurbishing Americans With Disabilities Act (ADA) compliant fishing piers, picnic areas, and playgrounds, new courtesy docks, upgraded boat ramps, enhanced campground amenities, and new interpretive signs.
- We also expanded recreational opportunities throughout 30 counties on TVA public land and public land owned by other agencies and communities. Examples include improvements and additions to trails, wildlife observation areas, stream access sites, informal campgrounds, courtesy piers, and boat ramps.

i Learn more!
tva.gov/recreation



Campgrounds

Upgrades and repairs to TVA dam reservation campgrounds were completed in Limestone, Green, Hardin, Henderson, Fannin, Cherokee, Polk, Roane, and Hawkins counties. These included:

Miller Island

A brand new public restroom was installed at this heavily used fishing and boating spot on the Clinch River tailwater below Norris Dam. Good-bye, porta-potty!



Blue Ridge

We installed additional picnic tables and ADA-compliant parking spaces for easier access. A new kiosk with educational signage was installed.

Melton Hill

All three pavilions received new metal roofs, and we broke out the heavy equipment to bush-hog and regravell Jim Jones Road. To top it off, we installed three new campsites with fire rings and lantern hangers. Come visit!

Gray's Landing

This spot in Stewart County is ready for increased public use, with new picnic tables and trash cans.

Hugh B. Day Access Point on Cherokee Reservoir

This area is heavily used for bank fishing and is known in the region for quality fishing during the spring spawning season. We restored river-bottom vegetation along the bank to improve near-shore water quality and habitat.

After the Flood

We worked hard all year to repair two popular spots that suffered heavy damage from floodwaters (and in one case, a tornado too) in spring 2019.

- Pickwick Dam Reservation at Savannah, Tennessee



- Rockpile Dam Muscle Shoals Reservation at Sheffield, Alabama



NATURAL RESOURCES
IMPLEMENTED MORE THAN

50
PROJECTS

TO IMPROVE
RECREATIONAL FACILITIES
ON DAM RESERVATIONS

A 2016 study conducted by the University of Tennessee estimated an

\$11.9 billion
economic benefit

from recreational expenditures along the Tennessee Valley's reservoir system. Since TVA manages roughly 11,000 miles of shoreline, that's a \$1-million-per-mile benefit to the people of the Valley.



Trails

TVA public lands provide over 170 miles of trails open to the public. TVA continued to expand and upgrade its trails across the region as well as perform vegetation management, stabilization and trail grading. This year we focused on trails in six counties, along six reservoirs, including:

- Joe Wheeler State Park on Wheeler Reservoir
- Reservation Trail on South Holston Reservoir
- Muscle Shoals Energy Trail on Wilson Reservoir
- Cherokee Forest Road on Cherokee Reservoir



TVA PUBLIC LANDS PROVIDE
THE SETTING FOR

170+
MILES OF TRAILS

OPEN TO THE PUBLIC YEAR ROUND

Water Trails

Studies show paddleboarding is one of the fastest growing recreational activities! We did a lot to support it this year, including the installation of **new stream access sites** and enhancing existing sites. We also worked with partners across Tennessee to enhance paddlers' experience on water trails by installing **interpretive signs**, printing and distributing **water trail maps**, and putting more maps online.



A few examples:

- Bear Creek Scenic Floatway
- Duck River Stream Access Site Expansion
- Shiloh Bridge – Elk River

Water Trail Maps

We developed detailed maps for paddlers who want to explore water trails in the Tennessee River Gorge, on the South Holston, and the Ocoees. Pick them up at an outdoor retailer near you, or download and print from tva.gov/recreation.



Fishing and Boating

TVA provides fishing and boating opportunities including ADA-compliant fishing piers, courtesy docks, and boat ramps. This year we worked with partners to improve stream access points, parks, courtesy piers, and launching ramps on nine reservoirs in 10 counties across the Valley.

A few examples:

- Goose Pond Colony on Gunter'sville Reservoir
- Popular tailwater area near Wheeler Dam
- Shady Grove boat ramp on Douglas Reservoir
- Douglas Dam Reservation courtesy pier replacement



South Holston Tailwater

A new ADA-compliant ramp, sidewalk, boardwalk, and pier were completed at the Morrell Depot parking area, a popular fishing spot. We connected it to the existing parking lot, which also got an upgrade.



ECOTOURISM


TVA partnered with state agencies and municipalities across the Valley to expand recreational opportunities on public lands and increase tourism.



The Tennessee River Valley Geo-tourism MapGuide grew tremendously this year thanks to the numerous partners supporting this effort.

This interactive web-based tool houses information on historical sites, recreation, festivals, and tourism-based businesses. The MapGuide showcases the beauty of the Tennessee River Valley.

We worked with partners in the seven-state region to enhance and maintain National Geographic's Geo-tourism MapGuide, showcasing the beauty and wonder of our natural resources and heritage, and recreational opportunities across the Tennessee River Valley. The MapGuide tool is a great way to increase visibility and tourism in the Valley.

 **Check it out!**
exploretrv.com



Tennessee RiverLine

TVA is a proud member of the Tennessee RiverLine partnership which aims to create a continuous, multimodal (paddle, hike, bike) system of experiences along the 652-mile Tennessee River that connects communities and enhances tourism from Knoxville, Tennessee, to Paducah, Kentucky.



Fishing Tournaments

The Bass Angler Sportsman Society (B.A.S.S.), one of the most recognized bass tournament organizations, identifies six TVA reservoirs as among the top 25 reservoirs for bass fishing in the southeastern United States: South Holston, Watauga, Chickamauga, Gunter'sville, Pickwick, and Kentucky.

TVA reservoirs are nationally known for their fishing, including bass, crappie, walleye, trout, and catfish. In fact, bass fishing is now a competitive sport that brings anglers from all over the United States to fish the Tennessee River Valley reservoirs.

PUBLIC OUTREACH AND INFORMATION

TVA provides environmental education, volunteer opportunities, and community support to help engage communities in outdoor activities and caring for the environment. Through River Neighbors and other e-newsletters, social media, web-based interactive tools, publications, and TVA's Public Land Information Center, TVA connects with you!



We provide environmental education and recruit volunteers for work on local wildlife and aquatic habitats, river management, public lands, recreational areas, and TVA events.

Our many programs this year included:

- Kids 4 Clean Water
- TenneSEA School Program
- Erase the Waste litter prevention and recycling campaign
- Trash to Treasures
- Get Outdoors Expo
- Friends of Booker T. Washington State Park
- Plant Camp for Valley teachers
- Our mobile aquarium housing local native fish species

TVA Science Kids

Through the Children's World Water Monitoring Program, TVA engages elementary school children in science by providing water monitoring kits to schools and delivering in-class water educational programs. We also encourage teachers to enhance their experience by using the program's online resources to log in their classroom data and see how other children are using the program around the world.



10,000+
CHILDREN

RECEIVED ENVIRONMENTAL EDUCATION
ACROSS 237 COUNTIES



Our "Big Three"

TVA Natural Resources staff partnered with agencies, communities, and our fantastic volunteers to fan out across the Valley, hosting and supporting clean-up, fix-up, and educational events in 28 counties for Earth Day, Trails Day, and National Public Lands Day!

Sign of the Times

This year we worked hard to enhance visitors' experiences on our public lands by replacing signs and displays in eight counties across the Valley.



600+
ENVIRONMENTAL AND
VOLUNTEER ACTIVITIES
IN 90 COUNTIES

We've finished looking back at 2019...

Now let's look ahead at plans for 2020!

FLIP OVER THIS REPORT TO VIEW THE 2020 PLAN



Visit us at [TVA.com](https://www.tva.com)