

2021 Year in Review

TVA
Stewardship
Successes

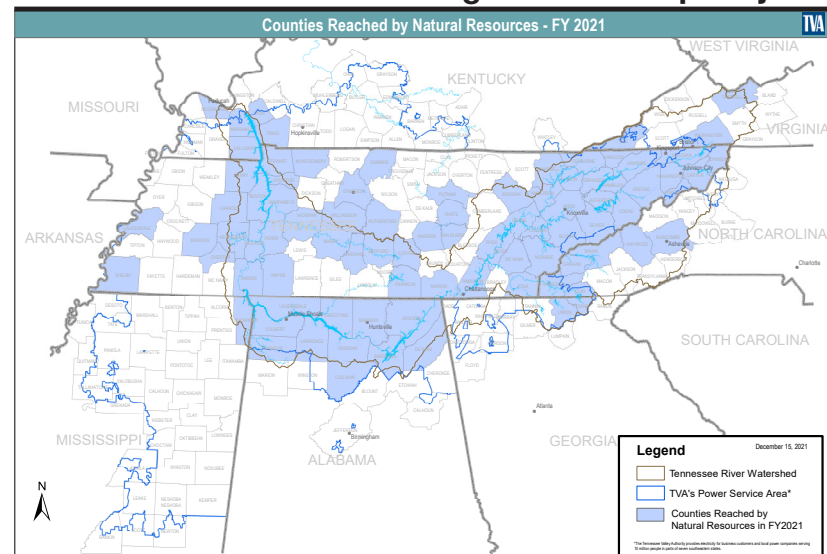


TENNESSEE
VALLEY
AUTHORITY

Welcome to Our Progress Report

Some years tend to stick out in the memory for a long time, and 2021 was another one of those years. The global COVID-19 pandemic stretched into a second year, bringing changes to our daily routines and also to how Natural Resources completed our work. Although our stewardship mission of managing the Tennessee River system and its public lands does not waver, Natural Resources, along with our neighbors and the country, collectively rose to the challenge of meeting the needs in different ways. In-person events became virtual; educational outreach went online. People spending more time at home decided to build that dock or improve their shoreline, resulting in more Section 26a shoreline permit applications this year than we've received in 14 years.

Counties We've Served Through Stewardship Projects



As record applications were being logged into the system, all indications pointed to a record number of visitors to TVA public lands and dam reservations. The importance of public lands was clear as people were eager to get outside and spend time in nature. Some camped at dispersed recreational sites, while others went for picnics at dam reservations. Mother Nature again brought heavy rainfall, and we continued our work to manage and care for the land and its wildlife habitat.



Just as this book was nearly ready to print, TVA Natural Resources lost a valued member of its team. Hugh Standridge was the senior manager of Natural Resources Management, with 35 years of TVA service. Hugh worked his way up through the ranks over those 35 years and was intimately involved in all aspects of our business. But that wasn't where his true value was – Hugh was a leader, a mentor and a friend. He was the epitome of continuous improvement always looking for ways to do things faster and better. He had a knack for metrics, interests, and strategy. He was direct and to the point, but always from a position of having your best interest at heart. He was an educator, always willing to step in and offer advice, often in the form of probing questions that challenged the recipient of his “advice” to figure out his/her own answers.

His passing has left a large hole that those of us privileged to learn from him are now stepping in (earlier than we expected) to fill. His imprint on TVA and Natural Resources is long-lasting, and the public's benefit from his leadership is reflected in the projects outlined in this book.

I know I speak for the entire staff when I say how thankful we are for our wonderful partners who help us in our work. When communities, agencies and volunteers come together, we can do so much more than any of us can do alone. As we look forward to 2022 and many new and ongoing projects, we are proud to look back for a moment and share this progress report with you.

Rebecca Hayden
Director, TVA Natural Resources

Our 2022 Year-End is dedicated to the memory of Hugh Standridge, TVA Natural Resources Management senior manager.



293,000
Acres of
Public Land



650,000
Acres of
Reservoir
Surface Water



11,000
Miles of
Public
Shoreline



\$12 Billion
Economic
Benefit From
Recreational
Opportunities



5,000
acres of forest
land managed



2,300+
shoreline construction
permits issued



We carried out
240+
stewardship
projects to
enhance natural
resources
and promote
ecotourism



TVA's integrated
reservoir system
consists of
49
dams



TVA owns
80
recreational
facilities



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 Tennessee Valley. As a federal agency, we hold these lands in trust for you, the public. We use our reservoir lands planning process to create plans for each reservoir area, allocating parcels into one of seven zones.

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 updates to the Tellico Reservoir Land Plan.

Section 26a Permitting/Land Use

TVA's goal is to protect land and shoreline resources while supporting access to public lands and waters according to the purposes laid out in Section 26a of the TVA Act of 1933. The lands and shorelines along TVA reservoirs are special places, and Section 26a and land-use processes help ensure they stay that way.

2,315
Section 26a
permits
issued

2,200
environmental
reviews
conducted

126
land-use
agreements
issued



Public Land Protection

TVA protects the public land under its care by maintaining clear boundaries, coordinating cleanups, assessing parcels, and managing access sites to prevent damage to cultural and natural resources.

Pandemic restrictions did not keep us from taking care of these important outdoor duties!

This year, TVA:

- Performed 1,113 maintenance tasks on 34,917 acres, and conducted asset inventory on 215 parcels of land.
- Made improvements to access-control measures to prevent illegal dumping, removed trash, repaired roads, replaced signage, resurfaced parking areas and repaired trail features.
- Sponsored partner organizations in 81 cleanups in 36 counties.

Keep the Tennessee River Beautiful (KTNRB):

- 45 cleanups hosted; 711 volunteers participating; 152,522 pounds of trash collected

Reservoir and Community Cleanups:

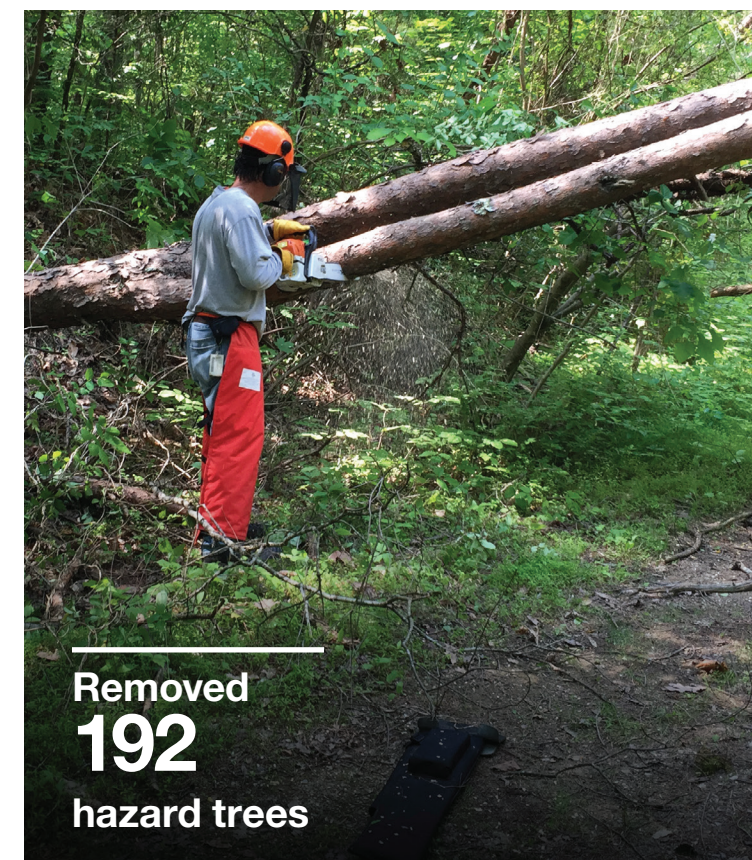
- Funding distributed to 18 organizations to host cleanups across the Valley



Removed
141
tons of litter in 105
cleanups involving
2,500+ volunteers



Marked more than
153
miles of boundary to help
the public easily find public
land available for recreation



Removed
192
hazard trees



Stabilized
3,004
feet of shoreline



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 valuable diversity of habitats, especially native plant communities. TVA's management of these lands supports hunting, fishing, camping, hiking, biking, photography, wildlife watching and much more.

We increased our efforts to protect pollinators this year, working to maintain, restore and protect natural vegetation that supports native bees, butterflies and other insects that are essential to our ecosystem. This included preparation and re-establishment of native plant communities on public lands, as well as lands under our transmission lines.

TVA managed and improved its public lands by:

- Conducting land improvement work on 2,700 acres of TVA public lands
- Maintaining native communities on 1,500 acres of grassland
- Implementing habitat enhancement projects, including the support of threatened and endangered species, in 26 priority locations
- Enhancing forest management on over 1,400 acres

TVA also partnered to support research efforts across the Valley:

TVA partnered with Virginia Tech and Virginia Highlands Community College on the installation of a second salamander eco-passage tunnel near Osceola Island at the South Holston Dam Reservation. Ongoing research has shown that the first tunnel, installed in 2018, is being utilized by amphibians and reptiles for safe passage during migration. The second tunnel will provide even more coverage and reduce mortality in the threatened species that use the passage.



Counting bats

Conducted gray bat emergence counts at five caves and counted 96,143 bats at the largest cave. Collected use data at previously installed artificial bat roosts and discovered colonies at two sites. Conducted assessments of 24 caves on TVA land to determine protection needs. Partnered with state and federal agencies to erect fencing around Key Cave in Lauderdale County, Alabama, which houses up to 60,000 bats. Controlling access to these caves is essential in preventing the spread of white-nose syndrome, a fungal disease that is decimating bat populations throughout the country.



Planting trees

In partnership with the University of Tennessee's tree improvement program, continued to work in the re-establishment of Norris-area seed orchards to produce locally adapted tree seedlings for planting and reforestation efforts in the East Region.



Reforestation efforts that go back to the 1930s have gotten a big boost and new technology from a partnership with the University of Tennessee. Careful grafting of selected trees, replanting trees, and an extensive seed orchard are carrying this program to future generations.

5,300
trees planted

2,400+
acres of
grassland
managed

Nuisance and Invasive Species Management

Controlling non-native, invasive species is important for the conservation and protection of native species communities. Without control efforts, non-native species often can take advantage of a new climate and new space, overflourishing and crowding out native species.

On Land

- This year, TVA controlled more than 250 acres of non-native, invasive plants (such as kudzu, common privet and fescue) in preparation for the re-establishment of native communities.
- We continued our work to study and relocate ospreys from our transmission equipment.

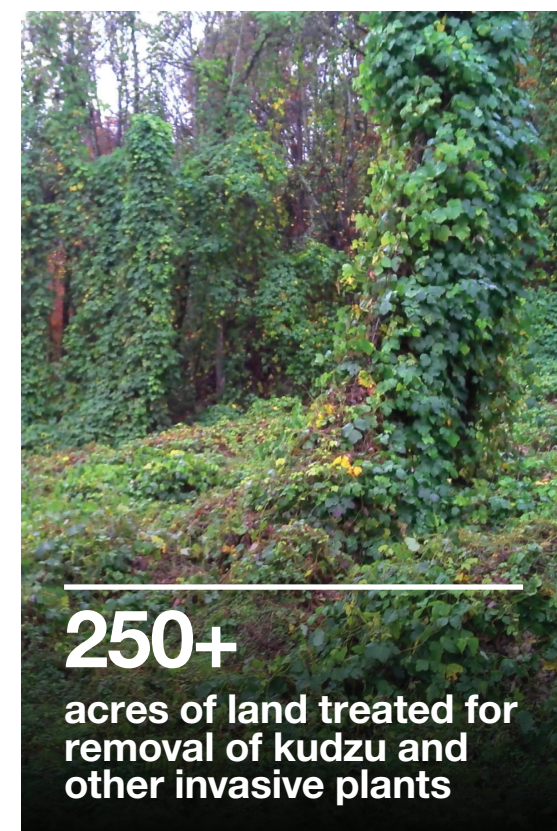
On Water

- TVA managed invasive aquatic plants on 2,105 acres of water, focusing especially on Gunterville, Nickajack, Chickamauga and Pickwick reservoirs.
- Natural Resources provided two aquatic harvesters, technical expertise and 500+ staff hours to help Browns Ferry Nuclear Plant in managing and removing invasive eelgrass from the plant's cooling water channels.



Relocating ospreys

TVA and its partners banded six juvenile ospreys and monitored the relocated nest sites to reduce impacts to the birds and power operations near Gunterville, Melton Hill and Watts Bar reservoirs.



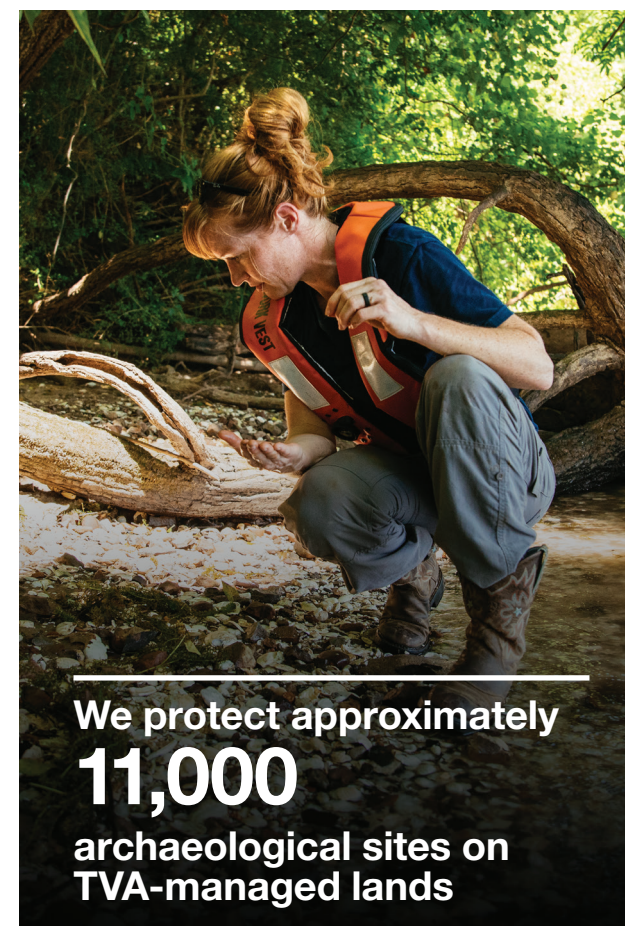
250+
acres of land treated for
removal of kudzu and
other invasive plants

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 may be affected by its action.

This year, TVA:

- Conducted surveys on 365 acres of TVA land containing possible historic resources under our Section 110 Monitoring program.
- Completed an inventory of items identified as funerary objects associated with present-day federally recognized Native American tribes. This is part of TVA's responsibility to comply with federal protection acts as well as our ongoing commitment to building relationships with tribes.
- Partnered with Native American tribes and academic archaeologists to conduct research on TVA public lands.
- Received support from 45 trained volunteers to help monitor archaeological sites around the Valley through our successful Thousand Eyes volunteer program.
- Stabilized approximately 7,400 feet of shoreline, which included six sites and three partial sites on Kentucky, Pickwick, Wheeler and Chickamauga reservoirs.
- Developed an archival research plan and compiled and synthesized multiple research collections.
- Corresponded with Alabama, Georgia, Tennessee and Kentucky Trail of Tears Association researchers to gather additional data.
- Developed a data management plan and file geodatabase directory.
- Continued to work with University of Alabama for the eighth year on a curation rehabilitation project to improve TVA collections obtained from the WPA survey.
- Continued to support McClung Museum and the University of Tennessee, Knoxville, in preparation of NAGPRA (Native American Graves Protection and Repatriation Act) cultural items for repatriation and reburial.
- Continued to assist multiple Native American tribes in the reburial of NAGPRA cultural items.



We protect approximately
11,000
archaeological sites on
TVA-managed lands



7,400
feet of land on six sites
stabilized to protect
cultural sites

Water Resources Stewardship

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

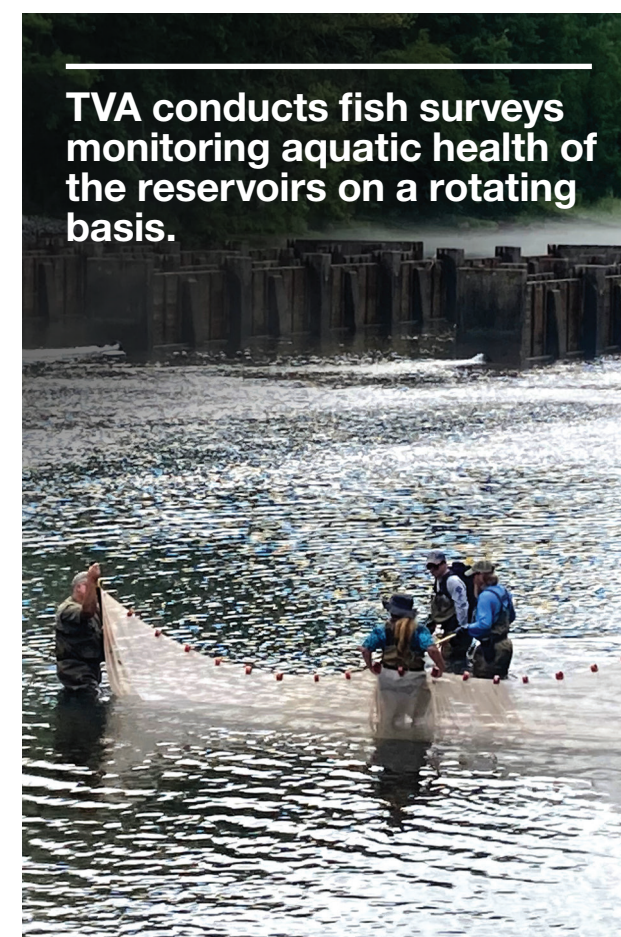
Clean water is vitally important—for people, for plants and for animals. Year after year, we monitor conditions in Valley streams and waterways with a broad range of clean water initiatives to support aquatic health.

This year, TVA:

- Established 7,300 linear feet of riparian buffer.
- As part of the Shade Your Stream program, worked with partners during five different events to plant trees along 2,000 linear feet of streams in the Little Tennessee River Basin.
- Partnered with nonprofit and government groups in the Paint Rock River Watershed in Alabama to establish 2,000 feet of riparian buffer and stabilize streambank.
- Partnered with multiple agencies in Stream Sentinel Monitoring program to monitor various sites for long-term climate change and trend analysis.
- TVA partners with the Little Tennessee Native Fish Conservation, which helps conserve and restore native fish, mussels and aquatic habitat in the Little Tennessee River. This year, TVA provided funding to numerous partners in this collaborative group to implement a variety of conservation projects, including the establishment of riparian buffers, creation of an outdoor living library for STEM education, mussel releases and aquatic life assessments. The Little Tennessee River is recognized as a national Native Fish Conservation Area, and partnering to protect and enhance aquatic and terrestrial habitats in this watershed is an important part of TVA's management of the Tennessee River system.



42
marinas certified as
Tennessee Valley
Clean Marinas, helping
to protect our water
resources (two new; 40
recertifications)



**TVA conducts fish surveys
monitoring aquatic health of
the reservoirs on a rotating
basis.**



**Tennessee River
Watershed
supports
240
native fish species
and 80 freshwater
mussel species**

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 primitive hiking trails to fully developed commercial campgrounds, TVA works to balance the resources under its care to provide recreational opportunities for everyone.

We invested a lot of time and effort to enhance our TVA dam reservations and day-use areas to make visitors' experiences better.

- Repaired walkways, ramps, docks, piers, pavilions, bathrooms, parking areas, roads and riprap.
- Replaced safety barriers, benches, signs, handrails.
- Installed fences, parking, new camping pads, fire pits, lighting, and removed hazard trees.

Camping

- TVA's six dam reservation campgrounds are managed by Recreation Resource Management. TVA performed improvements at Pickwick, Melton Hill and Douglas campgrounds.
- TVA also maintained approximately 100 miles of trail and constructed 4.3 miles of new trail along the South Holston Reservoir.

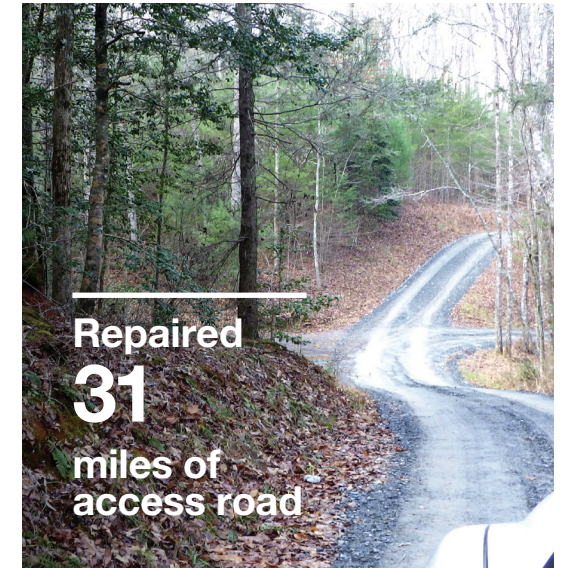


Fishing and Water Access

- Repaired four fishing piers and docks along Watauga, Tims Ford, Sycamore and Redbud reservoirs.
- Developed three new boat launching ramps along Boone and Guntersville reservoirs.
- Improved a highly popular ADA-accessible area by repairing a fishing berm and parking lot on Tellico Reservoir in Loudon County, Tennessee.
- Repaired, enhanced and performed maintenance on 14 lake or stream access sites in 10 counties on Boone, Guntersville, Bear Creek, Sycamore, Redbud and Pickwick reservoirs.
- Built two new canoe access sites, one on Bear Creek Reservoir and one along Pickwick Reservoir.
- Partnered with Legacy Parks and Knox County, Tennessee, to create a canoe/kayak access site on the Holston River. The project is along a stretch of the river where there is no public access for 20 miles.
- Developed detailed maps for paddlers who want to explore water trails in the Valley. The final in the series, Kentucky/West, is distributed and posted on TVA.com.
- Rebuilt stream access ramp at Mulberry Creek.
- Built new fishing pier at Wheeler Dam tailwater day-use area (DUA).
- Expanded parking area at Tellico Dam Reservation day-use area (DUA).
- Expanded Claysville launching ramp on Guntersville Reservoir; constructed new courtesy dock; completed ADA access to ramp; added 70 new parking spaces.
- Installed new restroom facilities at Mickens Branch launching ramp on Hiwassee Reservoir.
- Resurfaced parking area, added sand to beach area, installed 12 grills at Melton Hill Dam campground.
- Restored 10 gravel campsites at Melton Hill Dam campground.
- Added sand to beach area at Melton Hill Dam campground.



Updated
or installed
18
ADA-accessible
facilities



Repaired
31
miles of
access road



34
campground owners /
operators trained and
participating in Camp-
Right best practices



180.2
miles of trails on
TVA-managed land

Ecotourism

TVA partners with state agencies and municipalities to expand recreational opportunities and support the booming industry of ecotourism.

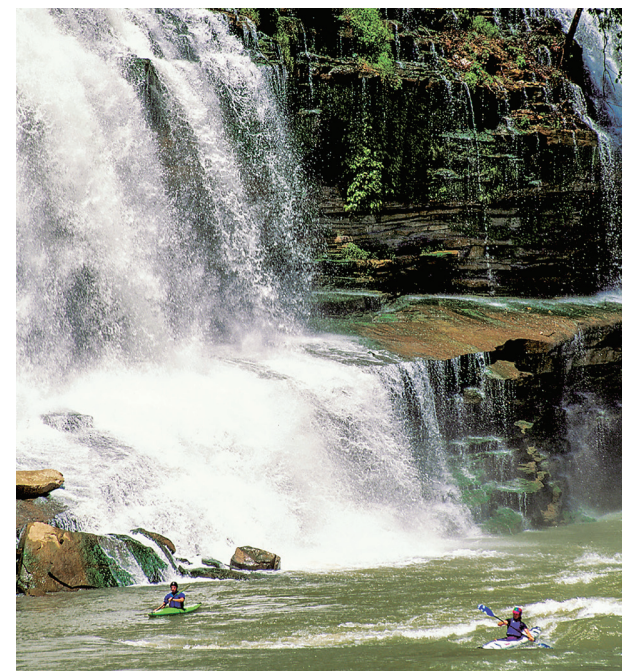
- TVA supports the National Geographic Tennessee River Valley (TRV) MapGuide initiative (exploretrv.org). The MapGuide is an interactive mapping platform used to promote Valley tourism. As COVID-19 continues to linger, this resource has become even more important to our tourism partners that use exploretrv.com and social media to share outdoor recreation and tourism opportunities. We will continue to work with these partners in their efforts to showcase the beauty and wonder of our natural resources and heritage.
- TVA partnered with the University of Tennessee Institute of Agriculture and the University of Georgia to conduct a study of economic impacts of TVA's stream access points throughout the Tennessee River watershed for paddlers. The study indicates visitors to these sites contribute \$45.43 million in direct and secondary effects, support more than 600 full- and part-time jobs, and contribute \$13 million in labor and personal income.

\$45.43 Million
Economic contribution of
water-based recreation at
63 TVA stream access sites

\$33.95M in direct spending | \$11.47M in secondary spending

565,663
Recreational visitors

Water-based recreation at
63 TVA stream access sites
supports up to **624 jobs**
in these areas. providing
\$12.96M in labor income



Tennessee RiverLine

TVA is a founding member of the Tennessee RiverLine partnership, whose goal is to develop a 652-mile water trail along the Tennessee River, connecting Knoxville, Tennessee, and Paducah, Kentucky. In FY21, TVA became a principal partner, making a multi-year commitment to participate in the development of the program.

The focus this year has been on development of Tennessee RiverLine's RiverTown program, which encourages local communities to partner on the mission, bringing economic development and enhanced recreational opportunities to communities within the TVA watershed.



Public Outreach and Information

TVA provides environmental education, volunteer opportunities and support to 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, we connect with you.

As TVA continued to support CDC guidelines in efforts to reduce the spread of COVID-19, our classroom and group education events were held in limited numbers and under strict guidelines to help ensure personal safety. In-classroom educational events were discarded in favor of virtual instruction and outdoor, socially distanced programs with limited numbers of participants. By modifying some of our past practices, we were still able to accomplish numerous tasks in support of TVA's communities.

TVA sponsored 14 organizations that implemented environmental education events. We continued to add participants to our iScience program partnership with Discover Life in America, and now have 18 middle schools

working to collect species data around their school grounds, helping us learn more about our unique public lands. Our team created eight virtual hike videos that are accessible to the public on our YouTube "Hiking Around the Valley" playlist, and we're working on more so we can spread the word about the recreational opportunities that surround us. Utilizing recommended safety measures, we were able to host several World Water Monitoring programs and BioBlitz events.

By employing best practices that first and foremost focused on the health of our staff and stakeholders, we were able to continue the missions of environmental stewardship and education that are at the heart of our Public Outreach group.

- Outreach Events: 264 in 66 counties
- World Water Monitoring (WWM) Education: 44 presentations and teacher trainings in 27 schools or parks. Students: 350+; counties: 26
- This year saw several educators taking advantage of the virtual WWM sessions that were created to help offset the loss of in-person classroom education during the pandemic.
- We added 11 new Adopt a Trail volunteers to bring our team to a total of 64 people who give their time to help monitor and maintain TVA public lands. In FY21, our volunteers put in 126 hours of work in 35 different locations across the Valley.



