



TENNESSEE VALLEY AUTHORITY  
**NATURAL RESOURCE PLAN**  
2020

Alabama, Georgia, Kentucky, Mississippi,  
North Carolina, Tennessee and Virginia



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The Natural Resource Plan (NRP) offers a broad range of programs to be used during the implementation of the Tennessee Valley Authority's (TVA) natural resource road map over the next 20 years. This reader's guide offers an overview of the NRP's structure, helping to provide clear direction to different areas of information within the document.

The NRP presented in this document represents the preferred alternative (Alternative B) that has been analyzed by TVA in the associated final supplemental environmental impact statement (SEIS).

## Executive Summary

The executive summary is an abridged version of the NRP, highlighting key objectives of the NRP, a history of environmental stewardship spending, a descriptive list of programs and a discussion on benefits and risks.

TVA's NRP programs support TVA's efforts to achieve a balance between the competing demands of public and private land use and natural resource protection.

## Chapter 1 – Introduction

The introduction gives a summary of TVA's mission, resource stewardship history, and Natural Resources Stewardship Strategy. It also provides an overview of the NRP, including the NRP objectives and benefits, its scope and how it was developed. Collaboration efforts, implementation funds and potential risks of not implementing the NRP are also included.

## Chapters 2-11 – Focus Area Chapters

Each proposed focus area has a dedicated chapter that outlines how the focus area objectives and programs align and support TVA's mission and the Natural Resources Stewardship Strategy. These chapters include a brief history, focus area objectives, benefits, program descriptions

and project examples. This provides a high-level picture of possible resource management efforts. Each focus area chapter provides a list of programs that TVA would implement over the 20-year span of the NRP. Collectively, all of the NRP programs identified in this document represent the preferred alternative (Alternative B) in the accompanying final SEIS.

Each focus area program presented in the NRP is explained using the following structure:

### Program Name and Description

- Provides a brief description of the program, defining it in a broad overview along with examples of activities.

### Expected Benefits

- Outlines the focus area and specific benefits of program implementation. These supplement the overall NRP benefits discussed in Chapter 1 and offer a brief discussion of why TVA is implementing each program.

### Geographic Scope

- Refers to the applicable geographic area of this program. Geographic boundaries are defined by TVA reservoir lands, the Tennessee River watershed and TVA's power service area. These areas may be referred to collectively as the Tennessee Valley or Valley.

# Executive Summary

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In the 1930s, President Franklin D. Roosevelt needed innovative solutions to lift the nation out of the depths of the Great Depression. TVA is considered one of his most innovative actions. Roosevelt envisioned TVA as an agency unlike any other. He asked Congress to create “a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise.” On May 18, 1933, Congress passed the Tennessee Valley Authority Act (TVA Act).



Congress created TVA to foster the economic and social well-being of the people of the Tennessee Valley, including the wise use and conservation of the region’s natural resources. Below is an excerpt from a letter written by Arthur E. Morgan, the first chairman of the TVA Board, to the agency on March 2, 1956, highlighting the importance of TVA’s involvement in preserving and protecting the Tennessee Valley’s lands:

*“As the population of our country increases and as leisure time increases, the need for recreation space and for bits of unspoiled nature to which people can go for refreshment of spirit, will continue to increase. Past generations have been so close to pioneering days that there has been lacking a sense of urgency in the preservation of fine bits of nature. It may be a generation or two more before the full importance of that need is recognized. I have felt that in the meantime the best we can do is to hold the fort, to keep our fine, unspoiled recreation areas in that condition until such an appreciation of them grows which will insure the necessary protection. For your help in this process of standing guard I am deeply grateful.”*

## The Natural Resource Plan

The NRP is an integral step in achieving the mission set forth in the TVA Act as well as fulfilling the responsibilities associated with being a good steward of the lands and resources that are entrusted to TVA. The NRP is a strategic level document that, over the next 20 years, will guide the direction of TVA’s resource stewardship. The NRP creates a sound framework for balancing land use, human activity and conservation in order to achieve the greatest public benefit.

TVA updated the 2011 NRP to better align TVA’s resource stewardship work with internal business planning and stewardship project implementation. The 2020 NRP defines objectives and programs for each focus area and a flexible approach for long-term planning, which helps TVA prioritize funding plans and further support TVA’s mission. As such, the 2020 NRP is designed to:

- Integrate the objectives of ten focus areas (Reservoir Lands Planning, Section 26a Permitting and Land Use Agreements, Public Land Protection, Land and Habitat Stewardship, Nuisance and Invasive Species Management, Cultural Resource Management, Water Resources Stewardship, Recreation, Ecotourism and Public Outreach and Information)
- Provide optimum public use benefit
- Balance competing and sometimes conflicting resource uses
- Coordinate and collaborate with partners and stakeholders to meet near- and long-term resource needs

These competing interests, coupled with today’s environmental awareness and focus on preserving nonrenewable resources, underscore the necessity for a consistent approach to the management of federal lands and waters in the care of TVA.

## History of Environmental Stewardship Spending

The TVA Act established TVA’s responsibility for stewardship of the waters and public lands of the Tennessee Valley. From its inception and through most of the 1950s, TVA received federal appropriations to fund its operations. In 1959, Congress passed legislation that made the TVA power system self-financing. However, TVA continued to receive

appropriations for its stewardship programs to supplement funding from power revenues and non-power revenue sources, such as agricultural leases, timber sales and recreation management and user fees.

The Energy and Water Development Act of 1998 ended federal appropriations to TVA and required TVA to fund non-power programs that constitute “essential stewardship activities” with power and non-power revenues. The term “essential stewardship activities” was interpreted to include those types of stewardship activities for which TVA was receiving appropriations at the time the legislation was enacted. Such activities include dam safety and maintenance, navigation, flood control and natural resource-related programs that are now included in the NRP. At the time Congress passed the TVA Act, TVA was spending approximately \$79 million per year on these activities.

## Funding

After 1999, TVA continued to support these stewardship activities at comparable levels, funding activities almost entirely from the sale of electricity. In 2010, TVA spent approximately \$65 million on essential stewardship programs and associated capital improvement projects. In 2013, during a review of essential stewardship programs and budget, the TVA Board recognized repeated budget reductions for TVA’s resource stewardship work and a decline in TVA’s presence in these areas across the Valley. This review led to the allocation of an additional \$10 million for resource stewardship work to support NRP-related programs beginning in fiscal year 2014. This increased level of funding has remained consistent through 2020.

## Plan Objectives and Performance

The 2020 NRP represents TVA’s high-level strategy for guiding stewardship efforts over the next 20 years. The objectives of the NRP focus areas will be supported by detailed action plans to drive specific implementation efforts. TVA will use focus area objectives, action plan details, and business planning tools to ensure the agency meets the strategic objectives of the NRP and aligns with the Natural Resources Stewardship Strategy, developed in 2016 by TVA’s Natural Resources group. The Natural Resources Stewardship Strategy is shown in Figure 1.



## Natural Resources Stewardship Strategy

To fulfill TVA's mission, Natural Resources serves the people of the TVA region by remaining agile, balancing competing demands and being a catalyst for collaboration in order to:

- Create and sustain destinations for recreation and opportunities for learning and research
- Protect and enhance biological, cultural and water resources and TVA's programmatic interests through integrated management of the Tennessee River system and public lands
- Assist water-based community development with technical support, land agreements and permitting using planning, clear regulations, meaningful guidelines and consistent enforcement

Figure 1. Natural Resources Stewardship Strategy

## Benefits

The NRP provides benefits to the public, to the resources that TVA protects and to our stakeholders. TVA's work in resource stewardship is a key piece of its integrated business model and this investment will help TVA sustain natural and cultural resources and recreational sites for the people of the Tennessee Valley in an efficient and effective manner.

Access to and use of outdoor recreational sites and amenities correlates to healthier lifestyles and thus a higher quality of life. In addition to ensuring a high quality of life for residents of the Tennessee Valley, the programs in the NRP create a number of positive economic impacts. The 80 recreational sites and approximately 293,000 acres of surrounding land and reservoirs operated and managed by TVA attract millions of visitors each year to enjoy the region's natural and water resources. These visitors create significant economic stimulus for the surrounding communities. According to a 2016 study conducted by TVA and the University of Tennessee's Institute of Agriculture, the economic impact to the region from water based recreation on TVA's reservoir system amounts to \$11.9 billion per year. Furthermore, the study revealed that there are approximately 130,000 jobs associated with these recreation opportunities.

The NRP helps satisfy TVA's requirement for its essential stewardship responsibilities that come with managing the Tennessee River system. Control of the river allows responsible management of the water for thermal control of key generation assets and for hydroelectric generation. Each of these helps reduce power costs, resulting in low electricity rates for residents and businesses of the Tennessee Valley.

## Risks

If TVA does not effectively and efficiently manage the resources entrusted to the agency, it faces both near- and long-term risks, including not fully supporting TVA's Environmental Policy as outlined in Section 1.2 or resource management accountabilities assigned by the TVA Act. These risks can result in a broad range of impacts; examples include impacts to public health and safety, economic development, quality of life, nonrenewable resources and public perception of TVA.

While each program has its own unique risks, there are overarching concerns and challenges associated with not implementing the NRP (see Table 2). For example, if TVA does not actively preserve or protect the region's resources, such as archaeological artifacts, there is a risk of losing them forever.

## Summary of Focus Areas

Expanded from the 2011 NRP, the 2020 NRP includes ten focus areas that encompass TVA's work in resource stewardship. The focus areas added to the 2020 NRP are identified with the word "new" after the title.

### 1. Reservoir Lands Planning

TVA uses Reservoir Land Management Plans (RLMPs) as tools to manage the approximately 293,000 acres of public land around its reservoirs. Reservoir Lands Planning is the framework for how TVA intends to manage its public lands. Additionally, TVA aligns the use of public lands with its policies and guidelines as well as with its responsibilities under the TVA Act.

As a steward of natural and cultural resources across the Tennessee Valley, TVA has a duty to manage its lands sustainably for present and future generations. Reservoir Lands Planning guides TVA's management decisions concerning natural and cultural resources and property administration.

Public lands adjacent to TVA reservoirs, together with adjoining private lands, are used for public parks, industrial development, commercial recreation, residential development, tourism, forested and wildlife management areas, and for a variety of other needs associated with local communities and government agencies.

RLMPs detail the land management strategies used on a reservoir-by-reservoir basis and guide TVA's decisions related to Section 26a permitting and land use requests. The planning process includes a systematic method of identifying and evaluating the most suitable uses of public lands under TVA stewardship. During the Reservoir Lands Planning process, TVA considers land use and natural and cultural resource needs, TVA's programmatic interests and input provided by the public and state and federal agencies to guide the allocation of TVA land and land rights.

### Objectives:

- Provide a consistent approach to balancing shoreline development, recreation, natural and cultural resource management and other demands by applying a systematic methodology to identify the most suitable land uses
- Ensure input opportunities for the public and local, state and federal entities on TVA land management decisions

### Benefits:

- Provides a consistent approach to balancing shoreline development, recreational use, natural and cultural resource management and other uses by applying a systematic methodology to identify the most suitable land uses
- Identifies land use zone allocations to optimize public benefit, balance competing demands for the use of public lands and support TVA's broad regional resource development mission
- Guides TVA's land management and property administration decisions while enhancing the protection of resources, including threatened and endangered species, cultural resources, wetlands, unique habitats, natural areas, water quality and the visual character of the reservoirs
- Provides a mechanism for public involvement that allows local, state and federal entities as well as individual members of the public to participate during the lands planning process

## 2. Section 26a Permitting and Land Use Agreements (New)

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

TVA is entrusted to manage its land and shoreline resources in order to provide multiple benefits to the people of the Tennessee Valley and to serve as a responsible steward of the Tennessee River system.

TVA manages the use of these lands and shorelines in a manner that is consistent with the purposes of the TVA Act. In an effort to best manage the use of these reservoir lands and waters, TVA developed its Land Policy, Shoreline Management Policy (SMP) and Section 26a Regulations.

### Objectives:

- Manage permission to use the shoreline and public land in a fashion that is consistent with the TVA Act, National Environmental Policy Act (NEPA), SMP and the Land Policy







- Seek to develop clear rules and policies, engage in public education and communication and issue permits and agreements consistent with standing policies
- Support unified development of the Tennessee River system and flood control objectives

#### Benefits:

- Balances competing demands to provide public access to the reservoir while protecting natural and cultural resources and TVA's management of the Tennessee River system
- Provides consistent guidance to support use and development of eligible public lands and shoreline for residential, commercial recreation, public and industrial purposes
- Supports community development and growth by making TVA public lands and shoreline available for infrastructure and public use
- Provides an interface between TVA and landowners around TVA reservoirs

### 3. Public Land Protection (New)

In addition to the approximately 293,000 acres of public land, TVA also manages nearly 470,000 acres of inundated property and administers various land rights on behalf of the United States over another 293,000 acres of privately owned land for the purposes of managing the TVA reservoir system. TVA constantly faces challenges associated with

activities that abuse or attempt to privatize TVA public land or impact important resources. These activities degrade the quality of the land, land rights and the user experience and the cumulative effects threaten TVA's ability to fulfill its management responsibilities.

#### Objectives:

- Protect the public land and land rights in TVA's custody and control to preserve them for future generations while balancing competing demands through proactive and reactive management efforts
- Apply consistent enforcement of TVA's rules, regulations, policies and applicable local, state and federal laws
- Assess and inventory TVA public lands and associated assets to improve the quality of public lands
- Inform and engage the public to provide clear expectations for sustainable use of TVA public land

#### Benefits:

- Enhances awareness of the value of TVA land and water resources for conservation, recreation, economic development and other competing uses
- Protects wildlife habitat and biodiversity in the Tennessee Valley
- Supports unified development and flood control objectives in the Tennessee River system
- Protects public and commercial recreation opportunities

### 4. Land and Habitat Stewardship (formerly Biological Resources)

The Land and Habitat Stewardship Focus Area contains many of the programs and activities classified under the Biological Resources area of the 2011 NRP.

Land and Habitat Stewardship refers to the management of natural resources, such as land, plants and animals with a particular focus on how that management brings value and benefit for both present and future generations. The Tennessee River's 41,000-square-mile watershed along with TVA's 293,000 acres of public land, 11,000 miles of reservoir shoreline and an even larger power service area that spans portions of seven states, provide a canvas for TVA to manage its natural resources and enhance habitat. Changing conditions as a result of damage from natural events (storms, disease and insects) and impacts from public use require flexible resource management. TVA's land and habitat stewardship on public lands provides a valued diversity of habitats, including native plant communities. This provides complementary opportunities, including hunting, fishing, camping, hiking, biking, photography, wildlife viewing and other outdoor activities.

TVA works closely with various local, state and federal agencies, non-governmental organizations, industries and stakeholders to develop and support conservation planning strategies. For example, TVA has partnered to craft federal refuge management plans and comprehensive state-wide conservation plans. TVA's management efforts often align with interagency goals and objectives.

#### Objectives:

- Improve protection and monitoring of sensitive resources on TVA land
- Enhance biological diversity and wildlife habitat
- Improve forest health and associated ecological benefits
- Improve interagency relationships and partnership efforts toward mutual stewardship goals

#### Benefits:

- Increases planning, protection and management of sensitive resources (e.g., threatened and endangered species, wetlands and natural areas)
- Incorporates adaptive management approaches to improve wildlife habitat

- Enhances wildlife habitat and biological diversity through restoration and maintenance of native plant communities using ecologically sound management practices
- Expands partnerships to further resource stewardship efforts in the region
- Increases opportunities for outdoor public use

### 5. Nuisance and Invasive Species Management (New)

Invasive species represent one of the most significant threats to the Tennessee Valley's natural resources. Climate change, increased recreational use and travel and global transport may amplify the potential impacts caused by invasive species. Some species can become a nuisance when present in concentrated amounts or in undesired locations, becoming destructive or even threatening to humans, property and other species. Nuisance and invasive species may have harmful effects on infrastructure, economy, human health and recreation.

TVA works to address the negative effects of nuisance and invasive terrestrial and aquatic plants by using a prioritized, planned and adaptive approach to management. On land, TVA manages nonnative, invasive plants for improvement of habitat using a variety of control methods, which include mechanical and chemical controls and prescribed fire. In an aquatic environment, TVA uses targeted surveying techniques and integrated management strategies where established growth impacts or impedes the access to developed public use areas. This can include the use of mechanical harvesting to clear navigation channels, aquatic labeled herbicides to open up nearshore recreation sites and selective biological controls where water bodies become inundated with plant growth. In some cases, TVA may manage newly introduced species to reduce future impacts from the species. TVA works directly with state and local stakeholders to partner on such efforts.

TVA controls nuisance animals where negative impacts may occur to TVA lands, reservoirs, public infrastructures and recreational users and facilities to protect public







health and safety, TVA assets and adjacent property from damage. For example, TVA is addressing public health and safety issues associated with feral hogs on public lands, bird impacts to power structures and local flooding caused by beavers. TVA is also working to

address recreational safety concerns and protection of native aquatic species as a result of the migration of Asian Carp into the Tennessee River watershed.

Past experience has demonstrated that prevention and control of nuisance and invasive species is best achieved through collaboration among all levels of government and the private sector. TVA will continue to develop critical partnerships and implement proactive strategies to prevent or reduce the likelihood that new nuisance and invasive species become established within the Tennessee Valley.

#### Objectives:

- Sustain and expand efforts to address the threats of invasive and nuisance species in order to best protect the Tennessee Valley's natural resources
- Ensure use of practical and environmentally sound management practices which will take into account stakeholder expectations and the multiple uses of TVA lands and waters
- Implement internal and external outreach efforts creating enhanced public awareness and action regarding the impacts of invasive and nuisance plants and animals
- Establish partnerships with universities and local, state and federal entities to identify and address threats posed by invasive and nuisance species within the Tennessee Valley

#### Benefits:

- Improves protection and enhancement of resources, habitats, biodiversity and use of public lands and reservoirs
- Enhances public awareness and action regarding the impacts of invasive and nuisance plants and animals
- Develops partnerships with resource management agencies and non-governmental organizations to further resource management efforts in the region and beyond

## 6. Cultural Resource Management (formerly Cultural Resources)

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. These cultural resources may include historic buildings, structures, sites, or objects; archaeological resources; Native American burials; funerary objects; sacred items; and other historic resources. 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 Resources Protection Act (ARPA).

#### Objectives:

- Comply with all federal laws related to cultural resource management on federal lands or on lands affected by TVA actions
- Increase the knowledge base of significant cultural resources on TVA lands through identification, evaluation and documentation
- Protect and preserve significant archaeological and historic resources through improved and enhanced management practices, such as monitoring, shoreline stabilization, archaeological curation and enforcement of federal laws
- Provide educational and outreach opportunities within TVA communities on the need to protect cultural resources and to share the unique history of the Tennessee Valley
- Partner with stakeholders, such as federally recognized Indian tribes, whose ancestral lands fall within the Tennessee Valley

#### Benefits:

- Ensures effective and sustainable protection of sensitive, nonrenewable cultural resources
- Improves relationships with stakeholders that attach cultural value to TVA-managed lands
- Ensures compliance with all applicable laws protecting cultural resources on federal land
- Increases education and awareness of the importance of protecting cultural resources through public outreach and community engagement

- Increases understanding of TVA's history and our role in the continuing development of the Tennessee Valley

## 7. Water Resources Stewardship (formerly Water Resources)

TVA has been actively involved in water resources management and Tennessee River system integration since 1933, when Congress charged the agency with managing and serving as the steward of the Tennessee River and its tributaries. Water Resources Stewardship focuses on protecting and improving the aquatic habitat and quality of the streams, rivers and reservoirs in the Tennessee River watershed.

The Tennessee River watershed encompasses parts of seven states in the Southeast and is approximately 41,000 square miles. The watershed is one of the most biologically diverse watersheds in North America and is home to more than 240 fish species and about 75 mussel species. TVA's efforts to protect and improve water quality and aquatic biodiversity include collecting and reporting aquatic resource and water quality data and working with partners to implement watershed protection efforts. TVA also builds and catalyzes partnerships, promotes public outreach efforts and provides technical support to implement key water resource initiatives throughout the Tennessee River watershed.

TVA works with partners to improve and enhance priority watersheds. Improvement and enhancement efforts include streambank stabilization, buffer establishment,

in-stream habitat improvements, mussel propagation and reintroduction and outreach. Partnership outreach efforts are also a vital part of Water Resources Stewardship. One example of partnership outreach efforts is the development of the Tennessee River Basin Network, a group of peer agencies and non-profit organizations that are working together to identify collaboration opportunities and shared resources and initiate long-term planning and outreach efforts to protect and improve biodiversity in the Tennessee River watershed.

#### Objectives:

- Monitor and assess biological conditions in streams and tailwaters to maintain an in-depth knowledge of the changing conditions of water quality throughout the Tennessee Valley and help TVA and stakeholders identify and track water quality protection and improvement opportunities
- Partner to promote and implement water quality and aquatic habitat improvement across the Tennessee River watershed
- Develop and execute outreach activities to raise public awareness of the importance and value of protecting water resources within the Tennessee River watershed

#### Benefits:

- Provides data that support an integrated management approach for TVA and natural resource stewardship activities





- Provides data to partners to enhance the understanding of stream, tailwater and reservoir conditions, support research and water-related conservation activities to improve water quality, reduce drinking water associated costs, create more recreation opportunities and improve habitat for aquatic life
- Fosters collaborative efforts and enhances the ability to leverage funding, technical support and networking opportunities to improve water quality and aquatic biodiversity
- Facilitates partnerships to implement activities that protect exceptional aquatic biodiversity within the Tennessee River watershed
- Increases public awareness of the value of the Tennessee River system's biodiversity and water quality

## 8. Recreation (formerly Recreation Management)

TVA's Recreation Focus Area supports recreation opportunities so that the Tennessee Valley remains one of the best places to live, work and play. Since its establishment by Congress in 1933, TVA's earliest leaders understood that as the lands around the reservoirs were developed in the Tennessee Valley, recreation would be a direct link to the social and economic advancement of the surrounding areas. This was explicitly recognized in a 1936 TVA Board report to Congress, which stated: "The Tennessee River possesses a great variety of scenery. If this beauty is preserved, the river system will become one of the favorite recreation areas in the United States." TVA envisioned development along its reservoirs in an effort to bring more people closer to these valuable resources in the hopes that they might enjoy the many benefits that they provide.

TVA reservoirs and the land surrounding them offer an abundance of recreation opportunities, including boating, water skiing, canoeing, sailing, windsurfing, swimming, fishing, hunting, hiking, nature photography, picnicking, bird-watching and camping. Much of the 293,000 acres of TVA public land is available for dispersed recreation, which offers a more primitive experience that is not supported by developed recreational facilities.

Many of TVA's developed recreation areas, such as campgrounds and marinas, are managed by commercial

and public operators who specialize in the recreation business. TVA encourages sustainable management practices from these operators, like water conservation and native plant management. In addition to the recreation assets and activities on TVA land, TVA partners with local, state and federal agencies to support nearly 400 public recreation areas through management agreements. TVA administers these agency agreements to provide complimentary recreational assets, including wildlife refuges and municipal and state parks. These recreational opportunities support the economic impact of the travel and tourism industry in the Tennessee Valley.

A 2016 study conducted by the University of Tennessee estimated an \$11.9 billion economic impact annually from water based recreational expenditures in the Tennessee Valley. Since TVA manages roughly 11,000 miles of shoreline, that amounts to a \$1 million per mile benefit to the people of the Tennessee Valley. From a primitive hiking trail to a fully developed commercial marina, TVA strives to balance resources under its care while providing a diverse array of recreational opportunities for the public.

### Objectives:

- Provide commercial and public recreational opportunities on TVA-managed lands
- Partner with municipalities, nongovernment organizations, and local, state, and federal agencies to provide recreation assets and opportunities throughout the Valley
- Protect natural and cultural resources by developing and implementing sustainable recreation practices

### Benefits:

- Increases recreation opportunities on TVA public lands
- Improves recreation information and data to support TVA and regional planning efforts
- Promotes greater diversity of recreational opportunities through collaboration and partnerships
- Increases promotion of sustainable recreation best practices
- Enhances integration of TVA and partner efforts to improve recreation management efficiency

## 9. Ecotourism (New)

Ecotourism is nature-based, outdoor adventure and sustainable tourism. This concept mixes outdoor recreation

activities with conservation-based work, which results in sustainable recreation areas that are based in nature and/or on natural features. TVA's Ecotourism programs will complement existing community, state and regional travel and tourism efforts, which aligns with TVA's mission to make the Tennessee Valley a great place to live, work and play.

TVA's public lands and shoreline have long provided a platform for partnerships in support of the tourism industry. Community and private sector expansion of facilities, attractions, festivals and events helps attain critical mass to attract and hold leisure travelers. The result has been the development of travel destination experiences with extended stays leading to positive impacts to local economies, job creation, private investment and an expanded tax base.

### Objectives:

- Partner with local communities to maximize their ecotourism and recreation potential
- Gain knowledge of use, trends, and preferences to aid in planning efforts through targeted studies
- Enhance TVA recreation facilities to expand tourism and local visitation
- Promote recreation and tourism opportunities to encourage use

### Benefits:

- Provides positive impacts to local economies
- Increases understanding of recreational trends to maximize a local community's ecotourism potential
- Increases recreational opportunities for local communities and destination travelers
- Increases information provided to the public about available recreational opportunities in the Tennessee Valley

## 10. Public Outreach and Information (formerly Public Engagement)

TVA has been charged with managing its resources in an integrated manner to ensure the protection, enhancement and conservation of these resources for future generations to enjoy. Overarching public outreach programs increase public awareness and appreciation of the natural and cultural resources in the Tennessee Valley, as well as provide opportunities for volunteer involvement, environmental education and collaborative partnerships. The Public Outreach and Information programs focus on communicating, involving and engaging communities

of and visitors to the Tennessee River watershed and the TVA power service area.

Public Outreach and Information efforts include environmental education, volunteer opportunities, community support and stakeholder engagement. Environmental education programming is a valuable component of TVA's public outreach, providing a platform for TVA to share information and our passion for natural and cultural resources and public lands with children and adults. TVA's Volunteer Program offers opportunities to learn about nature and be part of a collective effort to help protect natural and cultural resources and enhance recreational areas throughout the region.

Through e-newsletters such as River Neighbors, social media, web-based interactive tools, publications and TVA's Public Land Information Center, TVA connects with stakeholders by providing information on local wildlife and aquatic habitats, river management, public lands, recreational areas and TVA events. TVA also works collaboratively to support communities in their stewardship efforts across the region. Examples include the Kids in the Creek programs, which introduce kids to aquatic species in local streams; events that promote recycling and reuse of materials; and 4-H clubs that teach environmental stewardship.

### Objectives:

- Engage communities to increase awareness and understanding of the value of cultural and natural resources and recreational opportunities associated with public lands and waters throughout the Tennessee River watershed and TVA's power service area
- Create opportunities for public involvement in resource stewardship and recreation







- Develop and maintain strategic relationships to enhance stewardship of recreational assets and cultural and natural resources in the Tennessee River watershed and TVA's power service area through collaborative efforts and education

Benefits:

- Increases public awareness, involvement and appreciation of the natural and cultural resources

and recreational opportunities in the Tennessee River watershed and TVA's power service area through an integrated education and communication effort

- Improves public understanding of the value and benefits of resource protection.
- Enhances recognition of the high quality of life in the Tennessee Valley

# Introduction

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Since 1933, TVA has been improving the quality of life in the Tennessee Valley region through its threefold mission of providing affordable and reliable power, promoting sustainable economic development and operating as a steward of the region’s natural and cultural resources. To meet its environmental stewardship mission, TVA has developed a dedicated plan to guide its management of TVA lands and the associated cultural and natural resources, support of recreation and tourism and efforts in environmental education and community engagement.



### 1.1 Tennessee Valley Authority History

President Franklin D. Roosevelt needed innovative solutions to lift the nation out of the depths of the Great Depression and TVA is considered one of his most innovative actions. Roosevelt envisioned TVA as an agency different from any other. He asked Congress to create “a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise.” On May 18, 1933, Congress passed the TVA Act. (A copy of the TVA Act is available on the TVA website at <https://www.tva.gov/About-TVA/Our-History/The-TVA-Act>.)

From its beginning, TVA has held fast to its strategy of integrated resources solutions, even as the issues changed over the years. Each challenge the people of the Tennessee Valley faced — whether it was the need for power, navigation to transport goods to and from larger markets, flood reduction, malaria prevention, reforestation or erosion control — was studied in its broadest context. TVA operates a system of dams and reservoirs in the Tennessee Valley for the purposes of flood control, navigation and power production. The Tennessee River system includes more than 41,000 square miles of watershed, 11,000 miles of shoreline and 293,000 acres of land. TVA manages that system in an integrated way. In addition, TVA’s environmental stewardship efforts have historically focused on improving water quality and protecting cultural resources and wildlife habitat, while providing recreational opportunities and a wide range of other public use benefits.

### 1.2 Overview of TVA’s Mission, Environmental Policy and Natural Resources Stewardship Strategy

When President Franklin Roosevelt signed the TVA Act, providing electric power was not his sole intent, but rather the means to a greater end. “Power is really a secondary matter,” Roosevelt said at a press conference. “TVA is primarily intended to change and to improve the standards of living of the people of the valley.” TVA was created by Congress in 1933 and charged with a unique mission—to improve the quality of life in the Tennessee Valley through the integrated management of the region’s resources.

We recognize that TVA is unique among power generators in its responsibility to serve the people of the Tennessee Valley through the integrated management of the Tennessee River system, which includes approximately 11,000 miles of shoreline, 650,000 surface acres of reservoir water and 293,000 acres of reservoir lands. We serve the people of the Tennessee Valley by focusing on the three key areas of energy, environment and economic development. A key part of TVA’s mission is managing this system for multiple benefits, including power generation (Energy); protecting and enhancing cultural and natural resources (Environment); and investing in communities to create and sustain the Tennessee Valley as a destination for industry, tourism and outdoor recreation (Economic Development).

### Energy

As the nation’s largest public power provider, TVA delivers safe, reliable, clean, competitively priced electricity to 154 local power companies and 58 directly served customers. TVA’s power portfolio is dynamic and adaptable in the face of changing demands and regulations. TVA’s portfolio has evolved over the past decade to a more diverse, reliable and cleaner mix of generation resources, which today provides 54 percent carbon-free power. The Tennessee Valley Authority’s 2019 Integrated Resource Plan (IRP) is a long-term plan that provides direction on how TVA can best meet future demand for power. It shapes how TVA will provide low-cost, reliable and clean electricity; support environmental stewardship; and foster economic development in the Tennessee Valley for the next 20 years.

### Environment

TVA’s mission of service includes being stewards of the regions’ natural and cultural resources, including its waterways and surrounding lands. TVA manages the thriving Tennessee River system to provide multiple benefits to the people it serves—including flood control, recreation and power production—and ensure that the region will be a safe, healthy and beautiful place to live and play for years to come.

### Economic Development

From the beginning, TVA was charged with providing the people of the Tennessee Valley a better opportunity to prosper. TVA works with partners across the region to help bring new investments and good jobs to the region and keep them here. TVA’s reliable, low-cost safe, clean and affordable electricity helps the region recruit industry and keeps power bills lower for the homes, businesses and industries of the Valley.

TVA’s overarching Environmental Policy is to produce clean, reliable and affordable power, support sustainable economic growth in the Tennessee Valley and promote environmental sustainability in a balanced and ecologically sound manner. As a good steward, it is TVA’s duty to promote the balanced use of the Tennessee River watershed and its natural and cultural resources by the public. TVA is committed to sustainability and continuous improvement, proactive stewardship in managing natural and cultural resources and environmental footprint and maintaining compliance with all applicable environmental and legal requirements.

TVA continues to integrate sustainable practices into business operations by establishing goals, measuring progress and reporting performance in these six key areas:

#### Climate Change Mitigation

TVA actively reduces its carbon emissions through cleaner production options and energy efficiency initiatives. TVA is:

- Minimizing its carbon footprint and cutting greenhouse gases by reducing our dependence on coal-fired plants and actively pursuing cleaner sources of energy, such as hydropower, nuclear and natural gas
- Investing in technology that supports low- or zero-carbon emitting energy and smart grid infrastructure
- Encouraging customers to use energy efficiency, premium green-energy and regional climate change mitigation opportunities
- Actively investing in renewable energy solutions

#### Air Quality Improvement

TVA improves regional air quality through emission controls on existing generation and through adopting cleaner energy options. TVA is:

- Employing air-emission reduction equipment at our coal-fired plants
- Considering air quality as a critical component in future capacity-planning decisions

#### Water Resources Monitoring

TVA manages an integrated river system for multiple uses and provides clean water for Tennessee Valley needs. TVA is:

- Lessening impact on aquatic systems while balancing thermal cooling needs
- Reducing consumption of water at TVA’s metered facilities
- Managing water quality and quantity impacts through permitting activities on and around TVA reservoirs; the collection, maintenance and





distribution of water quality information; and strategies to manage increased water demand

**Waste Minimization**

TVA conducts its operational and business functions striving to reduce waste and increase recycling. TVA is:

- Reducing the waste footprint of all TVA facilities by decreasing waste generation and improving recycling
- Adapting our generation facilities to produce less waste
- Recycling coal-combustion waste

**Environmental Reviews**

TVA manages public lands for multiple benefits, striving to maintain good environmental health while balancing the need for sustainable development. TVA is:

- Managing TVA lands, mineral rights and shoreline access to better achieve environmental commitments while meeting the needs for recreation, residential access and economic development
- Minimizing the environmental impacts of land management decisions, through NEPA

**Sustainable Land Use and Natural Resource Management**

TVA manages public lands for multiple benefits, striving to maintain good environmental health while balancing the needs for sustainable development and recreation. TVA is:

- Managing TVA lands according to Reservoir Land Management Plans
- Improving reservoir shoreline conditions through collaborative partnership initiatives and balance the multiple uses of the reservoirs in accordance with TVA's Land Policy and Shoreline Management Policy
- Providing well-managed, ecofriendly recreation while balancing the protection of cultural and heritage resources
- Promoting ecological diversity and wildlife habitats on TVA lands

TVA accomplishes this mission and supports the objectives of the TVA Environmental Policy through implementation of the NRP and Natural Resources Stewardship Strategy, developed in 2016 by TVA's Natural Resources group. The Natural Resources Stewardship Strategy is shown below in Figure 2.

**Natural Resources Stewardship Strategy**

To fulfill TVA's mission, Natural Resources serves the people of the TVA region by remaining agile, balancing competing demands and being a catalyst for collaboration in order to:

- Create and sustain destinations for recreation and opportunities for learning and research
- Protect and enhance biological, cultural and water resources and TVA's programmatic interests through integrated management of the Tennessee River system and public lands
- Assist water-based community development with technical support, land agreements and permitting using planning, clear regulations, meaningful guidelines and consistent enforcement

Figure 2. Natural Resources Stewardship Strategy

**1.3 Overview of the Natural Resource Plan**

Historically, TVA has taken various approaches to managing the reservoir lands and waters and the associated natural and cultural resources and recreation facilities in its care. By establishing the Environmental Policy, TVA created expectations for a more systematic and integrated approach toward managing energy production and environmental stewardship. The IRP and this NRP are implementation plans for TVA's mission as described in the agency's Strategic Plan. The IRP focuses on the power supply portfolio, whereas the NRP focuses on natural, cultural and water resources; recreation; public engagement; and lands management. When the care of the Tennessee River was entrusted to TVA, essential stewardship responsibilities were entrusted with it. Activities guided by the Natural Resources Stewardship Strategy and the NRP fulfill a number of these responsibilities.

To achieve its overall mission of providing low-cost, reliable power to the people of the Tennessee Valley, TVA focuses on four strategic imperatives: balancing power rates and debt so that TVA maintains low rates while living within its

means; and recognizing the trade-off between optimizing the value of TVA's asset portfolio and being responsible stewards of the Tennessee Valley's environment and natural resources. Figure 3 represents the alignment of the TVA Act, TVA's Mission and TVA's four strategic imperatives (Rates, Asset Portfolio, Stewardship, and Debt) to the NRP and its companion document, the IRP.

The NRP creates a sound framework for balancing land use, human activity and conservation in order to achieve the greatest public benefit from the Tennessee River system. The initial NRP was completed in 2011 and called for periodic updates. The 2020 NRP is the first update. Expanded from the 2011 NRP, the 2020 NRP includes ten focus areas that encompass TVA's work in resource stewardship. The NRP provides strategic guidance and alignment of TVA's stewardship work.

To complement the strategic guidance and alignment that the 2020 NRP provides, TVA will use five-year action plans to establish the tactics needed to achieve and evaluate implementation of focus area objectives, and support business planning. The action plans will include measures of success that will help assess successful implementation of focus area objectives and outline public engagement and communication efforts. Annual updates will ensure the action plans remain relevant. The two-pronged approach of a tactical, short-term implementation strategy (five-year action plans and business plan) that complements the strategic, long-term guidance document of the 2020 NRP will provide the direction and flexibility necessary for successful implementation of the NRP. This flexible approach helps TVA be better equipped to collaborate with stakeholders, prioritize funding and support TVA's mission.

**Natural Resource Plan Alignment**

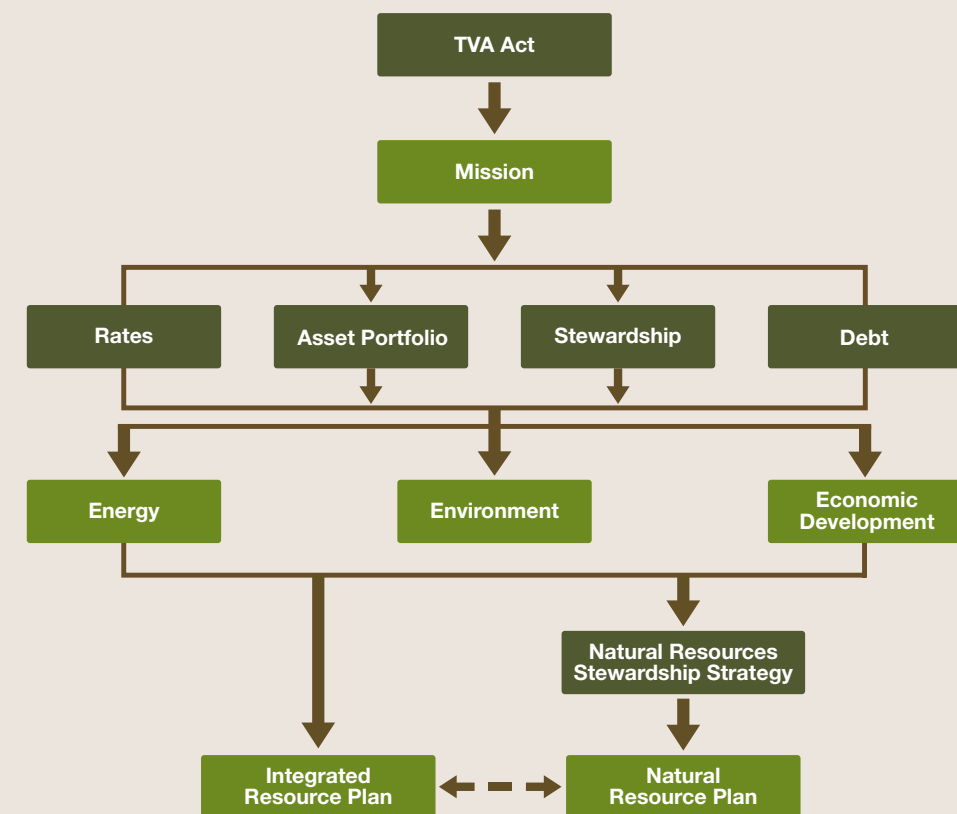


Figure 3. Natural Resource Plan Alignment



TVA will measure and monitor progress throughout the 20-year life cycle of the NRP and update the plan and approach when necessary. To encourage continuous public input TVA will receive comments at any time through its Public Land Information Center (PLIC) at [plc@tva.gov](mailto:plc@tva.gov) or 800-882-5263, and through outreach events attended or hosted by TVA throughout the Valley each year. Other opportunities for public input (e.g. social media, [tva.com](http://tva.com)) may be utilized as appropriate. TVA plans to inform the public by publishing an annual report on natural resource stewardship activities and improving the information available to the public on TVA's stewardship projects on [tva.com](http://tva.com).

In accordance with the NEPA, TVA completed an environmental impact statement in 2011 on the NRP. To assess the environmental impacts of the proposed update of the NRP, TVA prepared a supplemental analysis and released a draft Supplemental Environmental Impact Statement (SEIS) for public review and comment in May 2019. The SEIS describes the proposed focus area programs and assesses the potential environmental impacts associated with the implementation of the programs. During the public review and comment period, TVA held public meetings across the Valley and gathered public input on the proposed update of the NRP. After considering this input, TVA finalized the NRP and SEIS and released them to the public in February 2020.

### 1.3.1 Focus Areas

The updated NRP is designed to integrate the objectives of all of the focus areas, provide optimum public benefit and balance competing and sometimes conflicting resource uses. These competing uses and external development pressures, coupled with increasing recognition of the importance of preserving nonrenewable resources, underscore the necessity for a consistent approach to the management of federal lands, waters and associated resources in the care of TVA.

The updated NRP incorporates programs for each of the ten focus areas along with objectives and benefits. For each focus area, broad objectives establish the intent of stewardship efforts and benefits demonstrate the potential value of stewardship efforts. Examples of program activities provide additional insight into the nature of the program.



Figure 4. Natural Resource Plan Focus Areas

### 1.3.2 Geographic Scope

The geographic scope of the NRP includes the Tennessee River watershed and the TVA power service area, collectively referred as the Tennessee Valley. The geographic reach of each program is highlighted in its respective focus area chapter (Chapters 2 through 11). Generally, activities within the land and habitat stewardship, reservoir lands planning, cultural resources, public land protection, Section 26a permitting and land use agreements and nuisance and invasive species management focus areas of the NRP target primarily the 293,000 acres of TVA-managed reservoir lands. Recreation, ecotourism and public outreach program activities have a broader reach and may be implemented within TVA's power service area and on TVA lands or other public lands within the Tennessee River watershed. The geographic scope for the Water Resources Stewardship Focus Area of the NRP includes the entire Tennessee River watershed as shown in Figure 5.

### Natural Resource Plan Geographic Scope

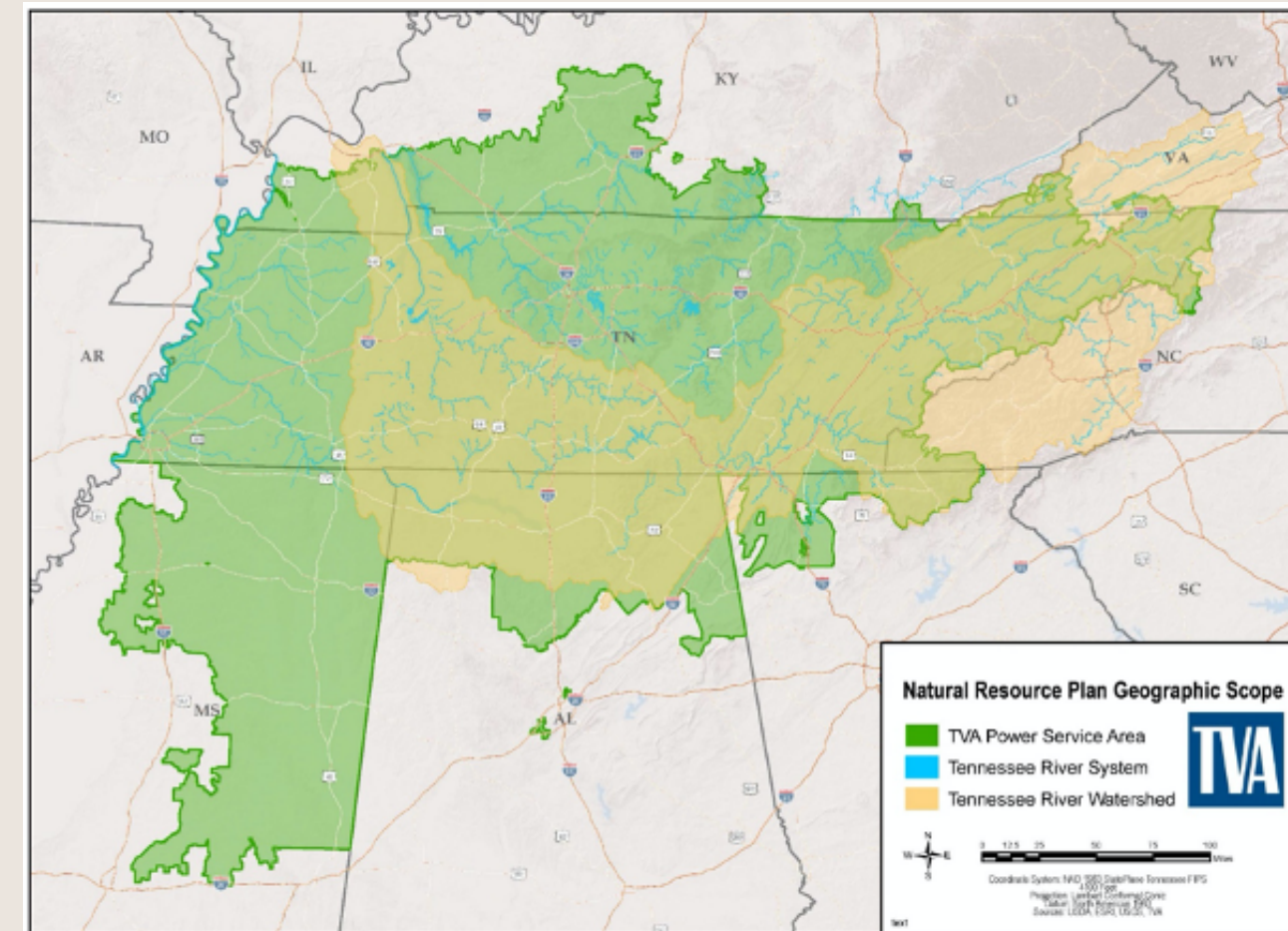


Figure 5. Natural Resource Plan Geographic Scope

### 1.3.3 Out of Scope

The NRP aligns with and builds upon many existing TVA policies, regulations and initiatives, most notably TVA's Section 26a Regulations, SMP, Land Policy, Public Land Protection Policy and Aquatic Plant management. Items that are considered out of the NRP's scope include, but are not limited to mosquito management, reservoir release improvements programs and operation of the reservoir system. These activities have already been addressed through comprehensive public review processes and are the subject of other policies.

### 1.4 Stakeholders

During the development of the 2011 and 2020 NRPs, TVA gained valuable insight into the NRP by listening to different perspectives, viewpoints and sometimes-competing objectives. This played a prominent role in defining the direction for TVA's stewardship efforts. TVA actively sought input from the Regional Resource Stewardship Council (RRSC), peer agencies and the public during the development of the NRP. Going forward, TVA will continue to provide stakeholders with opportunities for input on TVA's stewardship activities.



### 1.4.1 Regional Resource Stewardship Council

As competition for finite resources grows, fulfilling TVA's integrated resource stewardship mission requires increased cooperation with communities and other public agencies. It is in the interest of TVA and the public to establish a forum to regularly obtain advice on stewardship trends, opportunities and challenges. In 1999, TVA established the RRSC to advise TVA on its stewardship activities and the priorities among competing objectives and values. In addition to these responsibilities, the RRSC serves as a stakeholder group and provides input for the development of the NRP. The RRSC was established under the Federal Advisory Committee Act. Its meetings are open to the public and the proceedings, including names of current and past members, are published at <http://www.tva.com/rrsc>.

In July 2018, the RRSC provided guidance and input on the direction of the 2020 NRP and emphasized the need to continue balancing competing demands for resources, encouraged TVA to seek public input on stewardship activities and supported the shift to a more strategic level document.

### 1.5 Development Process

The 2020 NRP is based on the 2011 NRP. The figure below outlines key steps in the development of the 2020 NRP.

The 2011 NRP provided a framework for some of TVA's stewardship work, categorized in six resource areas (Biological, Cultural and Water Resources; Recreation; Lands Planning and Public Engagement).TVA began

implementation of the 2011 NRP and was successful in carrying out many program activities. However, TVA was not able to apply consistent effort across all programs and resource areas. In 2016, TVA's Natural Resources group developed the Stewardship Strategy to better align its stewardship work with the TVA mission and to support TVA's efforts related to energy, the environment and economic development.

In 2017, TVA conducted an evaluation of the 2011 NRP and program implementation. Results indicated that it could be beneficial to revise some NRP programs to better guide stewardship work. TVA also acknowledged that the 2011 NRP did not provide comprehensive coverage of TVA's resource stewardship work. TVA used the information gathered during the 2017 evaluation to determine the preliminary scope for the NEPA review. TVA revised the structure of the proposed NRP to create a strategic high-level document that was more inclusive of TVA's stewardship efforts and provided the flexibility needed to meet changing user, resource and programmatic needs. The six resource areas from the 2011 NRP were restructured and expanded to create ten proposed focus areas. Focus area objectives and benefits were developed to better align with the Stewardship Strategy and TVA's Mission.

Following the requirements of NEPA, TVA published a Notice of Intent in the Federal Register to initiate a public scoping period in July 2018. TVA held four open house meetings across the Tennessee Valley to discuss the scope of the 2020 NRP update in greater detail and one webinar was held for those not able to attend an open house. The open house meetings and webinar offered the public an opportunity to comment and provide input on the scope of the 2020

NRP update. TVA placed advertisements in 37 newspapers throughout the Tennessee Valley and mailed 250 post cards directly to stakeholders. Additionally, 66 people attended the scoping meetings.

Following closure of the public scoping period, TVA published a NRP Public Scoping Report on November 1, 2018, which documents TVA's efforts to engage the public during the scoping period and includes all comments received by TVA.

With scoping completed, TVA initiated the development of the draft SEIS and the updated NRP. During this time, the ten proposed focus areas along with the program descriptions, objectives, benefits and example activities were reevaluated as needed. These components make up the 2020 NRP.

Because TVA issued an environmental impact statement (EIS) with the 2011 NRP, TVA conducted an analysis supplementing the 2011 EIS to consider the proposed updates to the NRP. TVA published a draft SEIS and the 2020 NRP for a 45-day public review and comment in May 2019.

During the review period for the draft NRP and SEIS, TVA hosted four public meetings and a webinar to provide opportunities for the public and others to ask questions and provide input on the draft SEIS and draft 2020 NRP. Meetings were held in June 2019 in Knoxville, Chattanooga, and Camden, Tennessee, and in Muscle Shoals, Alabama. TVA also hosted a public webinar and provided information on the project webpage: [www.tva.gov/nrp](http://www.tva.gov/nrp). After public input was considered, TVA issued the NRP and final SEIS in February 2020.

### 1.6 Implementation Strategy

The NRP represents TVA's high-level strategy for managing its natural resources in the long term. To complement the NRP's strategic guidance TVA will develop five-year action plans to provide more detailed implementation strategies for each focus area. Updated annually, the action plans will provide a tool to measure and assess implementation and alignment with the NRP. TVA will use the action plans along with public and stakeholder input to guide annual stewardship project planning efforts.

Partnerships and engagement are critical components of successful NRP implementation. The availability of

partnerships may influence the level of implementation for some programs. TVA, along with other agencies, is tasked with finding new and creative ways to address funding and personnel challenges to effectively manage its lands and associated resources and facilities.

Engaging the public and stakeholders through information sharing and feedback opportunities is important to TVA and helps the agency better understand user needs for Valley resources. TVA will employ annual reports to inform the public of TVA's progress in meeting NRP objectives. TVA will provide avenues for public input on future stewardship efforts through face to face interactions and web based tools.

### 1.7 NRP Evaluation

An integral component of the NRP is a defined method by which TVA will measure and monitor progress throughout the 20-year life cycle of the NRP. TVA will use the five-year action plans to ensure its annual project planning supports the objectives of the NRP. The five-year action plans will include specific measures of success (reviewed annually) that align the NRP with planned stewardship activities. The action plans will be based on the focus area objectives shown in the following table and will help ensure each focus area objective is being considered.

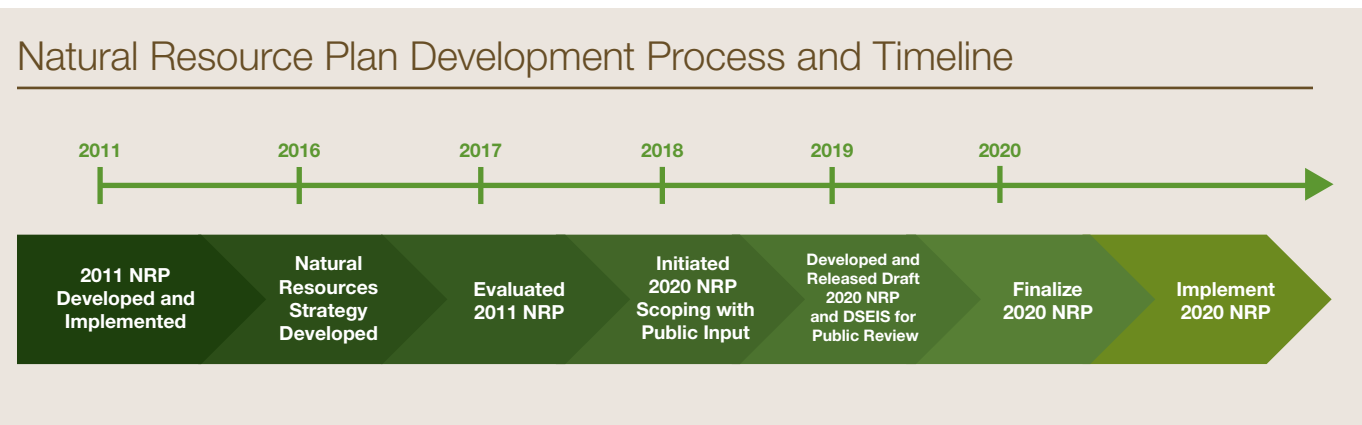


Figure 6. Natural Resource Plan Development Process and Timeline





## NRP Focus Areas and Focus Area Objectives

### Reservoir Lands Planning

- Provide a consistent approach to balancing shoreline development, recreation, natural and cultural resource management and other demands by applying a systematic methodology to identify the most suitable land uses
- Ensure input opportunities for the public and local, state and federal entities on TVA land management decisions

### Section 26a Permitting and Land Use Agreements

- Manage permission to use the shoreline and public land in a fashion that is consistent with the TVA Act, National Environmental Policy Act (NEPA), SMP and the Land Policy
- Seek to develop clear rules and policies, engage in public education and communication and issue permits and agreements consistent with standing policies
- Support unified development of the Tennessee River system and flood control objectives

### Public Land Protection

- Protect the public land and land rights in TVA's custody and control to preserve them for future generations while balancing competing demands through proactive and reactive management efforts
- Apply consistent enforcement of TVA's rules, regulations, policies and applicable local, state and federal laws
- Assess and inventory TVA public lands and associated assets to improve the quality of public lands
- Inform and engage the public to provide clear expectations for sustainable use of TVA public land

### Land and Habitat Stewardship

- Improve protection and monitoring of sensitive resources on TVA land
- Enhance biological diversity and wildlife habitat
- Improve forest health and associated ecological benefits
- Improve interagency relationships and partnership efforts toward mutual stewardship goals

### Nuisance and Invasive Species Management

- Sustain and expand efforts to address the threats of invasive and nuisance species in order to best protect the Tennessee Valley's natural resources
- Ensure use of practical and environmentally sound management practices which will take into account stakeholder expectations and the multiple uses of TVA lands and waters
- Implement internal and external outreach efforts creating enhanced public awareness and action regarding the impacts of invasive and nuisance plants and animals
- Establish partnerships with universities and local, state and federal entities to identify and address threats posed by invasive and nuisance species within the Tennessee Valley

### Cultural Resource Management

- Comply with all federal laws related to cultural resource management on federal lands or on lands affected by TVA actions
- Increase the knowledge base of significant cultural resources on TVA lands through identification, evaluation and documentation
- Protect and preserve significant archaeological and historic resources through improved and enhanced management practices, such as monitoring, shoreline stabilization, archaeological curation and enforcement of federal laws
- Provide educational and outreach opportunities within TVA communities on the need to protect cultural resources and to share the unique history of the Tennessee Valley
- Partner with stakeholders, such as federally recognized Indian tribes, whose ancestral lands fall within the Tennessee Valley

### Water Resources Stewardship

- Monitor and assess biological conditions in streams and tailwaters to maintain an in-depth knowledge of the changing conditions of water quality throughout the Tennessee Valley and help TVA and stakeholders identify and track water quality protection and improvement opportunities
- Partner to promote and implement water quality and aquatic habitat improvement across the Tennessee River watershed
- Develop and execute outreach activities to raise public awareness of the importance and value of protecting water resources within the Tennessee River watershed

### Recreation

- Provide commercial and public recreational opportunities on TVA-managed lands
- Partner with municipalities, non-governmental organizations, and local, state and federal agencies to provide recreation assets and opportunities throughout the Tennessee Valley
- Protect natural and cultural resources by developing and implementing sustainable recreation practices

### Ecotourism

- Partner with local communities to maximize their ecotourism and recreation potential
- Gain knowledge of use, trends, and preferences to aid in planning efforts through targeted studies
- Enhance TVA recreation facilities to expand tourism and local visitation
- Promote recreation and tourism opportunities to encourage use

### Public Outreach and Information

- Engage communities to increase awareness and understanding of the value of cultural and natural resources and recreational opportunities associated with public lands and waters throughout the Tennessee River watershed and TVA's power service area
- Create opportunities for public involvement in resource stewardship and recreation
- Develop and maintain strategic relationships to enhance stewardship of recreational assets and cultural and natural resources in the Tennessee River watershed and TVA's power service area through collaborative efforts and education

Table 1. NRP Focus Areas and Focus Area Objectives





TVA will be able to refocus its stewardship efforts quickly to meet the ever-changing needs and desired conditions of the region's resources through annual review and updates to the action plans and budget planning efforts.

### 1.8 Benefits

The NRP provides a number of benefits to its stakeholders and customers, the public and the resources that TVA protects. TVA's work in resource stewardship is a key piece of its integrated business model and this investment will help it sustain accessible natural resources and recreational sites for the people of the Tennessee Valley in an efficient and effective manner. This in turn translates into low electricity rates, helping keep residents' cost of living low and quality of life in the Tennessee Valley high.

According to a 2016 study by TVA and the University of Tennessee's Institute of Agriculture, the economic impact to the region from water based recreation on TVA's reservoir system amounts to \$11.9 billion a year. Furthermore, the study revealed that there are approximately 130,000 jobs associated with these recreation opportunities.

Chapters 2 through 11 of the NRP discuss the expected benefits at a programmatic level. The following sections provide an overall look at the benefits associated with TVA's resource stewardship.

#### 1.8.1 Public and Economic Benefits

Sound natural and cultural resource management provides significant benefits to the public. Access to and use of outdoor recreation (e.g. trails and day use areas) has been shown to correlate to healthier lifestyles and thus a higher quality of life. In addition to ensuring a high quality of life for residents of the Tennessee Valley, programs in the NRP work to protect many of the Tennessee Valley's nonrenewable resources. These resources include such things as archaeological resources and threatened and endangered plant and animal species that can never be recovered once they are gone.

The programs in the NRP create a number of positive economic impacts as well. TVA's recreational sites and

approximately 293,000 acres of surrounding public land and reservoirs operated and managed by TVA attract millions of visitors each year to enjoy the region's natural and water resources. Recreational and boating opportunities are provided by each reservoir and create numerous reservoir and tailwater fishing sites.

#### 1.8.2 Customer Benefits

In addition to the intrinsic value of protecting TVA's natural and cultural resources, good management can create significant costs savings for customers. When the care of the Tennessee River was entrusted to TVA, essential stewardship responsibilities were entrusted with it. The NRP fulfills a number of these responsibilities and it helps provide the basis for maintaining control of the river.

This responsibility results in a number of benefits for TVA's customers and the agency. Control of the river allows responsible management of the water for thermal control of key generation assets and for hydro generation. Each of these helps reduce power costs. In addition, water conservation and resource management efforts by TVA can also reduce the impacts of water shortages and reduce the need for water development programs that raise the cost for water in the region.

Through the NRP TVA can more efficiently provide recreation and environmental education opportunities and resource protection measures. By integrating programs and enhancing partnerships, TVA can expand the implementation of resource stewardship efforts and improve the quality of life for Valley residents and visitors.

### 1.9 Funding

As a federal agency formed by the TVA Act, TVA received federal appropriations to carry out its work to fulfill TVA's mission, including dam building and stewardship activities. TVA also received appropriations for economic development, the Environmental Research Center and Land Between The Lakes National Recreation Area (LBL); however, Congress discontinued appropriations to TVA for economic development after 1997, for the Environmental Research Center after 1998 and for LBL after 1999. LBL was transferred to the U. S. Department of Agriculture Forest Service in 2000. In 1959 and again in 1998, Congress passed laws to remove federal funding for TVA's work.

#### 1.9.1 Past TVA Environmental Stewardship Spending

TVA's responsibility for stewardship of the waters and public lands of the Tennessee Valley was established in the TVA Act. From its inception in 1933 through most of the 1950s, TVA received federal appropriations to fund its operations. In 1959, Congress passed legislation that made the TVA power system self-financing. However, TVA continued to receive appropriations to fund its stewardship programs. In addition, TVA's funding for stewardship activities also came from power revenues when benefits to the power system were provided and from non-power revenues, such as agricultural leases, timber sales and recreation user fees.

Public law 105-62, the Energy and Water Development Act of 1998 ended all federal appropriations for TVA. The law required TVA to fund with power revenues and other funds the stewardship (non-power) programs that constitute "essential stewardship activities" for which TVA was receiving appropriations just prior to the legislation. At the time the law was passed, TVA was spending approximately \$79 million on these activities and "essential stewardship activities" such as dam safety, navigation, reservoir release improvements, land management, invasive plant management, watershed teams, shoreline erosion stabilization, reservoir operations, natural heritage, cultural heritage and water supply.

TVA's essential stewardship allows for the integrated management of land, shorelines and river operations. This, in turn, allows TVA to effectively manage the river for low-cost power operations, water supply, navigation, resource protection and recreation and effectively engage and respond to customers, stakeholders, community members and business leaders. The estimated value of the essential stewardship functions to TVA and the Tennessee Valley region are in the range of \$370- \$380 million annually, which includes the value of thermal regulation, flood control, recreational spending in the Tennessee Valley and avoided Federal Energy Regulatory Commission costs.

After 1999, TVA continued to support these stewardship activities at comparable levels, funding activities almost entirely from the sale of electricity. In 2010, TVA spent approximately \$65 million on essential stewardship programs and associated capital improvement projects. In 2013, during a review of essential stewardship programs

and budget, the TVA Board recognized repeated budget reductions for TVA's natural resource stewardship work and a decline in TVA's presence in these areas across the Tennessee Valley. This review led to the allocation of an additional \$10 million to support NRP-related programs beginning in fiscal year 2014. This increased level of funding has remained consistent through 2020.

#### 1.9.2 NRP Implementation Funding

Funding includes the costs to implement work that support focus areas and program objectives. TVA is committed to meeting the annual resource requirements for compliance with legal and regulatory obligations.

Funding for the NRP will be dependent upon a number of different factors, including:

- User fees
- Reallocation of essential stewardship funding
- Recreation agreements
- Application fees
- Annual budgeting process
- Compliance funding
- Partnerships
- TVA base budget

The criteria and methodology to select NRP-related stewardship projects has evolved since 2014. TVA will use the NRP and the five-year action plans to direct its program implementation and funding prioritization. Actual funding levels for each year of the plan will be determined through TVA's internal budgeting process.

#### 1.10 Risks

If TVA does not effectively and efficiently manage the resources entrusted to it, it faces both near- and long-term risks, including not fully achieving the goals of the Environmental Policy or





resource management accountabilities assigned to it by the TVA Act and other federal regulations. Additional associated risks of TVA not effectively carrying out its stewardship responsibilities include reduction in positive visitor experiences to the region's public lands. These risks can result in a broad range of impacts. Examples include impacts to public health and safety, economic development, quality of life, nonrenewable resources and public perception of TVA.

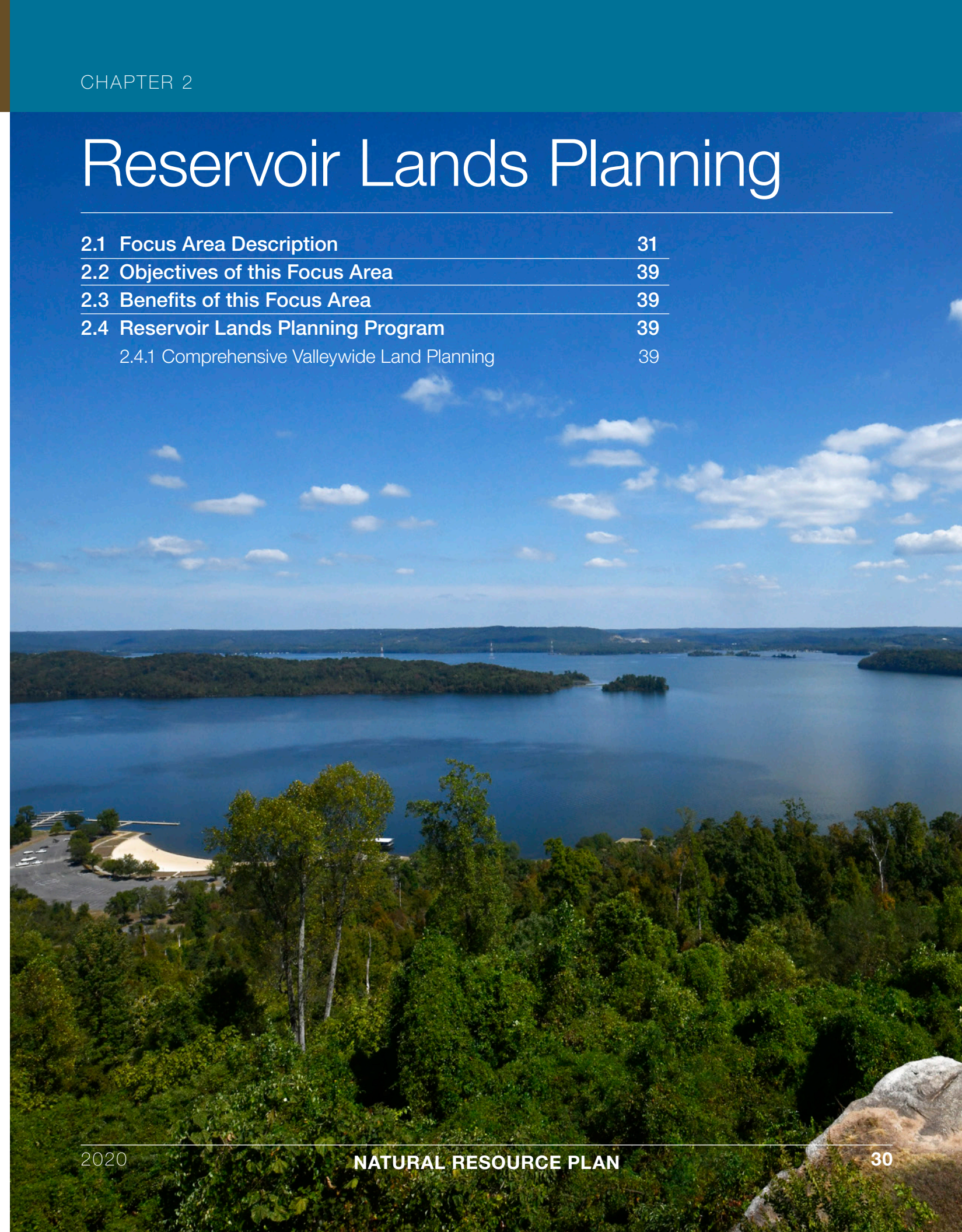
While each program has its own unique risks, there are overarching concerns and challenges associated with

not implementing the NRP (see Table 2). For example, if TVA does not actively preserve or protect the region's resources, such as archaeological artifacts, there is a risk of losing them forever. Additionally, partnerships are an essential component of TVA's implementation strategy. Not developing and fostering these relationships would jeopardize the ability to effectively and efficiently manage TVA lands.

TVA will work to mitigate risks with collaborative and comprehensive stewardship efforts through the NRP.

# Reservoir Lands Planning

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Potential Risks Associated with Not Implementing the NRP

Risk	Reservoir Lands Planning	Section 26a Permitting & Land Use Agreements	Public Land Protection	Land & Habitat Stewardship	Nuisance & Invasive Species Management	Cultural Resource Management	Water Resource Stewardship	Recreation	Ecotourism	Public Outreach & Information
Public health and safety issues	●	●	●	●	●	●		●		●
Unmet recreation needs	●	●					●	●	●	
Loss of heritage tourism and ecotourism opportunities		●		●	●	●		●	●	●
Loss of nonrenewable resources	●	●	●			●				
Degraded terrestrial and aquatic habitats	●	●	●	●	●		●			●
Decreased biodiversity	●		●	●	●		●			
Increased management costs (inefficient operations)		●	●	●	●	●		●		
Water quality impacts		●	●		●		●	●		●
Economic development impacts	●	●	●		●		●	●	●	●
Reduced public awareness and involvement	●	●	●	●	●	●	●	●	●	●
Insufficient or out-of-date information	●	●	●	●	●	●	●	●	●	●
Damaged relationships with local, state and federal agencies, and other nongovernmental organizations	●	●	●	●	●	●	●	●	●	●
TVA reputation	●	●	●	●	●	●	●	●	●	●

Table 2 Potential risks associated with not implementing the NRP



## 2.1 Focus Area Description

As a steward of critically important natural and cultural resources across the Tennessee Valley, TVA has a duty to manage its lands sustainably for present and future generations. Reservoir lands planning guides TVA management decisions on natural and cultural resources and property administration. TVA's Land Policy, approved by the TVA Board in 2006, governs the planning, retention and disposal of land under TVA's stewardship. The TVA Board recognized the public value of reservoir lands and, by approving the Land Policy, supported the position that TVA should continue to provide for their ongoing public use and enjoyment. In the Land Policy, the TVA Board stated:



*“TVA has a duty to manage its lands wisely for present and future generations. Accordingly, it is TVA's policy to manage its lands to protect the integrated operation of the TVA reservoir and power systems, to provide for appropriate public use and enjoyment of the reservoir system and to provide for continuing economic growth in the Valley. Recognizing that historical land transfers have contributed substantially to meeting multipurpose objectives, it further is TVA's policy to preserve reservoir lands remaining under its control in public ownership except in those rare instances where the benefits to the public will be so significant that transferring lands from TVA control to private ownership or another public entity is justified.”*

TVA's integrated resource management approach focuses on balancing flood control, navigation, power generation, water quality, recreation and other land use needs. Reservoir lands planning is one of the important tools TVA uses to accomplish this balanced management.

TVA develops RLMPs to manage the 293,000 acres of public lands around its reservoirs. Whereas the Land Policy sets forth an overall strategy, RLMPs detail the tactics on a reservoir-by-reservoir basis—and help TVA make decisions when it receives requests for the use of TVA public land. RLMPs are developed collaboratively with public agencies and officials as well as private individuals and organizations. By providing a clear vision for how TVA will manage public land, an RLMP minimizes conflicting interests and guides decisions on land use requests.

### History of Reservoir Lands Planning

Throughout its history, TVA has managed public lands to meet a wide range of regional and local resource development needs and to improve the quality of life, both within specific reservoir areas and throughout the Tennessee Valley. Public lands adjacent to TVA reservoirs, together with adjoining private lands, have been used for public parks, industrial development, commercial recreation, residential development, tourism development, forest and wildlife management areas and to meet a variety of other needs associated with local communities and government agencies. RLMPs guide land use approvals, private water use facility permitting and resource management decisions on TVA-managed public land.

Shortly after its creation by Congress in 1933, TVA began a massive dam and reservoir construction program that required the purchase of approximately 1.3 million acres of land for the creation of 46 reservoirs within the Tennessee Valley. Of these 1.3 million acres, approximately 509,000 acres have been sold or transferred from TVA's control, the majority of which were transferred to other federal and state agencies for public use. Of the remaining land, approximately 470,000 acres are located underneath the water of the reservoir system and TVA manages approximately 293,000 acres of land along these reservoirs for the benefit of the public.

An increasing demand for use of these remaining lands sometimes results in conflicting public opinions regarding the most appropriate use of individual parcels. These competing interests and development pressures, coupled with today's environmental awareness, underscore the necessity for a systematic and comprehensive planning approach to the management, retention and disposal of reservoir lands managed by TVA. TVA began planning its reservoir lands in

the 1960s and has implemented three different land planning methodologies for classifying reservoir lands since that time; these are

- The Forecast System
- The Multiple Use Tract Allocation
- The Single Use Parcel Allocation

The Forecast System was the first methodology implemented. The Forecast System documented actual and prospective uses for certain TVA-managed land around a reservoir using a variable set of designations.

In 1979, TVA shifted its lands planning approach to a public forum and applied the Multiple Use Tract Allocation methodology, which was a more systematic approach to planning reservoir lands. TVA lands were subdivided into manageable tracts and assigned appropriate multiple-use designations from ten categories: wildlife management, forest management, recreation, cultural resource management, agriculture, navigation, visual protection, open space, special management areas and industrial sites.

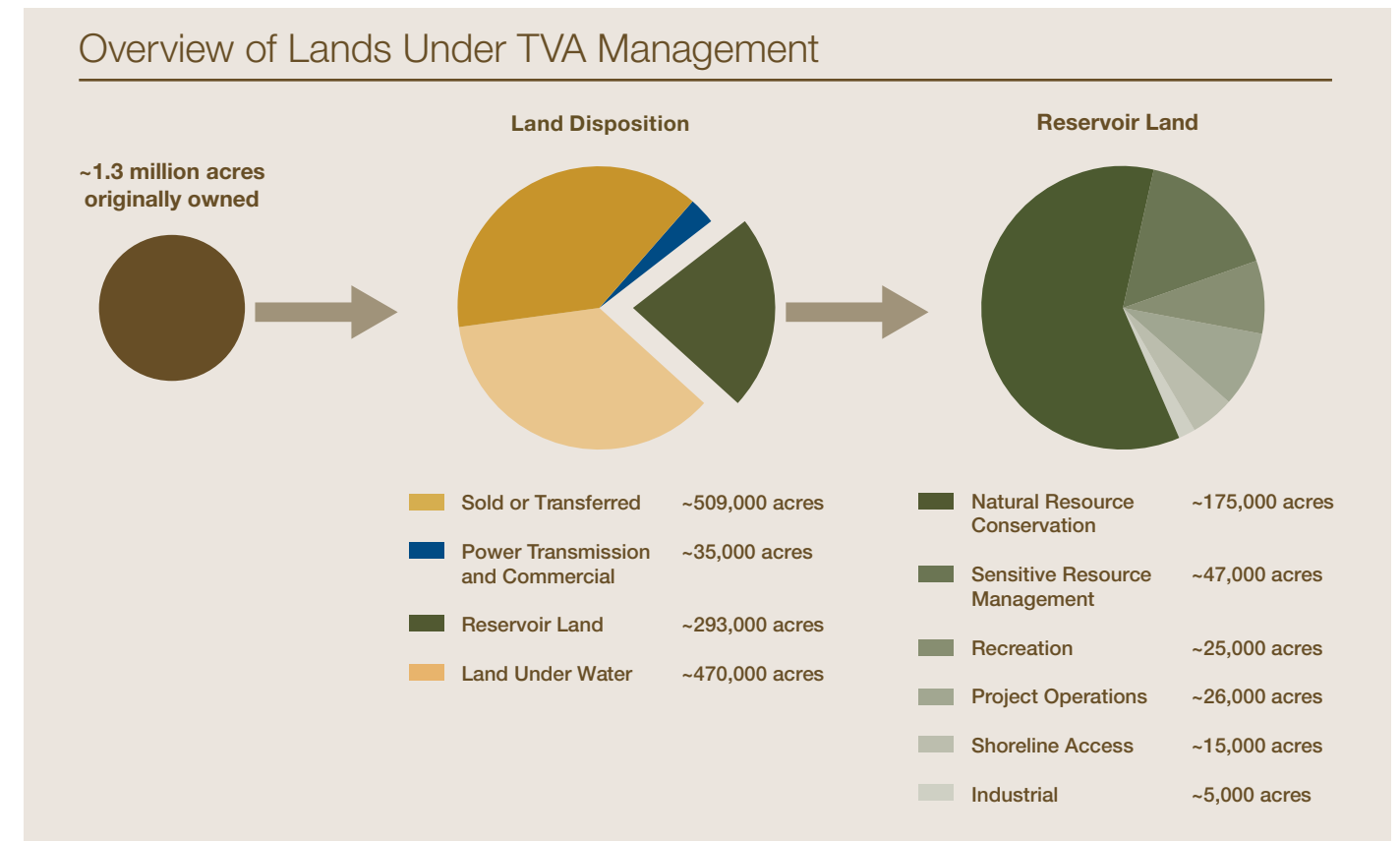


Figure 7. Overview of Lands under TVA Management





In 1999, in an effort to more clearly define and commit to suitable uses of reservoir lands, TVA began using the Single Use Parcel Allocation method, which is still in use today. In August 2017, the 2011 Comprehensive Valleywide Land Plan allocation ranges were updated to reflect changes in land use zones across the Tennessee Valley after the completion of the Multiple Reservoir Land Management Plans and EIS (TVA 2017). These allocation ranges are carried forward into the updated NRP, as shown in Table 3.

TVA's lands planning process allocates individual parcels on its reservoir land to guide how TVA-managed public lands are used for each of its reservoirs. TVA-managed lands are subdivided into manageable parcels and each parcel is designated to one of seven land use zone allocations. A description of each zone, including allowable land uses for each zone are described in Table 4.

**Comprehensive Valleywide Land Plan Zone Allocation Ranges**

Allocated Designation <sup>1</sup>	Current Allocations (%)	Allocation Ranges <sup>2</sup> (%)
Zone 2 Project Operations	9	7 to 10
Zone 3 Sensitive Resource Management	16	14 to 18
Zone 4 Natural Resource Conservation	60	56 to 63
Zone 5 Industrial	2	1 to 3
Zone 6 Developed Recreation	8	8 to 10
Zone 7 Shoreline Access	5	5 to 6

<sup>1</sup> Zone 1 – Non-TVA Shoreland represents private land on which TVA retained certain rights such as flowage.

<sup>2</sup> Represents the percentage of land acreage within each land use zone allocation. Does not represent shoreline miles

Table 3. Comprehensive Valleywide Land Plan Zone Allocation Ranges

Land Use Zone Definitions

Zone 1: Non-TVA Shoreland

**Shoreland that TVA does not own in fee.** This land may be privately owned or owned by a governmental entity other than TVA. Uses of this non-TVA land may include residential, industrial, commercial and/or agricultural. In many instances, TVA may have purchased the right to flood and/or limit structures on this non-TVA land (i.e., flowage easement). TVA's permitting authority under Section 26a of the TVA Act applies to construction of structures on non-TVA shoreland.

Non-TVA shoreland allocations are based on deeded rights and, therefore, will not change as a result of the lands planning process. This category is provided to assist in comprehensive evaluation of potential environmental impacts of TVA's allocation decision.

Zone 2: Project Operations

Land currently used, or planned for future use, for TVA operations and public works projects, including:

- **Land adjacent to established navigation operations** - Locks, lock operations and maintenance facilities and the navigation work boat dock and bases.
- **Land used for TVA power projects operations** - Generation facilities, switchyards and transmission facilities and rights-of-way.
- **Dam reservation land** - Areas acquired and managed for the primary purpose of supporting the operation and maintenance of TVA dams and associated infrastructures; secondary uses may also include developed and dispersed recreation, maintenance facilities, miscellaneous TVA field offices, research areas and visitor centers.
- **Navigation safety harbors/landings** - Areas used for tying off commercial barge tows and recreational boats during adverse weather conditions or equipment malfunctions.
- **Navigation dayboards and beacons** - Areas with structures placed on the shoreline to facilitate navigation.
- **Public works projects** - Includes rights-of-way for public utility infrastructures, such as sewer lines, water lines, transmission lines and major highway projects.

Zone 3: Sensitive Resource Management

Land managed for protection and enhancement of sensitive resources. Sensitive resources, as defined by TVA, include resources protected by state or federal laws or executive orders and other land features/natural resources TVA considers important to the area viewscape or natural environment.

Recreational natural resource activities, such as hunting, wildlife observation and camping on undeveloped sites may occur in this zone, but the overriding focus is protecting and enhancing the sensitive resources the site supports. Areas included are:

- TVA-designated sites with potentially significant archaeological resources.
- TVA public land with sites/structures listed in or eligible for listing in the National Register of Historic Places.
- **Wetlands** - Aquatic bed, emergent, forested and scrub-shrub wetlands as defined by TVA.
- TVA public land under easement, lease, or license to other agencies/individuals for resource protection purposes.
- TVA public land fronting land owned by other agencies/individuals for resource protection purposes.



- **Habitat protection areas** - These TVA natural areas are managed to protect populations of species identified as threatened and endangered by the U.S. Fish and Wildlife Service, state-listed species and any unusual or exemplary biological communities/geological features.
- **Ecological study areas** - These TVA natural areas are designated as suitable for ecological research and environmental education by a recognized authority or agency. They typically contain plant or animal populations of scientific interest or are of interest to an educational institution that would utilize the area.
- **Small wild areas** - These TVA natural areas are managed by TVA or in cooperation with other public agencies or private conservation organizations to protect exceptional natural, scenic or aesthetic qualities that can also support dispersed, low-impact types of outdoor recreation.
- **River corridor with sensitive resources present** - A river corridor is a segment of a river and the adjacent land along the banks. River corridors often consist of a linear green space of TVA land serving as a buffer to tributary rivers entering a reservoir. These areas will be included in Zone 3 when identified sensitive resources are present.
- **Significant scenic areas** - Areas designated for visual protection because of their unique vistas or particularly scenic qualities.
- **Champion tree site** - Areas designated by TVA as sites that contain the largest known individual tree of its species in that state. The state forestry agency "Champion Tree Program" designates the tree, while TVA designates the area of the sites for those located on TVA public land.
- **Other sensitive ecological areas** - Examples of these areas include heron rookeries, uncommon plant and animal communities and unique cave or karst formations.

## Zone 4: Natural Resource Conservation

Land managed for the enhancement of natural resources for human use and appreciation. Management of resources is the primary focus of this zone. Appropriate activities in this zone include hunting, timber management to promote forest health, wildlife observation and camping on undeveloped sites. Areas included are:

- **TVA public land** managed for wildlife or forest management projects.
- **TVA public land under easement, lease or license** to other agencies for wildlife or forest management purposes.
- TVA public land fronting land owned by other agencies for wildlife or forest management purposes.
- **Dispersed recreation areas** maintained for passive, dispersed recreation activities, such as hunting, hiking, bird-watching, photography, primitive camping, bank fishing and picnicking.
- **Shoreline conservation areas** - Narrow riparian strips of vegetation between the water's edge and TVA's back-lying property that are managed for wildlife, water quality or visual qualities.
- **Wildlife observation areas** - TVA natural areas with unique concentrations of easily observed wildlife that are managed as public wildlife observation areas.
- **River corridor without sensitive resources present** - A river corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails and interpretive activities. River corridors will be included in Zone 4 unless sensitive resources are present (see Zone 3).
- **Islands** without sensitive resources or existing development.



## Zone 5: Industrial

Land currently used, or planned for future use, for economic development, including businesses in distribution/processing/assembly and manufacturing. Preference will be given for businesses requiring water access. There are two primary types of uses for TVA land allocated for Industrial: **(1) access for water supply or structures associated with navigation, such as barge terminals, mooring cells, etc. or (2) land-based development potential.**

Areas included are:

- TVA public land under easement, lease, or license to other agencies/individuals/entities for industrial purposes.
- TVA public land fronting land owned by other agencies/individuals/entities for industrial purposes.
- In some cases, TVA land allocated to industrial use would be declared surplus and sold at public auction.

Types of development that can occur on this land are:

- **Industry** - Manufacturing, fabrication and distribution/processing/assembly involving chemical, electronics, metalworking, plastics, telecommunications, transportation and other industries. Industry does not include retail or service-based businesses.
- **Industrial access** - Access to the waterfront by back-lying property owners across TVA property for water intakes, wastewater discharge or conveyance of commodities (i.e., pipelines, rail or road). Barge terminals are associated with industrial access corridors.
- **Barge terminal sites** - Public or private facilities used for the transfer, loading and unloading of commodities between barges and trucks, trains, storage areas or industrial plants.
- **Fleeting areas** - Sites used by the towing industry to switch barges between tows or barge terminals that have both offshore and onshore facilities.
- **Minor commercial landing** - A temporary or intermittent activity that takes place without permanent improvements to the property. These sites can be used for transferring pulpwood, sand, gravel and other natural resource commodities between barges and trucks.

## Zone 6: Developed Recreation

Land currently used, or planned for future use, for concentrated, active recreational activities that require capital improvement and maintenance of developed infrastructure, including:

- **TVA public land** developed for recreational purposes, such as campgrounds, day-use areas, etc.
- TVA public land under easement, lease or license to other agencies/individuals/entities for developed recreational purposes.
- TVA public land fronting land owned by other agencies/individuals/entities for developed recreational purposes.





Residential use, long-term accommodations and/or individually owned units are not permitted on land allocated for developed recreation. Types of development that can occur on this land are:

- **Public recreation** - Recreation amenities developed and owned by a public agency that are open to the public. Public recreation areas may have varying levels of development, ranging from a water access site (e.g., launching ramp) to a marina facility. Facilities at public recreation areas could include playgrounds/play structures, picnic facilities, tennis courts, horseshoe areas, play courts, recreation centers, trails, greenways, natural areas, amphitheaters, food concessions (vending, snack bar), access to water for fishing and boating, swimming areas and swimming pools, launching ramps, courtesy piers, canoe access, marina facilities owned by a public entity, parking and campgrounds. Cabins or other overnight accommodations (other than campgrounds) are only permitted if the public recreation area is operated by a state or state agency as a component of a state park system.

Public recreation areas and facilities are typically owned and operated by the federal, state, county or local government. However, private entities may operate recreation facilities on public recreation land as concessionaires under agreement with the public entity controlling the property. The use of the facilities may be offered free or for a fee. Time-forward, public-private partnerships where facilities are owned by private investors will not be approved on public recreation land. All structures and facilities should be owned by the public entity.

- **Commercial recreation** - Recreation amenities that are provided for a fee to the public intending to produce a profit for the private owner/operator. These primarily water-based facilities typically include marinas and affiliated support facilities, such as stores, restaurants, campgrounds and cabins and lodges. Where applicable, TVA will require appropriate compensation for the commercial use of the property.

**Zone 7: Shoreline Access**

TVA-owned land where Section 26a applications and other land use approvals for residential shoreline alterations are considered in accordance with TVA's SMP. Types of development/management that may be permitted on this land are:

- Residential water use facilities, e.g., docks, piers, launching ramps/driveways, marine railways, boathouses, enclosed storage space and non-potable water intakes.
- Shoreline access corridors, e.g., pathways, wooden steps, walkways, or mulched paths that can include portable picnic tables and utility lines.
- Shoreline stabilization, e.g., bioengineering, riprap, gabions and retaining walls.
- Shoreline vegetation management.

*Table 4. Land Use Zone Definitions*

Reservoir lands planning is performed on a reservoir-by-reservoir basis and lands planning efforts may include an individual reservoir, multiple reservoirs (e.g., Mountain Reservoirs Land Management Plan) or portions of a reservoir. As with the Multiple Use Tract Allocation methodology, RLMPs developed with the Single Use Parcel Allocation methodology are planned in a public forum and

approved by the TVA Board, or its designee, as agency policy. In August 2017, TVA achieved a long-standing goal by completing RLMPs under the Single Use Parcel Allocation methodology for each of its previously planned reservoirs. The following table shows the current land zone allocations by reservoir.

**Comprehensive Valleywide Land Plan Zone Allocation Ranges**

Allocated Designation	Current Land Zone Allocation (% of Acreage)					
	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Apalachia Reservoir <sup>1</sup>	91	0	1	0	9	0
Beaver Creek Reservoir	11	0	0	0	86	0
Beech River Reservoir	6	0	51	0	43	0
Big Bear Creek Reservoir	7	82	0	0	10	0
Blue Ridge Reservoir	62	3	6	0	3	26
Boone Reservoir	24	17	51	0	9	<1
Cedar Creek Reservoir	10	66	10	0	8	5
Chatuge Reservoir	22	1	49	0	24	4
Cherokee Reservoir	7	12	68	0	9	3
Chickamauga Reservoir	7	16	54	2	12	9
Clear Creek Reservoir	100	0	0	0	0	0
Douglas Reservoir	50	3	40	0	6	1
Fontana Reservoir	43	0	5	0	47	4
Fort Loudoun Reservoir	30	4	21	2	39	4
Fort Patrick Henry Reservoir	27	7	41	0	14	10
Great Falls Reservoir	5	0	0	0	95	0
Guntersville Reservoir	6	27	60	1	5	2
Hiwassee Reservoir	36	11	44	0	4	4
Kentucky Reservoir	2	7	74	3	7	7
Little Bear Creek Reservoir	18	69	2	1	6	4
Melton Hill Reservoir	11	49	24	1	8	6
Nickajack Reservoir	33	38	23	2	4	<1
Nolichucky Reservoir	5	57	13	<1	25	0
Normandy Reservoir	17	8	70	0	5	<1
Norris Reservoir	3	18	67	0	7	5
Nottely Reservoir	53	0	33	0	11	2
Ocoees 1, 2, 3 Reservoir	100	0	0	0	0	0
Pickwick Reservoir	7	8	69	3	8	6
South Holston Reservoir	28	<1	46	6	19	1
Tellico Reservoir	5	17	56	2	15	4
Tims Ford Reservoir <sup>2</sup>	9	15	58	1	6	10
Upper Bear Creek Reservoir	6	81	8	0	3	2
Watauga Reservoir	46	9	38	0	8	<1
Watts Bar Reservoir	13	28	28	3	12	17
Wheeler Reservoir	13	10	70	3	4	<1
Wilbur Reservoir	83	0	17	0	0	0
Wilson Reservoir	88	0	0	0	12	<1
<b>Valleywide</b>	<b>9</b>	<b>16</b>	<b>60</b>	<b>2</b>	<b>8</b>	<b>5</b>

<sup>1</sup> Includes narrow strip of TVA-retained land along shoreline; acreage not calculated.

<sup>2</sup> Unique to Tims Ford Reservoir, an additional 68 acres (<1 percent) are allocated as Conservation Partnership (Zone 8). The allocation of TVA public land to Zone 8 has been discontinued. However, TVA will continue to manage lands allocated to Zone 8 per agency policy.

*Table 5. Land Use Zone Allocations*



## 2.2 Objectives of this Focus Area

- Provide a consistent approach to balancing shoreline development, recreation, natural and cultural resource management and other demands by applying a systematic methodology to identify the most suitable land uses
- Ensure input opportunities for the public and local, state and federal entities on TVA land management decisions

## 2.3 Benefits of this Focus Area

- Provides a consistent approach to balancing shoreline development, recreational use, natural and cultural resource management, and other uses by applying a systematic methodology to identify the most suitable land uses
- Identifies land use zone allocations to optimize public benefit, balance competing demands for the use of public lands, and support TVA's broad regional resource development mission
- Guides TVA's land management and property administration decisions while enhancing the protection of resources, including threatened and endangered species, cultural resources, wetlands, unique habitats, natural areas, water quality, and the visual character of the reservoirs
- Provides a mechanism for public involvement that allows local, state, and federal entities as well as individual members of the public to participate during the lands planning process

## 2.4 Reservoir Lands Planning Program

### 2.4.1 Comprehensive Valleywide Land Plan

#### Program Description

As part of the NRP, TVA developed its Comprehensive Valleywide Land Plan which comprises the framework

for TVA's reservoir lands planning program. Through this program TVA will continue to develop and evaluate RLMPs to guide TVA's land management and property administration decisions, while protecting natural and cultural resources. This program aligns with TVA's Land Policy and provides a consistent and systematic methodology to determine the most sustainable land uses for each parcel of TVA land.



#### Expected Benefits of the Program

- Provides a consistent approach by applying a systematic methodology to identify the most suitable land uses
- Identifies land use zone allocations to optimize public benefit, balance competing demands for the use of public lands and to support TVA's broad regional resource development mission
- Guides TVA land management and property administration decisions while enhancing the protection of significant resources, including threatened and endangered species, cultural resources, wetlands, unique habitats, natural areas, water quality and the visual character of the reservoir

#### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed reservoir lands.

# Section 26a Permitting and Land Use Agreements

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### 3.1 Focus Area Description

Since its establishment by Congress in 1933, the public has entrusted TVA to manage its land and reservoir resources to provide multiple benefits to the people of the Tennessee Valley and to serve as a responsible steward of the Tennessee River System. These land and reservoir resources that fall under the care of TVA include a 41,000 square mile watershed, 293,000 acres of reservoir land, 11,000 miles of reservoir shoreline and thousands of miles of off-reservoir streams and rivers that span a seven-state region. People throughout the Tennessee Valley and visitors highly value these public lands and waters and TVA has a duty to manage its lands wisely for present and future generations.



TVA manages the use of these lands and shorelines in a way that aligns with the purposes of the TVA Act. TVA developed its Section 26a Regulations, SMP and Land Policy in an effort to consistently manage the use of the reservoir lands and waters under its control. Accordingly, it is TVA's policy to manage its lands to protect the integrated operation of the TVA reservoir and power systems, provide for appropriate public use and enjoyment of the reservoir system and provide for continuing economic growth.

#### Section 26a Permitting

On October 22, 1971, TVA promulgated regulations setting forth the approval process and establishing a number of policies regarding the exercise of TVA's Section 26a authority. Section 26a of the TVA Act is designed to ensure that construction along the shoreline and in the waters of the Tennessee River does not adversely impact or compromise TVA's ability to manage the Tennessee River system. This section prohibits the construction, operation, or maintenance of any dam, appurtenant works, or other obstruction affecting navigation, flood control, or public lands or reservations across, along, or in the Tennessee River system or any of its tributaries until the plans for such construction, operation, or maintenance shall have been submitted to and approved by the TVA Board or its delegate.

Commencement of construction, operation, or maintenance of such structures without such approval is prohibited. Obstructions may include such things as boat docks, piers, boathouses, boat launching ramps, shoreline stabilization, dredging, floating cabins and other structures.

TVA implements Section 26a of the TVA Act through its SMP and Section 26a Regulations. The SMP became effective on November 1, 1999 and was based on the Shoreline Management Initiative that was initiated in the early 1990s to address growing public concern surrounding how increases in residential shoreline development would affect the shoreline resources and uses. In 1999, the TVA Board adopted the SMP based on the Shoreline Management Initiative EIS. This policy allows environmentally responsible development of shoreline where residential access rights already exist and preserves public benefits along shorelines where residential access rights do not exist. Under the SMP, TVA sought to balance residential shoreline development, recreational use and resource conservation needs in a way that maintains the quality of life and other important values provided by its reservoir system. In 2003, the Section 26a Regulations were updated to incorporate the standards established by the SMP as well as the permitting requirements for other non-residential uses.



Typically, TVA reviews and approves approximately 1,500 construction permits each year to ensure the compatibility of the proposed construction activity with flood control, navigation, reservoir recreation, power generation, land management and environmental protection mandates. Approximately 85 percent of these permits are designated for residential development. Section 26a approvals are federal actions, and therefore, TVA evaluates environmental impacts of these actions under NEPA and other federal laws.

#### Land Use

TVA frequently receives requests for use of reservoir property. These uses can be for commercial or public recreation, industrial development, agricultural use, public infrastructure, or special events. In 2006, the TVA Board recognized the public value of reservoir lands by approving the Land Policy, which supported the position that TVA should continue to provide for the public use and enjoyment of the reservoir system as well as for economic growth in the Tennessee Valley. The Land Policy governs the planning, retention and disposal of land and focuses on TVA's position as the manager of federal lands entrusted with the public's best interest. Additionally, it provides guidance for sustainable management of the public lands and associated resources.

Implementation of the Land Policy ensures the consistent management and best use of TVA land. TVA must consider the effects of land uses on the environment while also

complying with applicable laws and regulations. If the use is allowable under the Land Policy and the request has been reviewed and approved, TVA permission may be granted in the form of a term or permanent easement, license for short-term use, or sale of the property. Each year, TVA reviews approximately 40 reservoir land use requests.

### 3.2 Objectives of this Focus Area

- Manage permission to use the shoreline and public land in a fashion that is consistent with the TVA Act, NEPA, SMP, and the Land Policy
- Seek to develop clear rules and policies, engage in public education and communication, and issue permits and agreements consistent with standing policies
- Support unified development of the Tennessee River system and flood control objectives

### 3.3 Benefits of this Focus Area

- Balances competing demands to provide public access to the reservoir while protecting natural and cultural resources and TVA's management of the river system
- Provides consistent guidance to support use and development of eligible public lands and shoreline for residential, commercial recreation, public, and industrial purposes



# Section 26a Permitting and Land Use Agreements

- Supports community development and growth by making TVA public lands and shoreline available for infrastructure and public use
- Provides an interface between TVA and landowners around TVA reservoirs

## 3.4 Section 26a Permitting and Land Use Agreements Programs

### 3.4.1 Section 26a Permitting and Land Use Implementation

#### Program Description

TVA applies the Section 26a Permitting and Land Use Implementation Program in accordance with Section 26a of the TVA Act, SMP, Land Policy and associated regulations and guidelines. This program helps balance resource conservation, sustainable economic development, reasonable water access and recreation opportunities. TVA ensures compliance with Section 26a permits and land use agreements through shoreline and land inspections. Furthermore, TVA will continue to evaluate, develop and implement permitting and land use agreement procedural efficiencies and establish and maintain clear and meaningful policies, rules and procedures.

Examples of projects and efforts that support the implementation of the Section 26a Permitting and Land Use Implementation Program include:

- Supporting stakeholder requests through the issuance of Section 26a permits and Land Use agreements in accordance with Section 26a of the TVA Act, SMP and Land Policy
- Inspecting shoreline construction projects for compliance with Section 26a permits
- Evaluating, revising and developing guidelines as needed to support the implementation of TVA's Section 26a Permitting and Land Use Agreement Program

#### Expected Benefits of the Program

- Greater adherence to Section 26a of the TVA Act
- Enhanced management of the Tennessee River system for multiple benefits

- Improved development and disposal of managed lands to support sustainable development in the Tennessee Valley

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed.

### 3.4.2 Section 26a Permitting and Land Use Stakeholder Outreach and Communication

TVA will engage in stakeholder outreach and communication regarding Section 26a of the TVA Act, SMP, Land Policy and associated regulations and guidelines. Stakeholders include government entities, lakefront property owners, realtors, dock builders, recreational users and industrial and commercial entities. TVA will use outlets, such as tva.com to provide user-friendly information for stakeholders regarding permitting and land use. To increase awareness of these policies, regulations and guidelines as provided by Section 26a, TVA will conduct stakeholder outreach workshops and campaigns.

Examples of projects and efforts that support the implementation of the Section 26a Permitting and Land Use Stakeholder Outreach and Communication Program include:

- Providing information through tva.com, social media and other communication platforms
- Conducting realtor and stakeholder workshops and outreach events

#### Expected Benefits of the Program

- Improved partnerships
- Increased public awareness concerning how land and shoreline use impacts the environment and TVA's management of the reservoir system
- Improved understanding and compliance with TVA's Section 26a permitting and land use requirements

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed.

# Public Land Protection

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**4.1 Focus Area Description**

In a 1936 report to Congress, the TVA Board recognized the importance of reservoir property when it referred to these lands as “a protective belt” and described the permanent control of which as “a matter of critical importance in the interest of reservoir protection.” The 2006 Land Policy acknowledged the importance of TVA public land and land rights and TVA’s duty to manage them wisely for present and future generations in a way that is sustainable while balancing competing demands. The TVA Board in its 2018 Public Land Protection Policy reaffirmed the importance of TVA public land. The Public Land Protection Focus Area includes activities to prevent abuse and destruction of this land and to take necessary steps to remedy unauthorized uses and encroachments, as well as efforts to engage and educate the public to prevent abuse and unauthorized uses.



TVA public land provides many benefits to the people of the Tennessee Valley, not only today but also for generations to come. Various academic studies continue to show tangible value in TVA’s management of the land and water resources under its care and the significant benefit of these resources to the people of the region. Despite the value that TVA and others place on its public reservoir land and water resources, TVA continually faces challenges associated with activities that abuse or attempt to privatize TVA public land or destroy these important resources. Examples include trash dumping, damage from motorized vehicles, unauthorized vegetation removal and construction of permanent or temporary structures without permission from TVA. Such activities degrade the quality of the land, land rights and the user experience. While some individual impacts may seem inconsequential, the cumulative effects threaten TVA’s ability to fulfill its vital management responsibilities.

Through education and engagement efforts, TVA promotes the importance of its public lands and the appropriate use of those lands. TVA conducts regular assessments of its public

reservoir lands for impacts and addresses needs identified in a prioritized manner, including preventative and reactive measures for public land protection. By collaborating with local communities, organizations and state and federal agencies, TVA is able to expand its public land protection efforts and collaborate with others who value the benefits TVA’s public lands provide.

**4.2 Objectives of this Focus Area**

- Protect the public land and land rights in TVA’s custody and control to preserve them for future generations while balancing competing demands through proactive and reactive management efforts
- Apply consistent enforcement of TVA’s rules, regulations, policies and applicable local, state and federal laws
- Assess and inventory TVA public lands and associated assets to improve the quality of public lands
- Inform and engage the public to provide clear expectations for sustainable use of TVA public land

**4.3 Benefits of this Focus Area**

Protection of TVA’s public lands, the reservoir system and the associated resources provide the following benefits to the residents of the Tennessee Valley and the public:

- Enhances awareness of the value of TVA land and water resources for conservation, recreation, economic development and other competing uses
- Protects wildlife habitat and biodiversity in the Tennessee Valley
- Supports unified development in the Tennessee River system and flood control objectives
- Protects public and commercial recreation opportunities

**4.4 Public Land Protection Programs**

**4.4.1 Public Land Outreach**

Program Description

Outreach and engagement are the first lines of defense for public land protection. TVA utilizes several methods for engaging the public and conveying expectations for appropriate use of TVA public lands. To improve public lands and waters, TVA supports communities by encouraging participation in reservoir and community clean ups. Through



proactive communication with stakeholders and adjacent property owners, TVA can prevent encroachments and unauthorized uses of its lands. Additionally, tva.com is a platform used to share information regarding guidelines and rules for the authorized use of TVA public lands.

Examples of projects and efforts that support the implementation of the Public Land Outreach Program include:

- Supporting reservoir and community cleanups
- Sharing information with stakeholders and adjacent property owners to increase awareness and promote the value of TVA public lands

Expected Benefits of the Program

- Prevention of encroachments and other abuse by encouraging the appropriate use of TVA public land through improved communication efforts
- Reduction of trash and litter on TVA public land through engagement and the support of reservoir and community cleanups

Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed.

**4.4.2 Public Land Protection Enforcement**

Program Description

In accordance with the Public Land Protection Policy, TVA protects its land through the establishment and maintenance of rules and regulations and enforcement of these rules and regulations using available means. Rules and regulations create consistency for the public and TVA by outlining expectations and buttressing TVA’s basis for enforcement.

Examples of projects and efforts that support the implementation of the Public Land Protection Program include:

- Enhancing and implementing rules and regulations for authorized use of TVA public lands
- Protecting the quality and value of TVA public lands by addressing abuse and privatization of those lands
- Increasing awareness of the rules for use of TVA public lands by maintaining rules information on tva.com and installing rules signs on TVA property

Expected Benefits of the Program

- Sustainable use of TVA public lands



- Consistency in the enforcement of unauthorized activities and abuse of TVA public land
- Reduced violations and encroachments due to enforcement of rules and resolution of infractions
- Increased willingness of responsible parties to comply due to TVA's consistent enforcement

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**4.4.3 Comprehensive Land Condition Assessment**

**Program Description**

Through this program TVA assesses its land to determine the condition of each parcel of TVA public land and identify stewardship needs for maintaining or improving the conditions of each parcel. Once these stewardship needs are identified, staff in the appropriate focus area prioritize and address the needs.

Examples of projects and efforts that support the implementation of the Comprehensive Land Condition Assessment Program include:

- Assessing the condition of TVA lands to identify management needs, such as implementing invasive species control, enhancing wildlife habitat and reestablishing TVA property boundary lines

**Expected Benefits of the Program**

- Increased protection of natural, cultural and sensitive resources
- Increased knowledge of existing resource conditions and stewardship needs on TVA public lands
- Enhanced positive public perception associated with proactive land management

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**4.4.4 Natural Resources Asset Inventory**

**Program Description**

The Natural Resources Asset Inventory Program is a database of assets and facilities on TVA's developed and undeveloped lands. Examples of assets and facilities that may be logged into the database include picnic areas, campsites, playgrounds, swimming beaches, pavilions,

visitor centers, launching ramps, canoe accesses, fishing piers and parking areas. Having an accurate inventory allows for the development of routine maintenance and inspection schedules that are important in lifecycle management of assets. This information is used to protect TVA investments and to support future project planning for repair, renovation, or replacement of those assets.

Examples of projects and efforts that support the implementation of the Natural Resources Asset Inventory Program include:

- Assessing TVA assets to identify maintenance needs
- Providing data to inform annual budgeting and project prioritization
- Implementing inspection and routine maintenance schedules

**Expected Benefits of the Program**

- Increased efficiency in project planning and lifecycle management of assets
- Increased protection of TVA investments on reservoir lands
- Improved availability of information to share with the public

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**4.4.5 Property Management**

**Program Description**

TVA's Property Management Program encompasses efforts designed to clearly identify TVA's boundary and to take steps to reduce and mitigate unauthorized uses of TVA's public lands. Establishing and maintaining TVA's public land boundary and signage assists (1) the public in identifying TVA public lands, (2) adjacent property owners by preventing unintended encroachments and (3) TVA through clear identification and resolution of existing encroachments. In addition, and as resources allow, TVA systematically monitors and maintains existing access control measures that prevent abuse from motorized vehicles and other damaging activities, manages contracts with local communities for the control of litter and trash dumping and performs reservoir shoreline inspections to monitor construction activities.



Examples of projects and efforts that support the implementation of the Property Management Program include:

- Surveying to establish or reestablish TVA's property boundary
- Implementing access control to protect TVA public lands
- Installing signage to convey rules for authorized uses of TVA public lands

**Expected Benefits of the Program**

- Clearly identified property boundaries on TVA's public lands

- Reduced instances and more effective resolution of encroachments and unauthorized uses
- Increased protection of natural and cultural resources
- Continued TVA presence on public lands and reservoirs to support appropriate uses
- Enhanced positive public perception associated with proactive land management

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.



# Land and Habitat Stewardship

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## 5.1 Focus Area Description

The Tennessee Valley’s 41,000-square-mile watershed along with TVA’s 293,000 acres of public land, 11,000 miles of reservoir shoreline and even larger power service area provide a canvas for TVA to manage its natural resources and enhance wildlife habitat. The Land and Habitat Stewardship Focus Area guides TVA’s management of the forestlands, grasslands, wetlands and wildlife and their habitats under TVA care in a holistic manner. Land and Habitat Stewardship on public lands provides valuable open space for wildlife and can provide recreational opportunities, including hunting, fishing, camping, hiking, biking, photography and wildlife viewing.



TVA works closely with various local, state and federal agencies; non-governmental organizations; industries; and stakeholders to develop and support conservation planning strategies, including federal refuge management plans and comprehensive state-wide conservation plans. TVA management efforts often align with interagency goals and objectives.

TVA has a long history in the management of natural resources, especially in the areas of forestry, reclamation and wildlife management. The TVA Act recognized the role of forest management in the restoration of the region’s natural resources. Through the years, TVA worked with agencies and stakeholders to encourage better forest management, reforestation and mine reclamation practices, improving wildlife habitat, protecting threatened and endangered species, protecting sensitive resources associated with caves and establishing a regional natural heritage database to collect and store biological data. The development of private land adjacent to TVA-managed property has increased dramatically, compounding pressure on natural and cultural resources located on public lands. TVA’s Land and Habitat Stewardship programs support TVA’s efforts to achieve a balance between the competing demands of private land use and natural resource protection.

## 5.2 Objectives of this Focus Area

- Improve protection and monitoring of sensitive resources on TVA land
- Enhance biological diversity and wildlife habitat
- Improve forest health and associated ecological benefits
- Improve interagency relationships and partnership efforts toward mutual stewardship goals

## 5.3 Benefits of this Focus Area

Stewardship of TVA’s public lands, the reservoir system and the associated resources provide the following benefits to the residents of the Tennessee Valley and the public:

- Increases planning, protection, and management of sensitive resources (e.g., threatened and endangered species, wetlands, and natural areas)
- Improves implementation measures through adaptive management approaches and partnership opportunities
- Enhances wildlife habitat and biological diversity through restoration and maintenance of native plant communities using ecologically sound management practices
- Expands partnerships to further resource stewardship efforts in the region
- Increases opportunities for outdoor public use





## 5.4 Land and Habitat Stewardship Programs

### 5.4.1 Threatened and Endangered Species

#### Program Description

The Threatened and Endangered Species Program primarily addresses compliance with Section 7 of the Endangered Species Act, under which TVA is required to consult with the U. S. Fish and Wildlife Service concerning the effect of its actions on species listed by the U.S. Fish and Wildlife Service. Consultation can be required for projects proposed by TVA, those subject to permitting by TVA (e.g., approvals under Section 26a of the TVA Act), or those requiring the use of TVA lands. TVA collaborates with other federal and state agencies, non-governmental organizations and academic institutions to plan, design and implement projects to help benefit threatened and endangered species where appropriate.

Examples of projects and efforts that support the implementation of the Threatened and Endangered Species Program include:

- Continuing to comply with the requirements of the Endangered Species Act and implementation of biological opinion requirements
- Supporting and facilitating monitoring of select species populations
- Creating monitoring plans, seeking partnerships and cataloging select species

- Continuing cave protection activities
- Continuing implementation of habitat enhancement and protection activities

#### Expected Benefits of the Program

- Encouraged support of compliance with the Endangered Species Act by protecting and improving threatened and endangered species habitat on TVA lands and waters
- Increased resource knowledge to help make informed decisions on how lands are managed
- Improved coordination and communication with regulators

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 5.4.2 Wetland Management

#### Program Description

The Wetland Management Program includes activities that serve to identify, manage and protect wetlands on TVA lands in accordance with Executive Order 11990 (Protection of Wetlands).

Examples of projects and efforts that support the implementation of the Wetland Management Program include:

- Continuing implementation of current TVA wetland monitoring, management and protection practices on TVA-managed lands

- Assessing wetland function and quality
- Continuing to manage current database including data updates, information sharing and improved mapping

#### Expected Benefits of the Program

- Enhanced land management decisions through improved mapping and assessments identifying the location, type, condition and quality of wetlands on TVA lands
- Identified threats to wetlands on TVA-managed lands
- Increased preservation of the quantity, quality, functionality and biological diversity of TVA's wetlands

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 5.4.3 Sensitive Resources Data

#### Program Description

TVA's sensitive resource data management is maintained through the TVA Natural Heritage and Wetlands databases. The TVA Natural Heritage database is a regional biological database that contains an inventory of rare plants, animals, natural communities, conservation sites and other sensitive natural resource features for the entire TVA region. This extensive database also includes champion trees, colonial bird roosting sites and areas managed by other local, state and federal entities. The TVA Natural Heritage database is affiliated with and uses the NatureServe® network of natural heritage programs in North and Central Americas. The Natural Heritage methodology is supported by Biotics5, NatureServe's customized web-based interface for data entry and mapping. This ensures consistent data among the seven Tennessee Valley states in which TVA operates. TVA maintains cooperative data exchange agreements with its state and federal conservation partners, ensuring that the most current data is used to make informed decisions.

In addition to the TVA Natural Heritage database, TVA also maintains a wetlands database. Several geospatial data layers have been developed to support the assessment of proposed projects on wetland resources. These data layers are used for resource assessment and preliminary reviews for ground surveys and wetland delineations. The wetland data available includes scanned National Wetlands Inventory maps that have been georeferenced and combined to provide a seamless coverage of the entire TVA region. The National

Wetland Inventory maps, covering approximately 70 percent of the TVA region, are in a digitized format for spatial analysis.

TVA uses this biological data for environmental reviews, conservation planning and endangered species management activities. This data is integral to informing other programs and activities across all resource areas as well as collaborative efforts with external stakeholders.

Examples of projects and efforts that support the implementation of the Sensitive Resources Data Program include:

- Continuing current management of TVA Natural Heritage and wetlands databases
- Supporting data sharing agreements among TVA and other state and federal resource agencies

#### Expected Benefits of the Program

- Improved management and protection of the Tennessee Valley's sensitive resources through increased knowledge and data sharing of resource information
- Enhanced collaborative working environment through data sharing activities with state, federal and non-governmental organization partners
- Improved development of avoidance, minimization and mitigation measures as part of project planning

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 5.4.4 Natural Areas Management

#### Program Description

Through this program TVA manages its natural areas, which are ecologically significant sites, lands set aside for particular management purposes and lands that contain sensitive biological, cultural, or scenic resources. The TVA Natural Areas Management Program includes small wild areas, habitat protection areas, wildlife observation areas and ecological study areas.

Examples of projects and efforts that support the implementation of the Natural Areas Management Program include:

- Monitoring and assessing TVA's natural areas to develop a prioritized list of maintenance or improvement needs



- Developing and implementing comprehensive natural area management plans
- Establishing criteria to designate new and/or remove existing natural areas on TVA-managed lands
- Protecting and enhancing ecological communities (e.g., restoration of native communities, invasive species control, use of prescribed fire and maintaining and protecting rare native communities)
- Maintaining, enhancing and developing trails in natural areas

#### Expected Benefits of the Program

- Expanded and improved knowledge and information about sensitive resources, resulting in enhanced habitat protection of some of the Tennessee Valley's unique areas
- Increased opportunities for ecotourism resulting in greater local and regional economic benefits.
- Enhanced public awareness and appreciation of unique natural areas
- Enhanced collaborative working environment through information sharing with state, federal and non-governmental organization partners

#### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed lands.

### 5.4.5 Grass Land and Agricultural Land Management

#### Program Description

The Grass Land and Agricultural Land Management Program focuses on enhancing biological diversity on TVA's non-forested lands. Management of these lands provides habitat diversity for a wide range of plant and animal communities, as well as other environmental benefits and public use opportunities. These lands are maintained in early successional plant communities or agricultural fields, such as native warm season grasses (NWSG), row crops and hay forage. Sustainable agricultural practices help improve wildlife habitat, protect water quality, enhance soil productivity and help provide public benefits by only allowing acceptable agricultural crops that have positive natural resource benefits. Practices for growing these crops can vary from light management to very intensive management.

Examples of projects and efforts that support the implementation of the Grass Land and Agricultural Land

Management Program include:

- Continuing to manage agricultural licenses and cooperative state and federal agency agreements on TVA-managed lands
- Developing partnerships and utilizing cooperative and land use agreements with state and federal agencies, non-governmental organizations and local agricultural producers to manage and enhance TVA grasslands and agricultural lands.
- Establishing transitional buffer zones for habitat, establishing native plant communities and maintaining early successional habitat through use of prescribed fire, bushhogging and invasive control measures
- Implementing habitat conversion and enhancement such as converting exotic turf grass to native grass and forbs and creating and maintaining quality pollinator habitat

#### Expected Benefits of the Program

- Enhanced plant community diversity and wildlife habitat, support for existing resource management unit plans and protection of sensitive resources by maintaining vegetative cover on specific sites
- Reduced maintenance costs to TVA (e.g., dam reservations, substations, interior forest roads) and enhanced local agribusiness
- Elevated potential to meet interagency resource management goals
- Demonstrated innovative resource management practices

#### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed lands.

### 5.4.6 Dewatering Projects Management

#### Program Description

The Dewatering Projects Management Program operates, either alone or in partnership, nine dewatering projects on Kentucky and Wheeler Reservoirs. A dewatering area is an area that is seasonally flooded as part of a waterfowl management program by TVA, the Tennessee Wildlife Resources Agency, Alabama Department of Conservation and Natural Resources and U.S. Fish and Wildlife Service. The projects are operated as part of the Tennessee and Wheeler national wildlife refuges and state wildlife management areas.

Examples of projects and efforts that support the implementation of the Dewatering Projects Program include:

- Refurbishing and upgrading dewatering facilities to standard operation and function to support Dam Safety Governance and monitoring areas
- Operating, managing and maintaining dewatering areas and protecting structural integrity of earthen levees
- Collaborating with local and regional partners to provide enhanced public use and recreational opportunities, such as hunting, camping, biking, hiking, wildlife viewing and fishing

#### Expected Benefits of the Program

- Increased awareness of overwintering waterfowl, other wildlife and sensitive species habitat
- Enhanced protection of wetlands, bottomland forests, cultural resources, agricultural lands and highway or railroad embankments
- Improved waterfowl hunting and other dispersed use opportunities such as wildlife viewing, bank and boat fishing, hiking and biking
- Increased economic benefits to local communities through ecotourism and agriculture

#### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed lands.

### 5.4.7 Forest Resource Management

#### Program Description

In the Forest Resource Management Program, TVA oversees forest resources by developing management plans to balance multiple uses, such as enhancing habitat, managing vegetation and controlling exotic, invasive plant species. TVA implements a variety of management actions, including limited small timber harvests and invasive species control to support responsible land stewardship. Proper planning for timber harvesting or salvage operations for storm and insect damages can minimize both resource and public use impacts and enhance wildlife habitat and public use opportunities.

TVA's resource protection and enhancement activities on reservoir lands were historically planned and implemented as demonstrations of environmentally acceptable and cost-effective management. During the 1990s, management practices on reservoir lands were primarily focused on specific programmatic aspects, including forestry, recreation,

wildlife and sensitive resource protection. In the early 2000s, management approaches continued to evolve by engaging the public in the development of Resource Management Unit Plans for selected reservoir lands.

Through the Forest Resource Management Program TVA

manages the forest plant community and the wildlife it supports in a holistic manner while providing public use opportunities. The program addresses the challenges of balancing forest resource management with public use opportunities.

Examples of projects and efforts that support the implementation of the Forest Resource Management Program include:

- Assessing tree cutting and vegetation damage encroachments
- Managing hazard trees and small-scale vegetation (tree removal) operations associated with storm or insect damages
- Monitoring broad forest trends on TVA-managed lands and providing support to state forestry assessment plans
- Developing and maintaining a qualified fire management crew to enhance and protect TVA assets
- Implementing forest health and enhancement projects including reforestation, prescribed fire, invasive vegetation control, native species conversion, implementation of unit management plans, wildlife habitat enhancements and scaled timber harvest and salvage activities

#### Expected Benefits of the Program

- Public safety and regulatory compliance by hazard tree mitigation and vegetation control at dams, dikes, levees, emergency spillways and dewatering units
- Forest protection through insect and disease control and monitoring and wildfire prevention and suppression
- Forest health and associated ecological benefits through support of diverse, sensitive, historic and unique plant communities as well as wildlife habitats







**Geographic Scope of the Program**

Program efforts will be implemented within the Tennessee River watershed.

**5.4.8 Conservation Planning**

**Program Description**

Conservation planning efforts are carried out by local, state and federal agencies as well as by non-governmental organizations and others. TVA will support and participate in these interagency efforts to help reach the objectives of the NRP. For example, actions and efforts could include participation in interagency fire management working groups, prescribed fire councils, state wildlife conservation action plans, threatened and endangered species recovery and critical habitat plans and migratory avian conservation initiatives.

Examples of projects and efforts that support the implementation of the Conservation Planning Program include:

- Partnering with regulatory and resource management agencies and non-governmental organizations in local, state and regional conservation planning efforts
- Providing technical expertise, facilitating research opportunities and participating in working groups (e.g., migratory bird working groups)

**Expected Benefits of the Program**

- Increased interagency partnership opportunities
- Maintained and improved interagency relationships and cooperative efforts toward mutual goals
- Enhanced understanding and management of plant communities, wildlife and their habitats

**Geographic Scope of the Program**

Program efforts will be implemented within the Tennessee River watershed.

# Nuisance and Invasive Species Management

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### 6.1 Focus Area Description

Nuisance and invasive species represent a significant threat to the Tennessee Valley's natural resources. A species is considered invasive if it is not native to an ecosystem and if its establishment is likely to cause economic, environmental, or human harm. Some species, invasive or native, can become a nuisance when present in concentrated amounts or in undesired locations, becoming destructive or even threatening to humans, property and other species. These nuisance and invasive species have damaging effects on infrastructure, the economy, human health and recreation.



TVA has a long-standing history of prevention, management and control of nuisance and invasive species, which included vector disease control, forest management and aquatic plant management activities. Such management efforts and programs have evolved over the past few decades to meet new challenges and to continue to address legacy issues. Climate change, global transport and increased recreational use and travel amplify the threat and potential impacts caused by invasive species. TVA continues to address the challenges brought on by the introduction and establishment of invasive plant species as well as the influence of nuisance plant and animal species on TVA lands and waters.

TVA manages the effects of terrestrial and aquatic nuisance and invasive plants across the Tennessee Valley. On a terrestrial landscape, this includes the control of invasive plant species, such as kudzu and privet, usually in conjunction with other management activities, for the improvement of habitat on TVA lands. In an aquatic environment, nuisance levels of aquatic plants can restrict recreational uses, clog water intakes and impact commercial uses of a water body. TVA manages nuisance and invasive aquatic plants, including Hydrilla and Eurasian Watermilfoil in areas where their growth impacts or impedes the use of public recreation areas.

TVA also addresses nuisance animal issues where negative impacts may occur directly to TVA lands, facilities and recreational users in order to protect public health and safety

(e.g., dangers of feral hogs), TVA assets (e.g., bird impacts to power structures) and adjacent property from damage (e.g., flooding from beavers).

The rate of species introductions is likely to remain constant, if not to increase in the coming decades, posing a risk to the Tennessee Valley's natural resources. TVA will continue activities relative to nuisance and invasive species management, addressing existing issues and adapting to new challenges.

### 6.2 Objectives of this Focus Area

- Sustain and expand efforts to address the threats of invasive and nuisance species in order to best protect the Valley's natural resources
- Ensure use of practical and environmentally sound management practices which will take into account stakeholder expectations and the multiple uses of TVA lands and waters
- Implement internal and external outreach efforts creating enhanced public awareness and action regarding the impacts of invasive and nuisance plants and animals
- Establish partnerships with universities and local, state, and federal entities to identify and address threats posed by invasive and nuisance species within the Tennessee Valley

### 6.3 Benefits of this Focus Area

- Improves protection and enhancement of resources, habitats, biodiversity, and use of public lands and reservoirs
- Enhances public awareness and action regarding the impacts of invasive and nuisance plants and animals
- Develops partnerships with resource management agencies and non-governmental organizations to further resource management efforts in the region and beyond

### 6.4 Nuisance and Invasive Species Management Programs

#### 6.4.1 Aquatic Plant Management

##### Program Description

The Aquatic Plant Management Program aims to reduce the impacts of nuisance and invasive aquatic plants through a stakeholder-driven approach with the intent to balance the multiple uses of TVA reservoirs. The program will manage and reduce impacts of nuisance and invasive species by utilizing outreach opportunities to improve understanding of these impacts while developing collaborative partnerships with universities, state and local partners and serving as technical experts on aquatic plant management in the Tennessee Valley. TVA manages aquatic plants in developed public-access areas like boat ramps, swim beaches and courtesy piers on its reservoirs on an as-needed basis when recreational use and/or access become seriously hindered. In 1993, TVA completed an SEIS for these program activities; aquatic plant management activities under the NRP would be consistent with those addressed in the 1993 SEIS.

Examples of projects and efforts that support the implementation of the Aquatic Plant Management Program include:

- Utilizing mechanical treatments, including aquatic plant harvester, aquatic weed cutters, and manual V blade cutters
- Utilizing chemical methods, including applying emergent (foliar), floating, granular and submersed herbicide applications with non-restrictive Environmental Protection Agency-approved aquatic herbicides (in accordance with label recommendations) on targeted populations of aquatic plant species

- Utilizing biological methods, including the introduction of triploid (sterile) Chinese grass carp (*Ctenopharyngodon idella*) and *Galerucella* species of leaf beetle
- Providing public outreach opportunities, including events to inform and educate the public on aquatic plant species in the Tennessee Valley and preventative measures related to the introduction of aquatic species and management alternatives
- Collaborating and partnering with reservoir stakeholder groups and state and local governments to provide technical expertise on the history and management of aquatic plants in the Tennessee Valley and partnerships with universities to develop new mechanical, biological and chemical methods for aquatic plant management

##### Expected Benefits of the Program

- Improved reservoir access and use for multiple user groups
- Increased protection of water resources and migratory bird habitat
- Reduced impacts to TVA power operations caused by nuisance and invasive aquatic plant growth
- Reduced impacts from pioneer invasive aquatic plant species
- Enhanced outreach program efforts and partnership development to increase public knowledge and improve future decision-making

##### Geographic Scope of the Program

Program efforts will be carried out within the Tennessee River watershed.

#### 6.4.2 Nonnative Invasive Plant Management on TVA Lands

##### Program Description

Through this program TVA will manage the effects of nonnative invasive plants on TVA lands. TVA manages these species, utilizing mechanical, chemical, prescribed fire and other means in areas where habitat improvements have been made in natural areas, on trails and on dam reservation properties. Nonnative invasive plants include trees, shrubs, vines, grasses, ferns and forbs that spread rapidly and compete with native flora.



# Nuisance and Invasive Species Management

The following are examples of species that are nonnative and displace native species and their communities: privet (*Ligustrum* spp.), kudzu (*Pueraria montana*), tree-of-heaven (*Ailanthus altissima*), fescue (*Festuca* spp.), johnson grass (*Sorghum halepense*), olives (*Elaeagnus* spp.) and nepalgrass (*Microstegium vimineum*). TVA manages these species to protect existing habitat and recreational areas.

Examples of projects and efforts that support the implementation of the Nonnative Invasive Plant Management Program include:

- Developing a prioritized plan to control nonnative invasive plants on areas with sensitive resources, habitat enhancements and high public use, emphasizing areas with high partnership potential
- Utilizing mechanical methods, including removal by hand, mulching machine, bushhogging and strip disking
- Utilizing chemical methods, including foliage, broadcast, hack, stump and basal application with non-restricted herbicides (according to label recommendations)
- Utilizing biological methods, including the use of animals of the ruminant species where practical to manage Chinese privet (*Ligustrum sinense*), kudzu (*Pueraria montana*) and other species
- Utilizing prescribed fire treatments, which provide control and seasonal suppression of undesirable nonnatives and stimulate the growth of native species

### Expected Benefits of the Program

- Improved forest resources, wildlife habitats and biodiversity
- Improved protection of cultural and sensitive resources
- Increased protection of recreational assets and public lands

### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed lands.

### 6.4.3 Nuisance Animal Control

#### Program Description

The TVA Nuisance Animal Control Program manages the effects of nuisance animals on TVA lands, facilities and recreational users in order to protect against impacts of these animals.

TVA's Nuisance Animal Control Program strives to reduce the impacts of nuisance species to power operation facilities, recreational assets and natural resources. This work is done primarily through contractual agreements between TVA and the Wildlife Services section of the U.S. Department of Agriculture's Animals and Plant Health Inspection Service, who holds all federal and state permits that are required to conduct control activities with various wildlife species (e.g., raccoon, beaver, vultures, Canada geese, groundhogs, feral swine, double-crested cormorants, osprey, great blue herons and starlings).

Examples of projects and efforts that support the implementation of the Nuisance Animal Control Program include:

- Resolving animal damage conflicts via existing contractual agreement with U.S. Department of Agriculture-Wildlife Services through standard protocols which include assessment, harassment and dispersal and harassment with lethal reinforcement and lethal take
- Developing and implementing proactive strategies to manage nuisance animals on TVA-managed lands
- Continuing to collaborate with educational institutions and other partners to study the tendencies of nuisance animals and potential mitigation measures

### Expected Benefits of the Program

- Furthered protection of TVA's river management and power generation assets
- Enhanced protection of natural and cultural resources on TVA lands
- Increased protection of recreational assets and public lands
- Increased public health and safety

### Geographic Scope of the Program

Program efforts will be carried out within the Tennessee River watershed.



# Cultural Resource Management

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### 7.1 Focus Area Description

TVA has a rich history in cultural resource management that goes back to its initial establishment in 1933. The Tennessee Valley includes some of the most significant archaeological sites in the southeast. The history of TVA's influence in the Valley, through its electricity, flood control, economic development and recreation efforts, is still visible in many historic structures and buildings, such as dams and Civilian Conservation Corps features.



When decisions were made to inundate large areas of land along the Tennessee River and its tributaries for reservoir construction, local archaeologists expressed concern that many significant archaeological sites would be permanently lost. In response, TVA supported and often funded excavations of archaeological sites prior to the completion of several dam projects. Extensive excavations occurred on Norris, Guntersville, Wheeler, Pickwick, Watts Bar, Chickamauga and Kentucky Reservoir lands. These excavations resulted in large collections of archaeological materials that are now housed in repositories around the Tennessee Valley. Researchers across the southeast continue to study these collections and have learned a great deal about history as a result.

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. These include historic buildings, structures, sites and objects, archaeological resources, Native American burials, funerary objects and sacred items and other historic resources. A number of laws and regulations are in place that obligate TVA to protect these important places and resources.

The National Historic Preservation Act (NHPA) establishes preservation as a national policy and directs the federal government to work with tribes, communities and other interested parties to provide leadership in preserving, restoring and maintaining the historic and cultural environment of the nation. Federal agencies are obligated to maintain historic properties in ways that consider the

preservation of historic, archaeological, architectural and cultural values and ensure that tribal values are taken into account. TVA does this through the Preservation Program, which is an inventory of all cultural resources that have been identified on TVA property or located within the boundaries of TVA projects. When TVA is involved in projects that may affect historic properties, TVA complies with Section 106 of NHPA.

In addition to NHPA, the Archaeological Resources Protection Act (ARPA) protects archaeological sites that are found on TVA lands. ARPA requires permitting for any investigation of archaeological resources on TVA lands. Under ARPA, any information concerning the nature and location of any archaeological resource may not be publicly disclosed unless such disclosure would further ARPA's purposes. ARPA makes it illegal to remove artifacts from or damage archaeological sites or sell archaeological resources obtained illegally (i.e., without permits) from public or Indian lands. TVA is very active in the management of archaeological sites through enforcement, monitoring, protection and outreach programs. Vulnerable archaeological sites are identified, monitored and, where possible, protected. TVA's Thousand Eyes Archaeological Outreach Program works with federally recognized tribes, local historical groups and the public to spread awareness of the need to protect these sensitive resources. Additionally, TVA has numerous partnership initiatives to work with federally recognized tribes who once lived in the Tennessee Valley to protect and manage the many Native American sites found on its land.

Any Native American graves, funerary objects, sacred objects and objects of cultural patrimony found on TVA land are protected under the Native American Graves Protection and Repatriation Act (NAGPRA). NAGPRA also establishes a process for determining the rights of lineal descendants, Indian tribes and Native Hawaiian organizations to certain Native American human remains, funerary objects, sacred objects and objects of cultural patrimony that have been excavated or removed from TVA land. Many archaeological sites were excavated prior to the inundation of TVA's reservoirs resulting in the removal of thousands of Native American burials. TVA is returning these human remains and funerary objects to federally recognized Indian tribes.

The eight Cultural Resource Management Programs established in the NRP will help ensure that TVA complies with these laws as well as supports the stewardship of cultural resources that fall within the agency's management responsibility. These programs include the Preservation Program, ARPA Enforcement, Section 106 Compliance, NAGPRA Compliance, Thousand Eyes Archaeological Outreach, Archaeological Monitoring and Protection, Native American Consultation and Corporate History.

### 7.2 Objectives of this Focus Area

- Comply with all federal laws related to cultural resource management on federal lands or on lands affected by TVA actions
- Increase the knowledge base of significant cultural resources on TVA lands through identification, evaluation and documentation
- Protect and preserve significant archaeological and historic resources through improved and enhanced management practices such as monitoring, shoreline stabilization, archaeological curation, and enforcement of federal laws
- Provide educational and outreach opportunities within TVA communities on the need to protect cultural resources and to share the unique history of the Tennessee Valley
- Partner with stakeholders, such as federally recognized Indian tribes, whose ancestral lands fall within the Tennessee Valley

### 7.3 Benefits of this Focus Area

- Ensures effective and sustainable protection of sensitive, nonrenewable cultural resources
- Improves relationships with stakeholders that attach cultural value to TVA-managed lands
- Ensures compliance with all applicable laws protecting cultural resources on federal land
- Increases education and awareness of the importance of protecting cultural resources through public outreach and community engagement
- Increases understanding of TVA's history and our role in the continuing development of the Tennessee Valley

### 7.4 Cultural Resource Management Programs

#### 7.4.1 Preservation Program

##### Program Description

Section 110 of NHPA sets out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into the ongoing programs of all federal agencies. Federal agencies are responsible for identifying and protecting historic properties and avoiding unnecessary damage to them. Section 110 also charges each federal agency with the affirmative responsibility of considering projects and programs that further the purposes of NHPA.

Section 110 also requires federal agencies to establish a historic preservation program. This section of NHPA requires that an agency's preservation program include the following activities:

- Identify, evaluate and nominate eligible historic properties under the agency's control to the National Register
- Manage and maintain such properties in a way that considers preservation of their historic, archaeological, architectural and cultural values





- Fully consider historic properties not under agency jurisdiction or control but potentially affected by agency actions during agency planning
- Carry-out agency preservation-related activities in consultation with other local, state and federal agencies, Indian tribes, Native Hawaiian organizations and the private sector
- Ensure that alternative agency procedures for compliance with Section 106 of NHPA are consistent with regulations issued by the Advisory Council on Historic Preservation
- Deposit records on historic properties in the Library of Congress for future use and reference.
- Designate a Federal Preservation Officer
- Minimize harm to National Historic Landmarks
- Deny assistance, licenses and/or permits to any applicant who damages or destroys historic property with the intent of avoiding the requirements of Section 106, unless specific circumstances warrant such assistance (Section 110[k])

Examples of projects and efforts that support the implementation of the Preservation Program include:

- Conducting archaeological surveys on TVA-managed lands
- Hosting archaeological test excavations and field schools
- Maintaining TVA's historic photo collection, cemetery database and historic agency information
- Maintaining the existing database or developing a comprehensive database to unify TVA's cultural resource data sources in one location for improved resource management
- Enhancing curation and management of TVA's Historic Collection
- Conducting identification surveys of historic structures on TVA-managed lands
- Evaluating and nominating sites to the National Register of Historic Places
- Conducting adaptive reuse studies of TVA's historic buildings
- Submitting NHPA Section 3 report on Section 110 progress every three years
- Developing and implementing plans for TVA-owned historic properties suitable for heritage tourism

#### Expected Benefits of the Program

- Increased information gathered from historic sites to provide a better understanding of the history of the Tennessee Valley and the nation and to fulfill TVA's obligations under Section 110 of NHPA
- Increased protection of historic and archaeological sites
- Improved decision-making capabilities and prioritization of management actions from increased knowledge of sensitive resource locations on TVA-managed lands
- Improved relationships with stakeholders through increased partnership opportunities

#### Geographic Scope of the Program

Program efforts will be implemented on TVA-managed lands.

### 7.4.2 Archaeological Resources Protection Act Enforcement Program

#### Program Description

ARPA of 1979 was enacted to preserve and protect archaeological resources and sites on federal and Indian lands. The purpose of ARPA is to secure, for the present and future benefit of the American people, archaeological resources and sites on federal and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community and private individuals having collections of archaeological resources and data which were obtained before October 31, 1979.

ARPA authorizes federal agency permit procedures for investigations of archaeological resources on public lands under the agency's control and excludes from public disclosure any information concerning the nature and location of any archaeological resource unless such disclosure would further the purpose of ARPA. Further, any archaeological survey or excavation that occurs on TVA-managed lands requires a permit under ARPA. This process ensures that individuals and organizations wishing to work with federal resources have the necessary professional qualifications and that federal standards and guidelines for research and curation are followed. ARPA prohibits the removal, sale, receipt and interstate transportation of archaeological resources obtained illegally (i.e., without permits) from public or Indian lands. ARPA provides both civil and criminal penalties for violations. Specific prohibited acts



include excavation, removal, damage, or otherwise altering or defacing, or attempting to excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands without a permit.

Examples of projects and efforts that support the implementation of the ARPA Enforcement Program include:

- Conducting ARPA inspections through security checks
- Enforcement of the ARPA by TVA Police

#### Expected Benefits of the Program

- Decreased incidences of looting through public awareness of the enforcement process
- Improved relationships with stakeholders who have a spiritual or religious tie to the resources being impacted through illegal excavation and removal of archaeological resources
- Increased protection of sites

#### Geographic Scope of the Program

Program efforts will be implemented on TVA managed lands.

### 7.4.3 Section 106 Compliance

#### Program Description

Section 106 requires federal agencies, including TVA, to consider the effect of their actions on historic properties

and to allow the Advisory Council on Historic Preservation an opportunity to comment on the action. Compliance with Section 106 is a process that involves the following four steps and includes several activities within each step.

#### Step 1: Initiate the process

- Identify the consulting parties, including the State Historic Preservation Officer (SHPO), federally recognized Indian tribes, local governments, property owners, applicants and individuals or organizations which have an interest in the historic properties
- Establish a plan for notifying and involving the public in the proposed action
- Initiate consultation with consulting parties

#### Step 2: Identify historic properties within the Area of Potential Effects (APE)

- Determine the APE
- Review existing information on historic properties including any data concerning those not yet identified
- Seek information from consulting parties and others likely to have knowledge of historic properties in the area
- Take the steps necessary to identify historic properties within the APE. This may include background research, consultation, oral history interviews and field surveys



- Evaluate the historic significance of identified properties
- Assess the action's effects on historic properties
- Continue consultation with the consulting parties
- If no effects are found, obtain the concurrence of SHPO and the action may proceed

**Step 3: Assessment of adverse effects**

- Apply criteria of adverse effects in consultation with the SHPO
- Continue consultation with consulting parties
- Determine whether an effect is adverse
- Proceed with the action if no adverse effect is found
- Proceed to step 4 if an effect is adverse

**Step 4: Resolution of adverse effects**

- Continue consultation including notifying the Council, providing documentation and involving the public
- Resolve adverse effects
- Consult with SHPO and other consulting parties on ways to avoid, minimize or mitigate adverse effects
- Reach an agreement with SHPO on resolution of adverse effects
- Execute a memorandum of agreement

Examples of projects and efforts that support the implementation of the Section 106 Compliance Program include:

- Managing existing mitigation obligations
- Conducting reviews required by NHPA Section 106
- Establishing database for managing mitigation obligations

**Expected Benefits of the Program**

- Continued compliance with statutory and regulatory obligations in the review of federal undertakings
- Increased protection of cultural resources and knowledge
- Increased public appreciation and enjoyment of these resources
- Decreased compliance costs and staff time requirements by gained efficiencies

**Geographic Scope of the Program**

Program efforts will be implemented within the Tennessee River watershed and power service area.

**7.4.4 Native American Graves Protection and Repatriation Act Compliance**

**Program Description**  
NAGPRA Compliance

Program ensures that the requirements of NAGPRA are being met. This provides for the protection of Native American human remains, funerary objects, sacred objects and objects vital to Native American cultural identity.

Examples of projects and efforts that support the implementation of the NAGPRA Compliance Program include:

- Complying with NAGPRA
- Conducting repatriation and disposition of human remains and funerary objects to federally recognized tribes who once lived in the Tennessee Valley

**Expected Benefits of the Program**

- Improved relationships with federally recognized Indian tribes
- Continued compliance with obligations under NAGPRA
- Increased protection of cultural resources and knowledge

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**7.4.5 Thousand Eyes Archaeological Outreach**

**Program Description**

TVA is mandated by ARPA to establish a program to increase public awareness of the need to protect archaeological sites located on its public lands. To help meet this requirement, the agency developed an archaeological public outreach program called Thousand Eyes in 2003. In 2006, TVA developed its ARPA Enforcement Program that led to a greater understanding of the extensive looting problem and the need to increase through the Thousand Eyes Program efforts. The program includes TVA participation in outreach events, presentations to schools and other community groups, signage, a volunteer program and other activities.



The program is not only a legal requirement under ARPA, but it is also key to ensuring that TVA stakeholders and Valley residents have a greater appreciation for the sensitive resources entrusted to TVA's management.

Examples of projects and efforts that support implementation of the Thousand Eyes Program include:

- Conducting outreach events with community partners
- Developing interpretive or regulatory signage
- Managing TVA's volunteer site stewardship program

**Expected Benefits of the Program**

- Reduction in looting that results in permanent destruction of nonrenewable cultural resources.
- Increased protection of cultural resources
- Increased public knowledge of the significant archaeological resources in the Tennessee Valley
- Increased public appreciation and enjoyment of these resources

**Geographic Scope of the Program**

Program efforts will be carried out within the Tennessee River watershed and power service area.

**7.4.6 Archaeological Monitoring and Protection**

**Program Description**

Pursuant to ARPA, NHPA and NAGPRA, TVA seeks to identify archaeological sites that are being threatened by looting, erosion, or other impacts in order to identify appropriate action plans for protection. Both erosion and looting have effected thousands of archaeological sites on TVA land and each year a number of these sites are assessed for this damage and entered into the cultural resources database. Possible protection measures include shoreline stabilization, signage, fencing, or other barrier placement, and coordination with TVA Police to prevent further damage to the resource.

Examples of projects and efforts that support the implementation of the Archaeological Monitoring and Protection Program include:

- Protecting archaeological sites on TVA lands and reservoir shoreline
- Monitoring archaeological sites on TVA lands and reservoir shoreline

- Monitoring sites, developing signage, stabilizing eroding shoreline, installing access control measures and working with TVA Police to increase patrols under the ARPA Enforcement Program

**Expected Benefits of the Program**

- Preservation of significant archaeological resources
- Increased knowledge and prioritization of resources in need of protection to guide future management decisions
- Improved collection of data on the annual loss of resources
- Preservation of nonrenewable cultural resources
- Increased understanding of the history of the Tennessee Valley and the nation

**Geographic Scope of the Program**

Program efforts will be carried out within the Tennessee River watershed.

**7.4.7 Native American Consultation**

**Program Description**

TVA is required under Section 106 of NHPA, as well as under other laws, to consult with federally recognized Indian tribes who have a cultural or religious interest in the Tennessee Valley. Consultation is conducted through letter correspondence, regularly scheduled teleconferences and face-to-face meetings. TVA consults with tribes on all of its management efforts related to Native American archaeological sites.

Examples of projects and efforts that support the implementation of the Native American Consultation Program include:

- Coordinating and conducting consultation with federally recognized Indian tribes
- Conducting formal consultation workshops with federally recognized Indian tribes
- Identifying, managing and protecting Native American sites on TVA lands

**Expected Benefits of the Program**

- Increased knowledge of cultural resources
- Improved stakeholder relationships
- Enhanced partnerships with Indian tribes to protect, manage and learn from the significant Native American archaeological sites located in the Tennessee Valley





**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**7.4.8 Corporate History**

**Program Description**

The Corporate History Program maintains a record of TVA's history and provides educational and outreach opportunities to promote TVA's historical significance to the region, nation and world.

Examples of projects and efforts that support the implementation of the Corporate History Program include:

- Developing a formal TVA Corporate History Program and providing regular updates to the TVA Timeline

- Developing an Oral History Program
- Developing an annual history public outreach component and associated web site

**Expected Benefits of the Program**

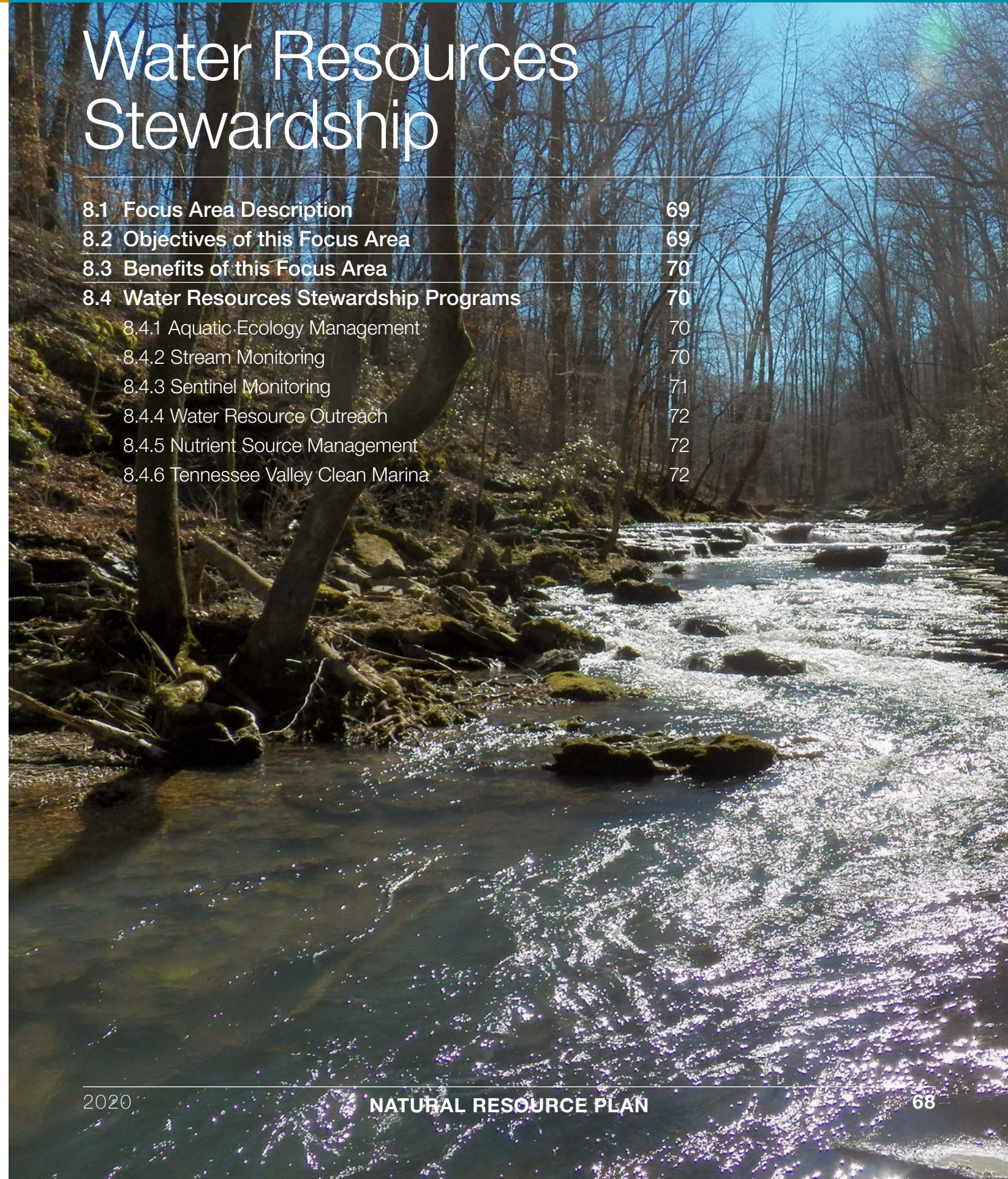
- Increased public awareness of TVA's historical significance to the region, nation and world
- Improved stakeholder relationships
- Increased public knowledge of cultural resources

**Geographic Scope of the Program**

Program efforts will be carried out within the Tennessee River watershed and power service area.

# Water Resources Stewardship

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### 8.1 Focus Area Description

TVA has been actively involved in water resources stewardship and river system integration since 1933 when Congress charged the agency with managing and serving as the steward of the Tennessee River and its tributaries. TVA's water resources management focuses on protecting and improving the quality of the streams, rivers and reservoirs in the Tennessee River watershed.

Many of TVA's programs have supported the construction, improvement and operation of the dams and reservoirs under TVA's care. As decades have passed, TVA's unique role and value to the region have evolved and its programs have also evolved to address the ever-changing demands placed on the river system.

Examples of historic activities include:

- Addressing erosion and suspended sediment in the Tennessee River watershed
- Studying TVA reservoir freshwater ecosystems
- Monitoring and improving water quality in reservoirs, rivers and tailwaters to maintain and enhance reservoir aquatic habitats for fisheries
- Documenting and studying stream biology, hydrology and water quality impacts of land uses
- Developing partnerships with stakeholders to reduce impacts of land practices in the Tennessee River watershed and sub-watersheds
- Collecting and utilizing water resources information to plan, site, construct and operate TVA fossil and nuclear electric generation stations

The Tennessee River watershed encompasses a portion of seven states and stretches approximately 41,000 square miles across the southeast. The watershed is one of the most biologically diverse watersheds in North America and has historically been home to more than 240 native fish species and 75 mussel species. TVA efforts to protect and improve water quality and aquatic biodiversity within the watershed include collecting and reporting water resources data and



working with partners to implement watershed protection and improvement measures. TVA also builds and catalyzes partnerships, promotes public outreach efforts and provides technical support in order to implement key water resources initiatives throughout the Tennessee River watershed.

Within the greater Tennessee River watershed, TVA works with partners in priority watersheds. Improvement and enhancement efforts include streambank stabilization, buffer establishment, instream habitat improvements, supporting mussel propagation and reintroduction and outreach. Partnership outreach efforts are also a vital part of water resources stewardship. One example of a partnership outreach effort is the development of the Tennessee River Basin Network (TRBN). TRBN is a group of peer agencies and non-profit organizations that work together to identify collaboration opportunities and shared resources and initiate long-term planning to protect and improve biodiversity in the Tennessee River watershed.

### 8.2 Objectives of this Focus Area

- Monitor and assess biological conditions in streams and tailwaters to maintain an in-depth knowledge of the changing conditions of water quality throughout the Valley and help TVA and stakeholders identify and track water quality protection and improvement opportunities
- Partner to promote and implement water quality and aquatic habitat improvement across the Tennessee River watershed
- Develop and execute outreach activities to raise public awareness of the importance and value of protecting water resources within the Tennessee River watershed

### 8.3 Benefits of this Focus Area

- Provides data that supports an integrated management approach for TVA and natural resource stewardship activities
- Provides data to partners to enhance the understanding of stream, tailwater, and reservoir conditions, support research and water related conservation activities to improve water quality, reduce drinking water associated costs, create more recreation opportunities, and improve habitat for aquatic life
- Fosters collaborative efforts and enhances the ability to leverage funding, technical support and networking opportunities to improve water quality and aquatic biodiversity
- Facilitates partnerships to implement activities that protect exceptional aquatic biodiversity within the Tennessee River watershed
- Increases public awareness of the value of the Tennessee River system's biodiversity and water quality

## 8.4 Water Resources Stewardship Programs

### 8.4.1 Aquatic Ecology Management

#### Program Description

The Aquatic Ecology Management Program focuses on the enhancement of aquatic biological communities in streams, reservoirs and tailwaters of the Tennessee River watershed. This enhancement may include activities, such as habitat improvement, biological monitoring and pollution reduction. TVA partners with local, state and federal organizations to identify and protect exceptionally diverse aquatic biological communities living in the Tennessee River watershed.

Examples of projects and efforts that support the implementation of the Aquatic Ecology Management Program include:

- Supporting collaborative partnerships to identify water quality improvement and aquatic habitat protection needs
- Partnering with local organizations and state and federal agencies to propagate fish and mussel species for reintroduction,

- install in-stream habitat improvement structures and remove aquatic barriers
- Partnering with local organizations and state and federal agencies to conduct outreach efforts to promote the value of the Tennessee River and its aquatic biodiversity

#### Expected Benefits of Program

- Increased protection of aquatic habitats and biological communities
- Enhanced coordination among stakeholders resulting in better management decisions
- Increased awareness of biodiversity hotspots within the Tennessee River watershed

#### Geographic Scope of Program

Program efforts will be carried out within the Tennessee River watershed.

### 8.4.2 Stream Monitoring

#### Program Description

The goal of TVA's Stream Monitoring Program is to employ biological monitoring to assess ecological conditions of streams throughout the Tennessee River watershed. Biological monitoring refers to the field sampling for fish and aquatic macroinvertebrate communities at approximately 525 sites throughout the Tennessee River watershed. The Stream Monitoring Program helps TVA maintain an in depth knowledge of the changing conditions in water quality throughout the Tennessee Valley and is used to identify water quality protection and improvement opportunities. This data is collected, stored, managed and used by TVA to make management decisions and shared with stakeholders to target and track water quality improvement efforts.

Examples of projects and efforts that support the implementation of the Stream Monitoring Program include:

- Conducting annual stream assessments
- Sharing stream monitoring data
- Field sampling for fish and aquatic macroinvertebrate communities at approximately 525 sites throughout the Tennessee River watershed. Approximately 100 sites are sampled annually. This data is collected, stored, managed, and used by TVA to make management decisions, and shared with stakeholders to target and track water quality improvement efforts





**Expected Benefits of Program**

- Provides data on stream conditions to help TVA and stakeholders make informed watershed management decisions
- Helps target and track watershed improvement efforts
- Provides comprehensive aquatic biological data sets to evaluate long-term trends in water quality

**Geographic Scope**

Program efforts will be carried out within the Tennessee River watershed.

**8.4.3 Sentinel Monitoring**

**Program Description**

TVA's Sentinel Monitoring Program is a partnership effort established to garner a better understanding of climatic impacts on water resources in the Tennessee River watershed. TVA partners with the Southeast Monitoring Network, which includes state resource and environmental agencies from Alabama, Georgia, Kentucky, North Carolina and Tennessee. This partnership conducts long-term monitoring of fish and aquatic macroinvertebrate community health, diatoms, canopy cover, temperature, pH, flow, aquatic habitat and other water quality parameters. Federal agencies, including the Environmental Protection Agency, National Park Service, U.S. Forest Service and U.S. Geological Survey, are also collaborating in the

data collection efforts under this program. Protocols and selection methods for monitoring stations were based upon information provided by the Northeast Climate Change Monitoring Group.

Examples of projects and efforts that support the implementation of the Sentinel Monitoring Program include:

- Collaborating with the Southeast Monitoring Network to collect physical, chemical and biological data at stream sites located throughout the Tennessee Valley
- Managing and sharing data, conducting trend analysis and reporting results

**Expected Benefits of Program**

- Enhanced understanding of potential climate change effects on streams and their biodiversity
- Improved planning efforts due to early identification of potential mitigation needs and strategies for aquatic species protection
- Improved knowledge and information sharing with agencies and other stakeholders for assessment and planning
- Ensured consistency with Executive Order 13514 (Federal Leadership in Environmental, Energy and Economic Performance, 2009) and the Council on Environmental Quality's implementation instructions to evaluate climate change risks and vulnerabilities

**Geographic Scope**

Program efforts will be carried out within the Tennessee River watershed.

**8.4.4 Water Resource Outreach**

**Program Description**

Under this initiative, TVA will work with local, state and federal partners to inform stakeholders about the importance of water resources that are central to the quality of life in the Tennessee Valley. These outreach efforts will focus on developing and implementing public outreach activities to raise awareness of the value of water resources and the importance of aquatic diversity.

Examples of projects and efforts that support the implementation of the Water Resource Outreach Program include:

- Promoting sustainable land use practices that protect stream and reservoir water quality
- Sharing information with stakeholders about water resources through media (e.g., videos, social media and TVA's web page) and at events, such as bass tournaments, boat shows and other events
- Communicating emerging resource concerns (e.g., loss of aquatic diversity and nutrient and sediment reductions).

**Expected Benefits of Program**

- Increased public awareness of the importance and value of protecting water resources within the Tennessee River watershed
- Enhanced public involvement and ownership in water resources protection and improvement

**Geographic Scope**

Program efforts will be carried out within the Tennessee River watershed.

**8.4.5 Nutrient Source Management**

**Program Description**

This program will focus on reducing excess nutrients in the waters of the Tennessee River watershed (e.g., phosphorus), which can contribute to water quality degradation in TVA-managed reservoirs. Reservoirs may receive excess nutrients through runoff from adjacent lands and other sources. Using available and collected data to assess the nutrient status in the waterways, TVA will work in

reservoir watersheds with the greatest potential for nutrient reductions to maintain their quality. This program will provide information to better understand and communicate resource conditions within the Tennessee Valley.

Examples of projects and efforts that support the implementation of the Nutrient Source Management Program include:

- Conducting research on potential nutrient trading opportunities
- Partnering with state and federal agencies, non-governmental organizations to create nutrient reduction strategies
- Working with partners to implement nutrient reduction projects to address non-point source pollution

**Expected Benefits of Program**

- Increased ability to identify the nutrient non-point sources from watersheds into TVA reservoirs in order to support focused nutrient load reduction initiatives
- Reduces excess nutrient loads to improve water quality and aquatic habitat
- Develops methods and techniques for achieving measurable nutrient load reductions and improvements in water quality

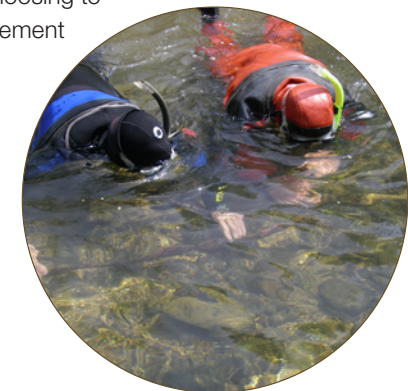
**Geographic Scope**

Program efforts will be carried out within the Tennessee River watershed.

**8.4.6 Tennessee Valley Clean Marina**

**Program Description**

The Tennessee Valley Clean Marina Program is a voluntary program that promotes environmentally responsible marina and boating practices and links commercial recreation infrastructure to TVA's Section 26a permitting and Land Use programs. Marina operators choosing to participate in the program implement best management practices to address issues, such as oil and gas control, sewage management, marina siting and erosion prevention to reduce water pollution and erosion in the Tennessee River watershed.







Examples of projects and efforts that support the implementation of the Tennessee Valley Clean Marina Program include:

- Collaborating with marina owners to maintain their clean marina certifications and certify new marinas
- Developing and providing marina owners and operators with outreach materials and training on existing obligations and best management practices to protect water quality
- Working with the marina operators to install best management practices associated with oil and gas control, sewage management and erosion prevention

**Expected Benefits of Program**

- Increased awareness of marina owners and operators about environmentally responsible best management practices
- Improved water resource conditions in TVA-managed reservoirs
- Supports compliance with state and federal regulations (e.g., wastewater management, fuel management, solid waste management requirements)

**Geographic Scope**

Program efforts will be carried out within the Tennessee River watershed.

# Recreation

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### 9.1 Focus Area Description

TVA’s Recreation Focus Area supports recreation opportunities so that the Tennessee Valley remains one of the best places to live, work and play. Since its establishment by Congress in 1933, TVA’s earliest leaders understood that as the lands around the reservoirs were developed in the Tennessee Valley, recreation would be a direct link to the social and economic advancement of the surrounding areas. This was explicitly recognized in a 1936 TVA Board report to Congress, which stated: “The Tennessee River possesses a great variety of scenery. If this beauty is preserved, the river system will become one of the favorite recreation areas in the United States.” TVA envisioned development along its reservoirs in an effort to bring more people closer to these valuable resources in the hopes that they might enjoy the many benefits that they provide.



TVA reservoirs and the land surrounding them offer an abundance of recreation opportunities, including boating, water skiing, kayaking, canoeing, rafting, sailing, windsurfing, swimming, fishing, hunting, hiking, nature photography, picnicking, bird-watching and camping. Much of the 293,000 acres of TVA public land is available for dispersed recreation, which offers a more primitive experience that is not supported by developed recreational facilities.

Many of TVA’s developed recreation areas, such as campgrounds and marinas, are managed by commercial and public operators who specialize in the recreation business. TVA encourages sustainable management practices from these operators, like water conservation and native plant management. In addition to the recreation assets and activities on TVA land, TVA partners with local, state and federal agencies to support nearly 400 public recreation areas through management agreements. TVA administers these agency agreements to provide complimentary recreational assets, including wildlife refuges and municipal and state parks. These recreational opportunities support the economic impact of the travel and tourism industry in the Tennessee Valley.

A 2016 study conducted by the University of Tennessee estimated an \$11.9 billion annual economic impact from recreational expenditures in the Tennessee Valley. Since TVA manages roughly 11,000 miles of shoreline, that amounts to a \$1 million per mile benefit to the people of the Tennessee Valley. From a primitive hiking trail to a fully developed commercial marina, TVA strives to balance resources under its care while providing a diverse array of recreational opportunities for the public.

### 9.2 Objectives of this Focus Area

- Provide commercial and public recreational opportunities on TVA-managed lands
- Partner with municipalities, nongovernment organizations, and local, state, and federal agencies to provide recreation assets and opportunities throughout the Valley
- Protect natural and cultural resources by developing and implementing sustainable recreation practices

### 9.3 Benefits of this Focus Area

Recreation management on TVA’s public lands, the reservoir system and the associated resources provide the following benefits to the residents of the Tennessee Valley and the public:

- Increases recreation opportunities on TVA public lands
- Improves recreation information and data to support TVA and regional planning efforts
- Greater diversity of recreational opportunities through collaboration and partnerships
- Increases promotion of sustainable recreation best practices
- Enhances integration of TVA and partner efforts to improve recreation management efficiency

### 9.4 Recreation Programs

#### 9.4.1 Developed Recreation Management

##### Program Description

TVA provides a variety of recreation assets for public use on most of its dam reservations and public lands, including restrooms, fishing piers, picnic facilities and trails. These assets are either operated by TVA or through an agreement with a partner, such as a concessionaire, city, county, or state entity. They are located at 46 dam reservations throughout the Tennessee Valley and one pumped storage

hydroelectric facility. Management of these facilities includes inventory and assessment as well as maintenance and upgrades of existing facilities and installation of new facilities at these sites. TVA’s dam reservation areas encompass approximately 3,000 acres of land and support around 1 million visitors annually.

Examples of projects and efforts that support the implementation of the Developed Recreation Management Program include:

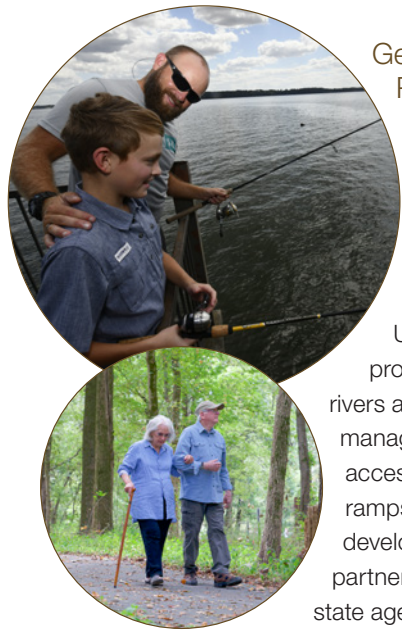
- Continuing to operate and manage TVA campgrounds and day-use areas
- Enhancing TVA campgrounds and day-use areas consistent with the Americans with Disabilities Act accessibility guidelines
- Utilizing emerging technologies with innovative design and efficiency measures at TVA campgrounds and day-use areas

##### Expected Benefits of Program

- Enhanced recreational opportunity through the enhancement of dam reservations as ecotourism and economic hubs
- Increased public recreation opportunities
- Improved natural and cultural resource protection through the use of sustainable practices and low impact activities







**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

**9.4.2 Water Access**

**Program Description**

Under this program, TVA provides public access to streams, rivers and reservoirs through the management of launching ramps and access sites. Of the many launching ramps and access sites TVA has developed, most are operated by partners, such as city, county and state agencies through third party agreements. TVA operates and manages launching ramps and stream access sites throughout the Tennessee Valley that are on TVA public lands.

Examples of projects and efforts that support the implementation of the Water Access Program include:

- Managing launching ramps and stream access sites
- Continuing to manage and develop partnerships to establish and promote water trails

**Expected Benefits of Program**

- Increased enjoyment of the reservoirs and streams by fisherman, paddle sports enthusiasts and others
- Increased partnerships with organizations and local, state and federal agencies

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

**9.4.3 Tennessee Valley Camp-Right Campground**

**Program Description**

The Tennessee Valley Camp-Right Campground (TVCRC) Program is a voluntary membership program that promotes environmentally friendly practices related to energy efficiency, water conservation and natural resource management efforts in public and private campgrounds on TVA lands. The program increases visibility of participating members by promoting camping opportunities at these campgrounds.

Examples of projects and efforts that support implementation of the TVCRC Program include:

- Collaborating with campground operators to maintain their TVCRC certifications and certify new campgrounds
- Providing campground operators promotional opportunities, networking and training
- Offering technical expertise and incentives to implement environmentally responsible retrofits and installations

**Expected Benefits of Program**

- Increased networking opportunities provided, such as webinars, workshops and conferences for member campgrounds, industry experts and TVA staff
- Increased visibility through promotional opportunities
- Heightened awareness of low-impact camping and campground management principles related to energy efficiency, water conservation, natural and cultural resource protection and native plant and tree management
- Increased potential operator and cost savings through efficiency and sustainability efforts
- Increased quality of the camping experience to support a more sustainable campground economy

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

**9.4.4 Dispersed Recreation Management**

**Program Description**

Through the Dispersed Recreation Management Program, TVA will enhance dispersed recreation areas and access to public lands. This includes managing impacts and creating recreational opportunities on TVA public lands, such as camping, bank fishing, hunting and bird watching. Dispersed recreation areas are not supported by formal recreation facilities, such as electricity, shower buildings and developed campsites.

Examples of projects and efforts that support the implementation of the Dispersed Recreation Management Program include:

- Evaluating and maintaining dispersed recreation sites
- Promoting the Leave No Trace Program through signage and web-based material

**Expected Benefits of Program**

- Increased access and recreational opportunities on public lands
- Improved quality of dispersed recreational experiences

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

**9.4.5 Trails Management**

**Program Description**

TVA's public lands are home to more than 170 miles of recreational trails. Many of these trails are managed in conjunction with partners and volunteer groups. Trail management may include vegetation management, signage, walking surface improvements and monitoring trail conditions and usage. Trails provide recreational opportunities to the public, including hiking, running, mountain biking, wildlife viewing, scenic viewing and other outdoor pursuits.

Examples of projects and efforts that support the implementation of the Trails Management Program include:

- Assessing, maintaining and enhancing TVA's trail system
- Developing partnerships to maintain and expand TVA's trail system

**Expected Benefits of Program**

- Increased trail-based recreation to support ecotourism and local economies
- Increased access to expand dispersed recreational opportunities

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

**9.4.6 Recreation Contract Management**

**Program Description**

TVA manages commercial and public recreational agreements and provides annual assessments and compliance associated with those contracts. TVA's recreational lands are typically used for campgrounds, marinas and public parks. This program includes implementing the Commercial Recreation Guidelines established in 2010, managing existing and proposed recreation agreements and associated Section 26a permits,

responding to requests for short-term use of TVA lands for recreational events and resolving recreation-related violations and encroachments. TVA also ensures contractual agreements and transferred lands are being utilized for public recreational purposes.

Examples of projects and efforts that support the implementation of the Recreation Contract Management Program include:

- Establishing and maintaining third-party management agreements, such as licenses, leases and easements to ensure those lands are being utilized for either public or commercial recreational purposes

**Expected Benefits of Program**

- Increased public recreational opportunities across the Tennessee Valley
- Enhanced operations, facilities and recreational experiences on TVA owned, leased and licensed properties while protecting natural and cultural resources

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

**9.4.7 Recreation Partnerships**

**Program Description**

TVA collaborates to enhance recreational opportunities and accessibility on public lands by partnering with local municipalities, state and federal agencies and non-governmental organizations to improve public recreation facilities. Recreation partnership projects include a broad range of activities; from minor improvements and upgrades of existing facilities, to installation of new public access facilities.

Examples of projects and efforts that support the implementation of the Recreation Partnerships Program include:

- Partnering with local municipalities, state and federal agencies and non-governmental organizations to enhance recreational assets on public lands







- Providing technical assistance and fostering partnerships to assist and address unmet needs on public lands in the Tennessee Valley
- Partnering to promote recreation on public waterways, including river-based recreation such as kayaking, canoeing, and rafting on rivers in the region such as the Flint, Toccoa, Wolf, Hiwassee, and others.

**Expected Benefits of the Program**

- Enhanced relationships with local, state and federal entities
- Expanded public service by providing recreational opportunities on TVA and non-TVA public lands across the Tennessee Valley
- Enhanced operations, facilities and recreational experience on TVA and other public lands through partnership engagement

**Geographic Scope of the Program**

Program efforts will be carried out within the Tennessee River watershed and power service area.

**9.4.8 Floating Cabins**

**Program Description**

The Floating Cabin Program is focused on management of over 2,200 existing floating cabins on TVA reservoirs. Floating Cabin Regulations will be developed in accordance

with the Water Infrastructure Improvements for the Nation Act of 2016 (WIIN Act), which was enacted by Congress on December 16, 2016. The WIIN Act authorizes TVA to prohibit construction of new floating cabins after the effective date of the legislation. In addition, TVA will publish regulations addressing health, safety and environmental standards to guide future management.

Examples of projects and efforts that support the implementation of the Floating Cabins Program include:

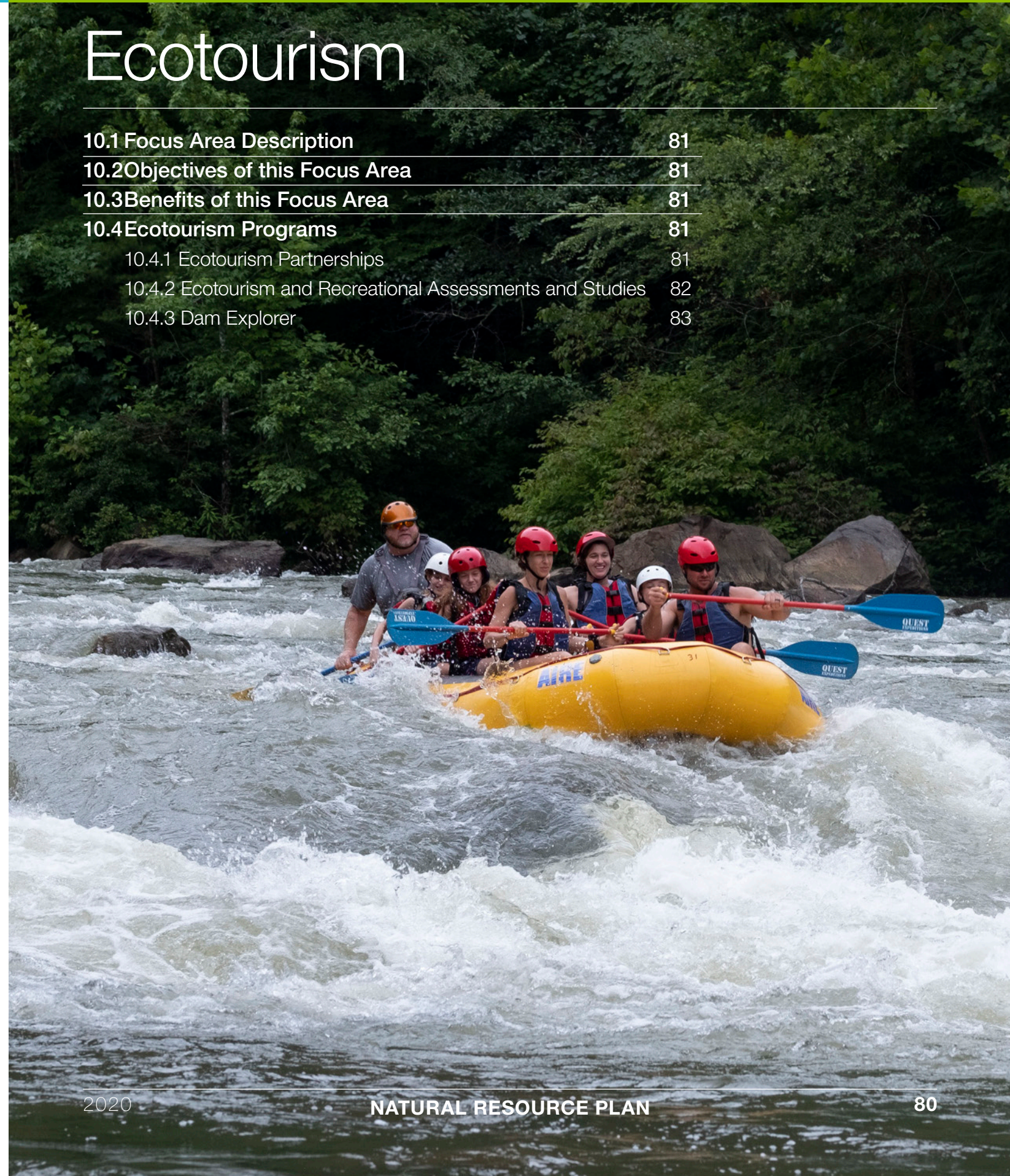
- Collaborating with commercial marinas and stakeholders to implement new regulations to manage existing floating cabins in a manner that best protects the natural resources of the Tennessee Valley
- Expected Benefits of Program**
- Increased focus on floating cabin rules and standards that will address safety and environmental issues, such as wastewater, flotation, electrical safety and improper mooring
  - Reduced floating cabin impacts to water quality, public recreation and navigation
  - Removed derelict and abandoned structures

**Geographic Scope of Program**

Program efforts will be carried out within the Tennessee River watershed.

# Ecotourism

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**10.1 Focus Area Description**

In recent years, nature-based, outdoor adventure and sustainable tourism have been labeled and defined using the term “ecotourism.” This concept of ecotourism mixes outdoor recreation activities with conservation, resulting in sustainable recreation areas that are based in nature or on natural features. Community and private sector expansion of facilities, attractions, festivals and events helps attain critical mass to attract leisure travelers and results in positive impacts to local, state and regional economies. With the Ecotourism focus area, TVA continues its mission of resource stewardship, economic development and the increasing need to assist economically distressed rural economies to support local, state and regional travel and tourism industry opportunities.



These initiatives aim to increase jobs and local tax bases, which complement existing community, state and regional travel and tourism efforts. TVA’s public lands and shoreline have long provided a platform in support of the tourism industry and make the Tennessee Valley a great place to live, work and play. Partnerships on TVA land and shorelines have been used for facility development, festivals and events that attract area visitors and tourists.

An integral part of attracting visitors is through the dissemination of print- and web-based materials designed to inform tourists on available opportunities. This has led TVA to partner with communities to reach a broader audience and promote sustainable recreation and tourism on Tennessee Valley lands and waterways.

**10.2 Objectives of this Focus Area**

- Partner with local communities to maximize their ecotourism and recreation potential
- Gain knowledge of use, trends, and preferences to aid in planning efforts through targeted studies
- Enhance TVA recreation facilities to expand tourism and local visitation

- Promote recreation and tourism opportunities to encourage use

**10.3 Benefits of this Focus Area**

The promotion and management of ecotourism on TVA’s public lands, the reservoir system and the associated resources provide the following benefits to the residents of the Tennessee Valley and the public:

- Provides positive impacts to local economies
- Increases understanding of recreational trends to maximize a local community’s ecotourism potential
- Increases recreational opportunities for local communities and destination travelers
- Increases information provided to the public about available recreational opportunities in the Tennessee Valley

**10.4 Ecotourism Programs**

**10.4.1 Ecotourism Partnerships**

**Program Description**

In this program TVA will work with partners to expand land- and water-based recreational opportunities, which supports

efforts to connect TVA and other public recreation amenities. In addition, TVA will support partner outreach efforts to inform residents and visitors of available recreational and tourism opportunities.

Examples of projects and efforts that support the implementation of the Ecotourism Partnerships Program include:

- Collaborating with local municipalities, state and federal agencies and non-governmental organizations to develop and enhance recreation amenities
- Collaborating with local municipalities, state and federal agencies and non-governmental organizations to promote tourism and recreation opportunities

**Expected Benefits of the Program**

- Expanded recreation facilities and tourism opportunities that create local jobs and tax benefits
- Increased awareness of targeted areas in order to maximize the potential economic impact

**Geographic Scope of the Program**  
Program efforts will be implemented within the Tennessee River watershed.

**10.4.2 Ecotourism and Recreational Assessments and Studies**

**Program Description**

Ecotourism and recreational assessments and studies are tools used to examine the current recreational trends, predict future growth, gain user preferences in facility development and create project-specific strategies to guide future planning and resource allocation efforts. Regional and site-specific studies may be used to support planning efforts in ecotourism and recreation.

Examples of projects and efforts that support the implementation of the Ecotourism and Recreation Assessments and Studies Program include:

- Conducting assessments and studies to support future planning efforts in ecotourism and recreation





**Expected Benefits of the Program**

- Better informed decision-making to facilitate project design and master planning efforts
- Improved understanding of recreational trends, use and preferences

**Geographic Scope of the Program**

Program efforts will be implemented within the Tennessee River watershed.

**10.4.3 Dam Explorer**

**Program Description**

The Dam Explorer Program focuses on TVA’s dam reservations to maximize recreational potential and to plan and create regional ecotourism destinations. TVA will work with local communities to develop new or enhance existing recreation facilities and interpretative areas on TVA and other surrounding public lands. This effort includes updating and developing master plans to address unmet recreation needs with designs for universally accessible recreation facilities.

Examples of projects and efforts that support the implementation of the Dam Explorer Program include:

- Expanding recreation opportunities by enhancing facilities on TVA’s dam reservations
- Collaborating with local communities to create complimentary recreation and tourism opportunities near TVA dam reservations
- Developing master plans to guide future enhancements on TVA’s dam reservations

**Expected Benefits of the Program**

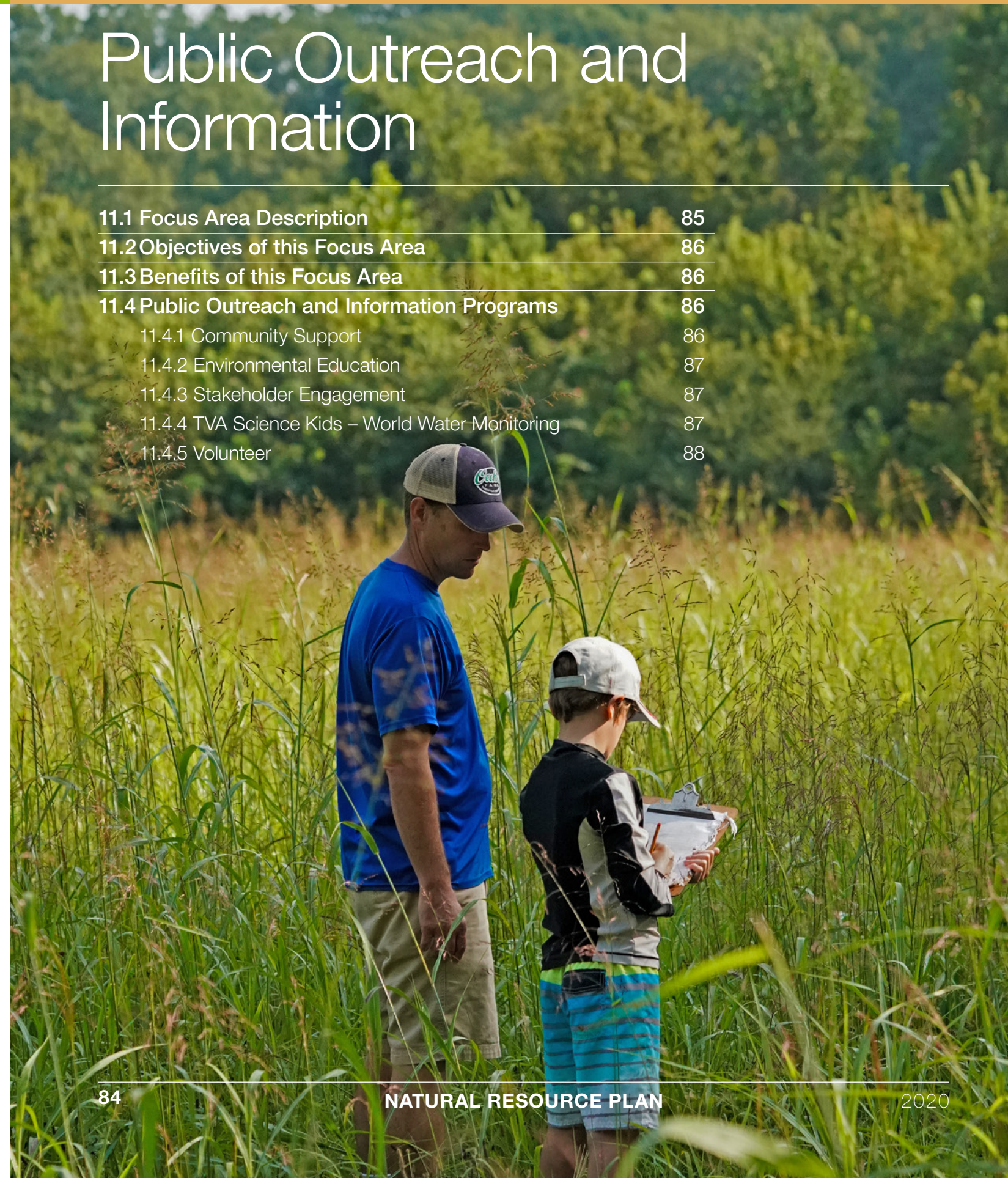
- Increased tourism and recreation opportunities that support local communities
- Updated dam reservation master plans that include a variety of recreational opportunities

**Geographic Scope of the Program**

Program efforts will be implemented on TVA-managed lands.

# Public Outreach and Information

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### 11.1 Focus Area Description

TVA has been charged with managing its resources in an integrated manner to ensure the protection, enhancement and conservation of these resources for present and future generations to enjoy. TVA has developed overarching public outreach programs in an effort to increase public awareness and appreciation of the natural and cultural resources in the Tennessee Valley as well as to provide opportunities for volunteer involvement, environmental education and collaborative partnerships. The Public Outreach and Information programs focus on communicating with, involving and engaging communities of and visitors to the Tennessee Valley and the TVA power service area.



Public Outreach and Information efforts include environmental education, volunteer opportunities, community support and stakeholder engagement. Environmental education programming is a valuable component of TVA's public outreach, providing a platform for TVA to share information and its passion for natural and cultural resources and public lands with children and adults. Through its environmental education efforts, TVA works with educators to bring hands-on learning experiences to the classroom. Opportunities are also available in outdoor settings on TVA public lands through BioBlitzes, guided hikes and other events. Environmental education helps build and foster interest in science, technology, engineering and mathematics (STEM) learning and career opportunities.

TVA connects with stakeholders by providing information about TVA events, local wildlife and aquatic habitats, river management, public lands and recreational areas through e-newsletters, such as "River Neighbors," social media, web-based interactive tools and other publications. TVA also works collaboratively to support communities in their stewardship efforts across the region; examples include support for Kids in the Creek programs to encourage children to learn about aquatic species in local streams;

Trash to Treasure events to promote recycling and reuse of materials; and 4-H club activities to promote environmental stewardship. TVA's Volunteer Program also provides opportunities for the public to learn about nature and be part of a collective effort to help enhance and protect natural and cultural resources and recreational areas throughout the region. Through this program, stakeholders can join TVA to help maintain trails, monitor wildlife and help keep public lands looking their best.

TVA's Public Outreach and Information programs help to bring a structured approach to TVA's efforts to communicate and share information across all of the NRP's focus areas. This creates efficiencies and ensures consistency within the agency. Through its Public Outreach and Information efforts, TVA is able to expand its reach beyond the Tennessee River watershed and the TVA-managed public lands to serve the customers of the power service area and stakeholders of the Tennessee River watershed. By helping communities recognize and value the stewardship efforts needed to maintain the 293,000 acres of land and 11,000 miles of shoreline entrusted to TVA and recreational areas created, TVA can ensure that the Tennessee Valley remains the best place to live, work and play.

TVA has a long history of providing information to Tennessee Valley communities and sharing innovative ideas. Beginning in the 1930s and continuing on into the 1970s, TVA worked with soil conservation associations to provide and promote the use of fertilizers and to demonstrate new farm practices to improve agricultural land throughout the Tennessee Valley. As electrification spread, TVA toured the region offering classes and demonstrations on home appliance use, helping families learn how new appliances could lighten their workload. TVA also initiated environmental education programming for schools and developed field guides for aquatic insects and plants in the 1990s. In recent years, TVA also launched tvakids.com and tvastem.com to provide avenues for students and teachers to learn about TVA and science. Throughout TVA's history, great strides have been made in engaging and serving the region, connecting with communities and sharing its stewardship values which is still an integral part of TVA's mission today. Within its Public Outreach and Information efforts, TVA recognizes many exciting opportunities as technology brings more innovations and communities in the Tennessee Valley expand. However, these opportunities may also bring future challenges, including maintaining relevance and effective ways to engage stakeholders as technology improves and balancing competing demands with regards to development and resource protection.

### 11.2 Objectives of this Focus Area

- Engage communities to increase awareness and understanding of the value of natural and cultural resources and recreational opportunities associated with public lands and waters throughout the Tennessee River watershed and TVA's power service area
- Create opportunities for public involvement in resource stewardship and recreation
- Develop and maintain strategic relationships to enhance stewardship of recreational assets and natural and cultural resources in the Tennessee River watershed and TVA's power service area through collaborative efforts and education

### 11.3 Benefits of this Focus Area

Public Outreach and Information programs about TVA's public lands, the reservoir system and the associated

resources provide the following benefits to the residents of the Tennessee Valley and the public.

- Increases public awareness, involvement, and appreciation of the natural and cultural resources and recreational opportunities in the Tennessee River watershed and TVA's power service area through an integrated education and communication effort
- Improves public understanding of the value and benefits of resource protection
- Enhances recognition of the high quality of life in the Valley

### 11.4 Public Outreach and Information Programs

#### 11.4.1 Community Support

##### Program Description

This program supports communities throughout the Tennessee River watershed and power service area in order to provide outreach and educational opportunities that facilitate TVA's natural and cultural resource protection efforts and TVA's operations. This allows TVA to partner with others to expand positive impacts across the region.

Examples of projects and efforts that support the implementation of the Community Support Program include:

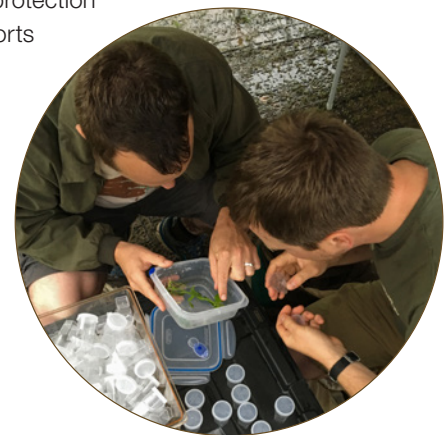
- Providing support for school recycling efforts
- Providing support, materials and technical expertise for environmental education

##### Expected Benefits of the Program

- Increased outreach and educational opportunities through partnerships
- Expanded resource protection and improvement efforts through partnerships

##### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.







### 11.4.2 Environmental Education

**Program Description**  
Through Environmental Education efforts, TVA fosters appreciation and awareness of natural and cultural resources, recreational opportunities and the Tennessee River system. TVA will expand and implement environmental education programming to schools and communities in support of STEM.

Examples of projects and efforts that support the implementation of the Environmental Education Program include:

- Developing and implementing a comprehensive and coordinated Environmental Education Program
- Leading hands-on learning experiences for children and adults on TVA public lands focused on environmental stewardship topics, such as the Tennessee River system and aquatic and terrestrial ecology
- Providing the Kids in the Creek programs to introduce children to aquatic species in local streams and help them understand the value of water resources
- Providing technical expertise for environmental education efforts and events

#### Expected Benefits of the Program

- Increased knowledge and awareness of the natural and cultural resources in the Tennessee Valley
- Expanded understanding of the value and importance of natural and cultural resource protection
- Increased awareness and appreciation of recreational opportunities in the region

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 11.4.3 Stakeholder Engagement

#### Program Description

Providing visitors and community members with information about how the Tennessee River system, the Tennessee Valley’s natural beauty, unique wildlife habitats and recreational opportunities can enhance experiences and grow an appreciation for the region. TVA uses outreach and communication materials, such as interpretive displays on public lands and web-based products, such as TVA’s “River Neighbors” to accomplish this. TVA also engages stakeholders to identify and implement opportunities for collaboration and partnerships to support stewardship efforts.

Examples of projects and efforts that support the implementation of the Stakeholder Engagement Program include:

- Creating and installing interpretive signs on TVA public lands
- Communicating and sharing information related to recreation, cultural and natural resources, public lands and the Tennessee River system through e-newsletters, web pages, social media and outreach events

#### Expected Benefits of Program

- Increased knowledge and awareness of the natural and cultural resources in the Tennessee Valley
- Expanded understanding of the value and importance of natural and cultural resource protection
- Increased awareness and appreciation of recreational opportunities in the region

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 11.4.4 TVA Science Kids – World Water Monitoring

#### Program Description

Through this program, TVA engages children in science by providing water monitoring kits to selected schools and delivering in-class water educational programs. In the summer months, TVA implements this program through partnerships with state parks, scouting groups and other community organizations. TVA also encourages teachers and participants to enhance their experience by using



the program’s online resources where they can log their classroom data and see how other children are using the program from around the world.

Examples of projects and efforts that support the implementation of the TVA Science Kids - World Water Monitoring Program include:

- Delivering the World Water Monitoring Program to children through elementary schools, state parks and other community organizations

#### Expected Benefits of the Program

- Increased knowledge and understanding of the value of water resources
- Encouraged participation in water resources conservation and protection efforts
- Promoted science careers and supported STEM education

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.

### 11.4.5 Volunteer

#### Program Description

Through its Volunteer Program, TVA encourages and guides participation in activities that help improve, enhance

and promote natural and cultural resource protection and recreation on TVA public lands and reservoirs. Efforts include leading volunteer event days, such as National Trails Day® and National Public Lands Day and providing opportunities to explore and experience TVA public lands through adopt a trail or adopt a spot opportunities.

Examples of projects and efforts that support the implementation of the Volunteer Program include:

- Engaging and encouraging volunteers to participate in TVA-led volunteer activities on TVA public lands
- Offering skills training to support volunteer activities carried out on TVA public lands

#### Expected Benefits of the Program

- Improved understanding of the role the public can play in caring for natural and cultural resources
- Expanded awareness of natural and cultural resources and recreational opportunities in the region
- Increased opportunities for public engagement

#### Geographic Scope of the Program

Program efforts will be implemented within the Tennessee River watershed and power service area.



