



Biological Resources

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TVA manages biological resources while providing many types of recreational opportunities for the public. With nearly 650,000 acres of impounded surface water (surface or pool area of the reservoirs) and approximately 293,000 acres of reservoir land, 11,000 miles of shoreline, and 42,000 miles of tributary streams and rivers, this land-and-water reservoir system represents a significant natural resource base offering numerous opportunities for resource management. Together, these public lands provide TVA with leadership opportunities in resource conservation and emerging resource management areas such as terrestrial greenhouse gas sequestration.

TVA has a long and storied history in the management of biological resources, especially in the areas of forestry, reclamation, fisheries and wildlife management. The TVA Act recognized the role of forest management in the restoration of the region's natural resources. The goals of TVA forestry programs included optimum forest productivity, economic expansion, watershed protection and environmental enhancement. Through the years, TVA worked with agencies and stakeholders to encourage better forest management, efficient wood utilization, environmental protection, reforestation and mine reclamation.

TVA developed the first forest tree nurseries in the Tennessee River Valley and assisted Valley states in developing their tree production capabilities. Between the 1930s and the 1960s, more than 600 million seedlings were produced at TVA's two forest nurseries for distribution across the region. From the 1950s through the 1970s, TVA conducted a program to inventory forested land in





the region, complementing the U.S. Forest Service's national inventory system. Through the 1980s and 1990s, TVA initiated some of the first computerized forestry planning tools in the nation, which were used to complete a systematic inventory of its forested properties. This inventory was used to guide forestry management activities. During the 1990s and 2000s, private land development adjacent to TVA-managed land increased dramatically, raising pressure on TVA's forests and leading TVA to balance private land use with traditional forest management goals.

From its earliest days, TVA has been committed to protecting and improving wildlife habitat. Between the 1930s and 1950s, TVA transferred more than 195,000 acres of land to federal and state agencies for the development of wildlife management areas and refuges. This effort provided significant benefits to varied resident and migratory wildlife and provided significant wildlife-oriented recreation opportunities for the region. In 1978, TVA initiated a wildlife restoration project aimed at restoring various animal populations. These introductions of species, conducted in partnership with state and other federal agencies and private organizations, resulted in the establishment of

self-sustaining populations of several species, such as osprey and bald eagles. During the 1970s and 1980s, TVA was instrumental in developing techniques to restore productive wildlife habitat to previously disturbed lands. TVA was recognized nationally for its work in reclaiming surface-mined lands and developing a wildlife-oriented model reclamation plan for southern Appalachia in cooperation with the U.S. Fish and Wildlife Service.

In the 1970s, TVA created a regional natural heritage database project to collect and store biological data. The database served to help guide effective conservation and land planning activities and to help TVA comply with the National Environmental Policy Act, the Endangered Species Act (ESA), wetland regulations under the Clean Water Act, executive orders and other federal and state regulations and legislation. In addition to maintaining the database, TVA monitored the health and status of threatened and endangered plant and animal species located at approximately 40 sites on TVA-managed lands. TVA also established a cave protection program designed to protect threatened and endangered species and other sensitive resources.

3.1 Goal

TVA will manage biological resources under its care in a holistic, ecologically sound manner to maintain biological diversity while supporting multiple uses to meet stakeholder expectations.

3.2 Benefits

Through management efforts in this resource area, TVA expects to realize the following benefits:

- Improved understanding of current land and resource conditions to support future planning and data sharing efforts
- Increased protection and enhancement of biologically diverse habitats (e.g., threatened and endangered species)
- Successful outreach efforts creating enhanced public awareness of land use impacts and the potential for transport of invasive or nonnative species/plants into habitats
- Promotion of environmentally sustainable dispersed recreational use of TVA-managed lands
- Development of partnerships with other resource management agencies and nongovernmental organizations to further resource management efforts in the region

3.3 Implementation Strategy

Through implementation of the Natural Resource Plan, TVA's biological resource management programs focus on protecting and enhancing the biological resources of the Tennessee Valley. This will be accomplished through the continued evaluation of biological resources, which will allow TVA to prioritize

and then preserve sensitive resources (e.g., threatened and endangered species) and unique resources (e.g., old growth bottomland hardwood stands), as well as conserve renewable resources (e.g., forests and native warm season grasses) in a sustainable manner to support diverse habitats for wildlife populations.

The NRP programs will promote environmentally sustainable recreational use on TVA-managed lands. Dispersed recreation, such as camping, bank fishing, and hiking, can create both positive and negative impacts on natural resources. TVA will take a proactive approach to reducing the negative impacts such as habitat or species damage while providing users with sustained, high-quality recreational experiences.

Finally, partnerships and cooperative projects with state and other federal agencies and nongovernmental organizations will be developed in an effort to support the current biological resources management efforts. It is critical for regional stakeholders to collaborate on protection, enhancement and conservation efforts. A key component in developing these relationships is the sharing of natural resource data. TVA will work with its partners to establish a compatible and comprehensive database of natural-resource-related information to help support and inform the various programs and activities being performed across the Tennessee Valley. This data sharing effort is not unique to biological resources and will, in the long term, be coordinated with other databases both internal and external to TVA.

Within biological resources, TVA has structured its implementation strategy based on the following characteristics:

- Land stewardship
- Habitat and species management
- Dispersed recreation
- Public outreach and awareness

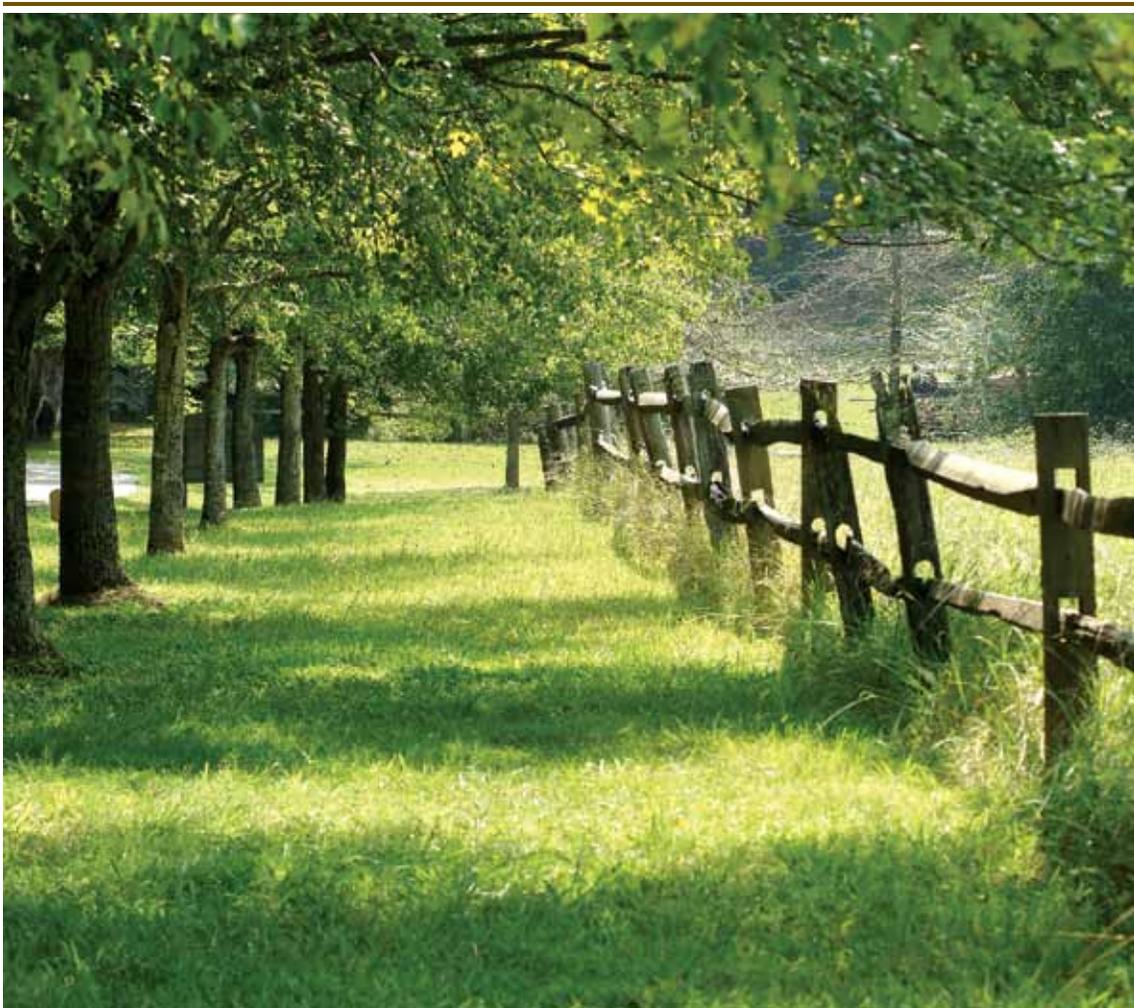
Land Stewardship

Currently, many components of TVA's biological resources management are being conducted in a fragmented manner, with missed opportunities for integration among complementary programs. Work is often reactive, with a limited view of the ramifications on a Valleywide basis and outdated or insufficient natural resource data for some areas of TVA-managed lands.

As part of determining how best to meet the future needs of the Valley's resources, TVA must first reestablish its baseline data for reservoir lands under its management. Through

the NRP, TVA will develop centralized, comprehensive databases using tools such as the Land Conditions Assessment to enable prioritization of land stewardship efforts. TVA is able to maximize the value of every dollar spent by making better information available to aid in its activity planning efforts, including:

- Identifying maintenance needs
- Improving public health and safety
- Ensuring compliance with regulatory requirements
- Protecting sensitive resources
- Preserving TVA assets
- Conserving the Valley's natural resources for future generations



Habitat and Species Management

Current terrestrial habitat management and sensitive resource protection activities again tend to be reactive. Under the NRP, TVA will develop and implement a variety of proactive methodologies in order to enhance and protect the diverse natural resources that TVA manages. Examples include:

TVA's forest resources and natural areas

TVA has over 200,000 acres of manageable forested reservoir properties. Over the last 15 to 20 years, TVA has managed these resources largely with a focus on maintenance activities. During this period, forest health, age and structure diversity, and overall wildlife habitat quality have in many cases deteriorated. Enhancing the focus on forest resource management will begin to reverse this decline and will create improved forest conditions, benefiting all resource areas within the NRP. Concurrently, TVA manages 154 natural areas throughout the Tennessee Valley. These areas protect some of the most biologically diverse and sensitive habitats occurring on TVA lands, such as unique plant, animal, cultural and scenic habitats.

Threatened and endangered species

As a federal agency, TVA is required under the Endangered Species Act to manage the populations of threatened and endangered species on TVA-managed lands. TVA plays a leadership role in the protection and management of several terrestrial species and their habitats. As part of the NRP, TVA will further strengthen its leadership role throughout the Tennessee Valley to enhance working relationships and data sharing in support of regional initiatives. To assist with this effort, TVA will increase its support for its Natural Heritage Program database

of rare and sensitive species and wetlands database and examine additional opportunities to proactively manage threatened and endangered resources nationally and regionally.

TVA-managed waterways and reservoirs

In connection with its more than 293,000 acres of reservoir land, the TVA-managed waterways and reservoirs create extensive year-round, temporal, seasonal, migration and over-wintering habitat for hundreds of forest, aquatic and wetland migratory bird species. These collective habitats in conjunction with surrounding mountains and plains provide a unique resource critical to the survival of many species in the southeastern United States. In addition, these types of programs improve wildlife-focused dispersed recreation opportunities for those who enjoy these resources.

TVA's dewatering projects on Kentucky and Wheeler reservoirs

These projects are the cornerstones for migratory waterfowl management in the Tennessee Valley region. They provide thousands of acres of high-quality habitat and significant opportunities for waterfowl hunting and wildlife observation. These areas, managed in concert with both state and federal wildlife agencies, are examples of successful long-term partnerships that greatly benefit these natural resources and local economies. Focusing efforts in this area will result in high-quality wildlife and wetlands habitat management and dispersed recreation opportunities, which will provide substantial social benefits to stakeholders. They will also provide substantial financial benefits to local and regional economies.

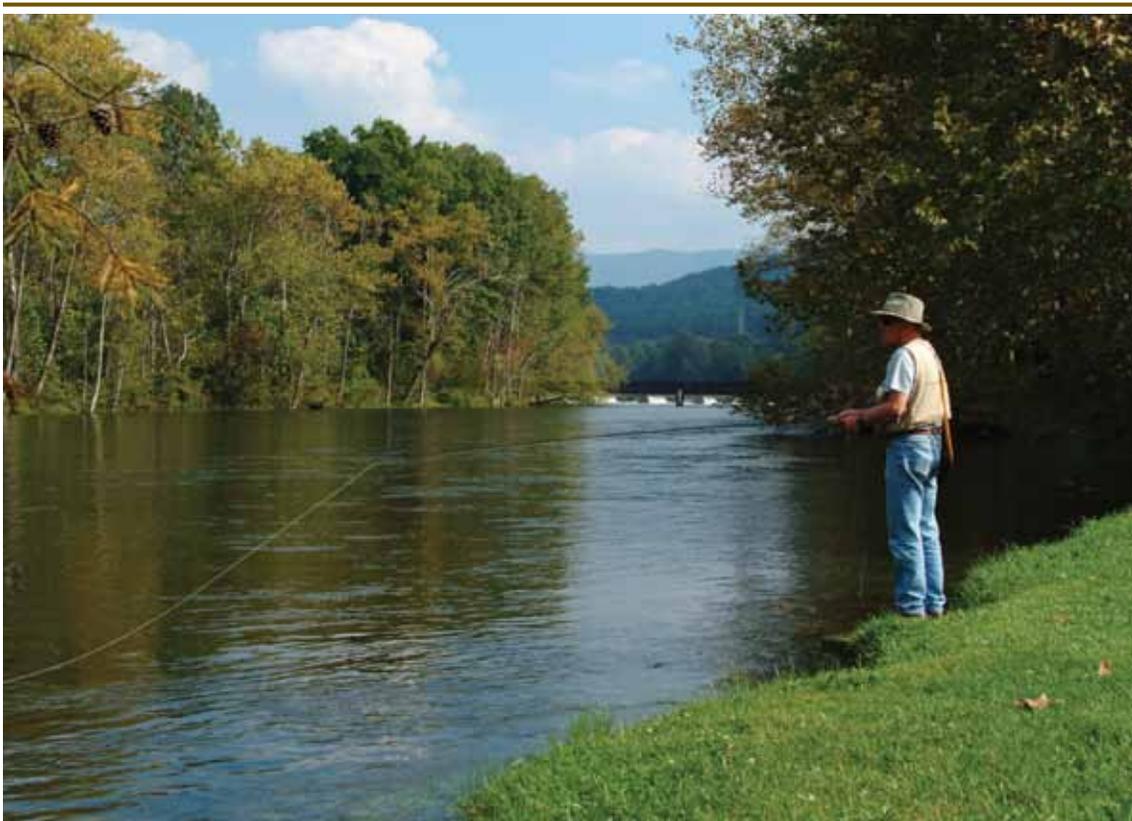
Dispersed Recreation

TVA's current work in the dispersed recreation area is somewhat fragmented. TVA has developed methodologies to evaluate the effects of dispersed recreation. However, work to remediate those impacts has not been conducted on a prioritized or regular basis.

Through the NRP, TVA will focus on improving conditions for those who enjoy hiking, camping, and other activities on the lands that it manages. TVA's reservoir properties attract more than 6 million visits annually for dispersed recreation purposes, and these visits generate local and regional economic benefits. The unintended consequences of this heavy use are impacts to public land that need to be managed to ensure that environmental and social conditions remain sustainable. Dispersed

recreation activities support TVA's effort to maximize the benefits of TVA-managed lands for public use by maintaining, enhancing, and expanding recreational and educational opportunities for Valley stakeholders to enjoy, while minimizing associated impacts.

TVA will utilize tools such as the land conditions assessment to identify high priority tracts of TVA-managed land for evaluation of dispersed recreation opportunities and impacts. These evaluations will then be prioritized to direct remediation work. Also, TVA will reevaluate trail and dispersed recreation needs as part of the five-year NRP refresh cycle to ensure it is meeting public demand and the intended use of the resources. Opportunities for partnerships also exist to help in expanding trail offerings through a coordinated build and maintain effort.



Public Outreach and Awareness

TVA's current biological resources efforts in public outreach and awareness are reactive and usually independent of other resource areas. Each NRP program contains a component of public outreach, which can vary from direct interactions or campaigns with the public to supplying information for other programs to utilize in outreach efforts. Educating the public plays an integral role in day-to-day management. It is essential to

create public awareness of issues that focus on preventable and proactive measures to improve and protect natural resources throughout the Tennessee Valley. Through the NRP, TVA will conduct proactive, integrated efforts not only with other resource areas, but also with state and other federal agencies and nongovernmental organizations to educate the public about the importance of biological resources and their positive effects on the quality of life in the Tennessee Valley.



3.4 Measures of Success

Implementation efforts in this resource area will be regularly evaluated to track progress using the following measures of success:

Resource Area	Measures of Success	Time Frame
Biological Resources	Complete land conditions assessment of all undeveloped TVA lands <ul style="list-style-type: none"> • Address 100% of identified safety issues • Improve or maintain 75-85% of lands to meet "fair" or "good" criteria 	8-10 years
	Ensure 100% of low-risk dewatering facilities meet dam safety guidelines	8-10 years
	Conduct boundary maintenance and meet signage needs on all TVA property	8-10 years
	Maintain all trails and informal recreation areas in "good" condition or close area permanently or until brought up to standard	20 years

3.5 Resource Area Programs

When developing the NRP, TVA identified programs and activities to support the goals of each resource area. The following

sections discuss each program in more detail, highlighting current activities, NRP activities, and expected implementation benefits. In addition, relationships between resource areas and other programs are discussed to help show linkages throughout the NRP.



3.5.1 Threatened and Endangered Species Program

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 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 land. TVA is directed under Section 7(a)(1) to utilize its authority “...in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species...”

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Reservoir shoreline stabilization/riparian management (Water)

- Stream and tailwater monitoring (Water)
- Climate change sentinel monitoring (Water)

Scope: As a federal agency, TVA’s responsibilities under the Endangered Species Act apply throughout TVA’s operational footprint. Its management of threatened and endangered species primarily occurs on TVA-owned lands.

TVA Span of Control: TVA’s span of control over threatened and endangered species varies by species (both plants and animals). TVA can directly influence listed species having large portions of their total population on TVA lands. Other, more widespread species are under partial or no span of control.

Current Activities

As required by Section 7(a)(2) of the Endangered Species Act, TVA consults with the U.S. Fish and Wildlife Service as appropriate concerning the potential for projects proposed by TVA or subject to approval by TVA (e.g., land use agreements and approvals under Section 26a of the TVA Act) to affect





endangered species. This is a nondiscretionary obligation of TVA as a federal agency. TVA also conducts management activities to aid in the conservation of threatened and endangered species according to the guidance in Section 7(a)(1) of the Endangered Species Act. Many of TVA's current endangered species management activities are conducted to comply with U.S. Fish and Wildlife Service biological opinion requirements and commitments resulting from environmental reviews.

Approximately 40 sites containing populations of federally listed animals and plants on TVA-managed lands are monitored. These monitoring activities were designed in cooperation with U.S. Fish and Wildlife and, as appropriate, other federal and state agencies. These data are reported to appropriate resource agencies and are used to protect these sensitive resources and to make informed decisions about land management and operational actions.

NRP Activities

- Continue to comply with the requirements of the Endangered Species Act and implementation of biological opinion requirements
- Continue monitoring of select species populations
- Create monitoring plans, develop and implement management actions, seek partnerships and catalog select species where management opportunities and/or emergent issues exist within the region
- Continue cave protection activities

Expected Benefits

Key benefits of this program are:

- Improved threatened and endangered species and habitat protection
- Compliance with Endangered Species Act regulations
- Increased resource knowledge, which results in informed decisions and reduced project costs and cycle times
- Improved coordination and communication with regulators
- Increased water quality benefits (e.g., protection of cave environments protects subterranean water resources)

3.5.2 Wetlands Management

Wetlands are highly productive and biologically diverse ecosystems that provide multiple public benefits such as flood control, reservoir shoreline stabilization, improved water quality, and habitat for fish and wildlife resources. The wetlands management program seeks to implement a proactive approach to identify, manage and protect wetlands under TVA's care.

Within the NRP, this program aligns with the following resource areas and programs:

- Nutrient source – watershed identification and improvement program (Water)
- Reservoir shoreline stabilization/riparian management (Water)
- Lands planning

Scope: TVA reservoir lands and TVA power lands

TVA Span of Control: Direct control on properties that TVA fully owns and manages and partial control on lands in cooperation with various state and federal agencies

Current Activities

TVA is guided by Executive Order 11990 (Protection of Wetlands, 1977), which directs federal agencies to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In addition, TVA utilizes the sensitive resources database to evaluate 26a permit applications for potential impacts to wetlands. TVA works with applicants (and the U.S. Army Corps of Engineers if needed) to avoid impacts

wherever possible or determine necessary mitigation actions. TVA has taken a proactive approach to wetlands protection by establishing red zone wetlands in its Shoreline Management Initiative of 1998.

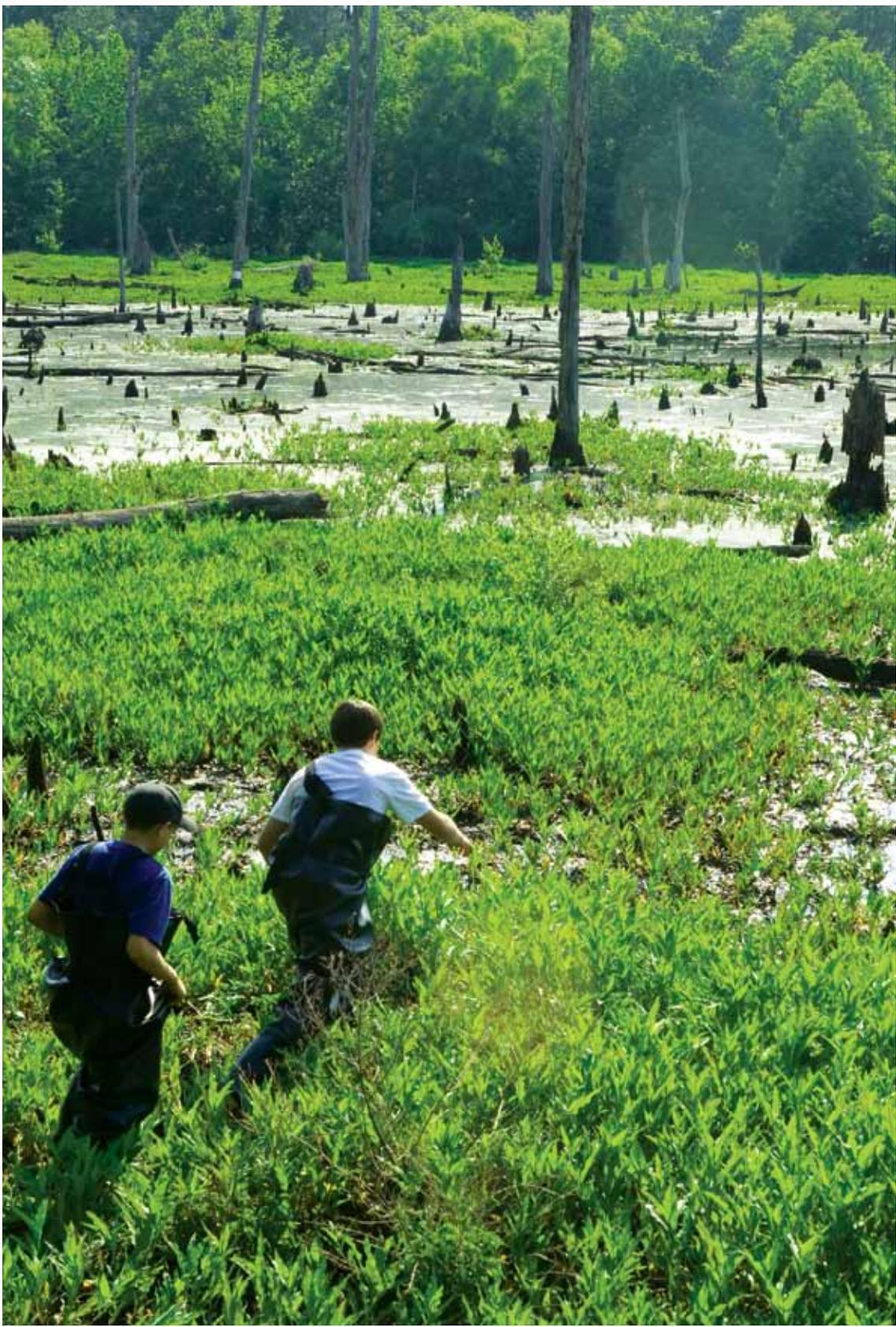
NRP Activities

- Continue implementation of current TVA wetland management and protection practices on TVA-managed lands

Expected Benefits

Key benefits of this program are:

- Protection of wetland resources to preserve their function and support fish and wildlife resources
- Improved water quality through the wetlands' filtering capability (keeping sediment out of reservoir) and prevention of shoreline erosion (providing a buffering effect for wave action)
- Increased eco-tourism opportunities resulting in greater economic benefits (dispersed recreation, fishing)
- Consistency with Executive Order 11990
- Expanded and improved knowledge and information of wetlands functions and values (wetlands database)
- Enhanced collaborative working environment through information sharing and pilot project activities with state, other federal, and nongovernmental organization partners



3.5.3 TVA Sensitive Resources Data Management

TVA's sensitive resources data management is maintained through the TVA Natural Heritage and wetlands databases. The TVA Natural Heritage database is a biological database that contains an ecological inventory of rare plants, animals, natural communities, natural areas, and other sensitive natural resource features. This extensive database also includes champion trees, colonial bird roosting sites, and areas managed by other federal, state or local entities. The TVA natural heritage database is affiliated with and uses the same information storage system as the NatureServe network of Natural Heritage programs in North and Central America. This ensures consistent data among the seven Valley states in which TVA operates. TVA maintains cooperative data exchange agreements with its federal and state conservation partners, ensuring that most current data are 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 a GIS-level resource assessment and preliminary reviews for ground surveys and wetlands' delineations. The wetland data available include more than 1,850 scanned National Wetlands Inventory maps that have been geo-referenced and combined to provide a seamless coverage of the TVA region. The National Wetlands Inventory maps, covering approximately 70 percent of the TVA region, are in a digitized format for spatial analysis. TVA uses these data for environmental reviews, conservation planning, and endangered species management activities.

These data are integral to informing other programs and activities across all resource areas as well as collaborative efforts with external stakeholders (e.g., state and other federal agencies).

Scope: For the purposes of the NRP, the scope of this program is focused within the TVA power service area. On occasion (e.g., power purchase agreements outside the service area, fuel purchases, coal leases, etc.), there is a business need to seek data from outside the TVA power service area. When this need arises, TVA utilizes its membership in the NatureServe network as well as relationships with U.S. Fish and Wildlife to access the necessary information. Various state natural heritage programs and Fish and Wildlife offices maintain these data nationwide

TVA Span of Control: Direct control over the TVA owned databases, partial control over shared data, and no control over data sought from state agencies, other federal agencies, and natural heritage programs

Current Activities

TVA actively maintains its inventory records using the following data sources:

- Information from museums and herbaria
- Results of field surveys by TVA and others
- Formal data exchanges with Natural Heritage programs in the seven Valley states
- Formal data exchanges with the U.S. Fish and Wildlife Service
- Information from professional contacts in other agencies and academia
- Results from TVA's endangered species monitoring and field assessments
- Unpublished and published scientific literature

Data users access the database for environmental reviews and planning purposes. All users are trained biologists, foresters or

ecologists who receive additional training on the use and proper interpretation of data contained in the database. They also receive supplemental training annually to improve interpretive skills and to be exposed to current conservation issues. These data are provided to data users via a comprehensive GIS-based computer system. To ensure compliance with the Endangered Species Act, TVA has developed standards used to interpret these data.

NRP Activities

- Continue current management of TVA Natural Heritage and wetlands databases
- Honor data sharing agreements among TVA, state and other federal resource agencies
- Add new data users for environmental review and planning purposes

Expected Benefits

Key benefits of this program are:

- Promotion of proactive management and protection of the 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 nongovernmental organization partners
- Improved TVA awareness of challenges facing sensitive resources as well as willingness to work with others on solutions
- Improved development of avoidance, minimization and mitigation measures as part of project planning due to an increase in sensitive resources data availability, resulting in reduced compliance costs and avoided (potential) project delays



3.5.4 Natural Areas Management

This program manages TVA's natural areas, which are ecologically significant sites, lands set aside for particular management objectives, and lands that contain sensitive biological, cultural or scenic resources. The TVA natural area program includes small wild areas, habitat protection areas, wildlife observation areas, and ecological study areas.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Lands planning

Scope: TVA-managed lands (includes power properties as well as reservoir lands)

TVA Span of Control: Direct control over TVA-managed lands and partial control over areas that are cooperatively managed with state or other federal resource agencies

Current Activities

In 1983, in recognition of the importance of unique natural resources, TVA established a policy for the identification and protection of natural areas. TVA manages 154 natural areas throughout the TVA region. Key activities include on-site condition assessments, erection of gates or barriers, trails management, and installation of regulatory and interpretive signage. TVA partners with state agencies and nongovernmental organizations to support monitoring, maintenance, trail development, and nonnative invasive plant control in these natural areas. Information on and boundaries

of both TVA and state natural areas are maintained in the TVA Sensitive Resources database. Recently, due to funding and personnel constraints, TVA has not actively monitored the conditions of its natural areas.

NRP Activities

- Monitor and assess TVA's natural areas to develop a prioritized list of maintenance or improvement needs (approx. one-third of natural areas assessed annually)
- Develop and implement comprehensive natural area management plans (approx. 15 natural areas annually)
- Establish criteria for a natural areas planning process to designate new or remove existing natural areas on TVA-managed lands

Expected Benefits

Key benefits of this program are:

- Expanded and improved knowledge of and information about sensitive resources, resulting in enhanced habitat protection of some of the Valley's unique areas (e.g., nonnative invasive plant control, boundary maintenance, species habitat enhancement, etc.)
- Increased opportunities for eco-tourism resulting in greater local and regional economic benefits (dispersed recreation)
- Enhanced public awareness and appreciation of unique natural areas
- Enhanced collaborative working environment through information sharing activities with state, federal, and nongovernmental organization partners

3.5.5 Migratory Birds Management

The migratory bird management program is composed of two elements: development and implementation of migratory bird management plans and increased involvement in regional working groups. For example, TVA is looking to renew its involvement in the Partners in Flight working group and seek partnerships for potential related projects.

Within the NRP, this program aligns with the following resource areas and programs:

- Recreation activities (both formal and dispersed recreation)
- Environmental education (Public Engagement)

Scope: TVA power service area and TVA reservoir lands

TVA Span of Control: Varies – Direct control within the reservoir system and dewatering areas; partial or no control on adjacent non-TVA lands (e.g., state wildlife management areas, U.S. Fish and Wildlife refuges, private lands)

Current Activities

TVA inventories, monitors and manages migratory birds on TVA-managed lands. Although it is not specifically mandated, TVA complies with Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds. TVA is a signatory to the Partners in Flight joint memorandum of understanding venture, which is outdated.

In 2004, as a result of the Reservoir Operations Policy, TVA altered the drawdown schedule on several reservoirs to balance competing uses of the reservoir system (e.g., recreation, water supply, water quality, flood control, power generation, and navigation). Concern about the resulting impacts to shorebird

populations led TVA to establish a five-year working group composed of federal and state agencies, nongovernmental organizations, and volunteers to learn more about shorebird resources in the Valley (Tennessee River Valley Shorebird Working Group).

During the late 1990s and early 2000s, TVA developed numerous resource management unit plans (see Section 3.4.15) that help provide sustainable habitat for migratory birds and other wildlife populations. These plans are still being used to manage TVA lands across the Tennessee Valley.

NRP Activities

- Comply with Executive Order 13186
- Support and participate in national and regional migratory bird management planning efforts, such as the U.S. Shorebird Conservation Plan, North American Waterfowl Management Plan, Migratory Bird Joint Ventures, and Landscape Conservation Cooperatives
- Continue participation in Tennessee River Valley Shorebird Working Group
- Partner with other agencies and nongovernmental organizations to implement conservation projects and to manage migratory bird populations on TVA reservoirs (e.g., waterfowl, shorebirds, double-crested cormorants, wading birds)

Expected Benefits

Key benefits of this program are:

- Improved habitat for migratory birds and monitoring of long-term trends for select species
- Enhanced collaborative working environment and relationships through information sharing activities with state, federal, and nongovernmental organization partners
- Increased tourism resulting in greater local and regional economic benefits (e.g., bird-watching and waterfowl hunting)

3.5.6 Grasslands and Agricultural Lands Management

The TVA grasslands and agricultural lands management program strives to increase habitat diversity across the TVA landscape. Grasslands and agricultural lands are lands that are nonforested and are maintained in early successional habitat or agricultural fields (e.g., row crops and hay forage). TVA manages these nonforested lands to maintain ground cover to prevent erosion, provide open and early succession wildlife habitat, enhance local agribusiness, provide future land maintenance cost savings, and maintain maximum flexibility for future management scenarios (e.g., carbon sequestration).

Within the NRP, this program aligns with the following resource areas and programs:

- Reservoir shoreline stabilization/riparian management (Water)
- Environmental education (Public Engagement)
- Lands planning

Scope: TVA reservoir lands and TVA power lands

TVA Span of Control: Direct control over TVA-managed lands and partial control on TVA lands that are under agriculture agreements with other agencies and local farmers

Current Activities

TVA grasslands and agricultural lands management activities are accomplished through agricultural licenses with individual

farmers and cooperative agreements with state agencies, other federal agencies and nongovernmental organizations (e.g., dewatering areas) as well as prioritized habitat enhancement projects on the 10 existing TVA reservoir management unit plans.

NRP Activities

- Continue to manage agricultural licenses and cooperative federal and state agency agreements on over 10,000 acres of TVA-managed lands
- Partner with other federal and state agencies and nongovernmental organizations in efforts to manage and enhance TVA grasslands and agricultural lands

Expected Benefits

Key benefits of this program are:

- Increased diversity and quality of wildlife habitat, water quality benefits, and dispersed recreational opportunities (e.g., wildlife viewing, hunting, etc.)
- Enhanced local agribusiness, resulting in a positive effect on local economies
- Demonstrated carbon management (e.g., by converting grasslands and agricultural lands to forest) and energy crop production (e.g., switch grass)
- Long-term maintenance cost savings associated with proactive management of nonforested lands
- Revenue generated from agricultural licenses



3.5.7 Dewatering Projects Management

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 (TWRA), Alabama Department of Conservation and Natural Resources, and U.S. Fish and Wildlife. The projects are operated as part of the Tennessee and Wheeler national wildlife refuges and state wildlife management areas.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Environmental education (Public Engagement)

Scope: Dewatering projects on TVA reservoir lands

TVA Span of Control: Direct control over the dewatering areas, which TVA owns, and partial control where it has agreements with state and other federal agencies to manage the lands within the dewatering areas



Current Activities

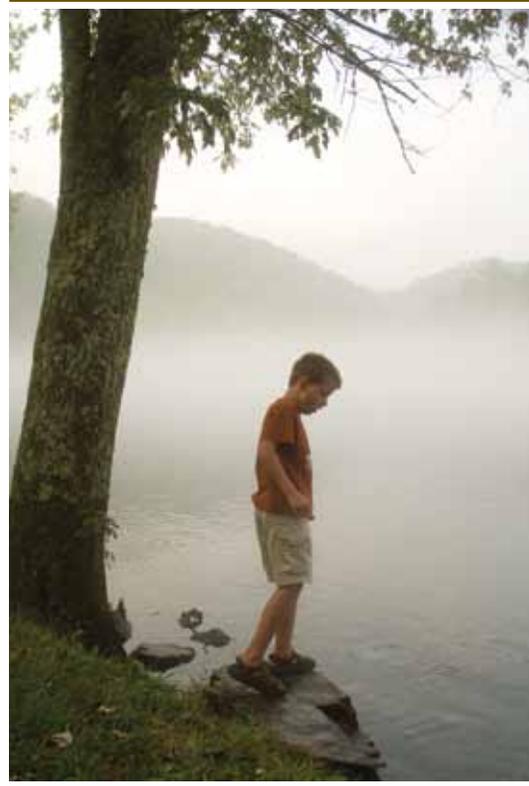
While primarily built for mosquito control, the dewatering areas are currently managed for waterfowl habitat and dispersed recreation (e.g., hunting, fishing, wildlife viewing). Other benefits of these areas include protection of bottomland hardwoods, slope protection for relocated highways and railways, and agriculture lands. TVA has entered into agreements with the Alabama Department of Conservation and Natural Resources, TWRA, and U.S. Fish and Wildlife for the management and cost sharing of operation and maintenance of these areas. Specific operation and management activities include the maintenance of earthen levees and operating pump house and water control gates. U.S. Fish and Wildlife, TWRA, and Alabama Conservation and Natural Resources manage the land base within the dewatering areas, such as maintenance of ditches, planting of crops, regulation of hunting activities, etc.

As a result of refocused efforts on dam and levee safety, TVA recently conducted a comprehensive dewatering area review to assess the status and make recommendations for refurbishment of each unit.

TVA has contractual agreements for highway and railroad embankment protection within dewatering areas (e.g., U.S. Highway 70 and railroad bridge at Camden, Tenn. dewatering area).

NRP Activities

- Continue management of current projects (includes maintaining or upgrading existing contractual agreements)
- Refurbish dewatering areas based on dewatering unit engineering and hydrologic reviews
- Operate, manage and maintain dewatering area projects at upgraded conditions
- Work with local and regional partners to



incorporate nature-based tourism into management of dewatering area projects.

Expected Benefits

Key benefits of this program are:

- A nationally recognized overwintering waterfowl habitat, along with good habitat for other wildlife, including sensitive species
- Protection of wetland habitats, bottomland forests, cultural resources, agricultural lands, and highway and railroad embankments
- Outstanding waterfowl hunting opportunities, along with other dispersed recreational opportunities (e.g., wildlife viewing, bank and boat fishing, hiking and biking trails, etc.)
- Economic benefits to local communities through tourism and agriculture

3.5.8 Forest Resource Management

The majority of TVA's public lands (more than 75 percent) are in mature forest cover that offers outstanding environmental watershed protection benefits. These benefits include slow release of storm water runoff, which helps in flood control, structurally intercepting rainfall or dissipation, evapotranspiration and controlling soil erosion.

TVA will manage its forest resources (all of the resources of the forest plant community, including the wildlife it supports) in a holistic manner, including:

- Forest access roads and parking areas management
- Forest resource and watershed protection
- Forest vegetation management
- Other public benefits (e.g., dispersed recreation, visual resources management, habitat enhancement)

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Recreation activities (both formal and dispersed recreation)
- Environmental education (Public Engagement)
- Reservoir shoreline stabilization/riparian management (Water)

Scope: TVA reservoir lands and TVA power properties

TVA Span of Control: Direct control over TVA-managed lands and partial control of TVA lands that are under agreements for management by other agencies

Current Activities

TVA has been the pioneer of watershed protection, including the establishment of agency tree seedling nurseries, tree improvement programs, reforestation (planting of millions of trees), soil erosion control, sediment management, and provision of technical forest resource management guidance across the Valley. TVA has over 100 miles of earth forest roads used by the public. Proper management of these forest roads includes best management practices that minimize soil erosion and off-site impacts that can adversely affect water quality.

Since discontinuation of its Forestry Prescription Process in the mid-1990s, TVA's forest management efforts have been limited in scope. These efforts have involved only small-scale salvage operations in response to storm or insect damages and planned harvests primarily for habitat enhancement. These actions have involved less than 1 percent of TVA's undeveloped lands. TVA's other forestry related efforts have been limited to mitigating tree hazards and encroachments involving tree cutting or other vegetative disturbances.

NRP Activities

- Manage tree hazards and tree cutting/vegetation damage encroachments
- Continue small-scale vegetation (tree removal) operations associated with storm or insect damages and forest wildlife habitat enhancements
- Monitor broad forest trends on TVA-managed lands and conduct basic forest protection activities (e.g., insects and disease, nonnative invasive plants, age-class of forest stands, prescribed burns)
- Provide support to state forestry assessment plans
- Develop and maintain a qualified fire management crew for local responses and to protect TVA assets

Expected Benefits

Key benefits of this program are:

- Improved forest resources, wildlife habitats, and scenic beauty
- Increased water quality benefits
- Better knowledge of forest resource trends and management needs
- Increased dispersed recreation opportunities
- Economic benefits to local communities through tourism
- Protection for cultural and sensitive resources (e.g., plant communities, shoreline erosion reduction, etc.) through proactive forest resource management
- Support for TVA's carbon management efforts
- Minimized long-term forest management costs through sustainable monitoring and improvement practices



3.5.9 Nonnative Invasive Plant Management

This program manages the effects of nonnative invasive plant infestation under and beside forest canopies, small forest openings, open and early successional habitat lands, and sensitive resource areas and habitats. Nonnative invasive plants infest a variety of forested and nonforested habitats. These plants can reduce forest productivity, hinder forest use and management activities, and degrade biodiversity and wildlife habitat. Nonnative invasive plants can include trees, shrubs, vines, grasses, ferns and forbs.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Campground management (Recreation)
- Day-use areas (Recreation)
- Reservoir shoreline stabilization/riparian management (Water)

Note: TVA's aquatic plant management program is not within the scope of the NRP.

Scope: All TVA property has the potential for nonnative invasive plant issues, including TVA power properties and TVA reservoir lands.

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands containing developed recreation facilities and lands where TVA has agreements with state and other federal agencies

Current Activities

Currently, TVA actively manages nonnative invasive plants in areas where habitat improvements have been made (e.g., native warm season grass fields). Also, TVA works to

control these plants in natural areas, on trails, and on dam reservation properties. Control is accomplished by mechanical means (e.g., hand grubbing, mowing, mulchers), chemical control (e.g., selective herbicides), and prescribed burning.

NRP Activities

- Control nonnative invasive plants on at least 1,000 acres of TVA-managed lands per year
- Develop a prioritized plan to control nonnative invasive plants on areas with sensitive resources (e.g., designated natural areas), habitat enhancements, or high public use, emphasizing areas with high partnership potential

Expected Benefits

Key benefits of this program are:

- Improved forest resources, wildlife habitats, and associated biodiversity
- Protection for cultural and sensitive resources (e.g., kudzu control at historic sites, native versus nonnative sensitive plants, etc.)
- Increased dispersed recreation opportunities
- Potential to reduce TVA's long-term control costs
- Increased protection of water resources and migratory bird habitat quality (e.g., alligator weed and water primrose)

3.5.10 Nuisance Animal Control

The nuisance animal control program manages the effects of nuisance animals on TVA lands, facilities, and recreational users to protect:

- Public health and safety (e.g., feral hogs)
- TVA assets (e.g., bird impacts to power lines and transformers)
- Adjacent private property from damage (e.g., flooding by beavers)

This process involves the removal of nuisance animals from the affected area. Common nuisance wildlife species for TVA include, but are not limited to, vultures, Canada geese, double-crested cormorants, herons, pigeons, gulls, beavers, raccoons, squirrels, bats, groundhogs, various other rodents, and feral or released domestic animals.

Within the NRP, this program aligns with the following resource areas and programs:

- Campground management (Recreation)
- Day-use areas (Recreation)
- Environmental education (Public Engagement)
- Reservoir shoreline stabilization/riparian management (Water)

Scope: All TVA property has the potential for nuisance animal issues, including TVA power properties, TVA reservoir lands, and developed recreation facilities

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands containing developed recreation facilities and lands where TVA has agreements with state and other federal agencies

Current Activities

The primary objective of TVA's nuisance animal control program is to reduce natural resource and facility damage caused by nuisance species in a practical, humane and environmentally acceptable manner. TVA has entered into a contractual agreement for the management of nuisance animals with the Wildlife Services section of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. Wildlife Services holds all federal and state permits that are required to conduct control activities with various wildlife species.

NRP Activities

- Resolve animal damage conflicts via existing contractual agreement with USDA Wildlife Services
- Develop and implement proactive strategies to manage feral or released domestic animals on TVA-managed lands

Expected Benefits

Key benefits of this program are:

- Improved public and TVA employee health, safety and property
- Support for TVA transmission and operational reliability and related cost savings
- Protection of TVA's earthen dams and levees
- Reduced liability for adjacent private property
- Enhanced protection of cultural, sensitive and natural resources
- Increased protection of water resources and island habitats (e.g., to vegetation on shorelines resulting in erosion due to double-crested cormorants)
- Increased dispersed recreation opportunities
- A positive public perception associated with proactive land management and maintenance

3.5.11 Terrestrial Greenhouse Gas Sequestration Management

The terrestrial greenhouse gas (GHG) sequestration management program is focused on continuing TVA's participation in research projects and third-party consortiums on terrestrial carbon sequestration, which is the storage of carbon in the biomass created by perennial vegetation such as root systems and tree trunks. TVA will continue its research efforts near Watts Bar nuclear plant as well as its involvement in the PowerTree and Utilitree consortiums, which are joint partnerships between electric companies that sponsor projects to sequester carbon dioxide.

As background, a carbon offset is an equivalent reduction in carbon dioxide or other greenhouse gases (GHGs). They are generated in a sector and/or region outside the boundary of an emissions cap or trading program. Offsets could potentially be used as a compliance mechanism under a national carbon reduction program. Initiatives similar to current terrestrial carbon sequestration research projects may be used to reduce future compliance costs if carbon legislation is passed. In order to obtain certified and verified offsets from terrestrial GHG sequestration activities, particular GHG accounting protocols must be followed (e.g., determination of applicability, development of baseline emissions, measurement and verification of emission reductions, third party reviews). Future types of terrestrial carbon sequestration projects that TVA may consider include:

- Forest creation and reforestation activities
- Forest type conversion
- Forest clearing and deforestation avoidance
- Conservation farming techniques

Scope: TVA-managed reservoir lands

TVA Span of Control: Direct control on TVA-managed reservoir lands

Current Activities

Currently, TVA is engaged in carbon offset projects on 41 acres of TVA-managed lands at Watts Bar Nuclear Plant for research purposes to build institutional knowledge of terrestrial carbon sequestration programs. TVA is currently involved in this research project for the purpose of:

- Obtaining information to develop internal expertise on how to generate carbon credits from a terrestrial carbon sequestration project in order to hedge risk associated with a carbon-constrained world
- Obtaining certified carbon reduction credits from the project
- Showcasing TVA's historic land and water stewardship mission
- Demonstrating new and advanced solid and above ground carbon measurement technologies

TVA currently participates in two voluntary consortiums, PowerTree Carbon Company and Utilitree Carbon Company LLC, that are conducting reforestation, afforestation, and forest management projects to sequester carbon.

NRP Activities

- Conduct research projects on 41 acres focusing on issues related to terrestrial greenhouse gas management
- Continue existing (PowerTree and Utilitree) involvement in third-party consortiums focusing on issues related to terrestrial GHG management practices

Expected Benefits

Key benefits of this program are:

- Development of internal knowledge regarding generation of carbon offset credits from a terrestrial carbon sequestration project
- Keeping TVA abreast of trends and best management practices for carbon management

3.5.12 Wildlife Habitat Council – Third-Party Certifications

The Wildlife Habitat Council (WHC) is a Maryland-based nonprofit organization that provides a third-party certification program that encourages corporations to enhance wildlife habitats on their properties. WHC certification adds value to programs by providing third-party credibility and an objective evaluation of projects. Wildlife Habitat Council biologists work with member companies to inventory wildlife populations, identify wildlife enhancement projects, and form teams of employees to administer them. Wildlife projects vary from site to site, but typically include maintaining wildlife food plots, establishing native grass and wildflower meadows, and providing artificial nesting structures for bluebirds, tree swallows, wood ducks and other species.

Within the NRP, this program aligns with the following resource area and program:

- Environmental education
(Public Engagement)

Scope: All TVA property has the potential for Wildlife Habitat Council projects, including TVA power properties, TVA reservoir lands, and developed recreation facilities

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands containing developed recreation facilities and lands where TVA has agreements with state and other federal agencies

Current Activities

In 1998, TVA established a formal relationship with the Wildlife Habitat Council. TVA projects currently certified by the council include Colbert Fossil Plant, Raccoon Mountain Pumped Storage Plant, and the Muscle Shoals Reservation. TVA's Reservoir Releases Improvements Program (see River Operations

Study, 2004, for additional information) has also received council certification. This program is credited with improving more than 300 miles of aquatic habitat by increasing the amount of dissolved oxygen and keeping the riverbed wet at all times.

NRP Activities

- Continue management of current certified projects
- Apply for Wildlife Habitat Council certification of the TVA Natural Resource Plan

Expected Benefits

Key benefits of this program are:

- Enhanced credibility of TVA management activities by the public through third-party review and certification
- Enhanced TVA corporate identity and pride (i.e., verify TVA is doing the right thing)



3.5.13 Wildlife Habitat Enhancement Partnerships

The wildlife habitat enhancement partnerships program focuses on collaborating with other federal and state agencies, individuals and nongovernmental organizations to improve habitats and increase wildlife-oriented recreational opportunities on TVA-managed lands.

Within the NRP, this program aligns with the following resource areas and programs:

- Reservoir shoreline stabilization/riparian management (Water)
- Environmental education (Public Engagement)
- Tennessee Valley Camp-Right Campground Initiative (Recreation)

Scope: TVA power lands, TVA reservoir lands, and developed recreation facilities

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands containing developed recreation facilities and lands where TVA has agreements with state and other federal agencies

Current Activities

TVA actively cooperates with various agencies, individuals, and nongovernmental organizations to improve habitat on TVA-managed lands. Examples include:

- U.S. Fish and Wildlife Service, Tennessee Wildlife Resources Agency, Alabama Department of Conservation and Natural Resources – dewatering areas (see dewatering projects management program description for additional information)
- Individual farmers – wildlife enhancement projects on TVA-managed lands under agricultural licenses
- Quail Forever – establishment of native warm season grass and food plots on Tellico, Watts Bar, and Melton Hill reservoirs
- Ducks Unlimited – construction and erection of wood duck nesting boxes on TVA-managed lands across the Valley and habitat restoration efforts on the Camden dewatering area
- The National Wild Turkey Federation – establishment of native grass and food plots on TVA-managed lands
- University of Tennessee and local native plant nurseries – establishment and management of native wildflower meadows on certain TVA-managed lands

NRP Activities

- Improve habitat on at least 750 acres of TVA-managed lands per year through partnership efforts only

Expected Benefits

Key benefits of this program are:

- Increased habitat and species diversity
- Potential water quality benefits (e.g., prevent erosion on TVA lands through vegetative habitat enhancement)
- Increased dispersed recreation opportunities and associated economic benefits
- Reduced nonnative invasive plants on projects areas
- Improved collaborative working and data sharing environment with various partner organizations
- A positive public perception associated with proactive habitat management

3.5.14 Boundary Maintenance

The boundary maintenance program establishes and maintains TVA’s reservoir property boundaries to assist in the identification and reduction of encroachments by owners of adjacent lands and to enhance the protection of natural and cultural resources through clear markings and signage. Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Environmental education (Public Engagement)

Scope: TVA reservoir lands

TVA Span of Control: Direct control on TVA-owned and managed reservoir properties

Current Activities

TVA prioritizes and implements annual boundary maintenance as needed at the reservoir level. However, due to staffing and funding constraints over the last 20 years, TVA has not proactively maintained boundaries on reservoir lands. Recently, as recommended by the Regional Resource Stewardship Council, TVA has begun to refocus its boundary maintenance efforts.

Boundaries are maintained by completing a four-step process:

1. TVA identifies priority areas to conduct boundary maintenance based on developmental pressures and timber harvest activities on adjacent properties, lack of existing boundary markings, elapsed time since the last boundary maintenance, and outcomes of other TVA processes.
2. A desktop review is conducted using aerial photos of the area, site-specific photos, and maps. This information, along with a data sheet, is taken to the boundary maintenance location.
3. The boundary line is located on the ground and denoted with the appropriate paint color. The following data are also collected during boundary maintenance: date of boundary maintenance, feet of boundary marked, TVA monument numbers and conditions, and type of additional maintenance needed (if any). TVA property signage is placed approximately 200 feet apart along each boundary line.
4. The data collected during boundary maintenance are transferred to a GIS database.

NRP Activities

- Conduct boundary maintenance (e.g., mapping, surveying, reestablishment, signage, etc.) at the reservoir level
- Develop a regional prioritization process for determining boundary maintenance needs at the reservoir level
- Address all regional boundary maintenance needs on a 10-year cycle while incorporating the latest and future survey technologies to assist in the process (e.g., lasers and GIS versus transits and stadia rod)

Expected Benefits

Key benefits of this program are:

- Reduction of encroachments and unauthorized uses of TVA-reservoir lands
- Enhanced value to recreationists through shared knowledge and information of TVA-reservoir lands (includes the public, adjacent landowners, agencies, and other nongovernmental organizations)
- Increased protection of all natural resources, including sensitive and cultural resources
- Improved land conditions across the Valley by maintaining lands and boundaries

3.5.15 Land Conditions Assessment and Land Stewardship Maintenance

The land condition assessment and land stewardship maintenance program includes two types of assessments of land conditions: comprehensive land conditions assessment (LCA) and rapid land conditions assessment (RLCA) (see Chapter 7 – Reservoir Lands Planning). These processes provide a prioritized list of tasks to address land maintenance needs that are identified. The program implements access control and other stewardship measures to ensure public health and safety (e.g., removal of danger trees), protect natural and sensitive resources, minimize soil erosion, and prevent other environmental impacts (e.g., trash and litter). It includes construction

and maintenance of roads to allow access for identified needs and tasks (e.g., construction, agricultural and timber activities).

Between 1998 and 2001, TVA developed 10 unit plans, addressing long-term (25-year), land-based resource management activities on lands allocated for natural resource conservation or sensitive resource management. The unit plans cover a total of 17,675 acres of land and were developed with substantial stakeholder input. Primary objectives of the unit plans were to provide sustainable amenities and benefits to the public through cost-effective management of unit-based resources, including habitat enhancement, sensitive resource management, access improvement, enhanced recreational opportunities, water quality improvements, and forest health. An example of a unit plan



can be found at www.tva.com/environment/reports/boone/.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Reservoir shoreline stabilization/riparian management (Water)
- Lands planning

Scope: TVA reservoir lands and natural areas on power property (e.g., Shawnee Fossil Plant)

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands where TVA has agreements with state and other federal agencies

Current Activities

TVA currently assesses land conditions using established land condition assessments and other resource management methodologies on about 10,000 acres of TVA-managed lands per year. These assessment tools and methodologies drive the prioritization of stewardship maintenance and management activities on TVA's lands.

Also, TVA manages the implementation of 10 existing unit plans on approximately 18,000 acres along eight reservoirs. Annual tasks include maintaining native warm season grass plantings and other wildlife habitat plantings, controlling invasive plants, maintaining access roads, and implementing forest improvements.

NRP Activities

- Assess 20,000 to 35,000 acres of TVA-managed lands annually. Execute a comprehensive approach for assessing all TVA reservoir properties in an effort to eventually replace the past rapid

land condition assessments with a comprehensive land assessment (hard data/information)

- Implement prioritized stewardship activities addressing public health and safety, asset preservation, and resource management needs based on land assessments (e.g., access control, road maintenance, sensitive resources protection, habitat improvement)
- Transition from the unit plan implementation methodology to the RLCA/LCA task prioritization methodology

Expected Benefits

Below are some of the key benefits TVA hopes to provide by implementing this program:

- Improved public health and safety across TVA-managed lands, which in turn helps to reduce possible costs associated with hazard management
- Increased protection of natural, cultural and sensitive resources
- Increased knowledge of existing resource conditions, locations and needs on TVA lands (e.g., signage, brochures, self-guided tours, etc.) to enhance value to recreationists and other users (e.g., universities)
- Protection of prior TVA investments on reservoir lands (e.g., habitat enhancements, access roads, invasive control)
- Creating a positive perception associated with proactive land maintenance (e.g., water quality improvements via minimized sediment runoff, wildlife habitat enhancements, forest resource management)

3.5.16 Conservation Planning

The conservation planning program supports natural resource planning initiatives throughout the southeastern U.S., including regional planning efforts with nongovernmental organizations, development of recovery plans for threatened and endangered species, development of state wildlife action plans and fisheries programs, and many other small- and large-scale conservation planning efforts.

Scope: TVA's power service area

TVA Span of Control: Direct control over conservation planning involving TVA-managed lands

Current Activities

TVA has participated in and provided data to many regional conservation-planning efforts throughout the southeastern U.S. These conservation planning efforts include eco-regional planning efforts with nongovernmental organizations, development

of recovery plans for federally listed species, development of state wildlife action plans and fisheries programs, and many other small- and large-scale conservation planning efforts. Because TVA's influence crosses state lines, TVA has been able to bring a unique perspective to these plans.

NRP Activities

- Continue to be advisers and participants in planning organizations
- Partner with regulatory and resource management agencies in state, local and regional conservation planning efforts

Expected Benefits

Key benefits of this program are:

- A comprehensive approach to collectively address regional natural resource issues
- Increased partnership opportunities
- Improved cooperation between agencies managing similar resources
- Reduced compliance costs
- Creation of larger-scale, collaborative conservation initiatives



3.5.17 Dispersed Recreation Management

The dispersed recreation management program provides a proactive approach toward managing impacts on TVA public lands associated with dispersed recreational use (e.g., camping, hiking, bank fishing, hunting, bird-watching). This management will enhance dispersed recreation sites on TVA public lands, thus providing the user with a higher quality recreational experience. Dispersed recreation sites are not supported by formal recreation facilities such as parking areas, shower buildings and developed campsites.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Reservoir shoreline stabilization/riparian management (Water)
- Environmental education (Public Engagement)
- Stream access sites (Recreation)
- Recreation design principles (Recreation)

Scope: Primary scope is TVA reservoir lands with additional dispersed recreation occurring on or around power properties (e.g., Saltillo power site and Murphy Hill power site)

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands where it has agreements with state and other federal agencies

Current Activities

TVA identifies and evaluates the condition of dispersed recreational areas for potential impacts to TVA-managed lands. To date, TVA

has identified and evaluated 265 dispersed recreation areas, which typically include multiple individual sites. TVA attempts to repair at least one heavily impacted area per year.

NRP Activities

- Collect data on dispersed recreation sites identified during lands condition assessment
- Repair 5 – 15 heavily impacted dispersed recreation sites annually
- Implement 5 – 10 key projects annually (e.g., new projects such as shoreline fishing sites and improved recreation access)
- Implement web-based educational campaign to promote eco-friendly dispersed recreation
- Develop and implement multi-year dispersed recreation plans
- Issue regulations on dispersed recreation facilities to enhance enforcement capabilities

Expected Benefits

Key benefits of this program are:

- Increased eco-tourism resulting in greater economic benefits
- Unique recreational opportunities for the public, such as bank fishing, hiking, bike trails, and wildlife viewing in areas where these activities are currently limited
- Enhanced value to recreationists through shared knowledge and information of TVA-reservoir lands (includes the public, adjacent land owners, agencies, and other nongovernmental organizations)
- Decreased impacts to forests, wildlife, cultural resources, sensitive species, water quality, and scenic quality of TVA reservoir lands
- Support to address and correct conflicting use issues (e.g., four wheelers interfering with deer hunters)

3.5.18 Leave No Trace

The Leave No Trace program is a national and international program designed to educate outdoor enthusiasts about the effects of dispersed recreation activities on the environment and to help them reduce those impacts.

Within the NRP, this program aligns with the following resource areas and programs:

- Archaeological monitoring and protection (Cultural)
- Reservoir shoreline stabilization/riparian management (Water)
- Environmental education (Public Engagement)

Scope: All TVA property has the potential to utilize the Leave No Trace program on TVA power properties, TVA reservoir lands, and developed recreation facilities

TVA Span of Control: Direct control on land TVA owns and manages and partial control on lands where TVA has agreements with state and other federal agencies

Current Activities

Currently, TVA participates in this program by making information available at select recreational areas and TVA field offices.

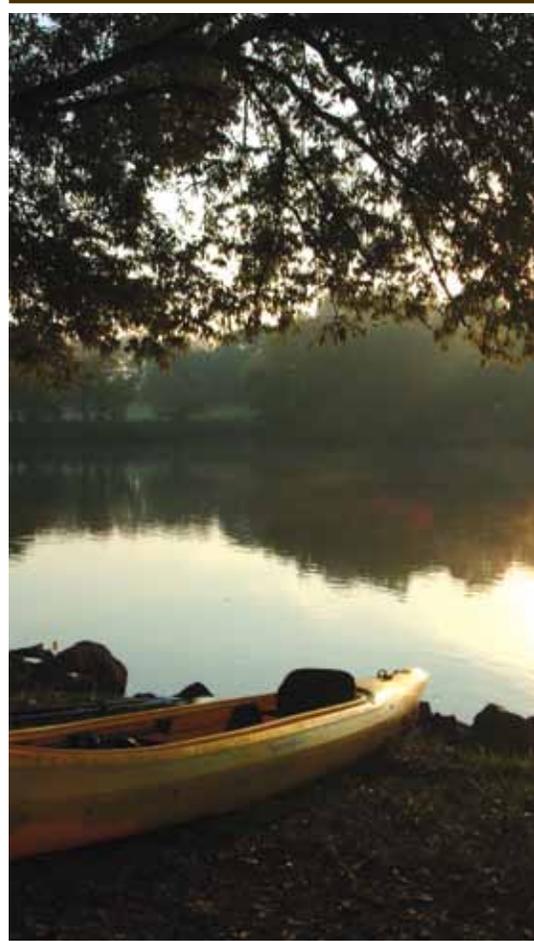
NRP Activities

- Continue to participate in Leave No Trace program
- Promote the Leave No Trace program throughout the Valley by providing educational information to users at recreation facilities/sites (both at information kiosks and through interactions with recreationists in the field), local businesses, and on the web

Expected Benefits

Key benefits of this program are:

- Decreased impacts to forests, wildlife, cultural resources, sensitive species, water quality, and scenic quality of TVA reservoir lands
- Increased quality of dispersed recreational experiences
- Enhanced value to recreationists through shared knowledge and information of TVA-reservoir lands (e.g., additional signage and responsibility information)
- Reduced operation and maintenance costs to clean up litter and manage the dispersed recreation areas



3.5.19 Trails Management

The trails management program will provide a systematic inventory and maintenance plan to manage over 100 miles of existing trails on TVA-managed lands. Trail usage provides recreational opportunities to the public, including hiking, running, mountain biking, wildlife viewing, scenic viewing, and other outdoor pursuits. TVA will collaborate with state, local and other federal agencies and nongovernmental organizations to:

- Provide a better quality recreation experience through proper maintenance and management of existing trails throughout the Valley
- Develop additional trails and maintenance plans in areas where needs are not being met

Within the NRP, this program aligns with the following resource areas and programs:

- Volunteer program (Public Engagement)
- Environmental education (Public Engagement)
- Recreation activities

Scope: All TVA property has the potential to utilize TVA-managed trails on TVA power properties, TVA reservoir lands, and developed recreation facilities

TVA Span of Control: Direct control on land TVA owns and manages and partial control on TVA lands containing developed recreation facilities and lands where TVA has agreements with state and other federal agencies

Current Activities

TVA has over 100 miles of existing trails located on TVA-managed lands. Currently, TVA does not have a systematic inventory or a maintenance plan for existing trails. Maintenance activities are restricted to reduction of safety hazards (e.g., removal of obstacles and surface enhancements) and placement of directional and regulatory signage. TVA also coordinates trail projects with potential partners to establish sustainable projects.

NRP Activities

- Proactively manage existing trail systems to include a systematic inventory and management/maintenance plan

Expected Benefits

Key benefits of this program are:

- Increased eco-tourism resulting in greater economic benefits
- Increased access opportunities to allow for additional dispersed recreational opportunities, such as wildlife viewing, bank fishing, scenic observation, etc.
- A positive public perception associated with proactive land management and maintenance