

*Amended Draft Environmental Impact Statement*

# Watts Bar Reservoir Land Management Plan



August 2007





**Document Type:** Environmental Impact Statement-  
Administrative Record  
**Index Field:** Amended Draft EIS  
**Project Name:** Watts Bar Land Plan  
**Project Number:** 2004-1

## AMENDED DRAFT ENVIRONMENTAL IMPACT STATEMENT

# WATTS BAR RESERVOIR LAND MANAGEMENT PLAN

Loudon, Meigs, Rhea, and Roane Counties, Tennessee

AUGUST 2007

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**Proposed project:** Watts Bar Reservoir Land Management Plan  
Loudon, Meigs, Rhea, and Roane Counties, Tennessee

**Lead agency:** Tennessee Valley Authority

**Cooperating agencies:** None

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**Comments must be  
submitted by:** September 24, 2007

**Abstract:** Tennessee Valley Authority (TVA) proposes to amend the *Watts Bar Reservoir Land Management Plan and Draft Environmental Impact Statement* (2005 Plan), issued in May 2005, and to update the 1988 *Watts Bar Reservoir Land Management Plan* (1988 Plan) for approximately 16,200 acres of TVA public land on Watts Bar Reservoir in Loudon, Meigs, Rhea, and Roane counties, Tennessee. The proposed updated *Watts Bar Reservoir Land Management Plan and Amended Draft Environmental Impact Statement* (Land Plan) would guide land use approvals, private water use facility permitting, and resource management decisions on Watts Bar Reservoir. The proposed Land Plan allocates land into broad categories or "zones," including Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial, Developed Recreation, and Shoreline Access.

This Land Plan incorporates modifications to the three alternatives proposed in the 2005 Plan as a result of TVA's November 2006 Land Policy and other administrative changes. These alternatives are a No Action Alternative to continue to use the 1988 Plan with accrued updates; a Modified Development and Recreation Alternative, providing suitable industrial use and developed recreation; and a Modified Conservation and Recreation Alternative, providing an emphasis on natural resource conservation and informal recreation activities. TVA's preferred alternative is the Modified Development and Recreation Alternative.

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## SUMMARY

### **PURPOSE OF AND NEED FOR ACTION**

The Tennessee Valley Authority (TVA) manages its public 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 Tennessee Valley. TVA is proposing to update the 1988 *Watts Bar Reservoir Land Management Plan* (1988 Plan) to reflect changing, community needs and current TVA policies. This includes allocating additional public lands on the reservoir that were not previously allocated in the 1988 Plan. These additional lands include narrow shoreline strips, TVA operation areas, and lands committed under legal agreements.

In May 2005, TVA issued a *Watts Bar Reservoir Land Management Plan and Draft Environmental Impact Statement* (2005 Plan) proposing to update the 1988 Plan for approximately 16,200 acres of TVA public land on Watts Bar Reservoir in Loudon, Meigs, Rhea, and Roane counties, Tennessee (TVA 2005a). Three alternatives were proposed in the 2005 Plan. These were a No Action Alternative to continue to use the 1988 Plan with accrued updates, a Balanced Development and Recreation Alternative with an emphasis on economic development and developed recreation, and a Balanced Conservation and Recreation Alternative with an emphasis on natural resource conservation and informal recreation activities.

The purpose of this *Watts Bar Reservoir Land Management Plan and Amended Draft Environmental Impact Statement* (Land Plan) is to revise the 2005 Plan by incorporating the changes derived from implementation of the TVA Land Policy (November 2006) and other subsequent updates. The Land Plan would allow an additional opportunity to assess environmental impacts of a reasonable range of alternatives for allocating TVA public land on Watts Bar Reservoir and provide a means for additional public involvement in the decision-making process. The proposed updated Land Plan would guide land use approvals, private water use facility permitting, and resource management decisions on Watts Bar Reservoir. The proposed Land Plan allocates land into broad categories or “zones,” including Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial, Developed Recreation, and Shoreline Access.

The Watts Bar Reservoir, which is part of the Watts Bar project, is a multipurpose reservoir operated by TVA for navigation, flood control, power production, recreation, and economic development. The Land Plan is intended to be consistent with the purposes of the Watts Bar project. The Land Plan also seeks to address issues and concerns raised by the general public. Each reservoir land management plan is submitted for approval to the TVA Board of Directors and adopted as policy to provide for long-term stewardship and accomplishment of TVA responsibilities under the TVA Act of 1933.

### **ALTERNATIVES**

TVA is considering three alternatives, consistent with the purposes of a multipurpose reservoir for managing public land around Watts Bar Reservoir.

TVA continues to propose an update of the 1988 Plan for Watts Bar Reservoir lands. With the implementation of the November 2006 TVA Land Policy and after review of the comments on the 2005 Plan, TVA is now considering modified versions of the 2005 alternatives. These modifications include updates of the proposed allocation Zones 5 (Economic Development to Industrial) and 6 (Developed Recreation), discontinuing the proposed Integrated Resource Management (IRM) plan, and administrative changes. The greatest difference from the original form of the alternatives is the removal of the residential component of mixed-use development, independent retail businesses, and some specific types of commercial recreation that are no longer provided for in the TVA Land Policy.

Under all alternatives, TVA would continue to conduct environmental reviews prior to the approval of any proposed development or activity on public land to address site-specific issues. TVA's selected alternative would guide TVA resource management and property administration decisions on the TVA public land surrounding Watts Bar Reservoir until the Land Plan is revised in the future, which is expected to be about 10 years.

**No Action (Modified Alternative A):** TVA would continue to use the existing 1988 Plan, with minor revisions to reflect allocation changes made over the past 19 years and current TVA policy. The proposed No Action Alternative (Modified Alternative A) would be updated with the administrative changes that have occurred or have been corrected since the publication of the 2005 Plan. These changes are limited to acreage and landrights corrections. The 19 allocation categories defined by the 1988 Plan would continue to be used, although activities and land uses not provided for by the Land Policy would not occur. Five thousand nine hundred acres of the TVA land on Watts Bar Reservoir (project operations and marginal strip) would continue to be administered by TVA but remain unplanned.

**Modified Development and Recreation (Modified Alternative B):** The proposed Modified Alternative B would continue to provide suitable economic and recreation opportunities as prescribed by the TVA Land Policy. TVA would apply one of the seven appropriate land allocation Zones to all Watts Bar Reservoir lands. Zone definitions, IRM, and administrative changes described above would be included. Under this alternative, TVA would help promote some industrial development and commercial recreation by allocating 1,253 acres of land for industrial use and 1,622 acres to recreation totaling about 18 percent of TVA-owned land on Watts Bar Reservoir. Approximately 7,500 acres (46 percent) of land would be allocated for sensitive and natural resource use. Although natural resource conservation and informal recreation would predominate on the reservoir, industrial development and developed recreation would occur on TVA land where those activities are most suitable and have the greatest opportunity for success.

**Modified Conservation and Recreation (Modified Alternative C):** Similar to the original Alternative C, the Modified Alternative C proposes a small amount of land allocated for economic development or industrial use and large portions to sensitive resource management and natural resource conservation. Under Modified Alternative C, TVA would help promote conservation of natural resources and informal and commercial recreation by allocating about 8,900 acres of land for Sensitive and Natural Resource use and 1,360 acres to Developed Recreation totaling about 63 percent of TVA-owned land on Watts Bar Reservoir. TVA would apply one of the seven appropriate land allocation zones to all Watts Bar Reservoir lands. Only those lands with existing industrial facilities, about 90 acres (less than 1 percent), would be allocated for industrial use. This alternative would also include the minor changes and alterations described in Modified Alternative B. Under this



alternative, natural resource conservation and informal recreation would predominate on TVA Watts Bar Reservoir land. Developed recreation would occur on TVA land where those activities are most suitable and have the greatest opportunity for success.

### **AFFECTED ENVIRONMENT**

TVA owns and manages 16,200 acres of land on Watts Bar Reservoir. The principal towns on the reservoir are Spring City, Kingston, Loudon, Rockwood, Lenoir City, Oak Ridge, and Harriman. Rural populations are concentrated in the numerous long valleys between the forested ridges. Watts Bar Reservoir flows from the northeast to southwest through Loudon, Meigs, Rhea, and Roane Counties in east Tennessee. At normal summer pool, the reservoir extends 72.4 miles up the Tennessee River to Fort Loudoun Dam, and 62.5 miles to Melton Hill Dam on the Clinch River. Including parts of the Emory and Little Emory rivers, the shoreline length totals 721 miles. TVA public land surrounding the reservoir includes natural areas, habitat protection areas, land fronting residential development, wildlife management areas, forested areas, licensed recreation areas, power transmission line corridors, riparian/wetland areas along streams and the reservoir shoreline, and Kingston Fossil Plant, Watts Bar Nuclear Plant, and the Watts Bar Dam Reservation.

There are 15 TVA managed areas and 17 areas managed by other local, state, or federal agencies currently located on or in the vicinity of public lands on Watts Bar Reservoir. Segments of the Emory and Little Tennessee rivers, and Piney Creek, which are tributaries to the reservoir, are listed on the National Rivers Inventory. Privately owned land surrounding the reservoir is a mosaic of residential and industrial/commercial development, upland and bottomland forests, and farmland comprised of hay, pasture, row crops, and small woodlots. The reservoir is similar to other reservoirs in the Tennessee River system in landscape character. Substantial visual features throughout the reservoir include secluded coves and vegetated large islands, visual buffering shoreline areas, and attractive isolated areas.

The numerous plant communities on Watts Bar Reservoir provide suitable habitat for a variety of wildlife species. These diverse plant communities include pine/hardwood forests, upland and riparian hardwood forests, and old field and agricultural field habitats. Many features, such as forested and emergent wetlands, streams, limestone bluffs, and caves, on reservoir parcels provide unique habitats for wildlife. In addition, the reservoir has one of the largest populations of nesting osprey in the Tennessee River Valley, and a significant establishment of heron colonies suggesting that the reservoir may provide suitable nesting habitat for other wading birds uncommon in Tennessee.

The various aquatic and terrestrial habitats in the vicinity of Watts Bar Reservoir provide suitable habitat for several federally and state-listed wildlife species. Although 13 plant species listed by the state of Tennessee occur on TVA land, there are no known federally listed plant species. Several protected terrestrial animal species occur on TVA land, and approximately 24 caves and 22 heron colonies were identified from the project area. Two of these species (bald eagles and gray bats) are federally listed, and 12 species are listed by the state of Tennessee. There are 10 mollusks and six fish in the vicinity of the reservoir that are state- or federally listed species. However, five of the mollusk species are believed to be extirpated from the reservoir. Currently, there are four federally listed mussels and one state-listed mussel and two federally listed and four state-listed fish known from the reservoir and its tributaries.

The overall reservoir ecological health rating for Watts Bar Reservoir was fair in 2004, with some ratings declining from good to poor between 1994 and 2002. The overall water quality characteristics of the reservoir are strongly affected by waters outside of the local watershed. Sediment quality ratings have varied from good to fair (1991-2003) with a greater frequency of occurrence of organic chemicals such as chlordane and polychlorinated biphenyls. Institutional controls (warning signs, fish consumption advisories, and monitoring) are in place to reduce health and environmental risks.

Throughout the reservoir, aquatic bottom-dwelling (benthic) animal communities rated generally 'poor,' although there may be an improving trend since 2002, except for the midreservoir area, which rated 'excellent' in 2004. With only two exceptions since 1994, vital stations fish community monitoring results have rated fish communities as 'good' in the reservoir, which indicates a consistently well-balanced fish assemblage.

Soils occurring in the Watts Bar Reservoir project area with properties to be classified as prime farmland (about 3,000 acres total) are generally located on the floodplains of the river and smaller streams. Especially significant areas of wetlands occur in the embayments associated with Hines Creek, Whites Creek, Muddy Creek, Greasy Run Creek, and Wolf Creek. Other important wetland areas are located in parcels located along the Little Emory River, in the Swan Pond and former Clinch River Breeder Reactor area, and on various forested islands in the reservoir.

The 100-year flood elevations for the Tennessee River part of Watts Bar Reservoir vary from 746.5 to 760.0 feet mean sea level (msl), while on the Clinch River arm of the reservoir, they vary from 747.1 to 755.3 feet msl. The flood risk profile elevations for the Tennessee River vary from elevation 747.0 to 769.3 feet msl, and on the Clinch River they vary from 748.4 to 759.2 feet msl.

Watts Bar Reservoir is bounded by three dams (Watts Bar, Fort Loudoun, and Melton Hill) with navigation locks that connect it to the National Inland Waterway System. There are several barge terminals near the principal towns of Spring City, Kingston, Loudon, Rockwood, Lenoir City, Oak Ridge, and Harriman, as well as some concentrations of residential shoreline developments and marinas. In 2005, over 1.2 million tons of commercial cargo was transported on the reservoir with an annual savings to shippers averaging \$9 million.

TVA land comprises about 11 percent of the land within 0.25 mile of Watts Bar Reservoir. There are over 17,000 acres of platted residential property adjacent to public land on the reservoir; approximately half of the platted area has already been converted to residential housing. Since the completion of Watts Bar Reservoir, TVA has sold or transferred over 9,000 acres (35 percent of the original TVA land base) to private, state, or federal ownership. Of the 721 miles of shoreline, 340 miles (47 percent) is available for Shoreline Access, which includes current development. TVA has several long-term land use agreements with other federal, state, and local government agencies for wildlife management areas, refuges, and parks.

Over 700 archaeological resources have been identified on TVA public land surrounding Watts Bar Reservoir from existing data and recent survey results. Prehistoric components and sites dating from the Paleo-Indian through Mississippian periods have been recorded, along with historic archaeological sites associated with the 19th to 20th century habitation of the area. Historic structures eligible for listing on the National Register of Historic Places

on TVA lands include the Watts Bar Fossil Plant; the Watts Bar Dam, Locks, and Power House; and a number of remaining dwellings from the original construction village (now Watts Bar Resort).

The reservoir receives an estimated 1.9 million recreation user days per year; approximately 313,000 gained access to the reservoir through public use areas, 702,000 through private residential areas, and 874,000 through commercial use areas. There are 67 developed recreation areas on Watts Bar Reservoir. Twenty-six are commercial recreation areas (e.g., marinas and campgrounds), and 37 are public recreation areas (e.g., boat ramps, picnic areas, beaches, and trails). In addition, there are four quasi-public recreation areas such as summer camps. Informal recreation is actively managed on 41 parcels allocated for natural resource conservation management but occurs on most undeveloped TVA-managed land. Most of Watts Bar Reservoir water recreation is designated as suburban and the Clinch River arm of the reservoir is designated as rural developed. There are over 50 paved boat ramps on the reservoir, 3,600 permitted docks, and marina facilities with about 1,500 boat docking slips (with an additional 200 plus out-of-water storage slips).

The 2000 census population of the four counties in the Watts Bar Reservoir area is estimated to have increased by 17.7 percent over the 1990 population, and estimates for 2006 indicate an additional 7.2 percent growth since 2000. This was a faster growth rate than in either the state or the nation, in contrast to the previous decade in which the area grew much more slowly than the state and the nation. Minorities account for 5.7 percent of the population, which is well below the Tennessee state average of 22.1 percent. In 2006, the civilian labor force of the area was 67,220 with an unemployment rate of 5.3 percent, which is higher than both the state and the national rates. The area is more dependent on manufacturing, farming, and government employment than either the state or the nation. In 2005, farm employment accounted for 4.8 percent, manufacturing 16.8 percent, government 15.4 percent, and, except for Roane County manufacturing and Meigs County government, all were 1 to 4 percent higher than both the state and national averages. Per capita personal income is lower than the state and national averages, averaging 78.4 percent of the national average in 2005. The estimated poverty rate in the area in 2004 was 14.1 percent, slightly lower than the state rate of 15.0 percent, but higher than the national average of 12.7 percent.

Except for ozone and particulate matter, all counties that surround Watts Bar Reservoir and their surrounding counties are currently in attainment with the National Ambient Air Quality Standards that establish safe concentration limits for pollutants in the ambient atmosphere. The closest Prevention of Significant Deterioration Class I area is the Great Smoky Mountains National Park to the east and southeast from the reservoir, which is about 20 miles distant.

## **ENVIRONMENTAL CONSEQUENCES**

Under any alternative, impacts to sensitive resources, such as federally and state-listed as endangered and threatened species, cultural resources, and wetlands, would be mitigated through regulatory requirement and commitment prior to any undertaking. Future residential, industrial, and recreational developments on adjacent private property or TVA property have the potential to impact water quality by increased soil erosion, chemical usage, and sewage loading. These impacts can be avoided or minimized by vegetated buffer zones and development restrictions similar to the Shoreline Management Policy.

Under any alternative, impacts to floodplain values would be insignificant and any development proposed in the 100-year floodplain would be subject to the requirements of Executive Order (EO) 11988 (Floodplain Management). Likewise, adverse effects to wetlands from land clearing and ground disturbance would be mitigated under Section 404 of the Clean Water Act and EO 11990 and would be insignificant. The potential for activities to affect archaeological and historic properties would be mitigated through phased compliance with the implementation of the programmatic agreement with the Tennessee State Historic Preservation Officer and the Advisory Council on Historic Preservation.

All of the alternatives directly result in insignificant impacts on air quality; however, proposed industry development actions would be carefully reviewed for potential impacts and compliance with air quality requirements. There may be some incremental clearing of wetland vegetation by landowners, resulting in some minor, cumulative loss of wetland function, primarily shoreline stabilization, wildlife habitat provision, and plant community diversity. In site-specific cases where some wetland impacts occur, mitigation requirements would offset any long-term loss of wetland functions.

Under the No Action Alternative, there would be an insignificant loss of public lands. However, there would be potential for the habitat alteration of up to 1,500 acres from future industrial use and the eventual loss of 3,200 acres of high-quality habitat from future industrial and developed recreation use. Loss and fragmentation of terrestrial habitat by clearing and alteration of vegetation could impact the composition and abundance of species. There would be no federally listed as threatened and endangered plants impacted, and use of the 1988 Plan would not likely adversely affect federally listed animal species. There would be some insignificant impacts to state-listed species from clearing and alteration of vegetation and pollution and siltation from erosion and ground disturbance activities. There would be temporary insignificant adverse impacts to managed areas and sensitive ecological sites from incompatible land use on adjacent areas. There would be no change to aquatic ecology and commercial navigation from the existing conditions that would have insignificant impacts, and the gradual minor degradation of visual resources would continue.

Under the No Action Alternative, the largest amount of land would be available for Developed Recreation (Zone 6) opportunities. The eventual use of land allocated for industrial or recreation development would cause loss of existing informal recreation at some sites resulting in a reduction of diversity in recreation opportunities. There would be no impacts to environmental justice and no change in impacts to socioeconomic issues with opportunities for future beneficial development. Insignificant air quality adverse impacts from emissions of construction and development activities would occur depending on the industries recruited. Some insignificant noise impacts from future industrial or recreation development are expected. Insignificant adverse impacts would occur to water quality from the release of toxic substances, erosion, or nutrient loading from future industrial and recreation development, and the potential loss of prime farmland would have an insignificant impact to region.

Under Modified Alternative B, the loss of public lands and other adverse impacts described below would be slightly less than the No Action Alternative. There would be potential for the habitat alteration of up to 1,250 acres from future industrial use and the eventual loss of 3,200 acres of high-quality habitat from future industrial and developed recreation use; loss and fragmentation of terrestrial habitat by clearing and alteration of vegetation could impact the composition and abundance of species. There would be no federally listed as

threatened and endangered plants impacted, and the proposed impacts would not likely adversely affect federally listed animal species. There would be slightly less insignificant impacts to state-listed species from clearing and alteration of vegetation and pollution and siltation from erosion and ground disturbance activities. There would be temporary insignificant adverse impacts to managed areas and sensitive ecological sites from incompatible land use on adjacent areas and beneficial impacts from the adjustment of boundaries and new areas. There would be insignificant adverse impacts to aquatic ecology and commercial navigation, and the gradual minor degradation of visual resources would continue. There would be no impacts to environmental justice and insignificant impacts to socioeconomic issues with opportunities for future beneficial development. Insignificant air quality adverse impacts from emissions of construction and development activities would occur depending on the industries recruited. Some insignificant noise impacts from future industrial or recreation development are expected. Insignificant adverse impacts would occur to water quality from the release of toxic substances, erosion, or nutrient loading from future industrial and recreation development, and the potential loss of prime farmland would have an insignificant impact to the region.

Under Modified Alternative B, the minor reduced amount of land available for Developed Recreation (Zone 6) when compared to the No Action Alternative would be offset by an increase in land allocated for Natural Resource Conservation (Zone 4). There would be insignificant adverse impacts to commercial navigation from loss of the Parcel 218 barge terminal; however, the designation of safety harbor land would be beneficial.

Under Modified Alternative C, TVA would maintain public ownership of almost all Watts Bar Reservoir land, and the greatest amount of land would be allocated for Natural Resource Conservation, offsetting the least amount of land available for Developed Recreation. Only 92 acres of public land would likely eventually be converted to industrial uses; however, there would be beneficial impacts to environmental justice because of the greater availability of public and informal recreation opportunities. Because there would be minimal clearing and alteration of vegetation, and consequently minimal pollution and siltation from erosion or ground disturbance activities, there would be no adverse and some beneficial impacts to federally listed as threatened and endangered species. This alternative would also have the least insignificant impacts to state-listed species of all other alternatives. The retention of high-quality terrestrial habitat would be a benefit to terrestrial ecology on the Watts Bar Reservoir area. This alternative would have the least potential alteration of aquatic habitat and most beneficial improvement to aquatic ecology and water quality, because there would be less industrial and recreation development land allocations that would cause the release of toxic substances, erosion, or nutrient loading. There would be temporary, insignificant adverse impacts to managed areas and sensitive ecological sites from incompatible land use on adjacent areas and beneficial impacts from the adjustment of boundaries and new areas. The least noise, prime farmland, air quality, and visual impacts of all the alternatives would occur. Although still insignificant, this alternative has the greatest adverse impacts to commercial navigation from loss of the Parcel 218 barge terminal and a potential future barge terminal on Parcel 298; however, the designation of safety harbor land would be beneficial.

### **IMPACTS SUMMARY**

Modified Alternative A has greater acreages of land allocated to developed uses, including Industrial and Developed Recreation, than the other alternatives. Adoption of Modified Alternative B would allow greater recreational and industrial development than Modified

Alternative C, but slightly less than Modified Alternative A. Therefore, Modified Alternative B would have greater potential for impacts to natural resources than Alternative C, but less than Modified Alternative A. Implementation of Modified Alternative C would result in the largest amount of acres allocated to Zone 4, Natural Resource Conservation.

#### **THE PREFERRED ALTERNATIVES**

The preferred alternative is Modified Alternative B, which provides suitable opportunities for the conservation of natural resources and economic development. The environmentally preferred alternative is Modified Alternative C, which has the least adverse impact on the environment of all the alternatives.

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## Acronyms and Abbreviations

<b>1988 Plan</b>	1988 <i>Watts Bar Reservoir Land Management Plan</i>
<b>2005 Plan</b>	2005 <i>Watts Bar Reservoir Land Management Plan and Draft Environmental Impact Statement</i>
<b>APE</b>	Area of Potential Effects
<b>ARPA</b>	Archaeological Resources Protection Act
<b>BMPs</b>	Best Management Practices
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CRM</b>	Clinch River Mile
<b>cfs</b>	Cubic Feet Per Second
<b>DO</b>	Dissolved Oxygen
<b>EA</b>	Environmental Assessment
<b>EIS</b>	Environmental Impact Statement
<b>ECSA</b>	Ecological Study Area
<b>ERM</b>	Emory River Mile
<b>EO</b>	Executive Order
<b>ESA</b>	Endangered Species Act
<b>FEIS</b>	Final Environmental Impact Statement
<b>FRP</b>	Flood Risk Profile
<b>GIS</b>	Geographic Information System
<b>HPA</b>	Habitat Protection Area
<b>HUC</b>	Hydrologic Unit Code
<b>IRM</b>	Integrated Resources Management
<b>KIF</b>	Kingston Fossil Plant
<b>Land Plan</b>	<i>Watts Bar Reservoir Land Management Plan and Amended Draft Environmental Impact Statement</i>
<b>LWBU</b>	Lower Watts Bar Management Unit
<b>mg/m<sup>3</sup></b>	Milligrams per cubic meter
<b>msl</b>	Mean Sea Level
<b>NRI</b>	Nationwide Rivers Inventory
<b>NEPA</b>	National Environmental Policy Act
<b>NHPA</b>	National Historic Preservation Act
<b>NNL</b>	National Natural Landmark

<b>NRI</b>	Nationwide Rivers Inventory
<b>NOI</b>	Notice of Intent
<b>NPS</b>	Nonpoint Source
<b>NRHP</b>	National Register of Historic Places
<b>NWI</b>	National Wetlands Inventory
<b>PA</b>	Programmatic Agreement
<b>PCB</b>	Polychlorinated Biphenyls
<b>PM<sub>2.5</sub></b>	Particulate Matter With a Diameter Less Than or Equal to 2.5 Micrometers
<b>PNNL</b>	Potential National Natural Landmark
<b>PPS</b>	Protection Planning Site
<b>PSD</b>	Prevention of Significant Deterioration
<b>ROD</b>	Record of Decision
<b>ROS</b>	Reservoir Operations Study
<b>ROS FEIS</b>	<i>Reservoir Operations Study Final Environmental Impact Statement</i>
<b>SAHI</b>	Shoreline Aquatic Habitat Index
<b>SEG</b>	Scientific Ecology Group Inc.
<b>SEIS</b>	Supplemental Environmental Impact Statement
<b>SHPO</b>	State Historic Preservation Officer
<b>SMI</b>	Shoreline Management Initiative, TVA
<b>SMI EIS</b>	<i>Shoreline Management Initiative: An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley Final Environmental Impact Statement</i>
<b>SMIN</b>	Shoreline Management Inventory
<b>SMP</b>	Shoreline Management Policy, TVA
<b>SWA</b>	Small Wild Area
<b>TDEC</b>	Tennessee Department of Environment and Conservation
<b>TRM</b>	Tennessee River Mile
<b>TVA</b>	Tennessee Valley Authority
<b>TWRA</b>	Tennessee Wildlife Resources Agency
<b>U.S.</b>	United States
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USCG</b>	U.S. Coast Guard
<b>USDOE</b>	U.S. Department of Energy
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>USFWS</b>	U.S. Fish and Wildlife Service

<b>WBDA</b>	Watts Bar Development Authority
<b>WBN</b>	Watts Bar Nuclear Plant
<b>WBWG</b>	Watts Bar Working Group
<b>WMA</b>	Wildlife Management Area
<b>WOA</b>	Wildlife Observation Area
<b>WROS</b>	Water Reservoir Opportunity Spectrum