

*Final Environmental Impact Statement
and Land Management Plan*

**Guntersville
Reservoir**



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**FINAL
ENVIRONMENTAL IMPACT STATEMENT
GUNTERSVILLE RESERVOIR LAND MANAGEMENT
PLAN**

Volume 1

**RESOURCE STEWARDSHIP
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TENNESSEE VALLEY AUTHORITY

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FINAL ENVIRONMENTAL IMPACT STATEMENT GUNTERSVILLE RESERVOIR LAND MANAGEMENT PLAN

Jackson and Marshall Counties, Alabama and Marion County, Tennessee

Abstract: TVA is proposing to update the 1983 land management plan for 40,236 acres of TVA-managed land on Guntersville Reservoir in Alabama and Tennessee. TVA proposes to use the Plan to guide land-use approvals, private water-use facility permitting, and resource management decisions on Guntersville Reservoir. Three proposed action alternatives are presented; each allocates land into broad categories, including TVA Project Operations, Sensitive Resource Management, Natural Resource Conservation, Industrial/Commercial Development, Developed Recreation, and Residential Access. The three action alternatives differ in how they would allocate 13 parcels where TVA received requests for industrial or recreational development. In addition, approximately 15,703 acres of land currently committed to a specific use through previous land use agreements would be allocated to that current use under all alternatives. The preferred alternative would result in about 12.7 percent of TVA public land on Guntersville Reservoir being allocated to TVA Project Operations; 25.5 percent to Sensitive Resource Management; 55.5 percent to Natural Resource Conservation, 0.8 percent to Industrial/Commercial Development, 4.2 percent to Developed Recreation and 1.3 percent to Residential Access. The No Action Alternative to continue management under the existing land use plan is also analyzed in this document. Table 1 of the Final Environmental Impact Statement Summary shows the distribution of proposed land uses, by acres, for each alternative.

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SUMMARY

FINAL ENVIRONMENTAL IMPACT STATEMENT GUNTERSVILLE RESERVOIR LAND MANAGEMENT PLAN Jackson and Marshall Counties, Alabama and Marion County, Tennessee

Introduction

Tennessee Valley Authority (TVA) proposes to update the 1983 Guntersville Reservoir Land Management Plan (1983 Plan) for TVA public land around Guntersville Reservoir. Currently, TVA owns and manages 40,236 acres of land on the reservoir. TVA intends to use the revised Guntersville Land Management Plan (Plan) to guide future decision making and to systematically manage its reservoir properties. By determining future land uses, the Plan is intended to be consistent with the purposes of the Guntersville Project, which is a multipurpose reservoir operated by TVA for navigation, flood control, power production, recreation, and other uses. TVA welcomes public comments on the proposed Plan and final environmental impact statement (FEIS).

Originally, TVA acquired approximately 109,671 acres of land for the Guntersville Project. Of that, 56,300 acres are covered by water during normal summer pool (595 mean sea level). Subsequent transfers and sales of land for various commercial, industrial, residential and recreational uses have resulted in a current balance of 40,236 acres of TVA land available for allocation to future uses.

The proposed Plan is intended to provide a clear statement of how project land would be managed in the future based on natural and cultural resource data; economic needs and public input. TVA considered a wide range of possible land uses in the development of the proposed alternatives. Each parcel of land was reviewed to determine its physical capabilities, suitable uses, and the needs of the public. Based on this information, the planning team allocated parcels to six planning zones. These are described in Table 2-2 of the FEIS. The Plan was developed using information obtained from the public, existing and newly-collected field data on land and resource conditions, and technical knowledge of TVA staff.

Public Involvement and Issue Identification

TVA held public scoping meetings to inform the public of the land management plan update and to solicit input in on March 20, 2000, in South Pittsburg, Tennessee; March 21, 2000, in Scottsboro, Alabama; and March 23, 2000, in Guntersville, Alabama. These meetings were attended by 112 people. In addition, written comments were invited through a news release, newspaper notices, and a website notice. Subsequent to the scoping meetings, TVA determined that the development of an EIS would allow a better understanding of the impacts of the alternatives. Accordingly, TVA published a Notice of Intent to prepare an EIS in the

Federal Register on December 20, 2000. Information collected from these efforts was used to identify the following issues to be addressed:

- **Aquatic Ecology.** About 63 percent of participants expressed a need for more shoreline erosion control.
- **Cultural Resources.** About 60 percent of respondents expressed a need for increased protection of cultural and historic sites.
- **Navigation.** The potential for the allocations to positively or negatively affect river navigation was identified by TVA staff as an issue.
- **Prime Farmland Conversion.** Although not identified by participants, the potential for the allocations to lead to the conversion of prime farmland to non-agricultural uses was identified by TVA staff as an issue.
- **Recreation.** More than half of the participants made requests for specific recreational uses such as more trails and wildlife observation areas. They were satisfied with the current availability of swimming beaches, campgrounds, lodging, and boating facilities.
- **Sensitive Plant and Animal Species.** About 58 percent of respondents expressed a preference for more protection of endangered species.
- **Significant Natural Areas.** About 63 percent of participants reported a need for more protection of land with unique natural features.
- **Socioeconomic Impacts.** The impact of the allocations on communities and community development was identified by TVA staff as an issue. Some respondents expressed a need for less industrial and economic development.
- **Terrestrial Ecology.** About 56 percent of respondents reported a need for more forest and wildlife management activities.
- **Visual Resources.** Participants valued the scenic beauty and setting of the reservoir, and about 68 percent requested more protection of natural land and open space.
- **Water.** About 68 percent of participants requested more protection of water quality.
- **Wetlands.** About 55 percent of participants requested more protection of wetlands.

Alternatives

Four alternatives were developed and evaluated in the DEIS. Brief summaries of each alternative are provided below. Table 1 shows the distribution of proposed land uses, by acres, for each alternative.

Alternative A – Current Plan (No Action)

Under Alternative A, the No Action Alternative, TVA would continue to use the existing 1983 Plan to guide its land use decisions. Specific requests would be considered pending further environmental review on the site-specific aspects of the proposal.

Table 1 - Comparison of Alternatives - Acres*				
Zone*	Acres			
	A Current Plan (No Action)	B1**** Balanced Development and Recreation)	B2**** Balanced Development and Conservation	B3**** Blended Alternative
1 - Non TVA Shoreland***	0	0	0	0
2 - TVA Project Operations	4,407.9 (13%)	4,996.2 (12%)	4,927.2 (12%)	5,079.5 (12%)
3 - Sensitive Resource Management	4,041.6 (10%)	10,121.5 (25%)	10,121.5 (25%)	10,259.8 (25%)
4 - Natural Resource Conservation	24,972.4 (63%)	21,867.1 (54%)	22,660.4 (56%)	22,323.5 (55.5%)
5 - Industrial/Commercial Development	1,786.3 (5%)	403.0 (1%)	338.2 (1%)	326.9 (0.8%)
6 - Developed Recreation	4,308.3 (11%)	2,306.8 (6%)	1,647.2 (4%)	1,703.7 (4.2%)
7 - Residential Access	0	541.5 (1%)	541.5 (1%)	542.6 (1.3%)
Total	39,516.5**	40,236	40,236	40,236

* For comparison purposes, zones for Alternative A have been updated to the rough equivalent used in the current planning process.

** Total current plan acreage reflects more than the 32,584 acres planned in the 1983 Plan due to multiple allocation tags on most parcels. For example, a parcel may be designated for both industrial and wildlife management purposes. For the purpose of preparing this table, that acreage is counted once under Zone 4 and once under Zone 5 because it can be used for either purpose today.

*** Non-TVA shoreland is not being allocated. This includes land adjoining the river over which TVA has flowage easement rights or land subject to outstanding residential access rights. Obstructions within the 500-year floodplain of the Tennessee River or tributary reservoirs require approval from TVA.

**** Alternatives B1 and B2 include 7,295 acres not planned in 1983. This land has been allocated to the other six zones in the current planning effort. The additional land allocated in the current effort include the Murphy Hill power plant site and areas of shoreline strip. Shoreline strip land with water access rights has been allocated to Zone 7, in accordance with the Shoreline Management Initiative Record of Decision in 1999. The remainder of the unplanned land is allocated to natural resource conservation, sensitive resource management, or recreation.

Alternative B1 – Balanced Development and Recreation and Alternative B2 -- Balanced Development and Conservation

Under Alternatives B1 and B2, the 1983 Plan would be updated to reflect how project land would be managed in the future based on current natural and cultural resource data; economic needs and public input. Alternatives B1 and B2 differ in the proposed uses for 795 acres affecting 13 parcels (see Table 2-3 of the FEIS). Under Alternative B1, Balanced Development and Recreation, TVA would allocate these 795 acres of TVA public land to TVA Project Operations (Zone 2), Industrial/Commercial Development (Zone 5) and Developed Recreation (Zone 6). Under Alternative B2, Balanced Development and Conservation, TVA would allocate this land to Natural Resource Conservation (Zones 4) and Industrial/Commercial Development (Zone 5).

Alternative B3 (Blended Alternative)

After review of public comments received on the Draft EIS, TVA created a third action alternative. In Alternative B3, TVA proposes to allocate parcels into zone categories that would partially or fully accommodate the requests described above. A complete list of all zone changes under Alternative B3 are described in Table 2-4 of the FEIS. The primary difference between Alternatives B1 and B3 is that the acreage for Zones 5 and 6 would be reduced by about 470 acres in Alternative B3. Alternative B3 would allow for maintenance of a buffer between the adjacent property and proposed development on Parcel 200a. All land in Parcel 26a, would be placed into Zone 4. The majority of land in Parcel 257 would be placed into Zone 4 and the remainder would be placed into Zone 2. Please see Section 2.2.2 of the FEIS for a complete description of why these changes were made in Alternative B3 relative to public comments received.

Comparison of Alternatives

Table 1 shows a comparison of the alternatives by of acres placed into each of the six land use zones. Outlined below is a comparison of Alternatives B1, B2 and B3 relative to the proposals for development (see Table 2-3 of the FEIS).

Under **Alternative B1**, land use allocation requests would be granted that would allow, subject to site-specific environmental review, the following actions:

- Conners Island recreation area on Parcel 26a north of Guntersville
- Guntersville airport expansion on Parcel 40 north of Guntersville
- Additional commercial recreation to complement the Wood Yard Marina at State Route 35 bridge on Parcel 127a at Scottsboro
- Mead Park proposal at the State Route 117 bridge on Parcel 145 at Stevenson
- Bridgeport Utilities boat ramp and Bridgeport walking trail on Parcels 154a and 159
- North Alabama Industrial Development Association allocation of Parcel 161a to allow industrial access

- I-24 Interchange development on Parcel 167 at Kimball
- Nickajack Industrial Park expansion on Parcel 172 to allow industrial access at New Hope
- Recreational development at the South Sauty Creek bridge
- Little Mountain Marina expansion on Parcel 207a
- Cisco Steel Marina proposal on Parcel 248 at State Route 227 causeway in Guntersville
- United Cherokee Intertribal or Guntersville City Park recreation development on Parcel 257 in Guntersville

Under **Alternative B2**, the above land use allocations would not be granted. These parcels would either continue in the current land use or be allocated to Zone 4.

Under **Alternative B3**, zone allocations consistent with the above proposals would be made, except:

- Commercial recreation expansion at Wood Yard Marina site would not be granted
- South Sauty Creek commercial recreation proposal would be decreased in size
- Conners Island parcel would be allocated to Zone 4 as in Alternative B2. Approximately 14 acres of Parcel 257 would be allocated to Zone 2 and the remainder (approximately 92 acres) to Zone 4, which would not allow some of the recreation requests to be granted,
- One residential access parcel (Parcel 20a) would be changed to Zone 5 to accommodate possible future commercial development of a watercraft sales facility.

Affected Environment

The Guntersville Reservoir is located in the southern extension of the Sequatchie Valley Province. This rolling valley floor is as much as 1,000 feet lower than nearby Sand Mountain to the east and the southernmost extensions of the Cumberland Plateau and its escarpment to the west. Sand Mountain extends for 38 miles along the eastern shoreline, and the area between this escarpment and the reservoir is mostly undeveloped. A small area of the lower portion of the reservoir between the city of Guntersville and Guntersville Dam is located in the Cumberland Escarpment physiographic region. This area is also mostly undeveloped and is among the most scenic reservoir shoreline in the region. Elsewhere, the reservoir and floodplain areas include attractive islands, rock bluffs, secluded coves, wetlands and agricultural land which is framed by high wooded ridges.

The Guntersville Reservoir watershed encompasses 2,669 square miles. Releases from Nickajack Dam account for an average of 37,200 cubic feet per second (cfs) of the water entering Guntersville Reservoir. An additional 4,600 cfs is generated by tributaries to the reservoir, and an average of 41,800 cfs discharges from Guntersville Dam into Wheeler Reservoir. The reservoir is considered nutrient rich and highly productive. Water quality ratings, as measured by dissolved oxygen, chlorophyll, and sediment characteristics are generally good. Several tributary streams are listed by the state as impaired. Stream impairment in these tributary streams is generally due to past surface mining, which has caused metal and pH problems, and farming, which has resulted in pesticide and organic enrichment. Most of the aquatic habitat on Guntersville is rated fair, based on characteristics

important to sport fish populations. Extensive aquatic weed growth, while providing benefits to wildlife and fisheries, interferes with recreational activities. Extensive weed growth also has the potential to cause detrimental water quality effects if shading of submerged vegetation results in die-offs and decay. The decay in turn would reduce dissolved oxygen and could be detrimental to most fish and aquatic life. As a result of these issues, aquatic weed populations are managed by mechanical harvesting and herbicides under a plan developed by the Guntersville Aquatic Plant Stakeholder Group.

Major cities adjacent to the reservoir are Guntersville, Scottsboro, Stevenson, Bridgeport, South Pittsburg and Jasper. Manufacturing is a larger contributor to part of the economy of the reservoir area than in the state or in the nation. There are several large industrial areas that have developed, including areas near Guntersville, Scottsboro, Stevenson, Bridgeport, and South Pittsburg. The Bellefonte Nuclear Plant site and the Widows Creek Fossil Plant site also add to the industrial character of portions of the reservoir. In addition, there are extensive areas of lake-oriented residential development, including 82 waterfront subdivisions, especially along the lower areas of the reservoir near Guntersville. Public use areas include 16 marinas, 43 boat ramps, 13 city or county parks, 8 campgrounds, 5 camping resorts, and 8 group camps or clubs. However, the reservoir includes large natural areas containing limestone bluffs, wooded shoreline, and numerous secluded coves and steep, wooded ridges.

A number of archaeological resources have been identified through previous surveys of Guntersville Reservoir land. Some of these resources may be eligible for the National Register of Historic Places. In addition, a number of historic structures exist on Reservoir properties and adjacent to the reservoir. Among these are the Guntersville Dam, Powerhouse, and Lock; Fort Harker, a Civil War fortification; Battery Hill at Bridgeport; and Creek Path Mission on Browns Creek.

Extensive wetlands exist on Guntersville Reservoir. Most common are aquatic bed wetlands, comprised of Eurasian milfoil, hydrilla, naiads, and lotus. Shallow water areas of coves and embayments contain herbaceous-emergent and scrub-shrub wetlands. Forested wetlands, containing bottomland hardwoods, are primarily under easement to the state for wildlife management areas. Other areas are found along embayments such as Browns Creek, Spring Creek, Roseberry Creek, Jones Creek, and Poplar Creek. Stands of tupelo in wetlands, which are rare in northern Alabama, also have become established on Dry Creek and on Bellefonte Island.

In addition, extensive acreages of prime farmland occur in Marshall and Jackson Counties on private land adjacent to the reservoir. Approximately 2,500 acres of prime farmland occur on TVA parcels being allocated in this plan. TVA currently licenses more than 860 acres on portions of 27 parcels of land for agricultural usage.

Surveys were conducted to determine if rare plants or sensitive ecological areas are located on reservoir land. No federally-listed plants were found; however, ten Alabama and five Tennessee state-listed plants were observed on nine Guntersville Reservoir parcels.

Populations of five listed species of animals were also observed during surveys of Guntersville Reservoir during 1999 and 2000. These included the federally-threatened bald eagle and the federally-endangered gray bat. Six species of federally-endangered mussels, one federally-endangered snail, and one federally-threatened fish are found in Guntersville Reservoir, mostly in the more riverine portion below Nickajack Dam. Designated natural areas on Guntersville Reservoir include Blowing Wind Cave and Fern Cave National Wildlife Refuges, Lake Guntersville and Buck's Pocket State Parks, Mud Creek, North Sauty Creek, Raccoon Creek, and Skyline State Wildlife Management Areas. In addition, as a result of previous land planning efforts, TVA has administratively designated Small Wild Areas at Cave Mountain, Big Spring Creek, Coon Gulf, Honeycomb Creek, and South Sauty Creek. TVA habitat protection areas were previously designated at Mink Creek and Honey Bluff.

Environmental Consequences

Under any alternative, sensitive resources such as endangered and threatened federal and state-listed species, cultural resources, and wetlands would be protected.

Under Alternative A, these resources would be protected by ongoing compliance with environmental protection laws and site-specific reviews conducted when specific actions are proposed. However, there is potential for fragmentation of habitat which could result in cumulative loss of habitat over time.

Under Alternatives B1, B2, and B3, additional protection would be ensured by allocation of land with priority resources to Zone 3. These proposed Zone 3 areas include large blocks of TVA public land on the Tennessee River near Guntersville Dam; parcels along Browns Creek, Big Spring Creek, Crow Creek, Mud Creek, Jones Creek, Battle Creek, and the Sequatchie River; and areas of Street Bluff, Buck Island, River Ridge, and the Sand Mountain escarpment. In addition, large areas of the reservoir would be allocated to Zone 4, which would also result in protection of important resources and natural habitats. Further, under Alternatives B1, B2, and B3, TVA proposes to designate three new Small Wild Areas, on Buck Island, Sand Mountain, and Bellefonte Island. In addition, nine habitat protection areas, which contain rare plants, are proposed for designation. Under Alternatives B1, B2, and B3, approximately 32,000 of the 40,000 acres being allocated would be in protective designations.

Under Alternative A, most of the parcels containing prime farmland soils were not included in the Plan. The 249 acres that were allocated were placed in less protective industrial or recreational categories. Under Alternatives B1, B2 and B3 most of the prime farmland soils are allocated for Zones 3 and 4, which would continue to protect these areas. However, approximately 780 acres of prime farmland soils are on parcels allocated to Zones 5, 6, and 7. If development actions were implemented on these parcels, this prime farmland would be lost. However, this is a small percentage of the extensive acreage of prime farmland in Marshall and Jackson Counties.

Under any alternative, future residential, industrial and recreational developments on adjacent private property or on TVA property have the potential to result in water quality effects due to increased soil erosion, chemical usage, and sewage loading. However, these effects are not inevitable, and can be avoided by use of vegetated buffer zones and the residential access restrictions required by residential permitting according to TVA's shoreline management policy.

Under any alternative, continuing development of residential subdivisions and occasional industrial facilities will continue to affect the reservoir's visual character. Under Alternative A, there was no specific visual protection designation, although some visual resource impacts would be protected through site-specific reviews of proposed developments. However, there would likely be a gradual reduction in visual attractiveness of the reservoir area. Under Alternatives B1, B2, and B3, visual resource protection and management would be enhanced by allocation of parcels with high scenic value to Zones 3 or 4.

Under Alternative A, there is no specific allocation category for protection of archaeological and historic resources. However, site-specific compliance reviews of specific actions would likely reduce most impacts to insignificant levels. In addition, some developments would likely be proposed which would require data recovery under Section 106 of the National Historic Preservation Act in order to proceed. Under Alternatives B1, B2, and B3, there are specific allocations for archaeological and historic resource protection. This would likely reduce the possibility of data recovery excavations and mitigation measures where developments are proposed. Approximately 90 percent of the recorded archaeological sites are included in protective Zones 3 and 4. TVA executed a Programmatic Agreement with the Advisory Council on Historic Preservation which governs implementation of reservoir land management plans in Alabama. The Programmatic Agreement requires identification of historic properties prior to implementation of specific activities under the land plan, and consultation with appropriate parties to determine whether there are historic properties eligible for the National Register of Historic Places, or which have religious or cultural significance to Native Americans. Development of a Programmatic Agreement with the Advisory Council on Historic Preservation in the state of Tennessee is under way. Until that agreement is finalized, TVA will meet Section 106 compliance obligations by phased compliance that will occur as subsequent land use requests are reviewed.

Under Alternative A, terrestrial ecological resources would be protected to some extent by site-specific reviews for specific activities. In addition, large areas are designated under all alternatives into zones compatible with natural resource management and enhancement. Depending on the sensitivity of resources, much of this land is available for wildlife management, wetland management, and riparian management to preserve, improve, or enhance ecological resources. The general mix of forest land and open land in the surrounding counties is expected to remain relatively unchanged in the near future with the possible exception of increased subdivision and road development. By maintaining approximately 81 percent of the TVA public land in Zones 3 and 4, implementation of Alternative B1 B2, or B3 could offset some cumulative effects of development and fragmentation on nearby private land.

Under Alternative A, approximately 300 acres are available for future recreational development, including public and private campgrounds, parks, and marinas. Continued expressions of interest from other public and private agencies have created opportunities to consider new recreational developments. In addition, the public increasingly values TVA public land for both formal and informal recreation uses. Accordingly, Alternatives B1, B2, and B3 propose the allocation of additional land to Recreational Development, and provide other public land for informal recreation use such as hiking, hunting, bird-watching and other uses compatible with resource protection. Specific recreational facilities on TVA public land such as hiking trails would be proposed and evaluated in more detail in subsequent natural resource management planning efforts.

After review of 15 specific proposals for economic and recreational uses of 13 parcels of TVA public land, and consideration of other public comments, TVA has chosen a preferred alternative. The Plan under Alternative B3 enhances resource protection and provides for needed economic development opportunities for communities along the Tennessee River. In addition, it responds to public concerns provided about several of the development proposals in Alternative B1.

The three alternatives contained in this document will be presented to the TVA Board of Directors, with a recommendation that Alternative B3 be adopted as TVA policy for management of Guntersville Reservoir land.

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Acronyms and Abbreviations

ADCNR	Alabama Department of Conservation and Natural Resources
ARPA	Archaeological Resources Protection Act
ADEM	Alabama Department of Environmental Management
APE	Area of Potential Effect
BMPs	Best Management Practices
cfs	cubic feet per second
DEIS	Draft Environmental Impact Statement
DO	Dissolved Oxygen
DOE	U.S. Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FRP	Flood Risk Profile
HPA	Habitat Protection Area
HUC	Hydrologic Unit Code
IGCC	Integrated Gasification Combined Cycle
INM	In Need of Management
msl	mean sea level
NAIDA	North Alabama Industrial Development Association
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PA	Programmatic Agreement
Plan	Reservoir Land Management Plan
1983 Plan	Existing Guntersville Reservoir Land Management Plan (1983)
PCBs	Polychlorinated Biphenols
PSD	Prevention of Serious Deterioration
RFAI	Reservoir Fish Assemblage Index
RVSMP	Reservoir Vital Signs Monitoring Program

SAHI	Shoreline Aquatic Habitat Index
S-CE	Special Concern Because of Commercial Exploitation
SCS	Soil Conservation Service
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SMI	Shoreline Management Initiative, TVA
SMP	Shoreline Management Policy, TVA
SPCO	Special Concern
STATSGO	State Soil Geographic Database
SWA	Small Wild Area
TDEC	Tennessee Department of Environment and Conservation.
TRM	Tennessee River Mile
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
UCI	United Cherokee Intertribal
USDA	Department of Agriculture
USFWS	Fish and Wildlife Service
WMA	Wildlife Management Area