Document Type: EA-Administrative Record
Index Field: Draft Environmental Assessment
Project Name: Tellico RLMP
Project Number: 2021-3

TELLICO RESERVOIR LAND MANAGEMENT PLAN
DRAFT ENVIRONMENTAL ASSESSMENT

Blount, Loudon, and Monroe Counties, Tennessee

Prepared by:
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November 2021

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Symbols, Acronyms, Abbreviations, and Glossary of Terms

SYMBOLS, ACRONYMS, AND ABBREVIATIONS

§	Section
APE	Area of Potential Effect
ARAP	Aquatic Resource Alteration Permit
BLS	Bureau of Labor Statistics
BMP	Best Management Practices
CAA	Clean Air Act
CFR	Code of Federal Regulations
CVLP	Comprehensive Valleywide Land Plan
CWA	Clean Water Act
DO	Dissolved Oxygen
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
HUC	Hydrologic Unit Code
LTRM	Little Tennessee River Mile
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLEB	Northern Long-Eared Bat
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NRP	Natural Resource Plan
NWI	National Wetland Inventory
PCB	Polychlorinated Biphenyl
PM	Particulate Matter
PSD	Prevention of Significant Deterioration
RLA	Rapid Lands Assessment
RLMP	Reservoir Land Management Plan
ROS	Reservoir Operation Study
ROW	Right-of-Way
SHPO	State Historic Preservation Officer
SMI	Shoreline Management Initiative
SMP	Shoreline Management Policy
TDEC	Tennessee Department of Environment and Conservation
TMDL	Total Maximum Daily Load
TRDA	Tellico Reservoir Development Agency
TRM	Tennessee River Mile
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resources Agency
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UTK	University of Tennessee, Knoxville
WMA	Wildlife Management Area

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) proposes to revise the 2000 Tellico Reservoir Land Management Plan (RLMP) based on its review of all existing land allocations to assess and respond to new issues and changes in conditions and circumstances. TVA proposes to revise the RLMP by changing the allocation of approximately 2,075.0 acres of the 12,787.6 acres (16.2%) of public lands managed by TVA on Tellico Reservoir in Blount, Loudon, and Monroe counties in East Tennessee.

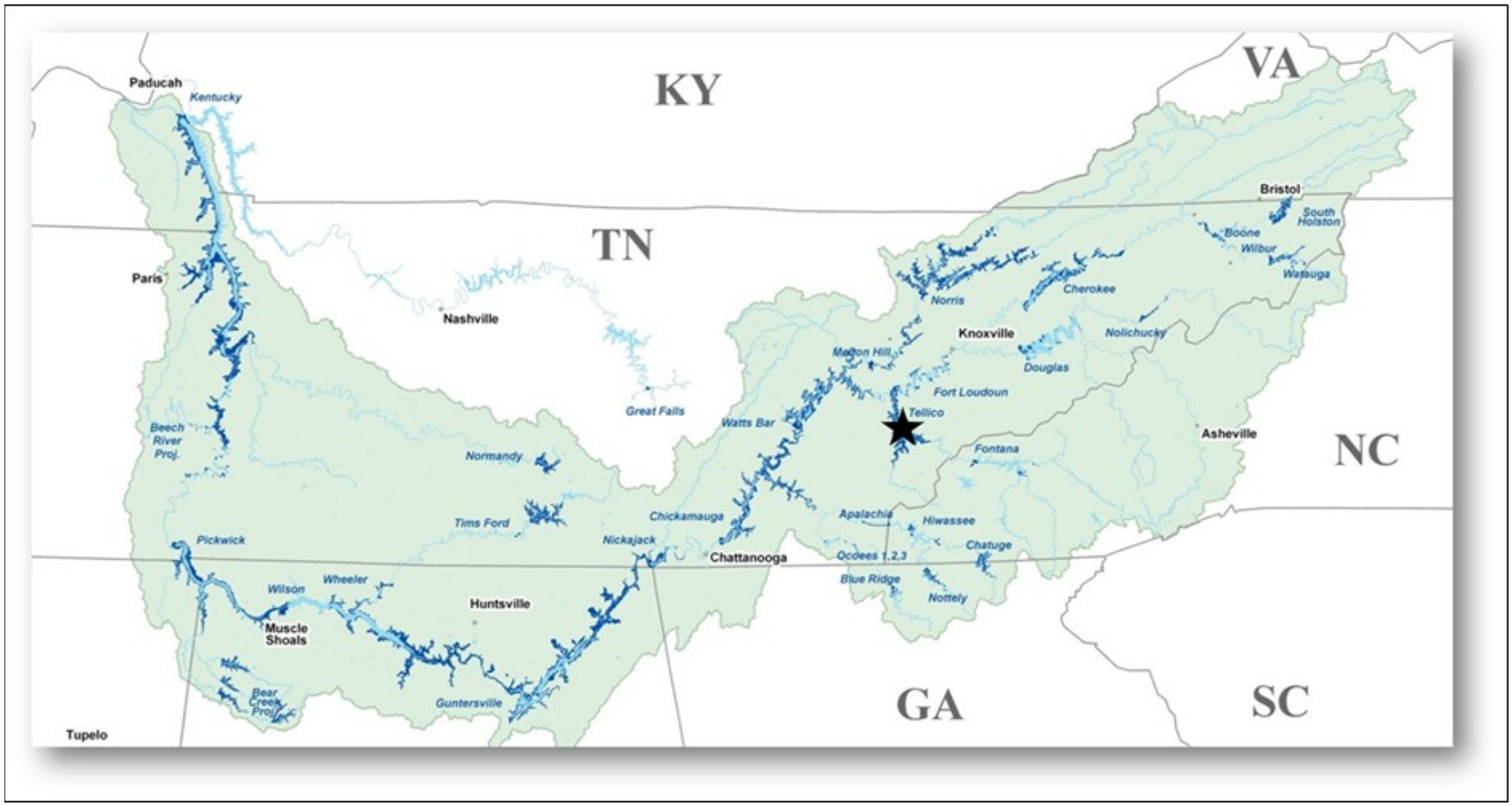
The proposed RLMP revision would be consistent with the TVA Land Policy, Natural Resource Plan (NRP) and Comprehensive Valleywide Land Plan (CVLP), and TVA's goals for managing natural resources on public lands. RLMPs guide land use approvals, private water use facility permitting, and resource management decisions on TVA-managed public land.

The purpose of TVA's RLMP planning process is to apply a systematic method of evaluating and identifying the most suitable uses of TVA-managed public lands in furtherance of TVA's responsibilities under the TVA Act. The RLMP planning process also supports compliance with applicable state and federal regulations and executive orders, and helps ensure the protection of significant resources, including threatened and endangered species, cultural resources, wetlands, unique habitats, natural areas, water quality, and the visual character of the reservoirs. Updates to RLMPs are needed to reflect changing land use needs and circumstances and to incorporate TVA's business needs and goals for managing natural resources on public lands.

In November 2006, the Board approved the TVA Land Policy to govern the retention, disposal, and planning of interests in real property. The Land Policy permits changes to land use allocations outside of the normal planning process under three circumstances: (1) Rectifying Administrative Errors, (2) Rezoning to Implement the Shoreline Management Policy, and (3) Rezoning for Water-Access Purposes for Industrial or Commercial Recreation Operations on backlying Land. The proposed land use allocations on Tellico do not meet these criteria for an 'off-cycle' allocation change; therefore, a revision to the 2000 RLMP is needed.

TVA's natural resource management strategy promotes the implementation of sustainable, cost-effective practices to balance protection and enhancement of ecological and cultural resources with providing multiple uses of the public lands. Through this approach, TVA ensures that resource stewardship issues and stakeholder interests are considered and conflicts are minimized. Resource management is based on cooperation, communication, coordination, and consideration of stakeholders potentially affected by resource management. TVA recognizes that the management or use of one resource affects the management or use of others; therefore, an integrated approach through the planning process is more effective than considering resources individually.

Figure 1 Location Map of Tellico Reservoir



1.1. Background

Shortly after its creation in 1933, TVA began a dam and reservoir construction program that required the purchase of approximately 1.3 million acres of land for the creation of 46 reservoirs within the Tennessee Valley region. Most of these lands are located underneath the water of the reservoir system or have since been sold by TVA or transferred to other state or federal agencies. Today, approximately 293,000 acres of reservoir land are managed by TVA for the benefit of the public. TVA manages these 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.

In managing public lands and resources under its authority, TVA seeks to provide effective and efficient management of natural, cultural, visual and recreation resources to meet all regulatory requirements and applicable guidelines. TVA develops RLMPs to integrate land and water program goals, balance competing and sometimes conflicting resource uses, and to provide for optimum public benefit. TVA's RLMPs apply a Single Use Parcel Allocation methodology, which defines separate parcels of reservoir land and allocates those parcels and affiliated land rights to one of seven land use zones:

Zone 1 - Non-TVA Shoreland

Zone 2 - Project Operations

Zone 3 - Sensitive Resource Management

Zone 4 - Natural Resource Conservation

Zone 5 - Industrial

Zone 6 - Developed Recreation

Zone 7 - Shoreline Access[1]

During the planning process, TVA completes an environmental review process, consistent with the National Environmental Policy Act (NEPA), to consider potential environmental impacts associated with the land use allocations. This environmental assessment (EA) is prepared to inform TVA decisionmakers in the selection of an appropriate plan for these public lands, while providing the public with opportunities to be involved in the process.

In 1979, TVA operations of Tellico Dam on the Little Tennessee River began, creating a reservoir with approximately 357 miles of shoreline. In June 2000, TVA issued the Tellico RLMP (2000 RLMP) and Environmental Impact Statement (EIS) for managing its 12,643 acres[2] of public lands on the reservoir. Tellico did not have a TVA RLMP prior to 2000. However, TVA did manage many of the Tellico Reservoir lands in accordance with Contract

[1] In the 2000 Tellico RLMP, Zone 5 parcels were zoned for "Industrial/Commercial," Zone 6 parcels were zoned for "Recreation," and Zone 7 parcels were zoned for "Residential Access." Under the revised plan, Zone 5 parcels will be identified as "Industrial," Zone 6 parcels will be identified as "Developed Recreation," and Zone 7 parcels will be identified as "Shoreline Access."

[2] The acreage figure of TVA-managed lands on Tellico Reservoir is currently slightly greater than the figure in the 2000 RLMP. Since 2000, TVA has completed several land transactions and made minor corrections to its mapping that have modified the acreage figure.

TV-60000A, which is in partnership with the Tellico River Development Agency (TRDA). TVA and TRDA continue to work cooperatively to carry out the terms of the Contract.

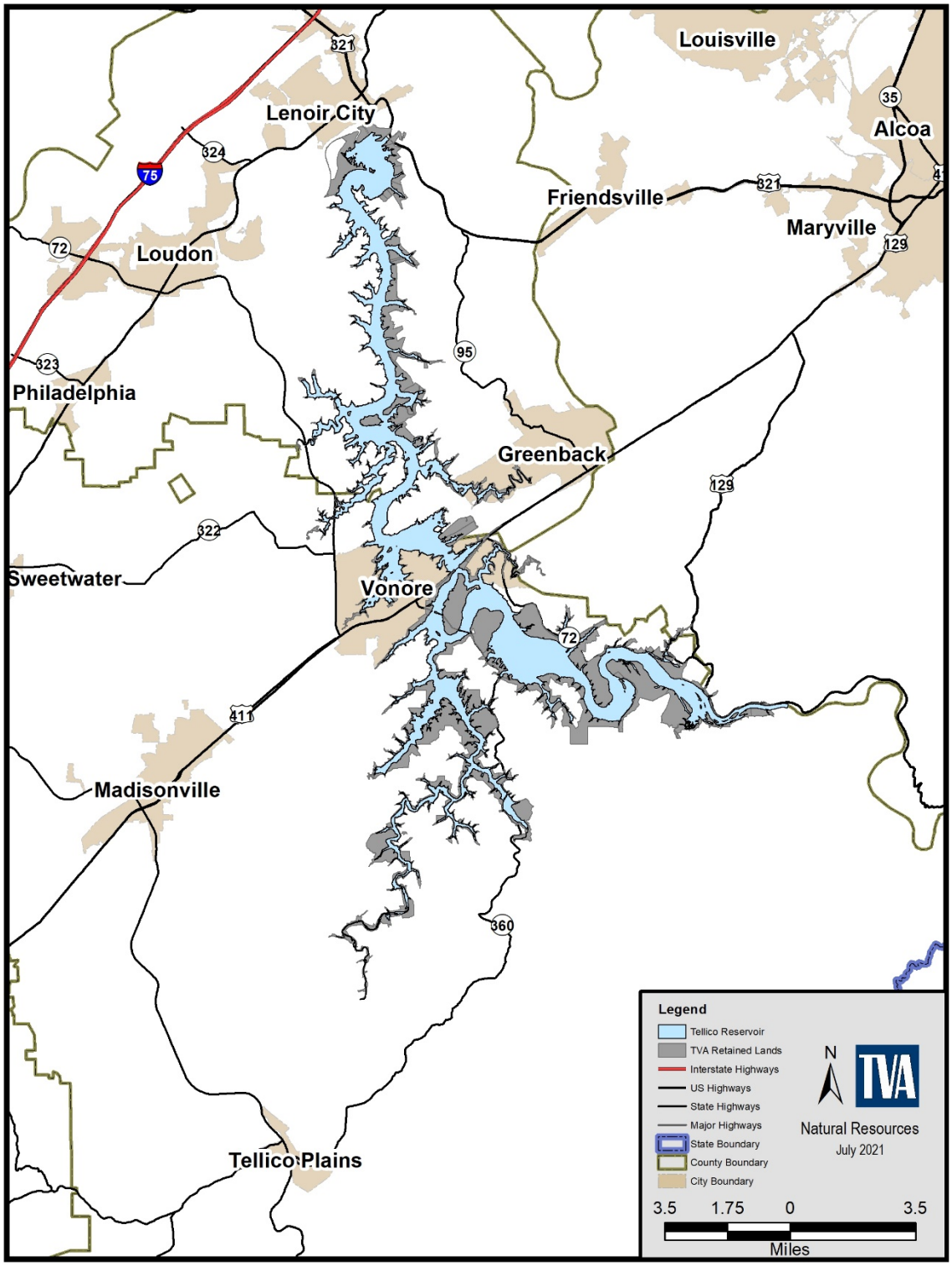
In August 2011, the TVA Board of Directors (Board) approved TVA's NRP and authorized the Chief Executive Officer to implement it. The NRP was updated by TVA in May 2020. The NRP guides TVA's natural resource management in the areas of (1) Reservoir Lands Planning, (2) Section 26a Permitting and Land Use Agreements, (3) Public Land Protection, (4) Land and Habitat Stewardship, (5) Nuisance and Invasive Species Management, (6) Cultural Resource Management, (7) Water Resources Stewardship, (8) Recreation, (9) Ecotourism, and (10) Public Outreach and Information.

As part of the NRP, TVA adopted the CVLP to guide use of approximately 293,000 acres of TVA-managed property on 46 reservoirs. The CVLP established land use allocation ranges across all TVA-managed reservoir lands. These ranges are targets within which TVA intends to maintain a balance of shoreline development, recreational use, sensitive and natural resource management, and other uses. The CVLP and its target ranges enable TVA and the public to consider land use allocations across the entire reservoir system and determine whether too much or too little attention is being given to particular land uses on a system-wide basis. In August 2017, the Board approved updates to the CVLP target ranges to reflect new RLMPs for eight TVA reservoirs.

1.2. Decision to be Made

The TVA Chief Executive Officer will decide which of the alternatives to adopt for the planning and management of TVA-controlled public land around Tellico Reservoir.

Figure 2 TVA Lands on Tellico Reservoir



1.3. Related Environmental Reviews

The following environmental reviews are relevant to TVA's proposed revision of the Tellico RLMP:

Tellico Reservoir Final Environmental Impact Statement (TVA 2000a) and Land Management Plan (TVA 2000b)

As noted above, TVA issued the Tellico RLMP in 2000 addressing the management of 12,643 acres of public lands on the reservoir (TVA 2000b). Because this EA will address changes to the 2000 RLMP that was reviewed in the 2000 Final EIS and no more than 16.2%[3] of TVA lands would change allocation under the two action alternatives, the 2000 EIS provides important information about the environmental impacts associated with parcel allocations that would be carried forward unchanged under all three alternatives (TVA 2000a). The EIS likewise provides important information about the affected environmental resources and is helpful to TVA in preparing updated resource information in Chapter 3.

Reservoir Operations Study Final Programmatic Environmental Impact Statement (TVA 2004)

The Reservoir Operations Study (ROS) evaluated alternative ways to operate the TVA reservoir system to produce greater overall public value. Specific changes in the operation of TVA reservoirs were implemented in 2004 because of this study. Tellico Reservoir was identified in the ROS as a "transitional reservoir" with flood storage of approximately 120,000 acre-feet. Under the ROS, the reservoir water levels begin rising on April 1 and reach summer pool around May 15; drawdown begins November 1 and reaches winter levels around December 1. These are the same operation dates as those for Fort Loudoun reservoir because TVA's Tellico and Fort Loudoun projects are connected by a canal in the vicinity of both dams. Therefore, Tellico Reservoir is treated as a main stem project, even though it is located on the Little Tennessee River, a tributary. The EIS includes an extensive amount of environmental resource information about Tellico Reservoir.

Shoreline Management Initiative (SMI): An Assessment of Residential Shoreline Development Impacts in the Tennessee Valley Final Environmental Impact Statement (TVA 1999)

In 1998, TVA completed the SMI EIS analyzing possible alternatives for managing residential shoreline development throughout the Tennessee River Valley. The selected Shoreline Management Policy (SMP) defines the standards for vegetation management, docks, shoreline stabilization, and other residential shoreline alterations. Across the TVA reservoir system, approximately 38% of the total shoreline is available for residential development, and a third of that shoreline had been developed by the mid-1990s.

The Tellico RLMP EA tiers from the final SMI EIS concerning the categorization and management of TVA-owned shoreline access land on the reservoir. Of the total 357 miles of shoreline on Tellico Reservoir, 99.3% of shoreline is owned and managed by TVA. In

[3] This percentage calculation includes approved allocation changes that have occurred since the approval of the 2000 Tellico RLMP.

accordance with TVA's SMP, TVA has traditionally categorized the residential shoreline for previous land plans based on resource data collected from field surveys. During development of the SMI EIS, a resource inventory was conducted for sensitive species and their potential habitats, archaeological resources, and wetlands along the residential shoreline. The shoreline categorization system established by the SMP was composed of three categories: Shoreline Protection, Residential Mitigation, and Managed Residential. In its RLMPs, TVA identifies which parcels are to be managed for Shoreline Access (Zone 7). However, TVA does not identify in the RLMP whether the shoreline access parcels are to be managed for Shoreline Protection, Residential Mitigation, or Managed Residential.

Updated Natural Resource Plan and Final EIS (TVA 2020)

In 2020, TVA completed an update of its Natural Resource Plan, which guides its natural resource stewardship efforts (TVA 2020). The NRP, first developed in 2011, addresses TVA's management of biological, cultural and water resources, recreation, reservoir lands planning, and public engagement. The NRP's goal is to integrate the objectives of these resource areas, provide for the optimum public benefit, and balance sometimes conflicting resource uses. In updating the NRP, TVA completed a supplemental EIS based on the 2011 EIS (TVA 2011a). The 2020 supplemental EIS describes TVA's resource management programs and activities, as well as the environmental impacts of those activities. TVA's updated NRP categorized existing and new programs into the 10 focus areas listed above in Section 1.1. Establishing new focus areas is intended to result in additional beneficial impacts to natural resources while providing TVA with an adaptable framework for implementing stewardship programs and activities over the next 20 years.

As part of the NRP, TVA adopted a Comprehensive Valley-wide Land Plan (CVLP) to guide use of approximately 293,000 acres of TVA-managed property on 46 reservoirs. The CVLP is composed of land use allocation ranges across all TVA-managed reservoir lands. These ranges are targets within which TVA intends to maintain a balance of shoreline development, recreational use, sensitive and natural resource management, and other uses. The CVLP and its target ranges enable TVA and the public to consider land use allocations across the entire reservoir system and determine whether too much or too little attention is being given to particular land uses on a system-wide basis. In August 2017, the Board approved updates to the CVLP target ranges to reflect new RLMPs for eight TVA reservoirs.

Multiple Reservoir Land Management Plans Final Environmental Impact Statement (TVA 2017)

On August 23, 2017, the TVA Board of Directors approved the proposed Multiple RLMPs for TVA-managed public lands on eight reservoirs in Alabama, Kentucky, and Tennessee: Chickamauga, Fort Loudoun, Great Falls, Kentucky, Nickajack, Normandy, Wheeler, and Wilson. The TVA Board also approved the proposed changes to the CVLP land use allocation target ranges, which were initially set forth in the NRP in 2011 and intended to aid decision making across the entire TVA reservoir system, including Tellico Reservoir. The Final EIS for this program was published in July 2017. TVA's proposed modifications to the Tellico RLMP must be consistent with the CVLP target ranges established in the Final EIS and by the TVA Board.

1.4. Scoping and Public Involvement

Scoping, which is integral to the process for implementing NEPA, is a procedure that solicits public input to the NEPA process to ensure that: (1) issues are identified early and properly studied; (2) issues of little significance do not consume substantial time and effort; (3) the NEPA document is thorough and balanced; and (4) delays caused by an inadequate review are avoided. TVA's NEPA procedures require that the scoping process commence soon after a decision has been reached to prepare a NEPA review in order to provide an early and open process for determining the scope and for identifying the significant issues related to a proposed action.

When considering the scope of a NEPA process, TVA considers the requirements of Executive Order (EO) 11988 (Floodplains), EO 13112 (Invasive Species), and EO 13653 (Preparing the United States for the Impacts of Climate Change), EO 11990 (Protection of Wetlands), EO 12898 (Environmental Justice), and applicable laws including the National Historic Preservation Act (NHPA), Endangered Species Act, Clean Water Act (CWA), and Clean Air Act (CAA).

On January 28, 2021, TVA initiated the public scoping process for the Tellico RLMP planning process. TVA notified the public of the initiation of the planning process in a variety of ways. TVA published information about the review and planning effort on the TVA webpage, notified the media, published notices in four local newspapers, and sent notices to numerous individuals, organizations, and intergovernmental partners with information about the review.

TVA established a project website as the primary platform for public outreach. The project website (click here to access) is intended to serve as the primary hub for distributing information to the public. The website instructed the public on how to submit scoping comments via email or mail. During the scoping period, TVA hosted a Virtual Public Meeting and added a Facebook event to raise awareness of the availability of the Meeting; approximately 100 people were reached through the meeting and event formats.

The notice initiated a 60-day public scoping period, which concluded on March 28, 2021. TVA prepared a Scoping Report to summarize its outreach efforts and the input that was received from the public and other agencies during the scoping period (the report is available on the project's website).

1.4.1 Public Scoping Comments

During the scoping period, TVA received a total of 46 submissions from members of the public and intergovernmental entities. Of the 46 comments, 44 were received electronically via email or online comment form submittals and 2 were received via mail. Of the 46 submissions, 38 were from individual members of the public, 2 were from state or local government agencies, and 6 were from local community or business groups. The comments received during the public scoping period are presented in the Scoping Report.

Of the 46 submissions, 18 individuals or groups expressed support for reallocating a portion of current Parcel 3 near the Tellico Dam Reservation in Loudon County from Zone 4 (Natural Resource Conservation) to Zone 6 (Developed Recreation). Similarly, 13

individuals or groups submitted comments supporting additional recreational opportunities in the Lenoir City and/or Loudon County area. Comments submitted by nine individuals or groups expressed general support for the direction of TVA's plan and supported TVA's effort to revise the plan.

Two pairs of individuals submitted detailed comment packages requesting that TVA consider the reallocation of current Parcel 99 from Zone 3 (Sensitive Resource Management) to Zone 7 (Shoreline Access) because of the historical use of the tract. The TRDA currently owns the land adjacent to Parcel 99, but the surrounding land has been developed as part of Kahite subdivision. TVA sold the land adjacent to Parcel 99 to TRDA with restrictions on its use in order to preserve a visual buffer for the Fort Loudoun State Historical Area and the Sequoyah Museum. The comments question the validity of the visual buffer.

One commenter expressed concerns about the safety of using the public facilities around the reservoir with lack of security resulting in vehicle break-ins. The commenter also requested that TVA include an erosion plan for all land use zones in the plan and consider how increased traffic impacts the provision of medical services for residents and visitors due to limited highway access.

1.5. Issue and Resource Identification

This EA is a programmatic document that addresses the proposed changes to the Tellico RLMP, which would allocate TVA-managed lands to the appropriate land use zone. This EA also evaluates potential impacts associated with the various types of uses permitted under each zone. The proposed RLMP does not include specific projects, such as developing campgrounds or industrial sites, and effects of such projects are not evaluated in this programmatic review. Whenever such individual projects are proposed in the future, TVA will determine the need for permits, coordination with other agencies (e.g., SHPO, USFWS and others), and the appropriate level of NEPA review and documentation. Additionally, this programmatic review does not address the operation of existing facilities, such as dams, electrical substations, or visitor centers, nor does it address the management of water levels in the reservoirs, which was evaluated in TVA's Reservoir Operations Study.

TVA internal reviews of current and historical information, reservoir data collected, and public input were used to identify the following resources/issues for evaluation in this EA. The effects of implementing each alternative were evaluated with respect to the following issues:

Prime Farmland – Existing land use patterns along the shoreline and back-lying land have been determined on most parcels by TVA land acquisition, disposals, and land use agreements. A majority of the parcels are committed to existing land uses with little to no potential for change of those land uses. Proposed allocation changes were evaluated to determine whether there would be effects to prime farmlands on TVA managed public lands.

Recreation – Existing developed (public or commercial) recreation facilities available to meet public needs were identified, as were those lands that are important for dispersed

recreation (e.g., hunting, bank fishing, bird watching, hiking, etc.). The effects of implementing each alternative on recreation opportunities in the vicinity of the reservoirs included in this plan were evaluated.

Terrestrial Ecology – Terrestrial plant and animal communities found on TVA lands in this plan were characterized using existing databases. Issues include the identification and protection of significant natural features, rare species habitat, important wildlife habitat, or locally uncommon natural community types. TVA will be consistent with EO 13186 and EO 13112 on migratory birds and invasive species.

Aquatic Ecology – TVA characterized the aquatic plants and animals found in the waters of the reservoir. TVA identified habitat for rare species, important aquatic habitat, or locally uncommon aquatic community types. The effect of implementing each alternative on aquatic ecology was evaluated.

Threatened and Endangered Species – TVA identified plants and animals that are state-listed or federally listed, proposed for listing, or candidates for listing as threatened and endangered, and are known to or are likely to exist in the vicinity of Tellico Reservoir. The presence of potentially suitable habitat within the TVA parcels was discussed for these species. The effect of implementing each alternative on threatened and endangered species was evaluated as well. TVA will comply with the Endangered Species Act and the Bald and Golden Eagle Protection Act.

Water Quality – TVA described water quality conditions within the reservoir, based upon the Reservoir Ecological Heath Monitoring Program or similar indices, as well as state classifications and advisories. The effect of implementing each alternative on water quality in the reservoirs was evaluated.

Wetlands – Wetlands on TVA land along the reservoir shoreline were identified. TVA will comply with EO 11990 on wetlands and the Clean Water Act. The effects of implementing each alternative on wetlands on the reservoirs included in this plan was evaluated.

Floodplains – Floodplains on TVA land along the reservoir shoreline were identified. TVA will comply with EO 11988 on floodplains. The effects of implementing each alternative on floodplains on the reservoirs included in this plan was evaluated.

Air Quality and Climate Change – Compliance with National Ambient Air Quality Standards (NAAQS), which establish safe concentration limits of various air pollutants, was evaluated.

Cultural and Historic Resources – Prehistoric or historic districts, known sites, buildings, structures, or objects on or near the TVA lands around the reservoir were identified. TVA will comply with Section 106 of the National Historic Preservation Act (NHPA). The effects of implementing each alternative on cultural resources on the reservoir was evaluated.

Natural Areas – TVA identified special and unique natural areas on or adjacent to TVA managed lands on Tellico Reservoir. The potential effect of implementing each alternative on these areas was evaluated.

Visual Resources – The aesthetic settings of the reservoir were characterized, and scenic and distinctive areas frequently seen by reservoir users and adjacent reservoir residents were generally described. The potential effect of implementing each alternative on the natural beauty of the shoreline was evaluated.

Socioeconomics – The current population, labor force, employment statistics, and income, of the population within the region of the reservoir were identified. A subset of these issues is environmental justice, the potential for disproportionate impacts to minority and low-income communities. The effect of implementing each alternative on socioeconomics was evaluated.

1.6. Public Review Process

TVA reviewed the public's scoping input when developing this EA. A draft EA has been prepared and is being issued for public review and comment. The draft EA will be available for review to the public and agency partners for a 60-day period. The draft EA will be announced in a media release and in local newspapers, and the EA will be posted on TVA's website. TVA's agency involvement includes sending notices to local, state and federal agencies and federally recognized tribes to inform them of the availability of the draft EA.

Comments that are received during the public review period will be carefully reviewed. TVA will review and consider these comments when finalizing its EA. TVA will respond to comments in the final EA and, if appropriate, will issue a finding of no significant impact.

1.7. Required Permits and Consultation

No federal permits are required to develop an RLMP. Site-specific information on reservoir resources has been characterized in this EA, and potential impacts on these resources were considered in making land use allocation recommendations. When specific actions are proposed on TVA parcels addressed in the RLMP, additional environmental reviews for these actions would be undertaken as necessary to address potential project specific impacts.

Appropriate agencies and offices regulating historic resources and endangered species have been consulted during this planning process. TVA will comply with the Programmatic Agreement (PA) executed in January 2020 in consultation with the Advisory Council on Historic Preservation, seven State Historic Preservation Officers (SHPO), including the Tennessee SHPO, and 21 federally recognized Indian Tribes, to address a suite of activities. This PA addresses TVA's compliance with Section 106 of the National Historic Preservation Act when implementing the various land plan activities. In August 2021, TVA consulted with the Tennessee SHPO and Tribes who have expressed an interest in Blount, Loudon, and Monroe counties. The Tennessee SHPO concurred that the reallocation of properties constituted an undertaking and that each individual undertaking should be reviewed under the PA. TVA will also complete necessary consultation with the USFWS under Section 7 of the Endangered Species Act.

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CHAPTER 2 - ALTERNATIVES

2.1. Description of Alternatives

During the lands planning process, TVA seeks to address issues and concerns raised by the public regarding allocation and management of the TVA parcels. TVA staff has utilized an internal land planning process to arrive at land use allocation recommendations. TVA has identified an initial list of proposed land use zone allocation changes for 102 reservoir parcels after reviewing and considering suitable uses of the parcels. These new allocations will be considered as the Proposed Land Use Plan Alternative (Alternative B) in the draft EA.

After the public scoping period, TVA determined that an additional alternative should be considered as part of the planning process. The "Modified Proposed Land Use Plan Alternative" (Alternative C) is substantially the same as Alternative B with the following exceptions: original parcel numbers 2, 3, 74, and a portion of parcel 44 would not be proposed for reallocation and would instead remain allocated as approved in the 2000 Tellico RLMP. Like Alternative B, the proposed lands plan would be updated for consistency with current lands planning practices, but Alternative C would restrict further new development on the reservoir.

TVA will also consider not changing any parcel allocations under the No Action Alternative (Alternative A).

Regardless of the alternative selected, the following conditions would apply:

- Any proposed development or activity on public land will be subject to TVA approval pending the completion of an additional site-specific environmental review to evaluate the potential environmental effects of the proposal. As necessary, TVA would impose any necessary mitigative measures as conditions of approval for the use of public lands to minimize adverse environmental effects.
- Future activities and land uses will be guided by the TVA Act and TVA's Land Policy, Shoreline Management Policy, NRP and CVLP.

TVA land use allocations are not intended to supersede deeded land rights or landownership.

2.2. Property Administration

In the proposed RLMP, each tract of TVA land around the reservoirs is categorized based upon a suitable use that is consistent with TVA policies and guidelines and applicable laws and regulations. Property administration procedures for all TVA lands are generally the same for each alternative under consideration. As administrators of these public lands, TVA will use the RLMP, along with TVA policies and guidelines, to manage resources and to respond to requests for the use of TVA public land.

Pursuant to the TVA Land Policy (Appendix A), TVA would consider changing a land use designation outside of the normal planning process (preparation of RLMPs) only for the

purpose of water access for industrial or commercial recreation operations on privately owned back-lying land, or to implement TVA's Shoreline Management Policy.

Public works/utility projects such as easements for pipelines, power or communication wires, roads or other public infrastructure proposed on any TVA public land that do not affect the zoned land use or known sensitive resources would not require an allocation change as long as such projects are compatible with the use of the allocated zone. For example, a proposed construction of a water intake structure could be compatible with a reservoir parcel allocated for Zone 4 (Natural Resource Conservation) provided natural resource conservation activities could continue. Proposed public works/utility projects would be subject to a project-specific environmental review. Any other requests involving a departure from the planned uses would require the approval of the TVA Board of Directors or as delegated by the Board.

Proposals consistent with TVA's policies and the allocated use, and otherwise acceptable to TVA, will be reviewed in accordance with NEPA and must conform to the requirements of other applicable environmental regulations and other legal authorities.

2.3. Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not take any action to amend the 2000 Tellico RLMP for TVA managed lands on the Tellico Reservoir. All parcels would continue to be managed by TVA according to the allocations of the 2000 RLMP. Consideration of the No Action Alternative is required under Council on Environmental Quality NEPA-implementing regulations; the analysis of this alternative serves as a baseline for comparing the other action alternatives.

2.4. Alternative B – Proposed RLMP Alternative

Under Alternative B, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres (16.2%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Under Alternative B, the proposed lands plan would be updated to become consistent with current lands planning practices and would consider proposals previously provided to TVA and supported by TRDA and/or local stakeholders. Consistent with TVA RLMP planning methodology, the public lands managed by TVA on Tellico Reservoir would be reviewed by the planning team and placed into one of the seven land use zones consistent with existing land use and staff recommendations.

2.4.1 Summary of Major Allocation Changes

The major categories of allocation changes proposed by TVA and included under Alternative B include the following:

- **Recreation Easements:**
    - TVA would allocate property currently under private recreation easements[2] as Zone 7 (Shoreline Access). This would affect approximately 9.6 acres. Currently, many private recreation easements are located on other zone allocations.

- TVA properties eligible for private recreation easements[4] allocated for Zone 7 (Residential Development) in the 2000 Tellico RLMP but not currently encumbered by a private recreation easement would be reallocated to Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation). This would affect approximately 100.7 acres. Note that this is not a change in how TVA processes applications in these locations, rather a better representation of the current situation. When recreation easements are approved, proposed allocation changes (to Zone 7 Shoreline Access) are processed in tandem with the easement application.

- **Recreation Requests:**
  - TVA would reallocate a portion of Parcel 3 to Zone 6 (Developed Recreation) in response to a request by a group of stakeholders (Lenoir City Committee of 100). The reallocation would allow the local community leaders to pursue potential commercial recreation opportunities for the area, likely to be developed by the Tellico Reservoir Development Authority (TRDA).
  - TVA would reallocate all of Parcel 2 and portions of Parcels 44 and 74, to Zone 6 (Developed Recreation) in response to a request from the Tellico Reservoir Development Authority (TRDA), in order to provide for additional recreational development opportunities. TVA would also reallocate a portion of Parcel 44 to Zone 4 (Natural Resource Conservation) as part of TRDA's request.
  - TVA would reallocate a portion of parcel 56 from Zone 5 (Industrial/Commercial) to Zone 6 (Developed Recreation) due to a deed modification on the backlying property allowing for public recreation purposes.

- **Reallocation of Recreation Lands:**
  - TVA would reallocate Parcel 10 from Zone 6 (Developed Recreation) to Zone 4 (Natural Resource Conservation) so that the parcel allocation is consistent with the other reservoir parcels with major trailheads and parking areas associated with the East Lakeshore Trail. This reallocation would implement the recommendation from the 2006 TVA Recreation Assessment (conducted after the release of the TVA Land Policy).
  - TVA would reallocate Parcel 91 from Zone 6 (Developed Recreation) to Zone 4 (Natural Resource Conservation) due to the lack of suitability for recreational development on the tract. The 2006 TVA Recreation Assessment recommended that this parcel be reallocated.
  - TVA would reallocate Parcel 136 from Zone 6 (Developed Recreation) to Zone 3 (Sensitive Resource Management) due to the lack of suitability for recreational development.

[4] Recreation easements are unique to Tellico Reservoir, permissible under TVA's contract with TRDA, TV-60000A. Recreation easements provide rights for water-use facilities where properties are eligible based on the designation of the property through TV-60000A and where the private property is located within 100' of the 820' contour.

- **Disposal of TVA interests:** Parcel 60 would be removed from the RLMP in its entirety as TVA has disposed of remaining interests in the property.
- **Residential Lands:** TVA would reallocate a small portion of Parcel 77 from Zone 4 (Natural Resource Conservation) to Zone 7 (Shoreline Access) where docks have been historically permitted to every backlying property and where the land is immediately adjacent to an existing Zone 7 parcel.

The following table details the major parcel allocation changes noted above that are proposed under this alternative using the current parcel numbers:

Table 2.1 Major Parcel Allocation Changes Under Alternative B

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
2	3.1	Zone 7 (Residential Development)	Change entire 3.1 acre parcel to Zone 6 (Developed Recreation) in support of the stakeholder request from TRDA to reallocate the property to allow for public recreation.	168
3	169.9	Zone 4 (Natural Resource Conservation)	Change approximately 99.36 acres to Zone 6 (Developed Recreation) in support of the stakeholder request (from the Lenoir City Committee of 100) to reallocate the property to allow for commercial recreation development.	2
4	95.1	Zone 3 (Sensitive Resource Management)	Change approximately 0.34 acre to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	6
9	270.2	Zone 4 (Natural Resource Conservation)	Change approximately 0.1 acre to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	11
10	84.2	Zone 6 (Developed Recreation)	Change approximately 82.33 acres to Zone 4 (Natural Resource Conservation), consistent with the usage of the parcel as a trail hub for the East Lakeshore Trail.	10
			Change approximately 0.47 acre to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	15
15	18.2	Zone 3 (Sensitive Resource Management)	Change approximately 0.13 acre to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	15

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
22	49.4	Zone 4 (Natural Resource Conservation)	Change approximately 0.14 acre to Zone 7 (Shoreline Access) to reflect two existing private recreation easements.	27
27	15.3	Zone 7 (Residential Development)	Change approximately 13.67 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	31
30	9.1	Zone 7 (Residential Development)	Change approximately 2.43 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	33
40	30.1	Zone 4 (Natural Resource Conservation)	Change approximately 0.03 acre to Zone 7 (Shoreline Access) to reflect a portion of an existing private recreation easement.	40
41	9.2	Zone 7 (Residential Development)	Change approximately 8.73 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	39
42	26	Zone 3 (Sensitive Resource Management)	Change approximately 0.59 acres to Zone 4 (Natural Resource Conservation) where neither private recreation easements[a] nor sensitive resources exist.	39
44	100.4	Zone 5 (Industrial/ Commercial)	Change approximately 29.43 acres to Zone 4 (Natural Resource Conservation) in support of a TRDA request to have a visual buffer between a proposed development and existing residential areas.	43
			Change approximately 34.63 acres to Zone 6 (Developed Recreation) in support of a TRDA request to develop a new recreational development.	46
50	37.1	Zone 7 (Residential Development)	Change approximately 31.39 acres to Zone 4 (Natural Resource Conservation) where access rights need to be obtained across TRDA property (through TRDA recreation easements) before water-use	151

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
			facilities can be considered and in order to manage the parcel consistently.	
51	35.1	Zone 4 (Natural Resource Conservation)	Change approximately 0.45 acres to Zone 7 - Shoreline Access for consistent management of the parcel where permits have been granted.	152
52	128.8	Zone 5 (Industrial/ Commercial)	Change approximately 0.66 acre to Zone 7 (Shoreline Access) to reflect a portion of one existing private recreation easement.	144
			Change 0.79 acre to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	143
53	11.7	Zone 7 (Residential Development)	Change approximately 0.92 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	143
56	31.0	Zone 5 (Industrial/ Commercial)	Change approximately 3.51 acres to Zone 6 (Developed Recreation) to reflect a deed modification supporting the backlying property usage for public recreation.	142
60	17.4	Zone 5 (Industrial/ Commercial)	Remove entire parcel from RLMP as TVA no longer owns any interest in the property – the former TVA Eastern Area Radiological Lab has been sold.	N/A
64	7.92	Zone 3 (Sensitive Resource Management)	Change approximately 0.09 acre to Zone 7 (Shoreline Access) to reflect a portion of an existing private recreation easement.	55
65	4.2	Zone 7 (Residential Development)	Change approximately 3.03 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	56
66	27.6	Zone 4 (Natural Resource Conservation)	Change approximately 0.03 acre to Zone 7 (Shoreline Access) to reflect a portion	55

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
			of an existing private recreation easement.	
67	17.3	Zone 7 (Residential Development)	Change approximately 3.18 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	61
			Change approximately 0.76 acres to Zone 3 (Sensitive Resource Management) where private recreation easements currently do not exist.[a]	59
70	8.5	Zone 7 (Residential Development)	Change approximately 2.09 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	62
74	387.5	Zone 4 (Natural Resource Conservation)	Change approximately 4.03 acres to Zone 6 (Developed Recreation) in support of the request from TRDA to relocate a public launching ramp for public safety.	68
			Change approximately 0.2 acre to Zone 7 to reflect a portion of an existing private recreation easement.	66
77	8.5	Zone 4 (Natural Resource Conservation)	Change approximately 1.14 acres to Zone 7 (Shoreline Access) where docks have been historically permitted to all backlying lots and property is immediately adjacent to an existing Zone 7.	69
79	2344.5	Zone 4 (Natural Resource Conservation)	Change approximately 2.39 acres to Zone 7 (Shoreline Access) to reflect eight existing private recreation easements.	85
91	24.1	Zone 6 (Developed Recreation)	Change approximately 23.33 acres to Zone 4 (Natural Resource Conservation) due to the lack of suitability for recreational development. This change would be consistent with the recommendations of the 2006 Recreation Assessment.	91

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
95	68.0	Zone 6 (Developed Recreation)	Change approximately 0.8 acres to Zone 7 (Shoreline Access) to reflect two existing private recreation easements.	139
97	79.1	Zone 4 (Natural Resource Conservation)	Change approximately 0.58 acres to Zone 7 (Shoreline Access) to reflect three existing private recreation easements.	139
101	11.9	Zone 7 (Residential Development)	Change approximately 4.63 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	130
102	20.9	Zone 3 (Sensitive Resource Management)	Change approximately 0.19 acres to Zone 7 (Shoreline Access) to reflect two existing private recreation easements.	132
107	18.6	Zone 7 (Residential Development)	Change approximately 15.98 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	98
111	10.7	Zone 7 (Residential Development)	Change approximately 8.65 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	102
115	19.7	Zone 3 (Sensitive Resource Management)	Change approximately 0.13 acres to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	126
116	28.9	Zone 4 (Natural Resource Conservation)	Change approximately 0.08 acres to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	126
117	645.1	Zone 3 (Sensitive Resource Management)	Change approximately 0.84 acres to Zone 7 (Shoreline Access) to reflect two existing private recreation easements.	126
119	48.6	Zone 4 (Natural Resource Conservation)	Change approximately 0.7 acres to Zone 7 (Shoreline Access) to reflect three existing private recreation agreements.	103
125	4.1	Zone 7 (Residential Development)	Change approximately 2.58 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	125

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
126	195.8	Zone 4 (Natural Resource Conservation)	Change approximately 2.46 acres to Zone 7 (Shoreline Access) to reflect four existing private recreation easements. Additionally, this acreage includes a small area, immediately adjacent to an existing Zone 7, where docks have been historically permitted.	122
128	184.7	Zone 3 (Sensitive Resource Management)	Change approximately 0.06 acres to Zone 7 (Shoreline Access) to reflect one existing private recreation easement.	111
129	11.8	Zone 7 (Residential Development)	Change approximately 1.26 acres to Zone 4 (Natural Resource Conservation) where private recreation easements currently do not exist.[a]	121
136	1.5	Zone 6 (Developed Recreation)	Change approximately 1.42 acres to Zone 3 (Sensitive Resource Management) due to the lack of suitability for recreational development purposes.	118

[a] This would not be a change in TVA's guidelines for Tellico Reservoir, but rather an acknowledgement of the need for applicants to obtain recreation easements before permits for water-use facilities can be issued.

2.4.2 Summary of Minor Allocation Changes:

Minor allocation changes include those that are administrative in nature or those lands which are being reallocated based on current guidelines or information but the use of the property remains unchanged. TVA is proposing numerous minor allocation changes to other parcels on Tellico Reservoir, including the following:

- **Road Right-of-Ways:** On parcels where road rights-of-ways (ROW) occur, these ROWs would be rezoned from various allocations to Zone 2 (Project Operations), consistent with TVA's current lands planning practices. This would affect approximately 303.78 acres.
- **Safety Landings:** Four Safety Landings would be rezoned from various allocations to Zone 2 (Project Operations), consistent with TVA's current lands planning practices.
- **Sensitive Resource Management and Natural Resource Conservation Lands:**
    - Four parcels (Parcels 16, 26, 31, and 117) would be reallocated from Zone 3 (Sensitive Resource Management) to Zone 4 (Natural Resource Conservation) and merged with adjacent parcels due to the lack of sensitive resources located on the parcels.

- Parcels 37 and 132 would be changed from Zone 4 (Natural Resource Conservation) to Zone 3 (Sensitive Resource Management) and merged with adjacent parcels due to the presence of sensitive resources on the tracts.
- Six parcels (Parcels 85, 87, 97, 106, 116, and 134) would be changed from Zone 4 (Natural Resource Conservation) to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources on the tracts.
- Islands previously grouped as one parcel (Parcel 5) in the 2000 Tellico RLMP would be incorporated in the nearest parcels or would be grouped into individual parcels in order to be consistent with TVA's current lands planning practices. Some islands would also be reallocated to Zone 3 (Sensitive Resource Management) where sensitive resources occur.

- **Administrative Errors:** Correct administrative errors from 2000 Tellico RLMP. This would affect approximately 31.29 acres.
- **Public Works:** A portion of Parcel 61 encumbered by easements associated with a road and water treatment plant would change from Zone 5 (Industrial/Commercial) to Zone 2 (Project Operations), consistent with current lands planning practices.

The following table details the minor parcel allocation changes noted above that are proposed under this alternative using the current parcel numbers:

Table 2.2 Minor Parcel Allocation Changes Under Alternative B

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
3	169.9	Zone 4 (Natural Resource Conservation)	Change approximately 0.35 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices	4
5	103.3	Zone 4 (Natural Resource Conservation)	Change approximately 19.36 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources.	9, 29, 38, 44, 77, 113, 114, 118
9	339.8	Zone 4 (Natural Resource Conservation)	Change approximately 19.6 acres to Zone 2 (Project Operations) to reflect the presence of existing road, transmission line, and Safety Landing, consistent with current lands planning practices.	12, 13, 14
10	84.2	Zone 6 (Developed Recreation)	Change approximately 1.34 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	14

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
			Change approximately 0.06 acres to Zone 3 (Sensitive Resource Management) for better management of the parcel due to the existing road ROW location.	16
11	502.1	Zone 4 (Natural Resource Conservation)	Change approximately 13.33 acres to Zone 2 (Project Operations) to reflect the presence of existing road ROWs and Safety Landing, consistent with current lands planning practices.	18, 23
			Change approximately 4.19 acres to Zone 6 (Developed Recreation) in order to correct an administrative mapping error for an existing recreation easement.	24
13	222.1	Zone 7 (Residential Development)	Change approximately 1.82 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	150
			Change approximately 6.52 acres to Zone 4 (Natural Resource Conservation) to correct an administrative error.	159, 163
14	44.7	Zone 4 (Natural Resource Conservation)	Change approximately 9.62 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	150
			Change approximately 0.03 acres to Zone 7 (Shoreline Access) correct an administrative error.	165
15	18.2	Zone 3 (Sensitive Resource Management)	Change approximately 2.08 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	14
16	26.3	Zone 3 (Sensitive Resource Management)	Change approximately 3.72 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
			Change approximately 2.67 acres to Zone 4 (Natural Resource Conservation) due to the lack of sensitive resources and merge with adjacent parcel for better land management.	21

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
19	44	Zone 6 (Developed Recreation)	Change approximately 0.53 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
21	13	Zone 3 (Sensitive Resource Management)	Change approximately 1.04 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
22	49.4	Zone 4 (Natural Resource Conservation)	Change approximately 6.7 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
23	140.1	Zone 4 (Natural Resource Conservation)	Change approximately 4.26 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
26	122.4	Zone 3 (Sensitive Resource Management)	Change approximately 12.04 acres to Zone 4 (Natural Resource Conservation) due to lack of sensitive resources found on the tract.	31
27	15.3	Zone 7 (Residential Development)	Change approximately 0.08 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
29	31.9	Zone 4 (Natural Resource Conservation)	Change approximately 5.18 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
31	3.9	Zone 3 (Sensitive Resource Management)	Change approximately 2.46 acres to Zone 4 (Natural Resource Conservation) due to lack of sensitive resources found on the tract.	35
			Change approximately 1.46 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
33	25.9	Zone 4 (Natural Resource Conservation)	Change approximately 2.73 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW and natural gas pipeline easement, consistent with current lands planning practices.	18

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
34	6.0	Zone 4 (Natural Resource Conservation)	Change approximately 1.73 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
37	5.4	Zone 4 (Natural Resource Conservation)	Change the entire parcel (5.4 acres) to Zone 3 (Sensitive Resource Management) and merge it with an adjacent parcel because of the presence of sensitive resources on the tract; merging with the adjacent parcel will allow for better parcel management.	38
42	26.0	Zone 3 (Sensitive Resource Management)	Change approximately 4.23 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
			Change approximately 0.59 acres to match backlying sales and where no sensitive resources are located.	39
43	19.1	Zone 6 (Developed Recreation)	Change approximately 2.31 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	18
44	31	Zone 5 - (Industrial/ Commercial)	Change approximately 1.01 acres to Zone 2 (Project Operations) to reflect the presence of an existing Safety Landing, consistent with current lands planning practices.	45
			Change approximately 2.6 acres of shoreline strip to match backlying Parcel 140a, currently allocated for Zone 4 (Natural Resource Conservation).	49
			Change approximately 10.9 acres of shoreline strip to match backlying Parcel 141a, currently allocation for Zone 6 (Developed Recreation).	50
45	23.6	Zone 4 (Natural Resource Conservation)	Change approximately 0.33 acres to Zone 7 (Shoreline Access) to correct an administrative error.	155
46	43.1	Zone 7 (Residential Development)	Change approximately 0.27 acres to Zone 4 (Natural Resource Conservation to correct an administrative error.	148

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
47	29.8	Zone 4 (Natural Resource Conservation)	Change approximately 1.13 acres to Zone 7 (Shoreline Access) to correct an administrative error.	149
48	4.9	Zone 3 (Sensitive Resource Management)	Change approximately 0.09 acres to Zone 7 (Shoreline Access) to correct an administrative error.	149
50	37.1	Zone 7 (Residential Development)	Change approximately 0.18 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	150
51	34.0	Zone 4 (Natural Resource Conservation)	Change approximately 2.2 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	150
			Change approximately 0.08 acres to Zone 7 (Shoreline Access) to correct an administrative error.	149
58	31.4	Zone 4 (Natural Resource Conservation)	Change approximately 30.72 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	51
59	16.6	Zone 5 - (Industrial/ Commercial)	Change approximately 11.31 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	51
			Remove approximately 5.81 acres of land where property has been sold.	N/A
61	19.1	Zone 5 - (Industrial/ Commercial)	Change approximately 17.58 acres of land to Zone 2 (Project Operations) where the property is encumbered with easements associated with an existing road ROW and a water treatment plant and associated facilities, consistent with current lands planning practices.	51
63	900.5	Zone 6 (Developed Recreation)	Change approximately 4.8 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
			Change approximately 0.02 acres to Zone 4 (Natural Resource Conservation) that was severed by the ROW and is not a part of the recreation easement.	95
66	27.6	Zone 4 (Natural Resource Conservation)	Change approximately 3.74 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
68	77	Zone 3 (Sensitive Resource Management)	Change approximately 2.36 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	60
70	8.5	Zone 7 (Residential Development)	Change approximately 0.04 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
74	387.5	Zone 4 (Natural Resource Conservation)	Change approximately 7.63 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
77	8.5	Zone 4 (Natural Resource Conservation)	Change approximately 3.2 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
			Change approximately 0.14 acres to Zone 6 for future recreation purposes.	72
78	108.16	Zone 6 (Developed Recreation)	Change approximately 7.97 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
79	2344.5	Zone 4 (Natural Resource Conservation)	Change approximately 58.29 acres to Zone 2 (Project Operations) to reflect the presence of existing road ROWs, consistent with current lands planning practices.	57, 74, 78, 83, 86
			Change approximately 5.4 acres to Zone 6 (Developed Recreation) to correct administrative errors for two recreation easements. New Zone 6 acreage would be merged with adjacent, existing Zone 6 parcels (previously Parcels 83 and 84).	75, 76

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
80	611.5	Zone 4 (Natural Resource Conservation)	Change approximately 11.64 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	83
			Change approximately 0.12 acres to Zone 6 (Developed Recreation) to correct an administrative error.	84
84	2.2	Zone 6 (Developed Recreation)	Change approximately 0.7 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	57
85	70.2	Zone 4 (Natural Resource Conservation)	Change approximately 68.27 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	77
			Change approximately 1.91 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	78
86	2.0	Zone 6 (Developed Recreation)	Change approximately 0.14 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	78
87	78.6	Zone 4 (Natural Resource Conservation)	Change approximately 72.58 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	87, 89
			Change approximately 6.07 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	86, 88
88	45.2	Zone 6 (Developed Recreation)	Change approximately 1.19 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
89	21.1	Zone 6 (Developed Recreation)	Change approximately 1.33 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
90	12.6	Zone 3 (Sensitive Resource Management)	Change approximately 1.42 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
91	24.1	Zone 6 (Developed Recreation)	Change approximately 0.77 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
93	65	Zone 6 (Developed Recreation)	Change approximately 2.92 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
94	37.5	Zone 6 (Developed Recreation)	Change approximately 5.56 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	51
95	68	Zone 6 (Developed Recreation)	Change approximately 1.88 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	51, 88
96	13.4	Zone 6 (Developed Recreation)	Change approximately 1.06 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
97	79.1	Zone 4 (Natural Resource Conservation)	Change approximately 70.31 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	137
			Change approximately 8.22 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	138
98	44	Zone 7 (Residential Development)	Change approximately 0.07 acres to Zone 4 (Natural Resource Conservation) to correct an administrative error.	134
			Change approximately 0.61 acres to Zone 3 (Sensitive Resource Management) to correct an administrative error.	136
99	3.0	Zone 3 (Sensitive Resource Management)	Change approximately 0.2 acres to Zone 7 (Shoreline Access) to correct an administrative error.	135

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
102	20.9	Zone 3 (Sensitive Resource Management)	Change approximately 3.96 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
104	104.1	Zone 4 (Natural Resource Conservation)	Change approximately 1.84 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
			Change approximately 0.65 acres to Zone 6 for future recreation purposes.	92
106	55.1	Zone 4 (Natural Resource Conservation)	Change entire parcel (55.1 acres) to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	97
110	274.2	Zone 4 (Natural Resource Conservation)	Change approximately 5.09 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
112	45.6	Zone 6 (Developed Recreation)	Change approximately 0.43 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
113	10.1	Zone 6 (Developed Recreation)	Change approximately 0.91 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
114	31.9	Zone 6 (Developed Recreation)	Change approximately 0.74 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
			Change approximately 0.21 acres to Zone 3 where a ROW severed the original parcel. This allows for better parcel management.	127
115	19.7	Zone 3 (Sensitive Resource Management)	Change approximately 1.58 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
116	28.9	Zone 4 (Natural Resource Conservation)	Change approximately 23.7 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	127

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
			Change approximately 5.11 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
117	645.1	Zone 3 (Sensitive Resource Management)	Change approximately 606 acres to Zone 4 (Natural Resource Conservation) due to lack of sensitive resources found on the tract; this acreage would be merged with adjacent parcel for better land management.	125
			Change approximately 3 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	128
118	166.4	Zone 4 (Natural Resource Conservation)	Change approximately 2.34 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	119
120	9.3	Zone 7 (Residential Development)	Change approximately 0.19 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
121	21.3	Zone 4 (Natural Resource Conservation)	Change approximately 0.39 acres to Zone 6 (Developed Recreation) to reflect an existing recreation easement with TRDA.	106
123	275.1	Zone 4 (Natural Resource Conservation)	Change approximately 0.26 acres to Zone 6 (Developed Recreation) to correct an administrative error where there is an existing recreation easement.	106
			Change approximately 12.41 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88, 109
124	199.2	Zone 3 (Sensitive Resource Management)	Change approximately 3.04 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	88
126	195.2	Zone 4 (Natural Resource Conservation)	Change approximately 4.24 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	119

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
128	184.7	Zone 3 (Sensitive Resource Management)	Change approximately 5.75 acres to Zone 2 (Project Operations) to reflect the presence of a road ROW, consistent with current lands planning practices.	112
130	12.2	Zone 6 (Developed Recreation)	Change approximately 0.15 acres to Zone 2 (Project Operations) to reflect the presence of a road ROW, consistent with current lands planning practices.	119
131	81.5	Zone 3 (Sensitive Resource Management)	Change approximately 3.16 acres to Zone 2 (Project Operations) to reflect the presence of a road ROW, consistent with current lands planning practices.	119
132	256.3	Zone 4 (Natural Resource Conservation)	Change approximately 256.14 acres to Zone 3 (Sensitive Resource Management) and merge with adjacent parcel for better land management.	118
			Change approximately 0.14 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	119
134	149.7	Zone 4 (Natural Resource Conservation)	Change approximately 79.34 acres to Zone 3 (Sensitive Resource Management) due to the presence of sensitive resources found on the tract.	113
			Change approximately 1.2 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	115
135	34.5	Zone 3 (Sensitive Resource Management)	Change approximately 1.31 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	115
136	1.5	Zone 6 (Developed Recreation)	Change approximately 0.08 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	115
137	164.6	Zone 3 (Sensitive Resource Management)	Change approximately 1.86 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	115, 116

Parcel	Parcel Acreage	Current Allocation	Proposed Allocation Change Description	New Parcel Number
139	2.9	Zone 6 (Developed Recreation)	Change approximately 0.16 acres to Zone 2 (Project Operations) to reflect the presence of an existing road ROW, consistent with current lands planning practices.	116
			Change approximately 0.01 acres to Zone 3 where ROW severed original parcel. This allows for better parcel management.	114
140a	139	Zone 4 (Natural Resource Conservation)	Change approximately 0.77 acres to Zone 2 (Project Operations) to reflect the presence of a road ROW, consistent with current lands planning practices.	18
141a	117	Zone 6 (Developed Recreation)	Change approximately 1.41 acres to Zone 2 (Project Operations) to reflect the presence of a road ROW, consistent with current lands planning practices.	18
N/A	N/A	N/A	Add approximately 11.12 acres of TVA land that were previously unaccounted for in the previous plan due to an administrative error (located between Parcels 44 and 58). The land would be allocated as Zone 5 (Industrial).	47

Under Alternative B, TVA would not change the land use allocation for 39 parcels. The allocation for these parcels would be incorporated into the updated Tellico RLMP, as proposed under Alternative B.

TVA would continue to apply guidelines developed for the 2000 RLMP to preserve the natural riverine settings of the Tellico River Corridor (Tellico River Miles 13.3-20.7). TVA would apply the guidelines when reviewing applications for water-use facilities in the corridor.

In the updated Tellico RLMP, TVA would incorporate a map into the RLMP that shows the locations of private properties that may be eligible for private recreation easements.

2.5. Alternative C – Modified Proposed RLMP Alternative

Alternative C would be substantially the same as Alternative B except that fewer parcels would be identified for potential new development under Alternative B.

Alternative C would be substantially similar to Alternative B except that TVA would not revise the allocations of parcels 2, 3, and 74 and a portion of parcel 44. These parcels would remain in the allocation identified and approved in the 2000 Tellico RLMP.

Under Alternative C, parcels 2, 3, and 74 (proposed under Alternative B for reallocation to Zone 6 (Developed Recreation)) would be allocated to various zones according to the 2000 Tellico RLMP. As shown in Table 2.3 below, parcel 2 would be allocated to Zone 7 (Shoreline Access), parcels 3 and 74 would be allocated to Zone 4 (Natural Resource Conservation).

Due to an existing safety harbor, parcel 44 is proposed for reallocation to Zone 2 under both Alternatives B and C. Additionally, a portion of the parcel that is currently allocated for industrial is proposed to remain allocated as industrial under both Alternatives B and C. However, two sections of the parcel, 34.63 acres in total, are proposed for reallocation to Zone 4 (Natural Resource Conservation) and Zone 6 (Developed Recreation) under Alternative B. Under Alternative C, these two sections would remain as currently allocated, Zone 5 (Industrial).

Table 2.3 Proposed Allocation of Four Parcels Under Alternatives B and C

Original Parcel Number	Alternative B	Alternative C
2	Zone 6	Zone 7
3	Zone 6	Zone 4
44	Zone 2	Zone 2
	Zone 4	Zone 5
	Zone 5	
	Zone 6	
74	Zone 6	Zone 4

Under this alternative, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 101 parcels affecting approximately 1,904.5 acres (14.9%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. The proposed land use plan would be updated for consistency with current TVA lands planning practices.

2.6. Comparison of Alternatives

2.6.1 Zone Allocations By Alternative

Currently, public lands around Tellico Reservoir are managed consistent with the 2000 RLMP and the allocation acreages are shown in Table 2.4 below. Under the proposed alternatives, TVA-managed lands around Tellico Reservoir would be zoned as indicated in the tables below.

Table 2.4 Comparison of Zone Allocations by Alternative

Zone	Alternative A*		Alternative B			Alternative C		
	Acres	Percentage	Acres	Acreage Change	Percentage	Acres	Acreage Change	Percentage
2	635.1	5	977	+341.9	7.6	977	+341.9	7.6
3	2,184.5	17.1	2,242.08	+57.58	17.5	2,242.08	+57.58	17.5
4	7,191.62	56.2	6,985.14	-206.48	54.6	7,059.11	-132.51	55.2
5	330.4	2.6	224.39	-106.01	1.8	288.44	-41.96	2.3
6	1,892.7	14.8	1,904.69	+11.99	14.9	1,763.61	-129.09	13.8
7	553.08	4.3	454.34	-98.74	3.6	457.4	-95.68	3.6

*Includes approved allocation changes

A summary of proposed revisions to Tellico RLMP zone allocation acreage is below:

- **Zone 2 (Project Operations)** - Under Alternatives B and C, the proposed allocation changes would increase Zone 2 acreage by approximately 341.9 acres. The increased acreage is due to the inclusion of road ROWs and Safety Landings that were not zoned for Project Operations in the 2000 RLMP.
- **Zone 3 (Sensitive Resource Management)** - Under Alternatives B and C, the proposed allocation changes would increase Zone 3 acreage by approximately 57.58 acres. The increased acreage is due to additional areas identified with sensitive resources.
- **Zone 4 (Natural Resource Conservation)** - Under Alternatives B and C, the proposed allocation changes would decrease Zone 4 acreage by approximately 206.48 acres and 132.51 acres, respectively. The decreased acreage is primarily due to the reallocation of road ROWs and Safety Landings to Zone 2 as those were predominantly zoned for Natural Resource Conservation in the 2000 RLMP. Additionally, several tracts were reallocated to Zone 3 (Sensitive Resource Management) lands where sensitive resources have been located. Under Alternative C, Zone 4 acreage would decrease less than under Alternative B due to Parcel 3 remaining in the Zone 4 allocation rather than being reallocated for another use.
- **Zone 5 (Industrial)** – Under Alternatives B and C, the proposed allocation changes would decrease Zone 5 acreage by approximately 106.01 acres and 41.96 acres, respectively. Under Alternative B, the decreased acreage is primarily due to the proposed reallocation of lands in support of recreational developments and the removal from the land plan of TVA lands that have been disposed of since 2000. Under Alternative C, the decreased acreage would be primarily due to the removal from the land plan of TVA lands that have been disposed of since 2000.
- **Zone 6 (Developed Recreation)** - Under Alternative B, the proposed allocation changes would increase Zone 6 acreage by approximately 11.99 acres. Three

parcels would be removed from recreational use as recommended by the planning team and/or recommended by the 2006 assessment that was conducted as a result of the TVA Land Policy. However, under Alternative B, other projects proposed by stakeholders, primarily TRDA, would compensate for the loss of those recreational lands with additional lands proposed for recreational use, resulting in a net increase of lands allocated to Zone 6 (Developed Recreation). Under Alternative C, the proposed allocation changes would decrease Zone 6 acreage by approximately 129.09 acres. Several of the parcels that would be allocated to Zone 6 under Alternative B would remain in their current allocations under Alternative C.

- **Zone 7 (Shoreline Access)** - Under Alternatives B and C, the proposed allocation changes would decrease Zone 7 acreage by approximately 98.74 acres and 95.64 acres, respectively. The decreased acreage change is due to the reallocation of lands requiring recreation easements to Zone 4 (Natural Resource Conservation) or Zone 3 (Sensitive Resource Management). When lands are requested for recreation easements, an allocation change to Zone 7 (Shoreline Access) would be required as well.

2.6.2 Consistency with the Comprehensive Valleywide Land Plan

The revision of an RLMP must be consistent with TVA's CVLP target allocation ranges. Table 2.5 below shows the CVLP target ranges, the current allocation percentages for the 293,000 acres of TVA-managed public land, and the adjusted allocation percentages with the proposed Tellico RLMP revision. The proposed allocation changes would result in minor changes to the allocation percentages for the 293,000 acres of TVA-managed public land.

Table 2.5 Consistency with CVLP By Alternative

Allocation Designation		2017 CVLP Ranges (Percent)	Alternative A Current Allocations (Percent)	Alternative B (Percent)	Alternative C (Percent)
Zone 2	Project Operations	7 to 10	8.7	8.9	8.9
Zone 3	Sensitive Resource Management	14 to 18	16.0	16.0	16.0
Zone 4	Natural Resource Conservation	56 to 63	60.0	59.9	59.9
Zone 5	Industrial	1 to 3	1.6	1.6	1.6
Zone 6	Developed Recreation	8 to 10	8.4	8.4	8.4
Zone 7	Shoreline Access	5 to 6	5.2	5.1	5.1

2.6.3 Comparison of Environmental Effects by Alternative

Summarized in Table 2.6 below are the potential environmental effects of each alternative considered in this EA. These summaries are derived from the information and analyses provided in Chapter 3 (Affected Environment and Environmental Effects).

Table 2.6 Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts from Alternative A (No Action)	Impacts from Alternative B (Proposed RLMP)	Impacts from Alternative C (Modified Proposed RLMP)
Prime Farmland	No change in current management. Approximately 26.2% of farmland on TVA parcels would be unavailable for agricultural use.	Minor effects, with a slight increase (3.6 acres in total) in lands that would be unavailable for agricultural use compared to Alternative A. There would be a decrease in farmland allocated under Zones 3 and 4 by 0.2%, with 26.4% of farmland on TVA parcels unavailable.	Similar to Alternative B. Approximately 26.5% of farmlands on TVA parcels would be unavailable for agricultural use, which is a 0.1% increase compared to Alternative B.
Recreation	No change to current management, with 88% of TVA lands allocated as Zones 3, 4 or 6, which are allocations most likely to support public recreational opportunities.	Slight decrease in allocations providing recreational opportunities (87%), primarily due to allocations that reflect existing infrastructure (ROWs). Generally, minor beneficial impacts on dispersed recreation and moderate beneficial impacts on developed recreation.	Similar effects as Alternative B, with 86.5% of lands with allocations most likely to support public recreational opportunities. Moderate adverse impacts on developed recreation compared to Alternative B.
Terrestrial & Aquatic Ecology	No change to current management.	Negligible effects compared to Alternative A. Protection of species would continue and site-specific NEPA reviews would ensure impacts addressed.	Similar effects as Alternative B, with fewer areas identified for potential development (compared to Alternative B). Negligible effects compared to Alternative A.
Threatened & Endangered (T&E) Species	No change to current management, with no effects to T&E species.	No T&E plants exist on reservoir; no effects on several state-listed plant species. Similar effects as Alternative A; allocation changes on parcels with sensitive wildlife would not result in change. Proposed changes have potential for minor beneficial effects on aquatic T&E species; no adverse effects.	No T&E plants exist on reservoir; no effects on state-listed plant species. Similar effects to terrestrial T&E as Alternatives A and B, although slightly reduced potential for impacts to sharp-shinned hawk compared to Alternative B. Effects to aquatic species are similar to those under Alternative B.
Water Quality	Continued management, with impacts the same as those discussed in	Negligible change in the potential for impacts compared to Alternative A. Changes from	Similar to Alternative B. With fewer areas proposed for Zone 6 (Developed Recreation),

Resource Area	Impacts from Alternative A (No Action)	Impacts from Alternative B (Proposed RLMP)	Impacts from Alternative C (Modified Proposed RLMP)
	the 2000 EIS. The potential for impacts are associated with uses and activities; the potential for increased nutrient loading remains.	protective zones to development zones increase potential impacts, although many proposed changes reflect existing ROW.	there is less potential for impacts.
Wetlands	No change in management would provide a continued level of conservation.	Allocation changes affect 80 parcels with 285 acres of wetland habitat. Most allocation changes would have neutral to beneficial impacts, promoting conservation of wetlands on Tellico.	Same effects as Alternative B.
Floodplains	No change in management.	Overall impacts to floodplains would be minor and insignificant relative to floodplains and their natural and beneficial values.	Overall neutral to slightly beneficial impacts to floodplains compared to the Alternative A, with relatively more beneficial impacts to floodplains than Alternative B.
Air Quality & Climate Change	No change in management. Approximately 22.4% of lands would continue to be allocated to zones with greatest potential for adverse air impacts (Zones 2, 5 and 6).	Similar effects as under Alternatives A and C. Approximately 24.3% of lands would be allocated to zones with greatest potential for air impacts (Zones 2,5 and 6).	Similar effects as under Alternatives A and B. Approximately 23.7% of lands would be allocated to zones with greatest potential for air impacts (Zones 2,5 and 6).
Cultural & Historic Resources	No change in management, with approximately 73.3% of lands conserved as Zones 3 or 4.	Similar to Alternative A, with slightly fewer lands allocated under Zones 3 or 4 (72.1%). Approximately 2/3 of known sites would be managed the same as Alternative A; about 1/3 would be managed under an allocation with an increase in the potential for disturbance. Site-specific reviews would address potential impacts.	Similar to Alternative B. Only one known site would be affected, compared to Alternative B, and it would be managed in a less-protective zone allocation.

Resource Area	Impacts from Alternative A (No Action)	Impacts from Alternative B (Proposed RLMP)	Impacts from Alternative C (Modified Proposed RLMP)
Natural Areas & Ecologically Significant Sites	No change in management.	Minor effects to Natural Areas, given that most allocation changes with potential to affect Natural Areas are proposed to reflect existing conditions, rights, or easements.	Similar to Alternative B, with one less allocation change with potential to affect a Natural Area.
Visual resources	No change in management.	Minor effects on visual resources under Alternative B, although localized effects may be moderate, where new land use allocations allow for development. Effects of development would be localized.	Similar to Alternative B, except that fewer parcels would be identified for potential development.
Socioeconomics	No change in management.	Minor beneficial effects, compared to Alternative A, associated with increased development potential of some parcels.	Similar to Alternative B, with beneficial effects compared to Alternative A. Fewer beneficial effects than Alternative B, however, due to a decrease in development potential.

2.7. Identification of Mitigation Measures

TVA's analysis of the alternatives includes mitigation that would reduce or avoid adverse effects. Mitigation measures are actions that could be taken to avoid, minimize, reduce or compensate for adverse impacts to the environment. In considering requests of TVA lands allocated under the RLMP, TVA would implement the following commitments and mitigation measures.

- Prior to approving any use of land on the reservoir, TVA would conduct an appropriate level of site-specific environmental review to determine the potential environmental effects of the proposed use.
- As necessary, based on the findings of any site-specific environmental review, TVA may require the implementation of appropriate mitigative measures, including best management practices (BMPs; e.g. Section 26a General and Standard Conditions/BMPs (TVA 2005a)) as a condition of approval for land use on TVA-managed land.
- In the event that a land use request involves industrial development, the subject environmental review will determine and document the extent of expected air quality impacts. Should the requested parcel be located in or potentially affect a nonattainment area for ozone or PM2.5, TVA shall require a conformity applicability

determination pursuant to regulations implementing Section 176(c) of the CAA to assure compatibility with measures in local plans for achieving attainment.

- Any future development of lands potentially supporting use by sensitive species will be coordinated with both state and federal agencies, as appropriate.
- Consistent with EO 13112, disturbed areas would be revegetated with native or non-native, non-invasive plant species to avoid the introduction or spread of invasive species.
- TVA will comply with the Programmatic Agreement executed in January 2020 in consultation with the Advisory Council on Historic Preservation, seven SHPOs (including the Tennessee SHPO), and 21 federally recognized Indian Tribes, to address a suite of activities. The PA addresses TVA's compliance with Section 106 of the NHPA when implement the various land plan activities.

2.8. Preferred Alternative

At this time, TVA prefers Alternative B as its revised Tellico RLMP. This RLMP alternative incorporates numerous updates to the existing RLMP to reflect actual uses of parcels as well as the presence of known or potential sensitive resources, and/or existing land rights or restrictions for parcels. In addition, this alternative allows TVA to respond to several proposals provided to TVA and supported by the local stakeholders.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

This chapter contains a description of the current conditions of various resources in the area of Tellico Reservoir that could be affected by implementation of the proposed RLMP. Potential environmental effects of Alternatives A, B and C on each of the identified resources are also analyzed in this chapter. TVA will analyze direct, indirect, and cumulative impacts associated with each plan alternative. Direct impacts are effects caused by a proposed action that occur at the same time and place (on site), whereas indirect impacts are effects caused by a proposed action but are removed in time or space (off site). Cumulative impacts are addressed at the end of this chapter.

As discussed in Chapter 2 under Alternative A, TVA would not make any change to the Tellico RLMP completed in 2000 and land management and future land use decisions would continue in accordance with the existing plan. Under Alternative B, TVA would implement an RLMP that would be used to manage existing land uses and guide future land use decisions. The modified RLMP would reallocate a portion of TVA lands on Tellico Reservoir into one of the seven land use zones based on current land usage, existing land rights (i.e., committed lands), public needs, the presence of known sensitive resources and TVA policies as described above in the pre-allocation process. Land allocations under Alternative B were primarily proposed to reflect existing conditions and suitable uses of land, and as such the difference in land allocations between the two alternatives is minor. Some allocation changes would result in no change in management (e.g., reallocating parcels with existing roadways to Zone 2 (Project Operations)), and no environmental effects would occur.

The analyses of direct, indirect and cumulative environmental consequences in this chapter were based upon the assumption that any activity allowed under a particular zone would occur at the greatest allowable intensity on the entire extent of the parcel. For example, on a 10-acre parcel allocated to Zone 5 (Industrial), it was assumed the entire 10 acres would be cleared of vegetation and developed to support an industrial facility. Activities on Zone 2 (Project Operations), Zone 6 (Developed Recreation), and Zone 7 (Shoreline Access) may include development, construction, and landscaping, but some areas of a parcel may be left in a relatively natural state. Therefore, the analysis was based upon the assumption that the potential for altering the existing conditions of a parcel are greatest under Zone 5 (Industrial), moderate under Zone 7 (Shoreline Access), Zone 2 (Project Operations), and Zone 6 (Developed Recreation), minor under Zone 4 (Natural Resource Conservation), and least under Zone 3 (Sensitive Resource Management). Future projects, when planned in detail, will be evaluated to determine site specific environmental impacts, and potential impacts to sensitive resources would be identified and avoided or minimized as appropriate and in a manner consistent with applicable laws and regulations.

None of the alternatives under consideration are expected to be controversial, involve unique or unknown risks, or violate federal, state, or local laws.

3.1. Prime Farmlands

3.1.1 Affected Environment

The conversion of farmland to industrial and other nonagricultural uses essentially precludes farming the land for the foreseeable future. With enough conversion of productive farmland, the economic base of rural communities can be adversely affected. Continued nationwide conversion of such land to nonagricultural uses has the potential of ultimately threatening the nation's agricultural capability--the ability to provide its citizens with basic requirements of food and fiber. Recognizing these long-term trends, the Federal Farmland Protection Policy Act was signed into law in 1981. The regulations codified at 7 CFR Part 658 set forth the criteria developed by the Secretary of Agriculture for identifying effects of federal programs on the conversion of farmland to non-agricultural uses.

Of the several classes of farmland covered by the law (prime farmland, unique farmland, and farmland of statewide or local importance), prime farmland is the most important and is the primary type that is considered on the lands being evaluated in this EA. Prime farmland is land that has the best combination of physical and chemical characteristics for the production of food, feed, forage, fiber, and oil seed crops. In addition, the land could be available for use as pasture, range land, forest land, or other land, but not for urban or build-up areas. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed according to acceptable farming methods. Prime farmland soils occur on nearly level to gently sloping land (usually less than 6% slope) along terraces; in depressions; narrow strips along drainage ways and streams; and on bottomland of creeks and rivers.

On Tellico Reservoir, there are 2,102 acres of prime farmland on TVA-managed lands covered under the Tellico RLMP; 16% of TVA lands on Tellico Reservoir, then, have prime farmland. These prime farmlands are within 42 separate soil map units. The prime farmlands on TVA-managed lands on Tellico Reservoir represent 2.7% of all prime farmlands occurring in Loudon County and 3.6% of the prime farmland occurring in Monroe County. Tellico Reservoir lands within Blount County do not contain prime farmland soils.

The amount of prime farmland that could be impacted by land use allocations was determined by measuring acreage of the various soils within the prime farmland category. The soils database is available from the TVA Geographic Information Services, Norris, Tennessee, and from the published United States Department of Agriculture-Natural Resources Conservation Service (formerly Soil Conservation Service) Soil Survey Reports of Blount County (1959), Loudon County (1961), and Monroe County (1981).

3.1.2 Environmental Consequences

As described below, because TVA is considering changes to only approximately 16.2% of public lands managed on Tellico Reservoir, there would be minor differences between the potential effects on prime farmland across the alternatives. For instance, the percentage of prime farmland across the three alternatives that would be allocated under Zones 3 and 4 (in which agriculture use may occur) would differ by no more than 0.3%. See Table 3.1 below.

Table 3.1 Percent of Prime Farmland Allocated by Alternative

	Alternative A (No Action)		Alternative B (Proposed RLMP)		Alternative C (Modified Proposed RLMP)	
Land Allocation	Prime Farmland Acres	% of Prime Farmland	Prime Farmland Acres	% of Prime Farmland	Prime Farmland Acres	% of Prime Farmland
Zone 2	188.96	10.3%	243.80	13.3%	243.80	13.3%
Zone 3	449.9	24.5%	544.79	29.6%	544.79	29.6%
Zone 4	904.74	49.3%	808.72	44.0%	806.50	43.9%
Zone 5	75.08	4.1%	66.09	3.6%	76.86	4.2%
Zone 6	120.15	6.5%	113.21	6.2%	102.69	5.6%
Zone 7	96.57	5.3%	61.19	3.3%	63.17	3.4%

3.1.2.1 Alternative A - No Action Alternative

As shown in Table 3.1, 26.2% (480.7 acres) of the total prime farmland soils on TVA-managed lands are unavailable for agricultural use under Alternative A (those classified as Project Operations, Industrial/Commercial Development, Recreation, and Residential Access under the current RLMP). This alternative would result in no change to the presently minor amount of prime farmland unavailable within the three counties or to trends in farmland conversion occurring in the area. As proposals for future development are submitted to the agency over time, continued management of TVA lands under the present contract would require the assessment of impacts to prime farmland, where they occur, on a case-by-case basis.

3.1.2.2 Alternative B - Proposed RLMP Alternative

As shown in Table 3.1, 26.4% (484.3 acres) of the total prime farmland soils on TVA-managed lands would be unavailable for agricultural use (those classified as Project Operations, Industrial/Commercial Development, Recreation, and Residential Access under the current RLMP). This represents a slight, insignificant increase in the amount of prime farmland that would be unavailable in the three-county area when compared to Alternative A. The notable increase in prime farmlands allocated to Zone 2 (Project Operations) can be attributed to TVA's proposal to reallocate parcels with existing roadway infrastructure as Zone 2 (Project Operations). Prime farmland allocated to Zones 5 (Industrial), 6 (Developed Recreation) and 7 (Shoreline Access) would decrease. Compared to Alternative A, the total allocation of prime farmlands under Zones 3 (Sensitive Resource Management) and 4 (Natural Resource Conservation) would decrease by only 0.2%. Permissible private water use facilities developed in Zone 7 parcels would not affect the suitability of those parcels as prime farmland, although the parcel would not be used for agriculture.

3.1.2.3 Alternative C - Modified Proposed RLMP Alternative

As shown in Table 3.1, 26.5% (486.5 acres) of the total prime farmland soils on TVA-managed lands would be unavailable for agricultural use under Alternative C. Because only minor differences between Alternatives B and C are proposed, the effects under this alternative would be similar to those under Alternative B. However, fewer lands would be

allocated for Zone 6 (Developed Recreation) use under this alternative. The total allocation of prime farmlands under Zones 3 (Sensitive Resource Management) and 4 (Natural Resource Conservation) under Alternative C would be similar to Alternative B, although there would be 2.3 fewer acres allocated as Zone 4 (Natural Resource Conservation) under Alternative C.

3.2. Recreation

3.2.1 Affected Environment

Tellico Reservoir waters and lands continue to attract heavy recreation use including boating, swimming, fishing, camping, nature observation, and hiking. These activities are supported by a range of public and commercial recreation amenities including boat launching ramps, picnic and swimming facilities, campgrounds, marina services and trails. Since publication of the 2000 Tellico Land Management Plan EIS, additional recreation amenities have been developed on the reservoir, including several that were envisioned in the 2000 plan and are incorporated by reference from the 2000 EIS (TVA 2000a). These include the establishment of a greenway and trails system on the lower right bank of the reservoir, establishment of a new marina/resort near the Town of Vonore, and a new boat access facility on the upper end of the Tellico River corridor. Other recreation improvements since publication of the 2000 EIS include additional picnicking and swimming areas, and expansion of camping and rental cabin accommodations. Some golf courses on the reservoir also offer golfing opportunities for the public.

A major factor in the continued popularity of Tellico Reservoir is the increasing population of the surrounding region including Blount, Loudon, and Monroe Counties. Since 2000, the population for the three-county region has grown from 183,859 in 2000 to 236,416 in 2020, an increase of 28.5% (USCB 2021). The population for this three-county region is projected to reach 266,446 by 2040, an increase of 12.7% (UTK 2021a). The continued growth of the population within the region is expected to lead to continued increases in demand for both dispersed and developed outdoor recreation.

3.2.2 Environmental Effects

3.2.2.1 Alternative A – No Action Alternative

Under Alternative A, TVA would continue to manage parcels on Tellico Reservoir according to the 2000 RLMP, with more than 88% of lands allocated as Zone 3 (Sensitive Resource Management), Zone 4 (Natural Resource Conservation), and Zone 6 (Developed Recreation), which are zones most likely to provide recreational opportunities. Other undeveloped lands managed by TVA that are allocated for other uses would continue to provide recreational opportunities.

3.2.2.2 Alternative B - Proposed RLMP Alternative

Under this alternative, selected parcels would be reallocated to align with current “on the ground” conditions as well as new opportunities for developed and dispersed recreation initiatives. Alternative B would also be responsive to input TVA has received from key stakeholder group and take into account the need to reallocate some shoreline parcels to align with proposed recreation uses on adjacent back lying lands.

Overall, this alternative maintains a reasonable balance between meeting needs for dispersed and developed recreation. As examples, the proposed reallocation of Parcel 10 from Zone 6 (Developed Recreation) to Zone 4 (Natural Resource Conservation) would be consistent with the use of this parcel as a trail hub for the East Lakeshore Trail while reallocation of a small portion of Parcel 74 from Zone 4 to Zone 6 would provide for the replacement of a boat launching ramp.

In general, parcels allocated to Zone 4 (Natural Resource Conservation) and Zone 3 (Sensitive Resource Management) are most suitable for accommodation of dispersed recreation activity. Under Alternative B, the acreage allocated to Zone 3 (Sensitive Resources Management) and Zone 4 (Natural Resource Conservation) would total 9,227.22 acres compared to 9,376.12 acres under Alternative A). Much of this reduction is due to the reallocation of existing road rights-of-way to Zone 2 (Project Operations) and would result in no changes to the use of the lands. Therefore, this small reduction should have no impact on dispersed recreation opportunities. Because some key parcels would be reallocated from a more intensive development to Zones 3 or 4 that would support proposed dispersed recreation initiatives, this alternative would have a minor beneficial impact on dispersed recreation.

Lands allocated to Zone 6 (Developed Recreation) would increase from 1,892.7 acres under Alternative A to 1,904.89 acres under Alternative B. This increase would reflect current conditions and stakeholder input and would result in potential moderate beneficial impacts on developed recreation.

Overall, this alternative maximizes the capability to meet present and long term (next 10 to 20 year) dispersed and developed recreational needs and represents moderate recreation benefits compared to Alternative A (No Action Alternative).

3.2.2.3 Alternative C - Modified Proposed RLMP Alternative

Specific lands affected by this alternative include parcels 2, 3, 44, and 74 as designated in the 2000 RLMP. While similar to Alternative B, this alternative would not reallocate these 4 parcels to Zone 6 (Developed Recreation) to support developed recreation. Instead, these parcels would remain allocated as approved in the 2000 Tellico RLMP.

In comparison to Alternative B, implementation of Alternative C would result in a relatively small increase in lands allocated to Zone 4 (Natural Resource Conservation) and a moderate decrease in parcels allocated to Zone 6 (Developed Recreation). There would be no change in parcels allocated to Zone 3 (Sensitive Resource Management). Lands allocated to Zone 4 would increase from 6,985.14 acres to 7,059.11, an increase of 73.97 acres. Zone 6 parcels would decrease from 1,904.89 to 1,763.61 acres, a reduction of 141.28 acres.

Parcel 2 consists of a narrow 3.1-acre shoreline strip located on the lower left descending right bank and is allocated Zone 7 (Residential Access) in the 2000 plan. Development associated with either Zone 6 or Zone 7 would likely result in similar potential impacts on sensitive resources. TRDA has requested this parcel be reallocated to Zone 6 (Developed Recreation) to support public recreation.

Parcel 3 is located on the lower right bank of the reservoir and is situated just upstream from the canal linking Tellico with the waters of Fort Loudon Reservoir. This parcel includes 169.90 acres, is currently classified as Zone 4, and would continue to be classified as Zone 4 (Natural Resource Conservation) under Alternative C. The parcel currently receives dispersed use including hiking, swimming and fishing. Reallocation of a 99.36-acre portion of this parcel to Zone 6 (Developed Recreation) as proposed under Alternative B could result in more impact on sensitive resources on this portion of the parcel. Therefore, there would be fewer potential impacts to the parcel under Alternative C (with continued management as Zone 4) than Alternative B (with management as Zone 6), given that a local stakeholder group has expressed an interest in pursuing recreation development if reallocated as Zone 6 (Developed Recreation).

Parcel 44 is located on the central area of the reservoir and consists of a shoreline strip totaling 34.63 acres. It is currently allocated to Zone 5 (Industrial) and would be allocated as Zone 5 under Alternative C. Development of this parcel under either Zone 5 (Industrial) or Zone 6 (Developed Recreation) would likely have similar levels of potential impact on sensitive resources, although there is a greater potential for development of this parcel if allocated as Zone 6 (as proposed under Alternative B), given that TRDA has requested a Zone 6 designation to support new recreation development.

Parcel 74 is located in the upper end of the reservoir and currently includes a total of 387.5 acres. Under this alternative, TVA would not modify its 2000 RLMP and would continue to manage the entire parcel as Zone 4. TVA would not reallocate a 4.03-acre portion of this tract to Zone 6 (Developed Recreation), as proposed under Alternative B (which responds to a TRDA request to relocate a nearby ramp).

In summary, the small increase in land allocated to Zone 4 (Natural Resource Conservation) would result in minor benefits to dispersed recreation while the reduction in parcels allocated to Zone 6 (Developed Recreation) would reduce opportunities for future recreation development on Tellico Reservoir. This alternative would therefore not be responsive to current requests for increased recreation development from TRDA and/or other stakeholder groups. Therefore, Alternative C would result in minor beneficial impacts on dispersed recreation opportunities and moderate adverse impacts on the potential for developed recreation initiatives.

3.3. Terrestrial Ecology

3.3.1 Affected Environment

Vegetation

The vast majority of land associated with the Tellico Reservoir occurs in the Ridge and Valley Level III ecoregion (Griffith et al. 1998). This ecoregion is a relatively low-lying area between the Cumberland Plateau to the west and the Blue Ridge to the east and is sometimes referred to as the Great Valley of East Tennessee. Within this area, the landscape is dominated by a series of roughly parallel ridges and valleys comprised of many different types of bedrock. Oak-hickory, mixed mesophytic, and riparian forest are all found in this part of Tennessee. Today, substantial portions of the landscape have been converted to an agricultural, industrial, or residential land use. Natural grasslands occurring

in shallow soils over calcareous bedrock occur sporadically throughout portions of the study area, mostly on steep slopes. A small percentage of Tellico Reservoir lands, just downstream of Chilhowee Dam, occur in the Blue Ridge Level III ecoregion. Within the study area, the Blue Ridge ecoregion contains some steep forested slopes and riparian areas associated with Tellico Reservoir.

The 2000 Tellico RLMP EIS and current aerial photography indicate that a wide variety of plant communities occur on parcels associated with Tellico Reservoir lands. Deciduous, evergreen, and mixed evergreen deciduous forest occurs throughout the study area. These forests range from fragmented early successional stands dominated by non-native species in the understory to mature, less disturbed stands with species rich herbaceous layers. Forest stands also occur across a wide range of landscape positions. Ridgetop and upper slope forests are populated by species indicative of drier habitats while forest stands near the reservoir or otherwise situated in wetlands are populated by species found in wet areas. Regardless of the condition of an individual site, all forested areas on Tellico Reservoir are comprised of habitats that are common and well represented throughout the region.

The vast majority of herbaceous vegetation occurring in the study area has been heavily manipulated by previous or current land use and possesses little conservation value. Areas in this category include frequently mowed lawns associated with the Tellico Dam Reservation, narrow and fragmented marginal strips situated between housing developments and the reservoir, transmission line ROW, and areas managed intensively for agriculture or wildlife. Typically, these types of habitats are dominated by non-native plants and do not support a species comparable to those found in natural plant communities. Emergent wetlands within the study area likely support a greater diversity of plant species than other types of common herbaceous vegetation.

Areas of herbaceous vegetation resembling native grasslands occur sporadically across Tellico Reservoir lands. These areas resemble a habitat known as a cedar glade, or barren, and are characterized by shallow, drought prone soils and scattered eastern red cedar around canopy openings. Typically, these grasslands occur on steep south-facing slopes, which enhances drought conditions that prevent tree growth. Today these natural openings are small, encompassing only a few acres at any given location. Historically, fire would have been more common in the environment and these prairie-like openings would have been much larger. Natural grassland habitat is known to occur on portions of parcels 1, 73, 107, 118, and 123. In addition to these known locations, other small grassland remnants are likely to occur elsewhere on Tellico Reservoir lands.

Executive Order (EO) 13112 directed TVA and other federal agencies to prevent the introduction of invasive species (both plants and animals), control their populations, restore invaded ecosystems and take other related actions. EO 13751 amends EO 13112 and directs actions by federal agencies to continue coordinated federal prevention and control efforts related to invasive species. This order incorporates considerations of human and environmental health, climate change, technological innovation, and other emerging priorities into federal efforts to address invasive species.

Some invasive plants have been introduced accidentally, but most were brought here as ornamentals or for livestock forage. Because these robust plants arrived without their

natural predators (insects and diseases) their populations spread quickly across the landscape displacing native species and degrading ecological communities and ecosystem processes (Miller 2010). According to Morris et al. (2004), invasive non-native species are the second leading threat to imperiled native species.

Substantial portions of the Tellico Reservoir lands have been extensively altered in the past, resulting in the introduction and spread of invasive non-native plants. No federal-noxious weeds are known from these parcels, but many non-native invasive plant species occur there. Common invasive plant species occurring on the Tellico Lands include, Chinese privet (*Ligusticum sinense*), Japanese honeysuckle (*Lonicera japonica*), Japanese stilt grass (*Microstegium vimineum*), mimosa (*Albizia julibrissin*), multiflora rose (*Rosa multiflora*), sericea lespedeza (*Lespedeza cuneata*), and tree-of-heaven (*Ailanthus altissima*). All of these species occur widely across the landscape and have the potential to adversely impact native plant communities because of their potential to spread rapidly and displace native vegetation. All are considered a threat in Tennessee (Tennessee Invasive Plant Council 2021)

Wildlife

Habitat across the Tellico Reservoir varies greatly from mowed grass yards to herbaceous rights-of-ways to mixed evergreen-deciduous forest to riparian habitat. Terrestrial animal species and their habitats observed on Tellico Reservoir are incorporated by reference from the 2000 EIS (TVA 2000a).

Mowed herbaceous fields and manicured lawns offer little suitable habitat for rare wildlife species, but can be used by many common species, especially when the landscape includes a few trees. Birds that utilize grassy areas in industrialized areas such as this include Canada goose, eastern phoebe, eastern kingbird, eastern meadowlark, killdeer, purple martin, red-tailed hawk, and rock dove (National Geographic 2002). Birds that utilize planted trees and buildings in industrialized areas include American robin, American goldfinch, blue jay, Carolina chickadee, Carolina wren, chimney swift, eastern towhee, tufted titmouse, northern cardinal, northern mockingbird, and yellow breasted chat (National Geographic 2002). Mammals that may be found in this type of environment include common mole, ground hog, least shrew, hispid cotton rat, white-footed mouse, common raccoon, Virginia opossum, eastern gray squirrel, coyote, and white-tailed deer (Whitaker 1996). Reptiles that typically occur in such areas include eastern fence lizard, five-lined skink, rat snake, and ring-necked snake (Powell et al. 2016).

Existing ROWs are comprised of a variety of herbaceous habitats ranging from cultivated crops, to pastures and early successional habitats. Birds that utilize these areas include chipping sparrow, field sparrow, killdeer, grasshopper sparrow, red-tailed hawk, red-winged blackbird, and white-throated sparrow (National Geographic 2002). Mammals that can be found in these areas are common mole, coyote, ground hog, least shrew, white-footed mouse, and white-tailed deer (Whitaker 1996). Reptiles that may use these habitats in this region include black racer, black rat snake, corn snake, eastern kingsnake, and eastern milksnake (Gibbons and Dorcas 2005). Emergent wetlands and saturated wet weather conveyances within field settings provide habitat for common amphibians and reptiles. Amphibians likely present include American bullfrog, American toad, southern leopard frog,

spring peeper, as well as upland chorus frog (Powell et al. 2016). Reptiles with the potential to occur in the project area include eastern black kingsnake, five-lined skink, black rat snake, and black racer (Powell et al. 2016, Gibbons and Dorcas 2005).

Deciduous and mixed evergreen deciduous forest offer habitat to a variety of common wildlife. Birds typically found in forested habitats of this region include American robin, barred owl, blue jay, common yellowthroat, downy and hairy woodpecker, eastern phoebe, eastern kingbird, eastern towhee, eastern wood-pewee, gray catbird, hooded warbler, indigo bunting, mourning dove, pileated woodpecker, red-eyed vireo, red-tailed hawk, tufted titmouse, white-breasted nuthatch, white-eyed vireo, yellow-billed cuckoo, and yellow-rumped warbler (National Geographic 2002, Stokes 1996). Some sections of forest also provide foraging and roosting habitat for several species of bat, particularly in areas where the forest understory is more open. Some examples of common bat species likely found within this habitat include big brown, eastern red, and hoary. Eastern chipmunk, eastern woodrat, white-footed mouse, and woodland vole are other mammals that may be present within this habitat (Kays and Wilson 2002, Whittaker 1996). Eastern box turtle, eastern fence lizard, eastern garter snake, North American racer, rat snake, and ring-necked snake are common reptiles of these forests in the project region (Powell et al. 2016, Gibbons and Dorcas 2005). Seeps, streams, and ephemeral ponds in deciduous, forests provide habitat for numerous amphibians including American and Fowler's toads, green frog, northern cricket frog, and other frogs, and several salamanders including spotted and mole salamanders.

The reservoir parcels provide wetlands, including wooded swamps and open water habitats and associated riparian zones that are used by a variety of wildlife. Common species include great blue heron, green heron, belted kingfisher, common yellowthroat, and northern parula. Shallow embayments, especially those with emergent vegetation, provide foraging habitat for waterfowl. Common waterfowl include wood ducks, Canada geese, and mallards. Other waterfowl present periodically include American black duck, gadwall, green-winged teal, ring-necked duck, lesser scaup, common goldeneye, bufflehead, hooded merganser, and common merganser.

A total of four colonial nesting bird colonies/heronries and 26 osprey nests have been observed within 3 miles of the reservoir. One of those colonies and four osprey nesting records are located on TVA parcels. Species such as spotted sandpiper that forage along the margins of reservoirs and killdeer that are not restricted to foraging on mud flats are commonly observed. Common amphibians found in the riparian zones include green frog, eastern narrowmouth toad, and Fowler's toad. Reptiles include northern water snake, common snapping turtle, and painted turtles. Common mammals include mink, muskrat, raccoon, and American beaver.

Review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation website resulted in the identification of 12 migratory birds of conservation concern that may occur in the project area (bald eagle, black-billed cuckoo, bobolink, Canada warbler, eastern whip-poor-will, Henslow's sparrow, Kentucky warbler, prairie warbler, red-headed woodpecker, rusty blackbird, wood thrush, and yellow-bellied sapsucker). Suitable habitat for all of these species exists on one or several TVA parcels.

See Threatened and Endangered section (Section 3.5) for a discussion of habitat requirements and impacts to bald eagle.

A search of the TVA Natural Heritage database in May 2021 indicated that 11 caves are located within 3 miles of Tellico Reservoir. Three caves are located on a TVA parcel. Waterfowl management areas found on Tellico Reservoir are incorporated by reference from the 2000 EIS (TVA 2000a).

3.3.2 Environmental Effects

3.3.2.1 Alternative A – No Action Alternative

Vegetation

Adoption of the No Action Alternative would result in no appreciable changes to plant communities on Tellico Reservoir lands compared to the current state. All parcels would continue to be managed according to their current allocation. Any land use request would be subject to a site-specific NEPA review, which would identify unique or important plant habitats potentially present on a site. All natural plant habitats within the study area, including extensive stands of common forest types and relatively rare natural grasslands, would continue to change over time. However, any shift in plant species composition would be related to natural ecological processes and not adoption of the No Action Alternative.

Wildlife

Under the No Action Alternative, TVA would not take any action to amend the 2000 Tellico RLMP for TVA managed lands on the Tellico Reservoir. All parcels would continue to be managed under the 2000 RLMP. TVA would continue to manage these parcels consistent with allocations in the 2000 Tellico RLMP. In the 2000 EIS, TVA identified impacts as insignificant negative impacts. Current communities of terrestrial animals and their habitats would either not be affected under the No Action Alternative or, should parcels be proposed for use, would be addressed in separate NEPA documents.

3.3.2.2 Alternative B - Proposed RLMP Alternative

Vegetation

Nearly all plant community types found across Tellico Reservoir lands are common and well represented throughout the region. Forest composition and structure varies by parcel. Some stands are relatively mature and comprised of larger trees with few invasive species, while other forest stands have been cleared more recently, have small diameter trees, and have fewer native species in the herbaceous layer. Regardless of the quality of the forest stand, there are generally many thousands of acres of similar habitat in the region. If the parcel allocations proposed under Alternative B ultimately result in development that requires removal of some forested habitat, large tracts of similar habitat would still exist on Tellico Reservoir lands and elsewhere in the region.

Natural grasslands are a rare and unique habitat type that occurs very sporadically in the Ridge and Valley ecoregion in east Tennessee. On Tellico Reservoir lands, these

grassland habitats are known to occur on portions of parcels 1, 73, 107, 118, and 123. Alternative B proposes no allocation changes for parcels 1, 73, 107, and 123, which would result in no management changes on those sites. The proposed allocation change on parcel 118 from Zone 6 (Developed Recreation) to Zone 3 (Sensitive Resource Management) would have no potential to negatively impact grasslands located there and could have beneficial impacts associated with increased conservation at that site.

Adoption of Alternative B would not result in significant impacts to the terrestrial ecology of the region. Any land use request would be subject to a site-specific NEPA review, which would identify unique or important plant habitats potentially present on that site.

Wildlife

Under Alternative B, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres (16.2%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Under Alternative B, the proposed land plan would be updated to become consistent with current land planning practices and would consider proposals previously provided to TVA and supported by TRDA and/or local stakeholders. Consistent with TVA RLMP planning methodology, the public lands managed by TVA on Tellico Reservoir would be allocated into one of the seven land use zones consistent with existing land use and staff recommendations.

Sensitive wildlife habitats (including caves) would, for the most part continue to be allocated in either Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) where they are afforded some protections, except for one cave on a parcel that would be changed to Zone 7 (Shoreline Access) to reflect existing shoreline development/homes on the back lying property. Most of this cave on the proposed Zone 7 parcel was flooded when the river was impounded. Any potential impacts to wildlife on parcels allocated as Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) or where residential boat dock permits are requested that are near caves would have separate environmental reviews to assess specific impacts of the proposed actions. Appropriate avoidance and minimization measures would be put in place.

Similarly, future proposed TVA actions or actions to be permitted by TVA that fall within 660 feet of osprey nests or heronries would be assessed during separate environmental reviews. Potential impacts would be assessed at that time and appropriate avoidance and minimization measures would be put in place.

Overall proposed zone allocations under Alternative B would not be significantly different when compared to Alternative A, the No Action Alternative. Major and minor proposed changes would not significantly affect Terrestrial Animal Ecology.

3.3.2.3 Alternative C - Modified Proposed RLMP Alternative

Vegetation

Adoption of Alternative C would have comparable impacts to those described for Alternative B.

Wildlife

Impacts to terrestrial animals under Alternative C would be substantially the same as Alternative B except that fewer parcels would be identified for potential new development under Alternative B.

Impacts to terrestrial animal species would be slightly less under Alternative C due to Parcel 3 remaining in the Zone 4 (Natural Resource Conservation) allocation rather than being reallocated for another use. However, overall proposed zone allocations under Alternative C would not be significantly different when compared to Alternative B or the No Action Alternative. Major and minor proposed changes would not significantly affect Terrestrial Animal Ecology.

3.4. Aquatic Ecology

3.4.1 Affected Environment

Aquatic habitat in the littoral (near shore) zone is greatly influenced by underwater topography and backlying land use. Underwater topography at Tellico Reservoir varies from moderately steep, with scattered small bluffs near the river channel, to typically shallower in embayments, coves, and areas further from the river channel and tributary stream channels. Undeveloped shoreline is mostly wooded, so fallen trees and brush provide woody cover in those areas. The cold-water discharges from Chilhowee Dam allow a trout fishery to be maintained in upper reaches of Tellico Reservoir.

Rock is an important constituent of littoral aquatic habitat over much of the reservoir, in either the form of bedrock outcrops or a mixture of rubble and cobble on steeper shorelines or gravel along shallower shorelines. Substrate and available aquatic habitat in coves and embayments also typically correspond to shoreline topography and vegetation. In areas characterized by residential development, habitat includes man-made features such as shoreline stabilization structures (e.g., seawalls or riprap) and docks. Fallen trees are less numerous in residential areas.

TVA began a program to systematically monitor the ecological conditions of its reservoirs in 1990. Previously, reservoir studies had been confined to assessments to meet specific needs as they arose. Reservoir (and stream) monitoring programs were combined with TVA's fish tissue and bacteriological studies to form an integrated Vital Signs Monitoring Program. The following descriptions of Tellico Reservoir's existing condition are based primarily on results from this program since the 2000 Tellico RLMP.

Benthic Community – Benthic macroinvertebrate (e.g., lake bottom-dwelling, readily-visible, aquatic worms, snails, crayfish, and mussels) samples were taken in two areas of

Tellico Reservoir in 2001, 2002, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, and again in 2019. Areas sampled include the forebay at Little Tennessee River Mile (LTRM) 1.0, and a mid-reservoir transition station at LTRM 15.0.

Bottom-dwellers are included in aquatic monitoring programs because of their importance to the aquatic food chain and because they have limited capability of movement, thereby preventing them from avoiding undesirable conditions. Sampling and data analysis were based on seven parameters that indicate species diversity, abundance of selected species that are indicative of good (and poor) water quality, total abundance of all species except those indicative of poor water quality, and proportion of samples with no organisms present. As shown in Table 3.2, the benthic community in Tellico Reservoir rated from Very Poor to Poor in comparison to other run-of-the-river TVA reservoirs. Since the 2000 Tellico RLMP, the scores have not improved.

Table 3.2 Benthic Community Ratings

Station	Monitoring Years									
	2001	2003	2005	2007	2009	2011	2013	2015	2017	2019
Forebay	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor	Very Poor
Mid-reservoir	Very Poor	Very Poor	Very Poor	Poor	Very Poor	Very Poor	Poor	Poor	Poor	Poor

Ecological Health – Sampling at Tellico Reservoir from 2001 through 2019 since the 2000 Tellico RLMP are presented in Table 3.3. Ratings for Tellico have remained Poor or at the low end of Fair. Ecological health evaluations focus on five indicators: dissolved oxygen, chlorophyll, sediment quality, benthic macroinvertebrate community, and fish assemblage.

Table 3.3 Tellico Ecological Health Ratings

Monitoring Years									
2001	2003	2005	2007	2009	2011	2013	2015	2017	2019
Very Poor	Poor	Fair	Fair	Poor	Poor	Poor	Fair	Poor	Poor

3.4.2 Environmental Effects

3.4.2.1 Alternative A – No Action Alternative

Under Alternative A, TVA would not take any action to amend the Tellico RLMP and would continue to manage parcels consistent with allocations in the 2000 Tellico RLMP. No impacts to the current aquatic ecology of Tellico Reservoir would occur. Any shift in ecological conditions would be related to natural ecological processes and not adoption of the No Action Alternative.

3.4.2.2 Alternative B - Proposed RLMP Alternative

Under Alternative B, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Under this alternative, the proposed lands plan

would be updated to become more consistent with current lands planning practices and would consider proposals previously provided to TVA and supported by TRDA and/or local stakeholders. In all under this alternative, there would be a reduction in lands previously allocated as Zone 4 (Natural Resource Conservation) by 206.48 acres. The decreased Zone 4 acreage is primarily due to the reallocation of road ROWs and Safety Landings to Zone 2 (Project Operations). Additionally, several tracts were reallocated to Zone 3; Zone 3 would see an increase of 57.58 acres due to additional areas identified with sensitive resources of some type. The zone allocations that would likely have the most opportunities to impact the aquatic ecology of Tellico Reservoir are Zone 6 (Developed Recreation) and Zone 7 (Shoreline Access). Overall, those zones combined would be reduced by 86.75 acres. Therefore, adoption of Alternative B would have no adverse impacts to the aquatic ecology of Tellico Reservoir.

As noted previously, prior to approving any specific activities on these parcels, TVA would conduct an appropriate level of site-specific environmental review to determine the potential environmental effects to aquatic ecosystems of the proposed use and to address adverse effects, as appropriate.

3.4.2.3 Alternative C - Modified Proposed RLMP Alternative

Under Alternative C the impacts to the aquatic ecology of Tellico Reservoir would be the same as described in Alternative B.

3.5. Threatened and Endangered Species

3.5.1 Affected Environment

Plants

A review of the TVA Regional Natural Heritage database and the USFWS Information for Planning and Consultation website indicates that no federally listed plants have been previously reported from within five miles of the Tellico Reservoir lands, but three federally listed plants have been previously reported from Blount, Loudon, and Monroe County, Tennessee (Table 3.4, below). Designated critical habitat for plants does not occur on Tellico Reservoir lands. The federally listed plants - spreading avens, white fringeless orchid, and Virginia spiraea - have very specific requirements and the study area does not contain the elements that constitute suitable habitat.

The TVA Regional Natural Heritage database indicates that 17 species tracked by the state of Tennessee have been reported from within five miles of the Tellico Reservoir lands (Crabtree 2016). Species tracked by the state of Tennessee have been previously observed in five general areas across the study area.

Spreading false-foxglove (*Aureolaria patula*) is perennial member of the figwort family that is parasitic on the roots of oaks. It grows on steep, partially shaded calcareous slopes above large streams and rivers and is often found near the edge of TVA reservoirs, including Tellico. On Tellico Reservoir lands, false-foxglove has been previously observed growing on two parcels that are marginal strips of shoreline between the reservoir and back lying developments. Both populations were last observed in 1997. These surveys did not

record specific information about the population size or vigor, but did indicate that both populations occurred in steep, forested areas.

Alabama snow-wreath (*Neviusia alabamensis*) is a globally rare, strongly clonal shrub that occurs sporadically across the eastern United States from central Arkansas east to northwest Georgia. On Tellico Reservoir lands, Alabama snow-wreath occurs on one parcel just east of Crowder Bluff growing on limestone outcrops. The species was last observed in 2009 growing in a small patch about 100 ft^2 in size.

The aquatic plants **large-leaf pondweed** (*Potamogeton amplifolius*), **creekgrass** (*Potamogeton epihydrus*), and **Tennessee pondweed** (*Potamogeton tennesseensis*) have little nexus with terrestrial habitats, but have been previously observed at several locations within Tellico Reservoir. Large-leaf pondweed was last observed in 1979 between Little Tennessee River mile 8 and 9, adjacent to three TVA parcels. All three species were observed growing just downstream of Chilhowee Dam adjacent to four TVA parcels.

Chapman's redtop (*Tridens flavus* var. *chapmanii)* is very rare in Tennessee and has only been reported from a handful of locations. On Tellico Reservoir lands, vigorous populations of this plant have been observed in steep, natural grasslands on one TVA parcel near the confluence of Fourmile Creek and the Little Tennessee River. This grass species was last observed in October 2018 and was common throughout the glade complex. Most plants were in fruit at the time of survey.

Table 3.4 All plant species of conservation concern previously reported from within five miles of Tellico study area and federally listed plants known from Blount, Loudon and Monroe County, Tennessee[1]

Common Name	Scientific Name	Federal Status[2]	State Status[2]	State Rank[3]
Plants				
Spreading False-foxglove[4]	*Aureolaria patula*		S	S3
American barberry	*Berberis canadensis*		S	S2
Whiteleaf Leatherflower	*Clematis glaucophylla*		S	S1
Creamflower Tick-trefoil	*Desmodium ochroleucum*		E	S1
Branching Whitlow-wort	*Draba ramosissima*		S	S2
Spreading avens[5]	*Geum radiatum*	E	E	S1
Butternut	*Juglans cinerea*		T	S3
Mountain Honeysuckle	*Lonicera dioica*		S	S2
Sweet Pinesap	*Monotropsis odorata*		T	S2
Alabama Snow-wreath[4]	*Neviusia alabamensis*		T	S2
American Pillwort	*Pilularia americana*		S	S1S2
White fringeless orchid[5]	*Platanthera integrilabia*	T	E	S2S3
Large-leaf Pondweed[4]	*Potamogeton amplifolius*		T	S1
Creekgrass[4]	*Potamogeton epihydrus*		S	S1S2
Tennessee Pondweed[4]	*Potamogeton tennesseensis*		T	S2

Common Name	Scientific Name	Federal Status[2]	State Status[2]	State Rank[3]
Virginia spiraea[5]	*Spirarea virginiana*	T	E	S2
Horsesugar	*Symplocos tinctoria*		S	S2
Dwarf Filmy-fern	*Trichomanes petersii*		T	S2
Chapman's Redtop[4]	*Tridens flavus* var. *chapmanii*		E	S1
Eastern Turkeybeard	*Xerophyllum asphodeloides*		T	S3

[1] Source: TVA Natural Heritage Database, queried August 2021.
[2] Status Codes: E = Listed Endangered; S = Listed Special Concern; T = Listed Threatened; [3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2)
[4] State-listed plants previously documented from tracts included in the Tellico RLMP.
[5] Federally listed species occurring within the county where work would occur, but not within 5 miles of the study area.

Terrestrial Animals

Reviews of the TVA Natural Heritage database indicate that nine state-listed, three federally listed, and one federally protected terrestrial animal species have been recorded within 3 miles of the reservoir or are incorporated by reference from the 2000 EIS. Four of these state-listed species (Allegheny snaketail, common barn-owl, eastern slender glass lizard, and tricolored bat) and one federally protected species (bald eagle) have been recorded on TVA parcels (see Table 3.5 below). Seven species previously addressed in the 2000 EIS (black-bellied salamander, Cooper's hawk, grasshopper sparrow, green anole, meadow jumping mouse, southeastern shrew, and river otter) are now considered common and/or apparently secure. They have been excluded from review in this section as they are no longer threatened or endangered.

Amphibians

Hellbenders are found in larger, fast-flowing, streams and rivers with large shelter rocks. Eggs are laid in depressions created beneath large rocks or submerged logs (Petranka 1998). Several records of this species occur in the Tellico Reservoir itself, all of which are either considered potentially extirpated or potentially historical due to the age of the records (1977; one year after the dam was installed). Following the creation of the impoundment, the reservoir no longer offered suitable habitat for this species. No known occurrences of the hellbender have been recorded in a TVA parcel, but records do occur in tributaries associated with Tellico Reservoir. Due to the abundance of creeks and streams, there may be suitable habitat present to support this species.

Junaluska salamander are known only from extreme western North Carolina and immediately adjoining areas of Tennessee. They are found under logs and rocks in and around large creeks. During summer and spring rains, they can also be found on roads at night (Petranka 1998). Similar to most of the hellbender records, the two records of Junaluska salamanders nearby are pre-impoundment records that now plot in the middle of the reservoir. No known occurrences of the Junaluska salamander have been recorded in

a TVA parcel. Due to the abundance of creeks and streams, there may be suitable habitat present to support this species.

Invertebrates

Allegheny snaketails are found in streams of the foothills of the Appalachian Mountains. They breed in riffle areas (NatureServe 2021). The only documented record of this species near Tellico Reservoir does occur on a TVA parcel and is from 1978. However, larvae of this species can be challenging to identify in the field and target sampling has not occurred on these parcels. Due to the abundance of creeks and streams, there may be suitable habitat present to support this species on TVA parcels.

Rusty-patched bumblebee inhabits grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. They require both diverse, abundant flowers from April to September and undisturbed nesting sites nearby in order to have sufficient food and overwintering sites for queens. They often build nests in abandoned, underground rodent cavities or similar cavities (USFWS 2019). Suitable habitat for this species likely exists in TVA parcels around Tellico. While records of this species do exist from Loudon and Monroe Counties within three miles of Tellico Reservoir, these records are from 1966. Tellico Reservoir is in the historic range of this species.

Birds

Bald eagles are protected under the Bald and Golden Eagle Protection Act (USFWS 2013). This species is associated with larger mature trees capable of supporting its massive nests. These are usually found near larger waterways where the eagles forage (USFWS 2007). There are nine bald eagle nesting records within 3 miles of Tellico Reservoir, four of which occur on TVA parcels currently designated as Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation). These parcels would continue to be Zone 3 or 4 under all alternatives.

Common barn-owl habitat descriptions and assessment of presence in the project area are incorporated by reference from the 2000 EIS (TVA 2000a). One record is known from a TVA parcel.

Osprey habitat descriptions and assessment of presence in the project area are incorporated by reference from the 2000 EIS (TVA 2000a). See discussion of osprey nests in the Wildlife section (Section 3.3) of this EA.

Sharp-shinned hawks primarily reside in coniferous or mixed deciduous-evergreen forests and open woodlots. They build nests in the canopy of evergreens, hidden by thick foliage (NatureServe 2021). While Sharp-shinned hawks were reported from Parcel 4 in the 2000 EIS, no nests of these species were reported at that time. Suitable nesting habitat for this species exists in forested areas throughout Tellico Reservoir though no nesting records have been documented there.

Mammals

Carolina northern flying squirrels inhabit high-elevation (greater than 4,000 ft.) mature coniferous and mixed forests. Optimal habitat appears to be cool, moist forest with abundant standing and down snags. This species occupies existing tree cavities or underground burrows or makes nests of leaves. No records of this species are known within three miles of Tellico Reservoir. No high elevation forest exists on TVA parcels therefore no suitable habitat for Carolina northern flying squirrel exists in the Tellico RLMP project area.

Eastern small-footed bat (previously referred to as small-footed myotis in the 2000 EIS) habitat descriptions and assessment of presence in the project area are incorporated by reference from the 2000 EIS (TVA 2000a). No records are known from TVA parcels. No caves on TVA parcels are known to support this species.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976a). At dusk, bats disperse over bodies of water where they forage for insects emerging from the surface of the water (Tuttle 1976b). No gray bats have been documented within three miles of Tellico Reservoir. Eleven caves are known within three miles. In previous decades, gray bats have been suspected to roost in a cave on a TVA parcel allocated as Zone 3 (Sensitive Resource Management). However, internal surveys of this cave in winter 2014 documented only minimal amounts of guano in the cave and no roosting gray bats. Should gray bat use this cave, it is likely only for temporary, transitional use during spring and fall. Foraging habitat for gray bats occurs across Tellico Reservoir.

Indiana bats hibernate in caves in winter and use areas around them for swarming (mating) in the fall and staging in the spring, prior to migration back to summer habitat. During the summer, Indiana bats roost under the exfoliating bark of dead snags and living trees in mature forests with an open understory and a nearby source of water (Pruitt and TeWinkel 2007, Kurta et al. 2002). Although less common, Indiana bats have also been documented roosting in buildings (Butchkoski and Hassinger 2002). Indiana bats are known to change roost trees frequently throughout the season, while still maintaining site fidelity, returning to the same summer roosting areas in subsequent years (Pruitt and TeWinkel 2007). Eleven records of Indiana bat have been reported within three miles of Tellico Reservoir. Records are both capture and summer roost trees. None of these records occur on TVA parcels. No caves on TVA parcels are known to support this species. Suitable summer roosting habitat for this species occurs throughout the project in forested areas. Suitable foraging habitat for this species occurs throughout the project area in forests and over bodies of water.

The northern long-eared bat (NLEB) predominantly overwinters in large hibernacula such as caves, abandoned mines, and cave-like structures. During the fall and spring, they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically greater than 3 inches in diameter). Roost selection by northern long-eared bat is similar to that of Indiana bat, however northern long-eared bats are thought to be more opportunistic in roost site selection. This

species also roosts in abandoned buildings and under bridges. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2014). Six records of NLEB are known within three miles of Tellico Reservoir. Records are predominantly capture records. None of these records occur on TVA parcels. No caves on TVA parcels are known to support this species. Suitable summer roosting habitat for this species occurs throughout the project in forested areas. Suitable foraging habitat for this species occurs throughout the project area in forests and over bodies of water.

Tricolored bats hibernate in caves, mines, and rock crevices. In summer they roost in dead or live vegetation in live trees. They are associated with forested landscapes where they forage near trees and along waterways, especially riparian areas (Harvey 2011). Summer roost trees selected in the Great Smoky Mountains National Park are often oak and yellow poplar (Carpenter 2017). In middle Tennessee, tricolored bats were observed roosting within clumps of dead foliage hanging from branches of live trees. The dead foliage was typically comprised of hickory or oak leaves (Thames 2020). This species has been documented in the one cave found on a TVA parcel. This parcel is Zone 3 (Sensitive Resource Management) and no change to the zoning of this parcel is proposed. Suitable summer roosting habitat for this species occurs throughout the project in forested areas. Suitable foraging habitat for this species occurs throughout the project area in forests and over bodies of water.

Reptiles

Eastern slender glass lizards are found in dry grasslands and open woodlands (Powell et al. 2016). Two records of this species are known within 3 miles of Tellico Reservoir. One of these records occurs on a TVA parcel that would be allocated as Zone 2 (Project Operations), Zone 4 (Natural Resource Conservation), and Zone 6 (Developed Recreation) under Alternative B. The record is from 1979 when an individual was found dead on an existing road; the portion of the parcel with this roadway is proposed for a zone change under Alternative B to reflect the fact that it is an existing road. Where the record occurs, the back lying parcel would remain Zone 4 (Natural Resource Conservation) under Alternative B, and the parcel along the water would be changed from Zone 4 (Natural Resource Conservation) to Zone 6 (Developed Recreation) under Alternative B to reflect the existing recreation easement and correct a mapping error in the original lands plan. Suitable habitat for this species occurs in a variety of locations around Tellico Reservoir.

Northern pine snakes are found in pine or mixed pine-dominated forests with well-drained sandy soils and an open understory (Gibbons and Dorcas 2005). One record of this species is known within 3 miles of Tellico Reservoir, but no records of this species are known on TVA parcels. Suitable habitat for this species exists on TVA parcels in dry evergreen forests.

Table 3.5 All terrestrial animal species of conservation concern known from within three miles of Tellico study area and federally listed species Blount, Loudon, and Monroe Counties, Tennessee or incorporated by reference from the 2000 EIS[1]

Common Name	Scientific Name	Federal Status[2]	State Status[2]	State Rank[3]
Amphibians				
Hellbender	*Cryptobranchus alleganiensis*	PS[4]	E	S3
Junaluska salamander	*Eurycea junaluska*	-	D	S2
Birds				
Bald eagle[5]	*Haliaeetus leucocephalus*	DM	D	S3
Common barn-owl[5]	*Tyto alba*	-	-	S3
Sharp-shinned hawk[5]	*Accipiter striatus*	PS[4]	-	S3B, S4N
Invertebrates				
Allegheny snaketail[5]	*Ophiogomphus incurvatus alleghaniensis*	-	-	S1
Rusty-patched bumble bee	*Bombus affinis*	E	-	S1
Mammals				
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	E	E	S1S2
Eastern small-footed bat	*Myotis leibii*	-	D	S2S3
Gray bat	*Myotis grisescens*	E	E	S2
Indiana bat	*Myotis sodalis*	E	E	S1
Northern long-eared bat	*Myotis septentrionalis*	T	T	S1S2
Tricolored bat[5]	*Perimyotis subflavus*	-	T	S2S3
Reptiles				
Eastern slender glass lizard[5]	*Ophisaurus attenuatus longicaudus*	-	D	S3
Northern pine snake	*Pituophis melanoleucus melanoleucus*	-	T	S3

[1] Source: TVA Natural Heritage Database and USFWS Information for Planning and Consultation (IPaC) website, August 2021
[2] Status Codes: D = Deemed in Need of Management; DM = Delisted but still being Monitored; E = Listed Endangered; T = Listed Threatened;
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2); S#B = Status of Breeding Population; S#N = Status of Non-Breeding Population.
[4] Partially listed species that is federally listed elsewhere in the world, but in the action area.
[5] Species recorded on TVA Parcels on Tellico Reservoir.

Aquatic Species

Information relating to the aquatic T&E species known to occur within Tellico Reservoir is still pertinent and incorporated by reference from the 2000 EIS (TVA 2000a). Habitat for two federally listed species (dusky tail darter and smoky madtom) and two state-listed species (Tennessee dace and flame chub) are likely to occur within the project area.

3.5.2 Environmental Effects

3.5.2.1 Alternative A – No Action Alternative

Plants

Adoption of the No Action Alternative would not impact federally listed plant species or designated critical habitat because neither occurs on the Tellico Reservoir lands. Adoption of the No Action Alternative would result in no appreciable changes to plant communities on Tellico Reservoir lands compared to the current state. All parcels would continue to be managed according to their current designation. Plant communities that support known populations of state-listed plant species would continue to change over time, but those changes would be unrelated to the continued implementation of this alternative. Any new land use request would continue to be subject to a site-specific NEPA review, which would identify new or existing populations of state-listed plant species if they occur within the action area. Adoption of Alternative A would have no discernable impact on state-listed plant species.

Terrestrial Animals

Under the No Action Alternative, TVA would not take any action to amend the 2000 Tellico RLMP and would continue to implement the 2000 RLMP. In the 2000 EIS, TVA identified impacts to terrestrial animals as insignificant negative impacts. Current threatened or endangered terrestrial animals and their habitats would not be affected under this alternative. Any new land use request would continue to be subject to a site-specific NEPA review, which would identify new or existing populations of species if they occur within the action area.

Aquatic Species

Under Alternative A, no impacts to federal or state-listed aquatic species would occur from the continued implementation of the 2000 RLMP. New land use requests would be subject to a site-specific NEPA review, which would consider potential impacts to aquatic species.

3.5.2.2 Alternative B - Proposed RLMP Alternative

Plants

Under the Proposed RLMP Alternative, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres (16.2%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Adoption of this alternative would not impact federally listed plant species or designated critical habitat because neither occurs on the Tellico Reservoir lands. Alternative B would not change the allocation on most of the parcels known to support state-listed plant species, but would result in minor changes on a parcel where Alabama snow-wreath has been recorded, as well as on two parcels where Creekgrass, Large-leaf pondweed, and Tennessee Pondweed have been recorded. Alternative B proposes a change from Zone 3 (Sensitive Resource Management) to Zone 4 (Natural Resource Conservation) on Parcel 125; this allocation

would have no impact on the ground in areas where Alabama snow-wreath is known to occur. The proposed change to Zone 2 (Project Operations) allocation would not change management that could result in impacts to state-listed species adjacent to Parcel 57. This is because an existing road ROW currently occupies the site and adoption of Alternative B does not change that situation; conditions would not change on the ground. The change in allocation on Parcel 77 from Zone 4 (Natural Resource Conservation) to Zone 3 (Sensitive Resource Management) would not change conditions in the reservoir in any way that could impact Creekgrass, Large-leaf pondweed, or Tennessee Pondweed.

Any new land use request would be subject to a site specific NEPA review, which would identify new or existing populations of state-listed plant species if they occur within the action area. Adoption of Alternative B would not measurably impact state-listed species.

Terrestrial Animals

Under Alternative B, the proposed lands plan would be updated to become consistent with current lands planning practices and would consider proposals previously provided to TVA and supported by TRDA and/or local stakeholders. Terrestrial animal records on parcels allocated as Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation) are afforded protected buffers due to the lack of development on these lands. Under this alternative, TVA is not proposing any allocation changes for parcels with bald eagle nests, nesting common-barn owl, Allegheny snaketail, and tricolored bat.

The parcel where the eastern slender glass lizard was reported would be altered to include appropriate zoning on the existing road where this specimen was found (i.e., Zone 2 (Project Operations). Much of the adjacent lands would continue to be allocated as Zone 4 (Natural Resource Conservation).

Areas with reported sharp-shinned hawk activity in the 2000 EIS would have a portion changed from Zone 3 (Sensitive Resource Management) to Zone 6 (Developed Recreation). This could lead to future impacts to nesting hawks, should they occur in this section of the parcel.

Carolina northern flying-squirrel would not be impacted by actions proposed under Alternative B as this species does not occur in the vicinity of Tellico Reservoir.

Future actions that result from zone allocation changes could impact habitat for any of threatened or endangered species listed above, except Carolina northern flying-squirrel. However, no additional threatened or endangered terrestrial animal species have been documented from TVA parcels around Tellico Reservoir. Any future proposed ground disturbing actions on parcels evaluated in this EA would still receive additional environmental review. Consultation with USFWS under Section 7 of the Endangered Species Act would occur as appropriate for federally listed species when physical activities on the ground are proposed. Appropriate minimization or avoidance measures would be put in place to avoid significant impacts.

Overall proposed zone allocations under Alternative B would not be significantly different when compared to the No Action Alternative. At this time, the proposed major and minor zoning changes would not affect threatened and endangered terrestrial animal species.

Aquatic Species

Under this alternative, the RLMP would be updated to become more consistent with current lands planning practices and would consider proposals previously provided to TVA and supported by TRDA and/or local stakeholders. In all under this alternative, there would be a reduction in lands previously allocated as Zone 4 (Natural Resource Conservation) by 206.48 acres. The decreased Zone 4 acreage is primarily due to the reallocation of road ROWs and Safety Landings to Zone 2 (Project Operations). Additionally, several tracts were reallocated to Zone 3 (Sensitive Resource Management); Zone 3 would see an increase of 57.58 acres due to additional areas identified with sensitive resources of some type. The zone allocations that would likely have the most opportunities to impact the aquatic ecology of Tellico Reservoir are Zone 6 (Developed Recreation) and Zone 7 (Shoreline Access).

Overall, those zones combined would be reduced by 86.75 acres. No parcels were identified specifically to protect habitats necessary for state- or federally-listed aquatic species. Alternative B protects several large areas containing wetlands and other sensitive terrestrial habitats. Many of these areas act as riparian buffer zones and, thus, will have an indirect but positive effect on aquatic habitat quality. Also, large lowland areas protected for cultural concerns may provide additional protection to aquatic habitats. Therefore, if any sensitive aquatic species are present, Alternative B would afford these species and/or habitat greater protection. Therefore, adoption of Alternative B would have no adverse impacts to the threatened and endangered aquatic species of Tellico Reservoir.

3.5.2.3 Alternative C - Modified Proposed RLMP Alternative

Plants

Adoption of Alternative C would have comparable impacts to those described for Alternative B. There are no known species occurring on the four parcels which would be allocated to a different zone under that alternative.

Terrestrial Animals

Impacts to threatened and endangered terrestrial animals under Alternative C would be substantially the same as Alternative B; fewer parcels would be identified for potential new development under Alternative B.

The potential for impacts to sharp-shinned hawk would be slightly reduced under Alternative C because Parcel 3 would continue to be allocated for Zone 4 (Natural Resource Conservation) compared to Alternative B, in which it would be allocated for a use with greater potential for development and ground disturbing activities. However, overall proposed zone allocations under Alternative C would not be significantly different when

compared to Alternative B or the No Action Alternative. At this time, the proposed major and minor zoning changes would not affect threatened and endangered terrestrial animals.

Aquatic Species

Under Alternative C the impacts to the aquatic threatened and endangered species of Tellico Reservoir would be the same as described in Alternative B.

3.6. Water Quality

3.6.1 Affected Environment

The Tellico Dam was constructed between 1967 and 1979 and serves to divert water through a short canal into Fort Loudoun Reservoir. The two linked reservoirs help regulate flooding downstream. The dam is located at Little Tennessee River Mile (LTRM) 0.3, just upstream of the confluence of the Little Tennessee and Tennessee Rivers. The reservoir stretches 33 miles along the Little Tennessee River into the mountains of east Tennessee, providing 357 miles of shoreline and 15,560 acres of water surface for recreation activities. Tellico has a flood-storage capacity of 120,000 acre-feet. The average flow is 6,213 cubic feet per second with the average retention time of approximately 37 days (TVA 1981a; TVA 1985b; TVA 2000a).

Tellico Reservoir is located in the Little Tennessee River watershed in both the Blue Ridge and the Ridge and Valley Provinces. The watershed encompasses 2,627 square miles in North Carolina, Tennessee, and Georgia and empties to the Fort Loudoun Reservoir watershed. The upper 75% of the watershed consists of mountainous terrain characterized by steep slopes and heavy forest cover. Runoff from this area is controlled by dams above Tellico Reservoir on the Little Tennessee River and several of its upstream tributaries. The remainder of the watershed consists of the minor tributaries draining directly into the reservoir (365 square miles) and the Tellico River watershed (285 square miles). The Tellico River watershed is primarily rugged terrain and the minor tributaries drain an area consisting of more gently rolling hills (TVA 1981a; TVA 1985a; TVA 2000a).

Watersheds are delineated by the U.S. Geological Survey using a nationwide system for the purpose of assessment and management activities. Hydrologic units are important to water quality because they define land areas that drain into a specific stream. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits. HUCs are used for reference for scientific study, sampling, and impact analysis. The Little Tennessee River watershed is divided into two cataloging units called the Lower Little Tennessee (06010204) and the Upper Little Tennessee (06010202). The HUCs that drain into Tellico Reservoir are ecologically rated as poor, fair, or good.

Tellico Reservoir is generally considered a low productivity reservoir (oligotrophic) with low nutrient and biochemical oxygen demand concentrations due to the geologic characteristics of the region. The upstream reach (LTRMs 20.0 to 33.6) receives primary inflow from Chilhowee Reservoir and is essentially riverine with water quality similar to the Chilhowee release (cold and nutrient poor with low mineral content). The middle reach of the reservoir (LTRMs 3.0 to 20.0) is deeper and wider, receiving inflow from the Tellico River as well as from Chilhowee. This segment of the river has a greater volume and a longer residence

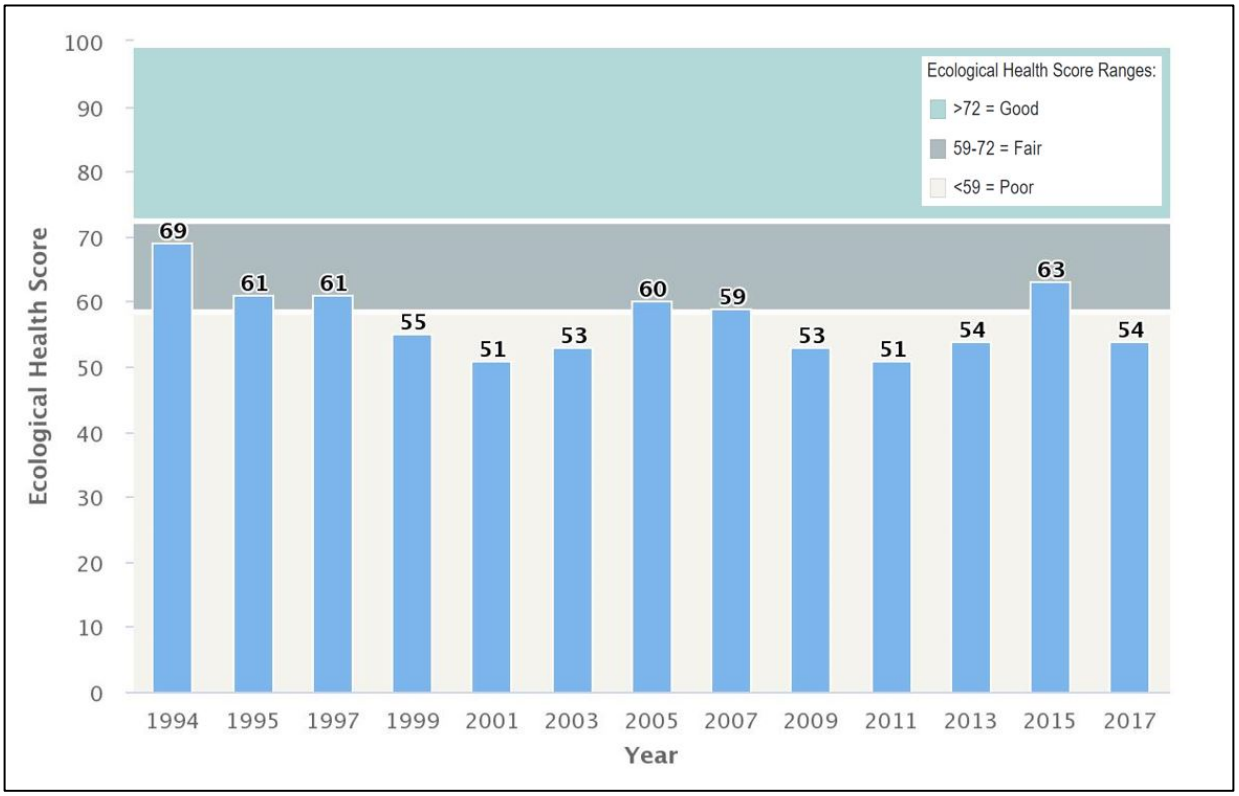
time than the upper reach, and water quality is more influenced by internal reservoir processes. Water quality in the downstream reach of the reservoir (LTRMs 0.3 to 3.0) is influenced not only by local inflows and internal reservoir processes, but also by the hydrodynamics and exchange of water through the canal connecting Tellico and Fort Loudoun Reservoirs (TVA 1981a). The canal is only 20 to 25 feet deep and the Tellico forebay is 82 feet deep. The result is that water at strata below the 25-foot depth is essentially trapped and becomes anoxic during much of the summer (TVA 1998b; TVA 2000a).

3.6.1.1 TVA Water Quality Monitoring and Results

Reservoir water quality information is available from TVA's Reservoir Health Rating monitoring program. The ecological health of Tellico Reservoir has been monitored using the same methodology since 1994. Ecological health evaluations focus on five indicators: dissolved oxygen, chlorophyll, sediment quality, benthic macroinvertebrate community (bottom life), and the fish assemblage. For a discussion of the biological ratings, see Section 3.4 Aquatic Ecology. TVA monitors two locations on Tellico Reservoir for physical and chemical characteristics and sediment contaminants, typically on a two-year cycle. The forebay, the deep, still water near the dam at LTRM 1.0, is monitored in addition to the middle part of the reservoir at LTRM 15.0.

The overall ecological health for Tellico Reservoir was rated "poor" in 2017. Tellico has rated either "poor" or at the low end of the "fair" range all years except 1994, when it scored slightly higher due primarily to improved chlorophyll concentrations (see Figure 3).

Figure 3 Ecological Health Ratings for Tellico Reservoir, 1994-2017



In 2017, TVA monitored for dissolved oxygen, chlorophyll and sediment in the two locations. Findings are summarized in Table 3.6.

Table 3.6 Ecological Health Indicators for Tellico Reservoir, 2017

Monitoring location	Dissolved oxygen	Chlorophyll	Sediment
Forebay	Poor	Poor	Good
Mid-reservoir	Fair	Fair	Good

Dissolved oxygen (DO) is the amount of oxygen that is present in water and is necessary in respiration of most aquatic organisms. If concentrations of DO are low, it can adversely affect the health and diversity of aquatic organisms. DO rated "poor" at the forebay and "fair" at the mid-reservoir. Historically, DO ratings at the Tellico forebay have fluctuated between "good," "fair," and "poor." At the mid-reservoir, DO has rated "good" all other years monitored except 2006, when it also rated "fair." Low DO concentrations have occurred at the mid-reservoir location in several other years, but only for short durations, and the total area of the water column affected remained small enough that overall conditions rated "good." Prevailing weather patterns and related changes in reservoir flows are major factors in differing dissolved oxygen conditions from year-to-year. Reduced flows through the reservoir during periods of low rainfall and runoff can cause poorer DO conditions. The Valley has experienced periodic drought-like conditions, thereby allowing for more stagnant conditions and lower DO concentration in bottom waters.

Chlorophyll is used as a surrogate measurement for the amount of phytoplankton in the water. Increased levels of phytoplankton production can cause adverse ecological and use impacts, such as reduced water clarity, more frequent algal blooms, and higher oxygen demands which reduces the amount of DO in the water. As noted in Table 3.6 above, chlorophyll in 2017 rated "poor" at the forebay and "fair" at the mid-reservoir. Higher chlorophyll concentrations can be expected at the forebay because of the exchange of water from the nutrient-rich forebay of the Fort Loudoun Reservoir, which is connected to Tellico Reservoir via a canal. Chlorophyll typically rates "poor" at the forebay and "fair" or "poor" at the mid-reservoir location.

Sediment quality is the measure of the amount of polychlorinated biphenyls (PCBs), pesticides, and metals in sediment on the bottom of the reservoir. If these sediments are contaminated, they can have adverse impacts on bottom fauna and can often be long-term sources of toxic substances to the aquatic environment. The sediment quality rated "good" at both of the monitoring locations at Tellico Reservoir. No PCBs or pesticides were detected in 2017 and concentrations of metals were within suggested background levels. Sediment quality rated "good" in most years prior to 2017, but the detection of PCBs or pesticides (Chlordane and Aldrin) and/or elevated levels of arsenic has resulted in some "fair" ratings. Arsenic is a naturally occurring element in the soils and concentrations in sediments deposited in the reservoir are generally near suggested background concentrations. Chlordan and Aldrin were banned from use in the 1970s and 1980s, but

were still detected in sediment samples collected from Tellico Reservoir in the early 1990s. They continue to be detected sporadically in sediments due to their slow degradation and ability to bioaccumulation in animals. Similarly, PCBs, which were banned from commercial production in 1979, are still detected sporadically in the reservoir. Concentrations of PCBs are in a decline based on fish samples collected from the reservoir.

3.6.1.2 Recent Evaluations by the State of Tennessee

The federal Clean Water Act (CWA) requires all states to identify all waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. The states are required to submit section 303(d) lists of impaired waters and section 305(b) water quality reports to the EPA.

Water quality limited streams are those that have one or more properties that violate water quality standards. They are considered impaired and not fully meeting their designated uses. The impaired segments of streams in the Tellico Reservoir, corresponding hydrologic unit, cause and source of impairment are listed in Appendix B.

The entire Tellico Reservoir is listed on the most recent TDEC 303(d) list as impaired by PCBs due to contaminated sediments. Tributaries of the reservoir listed as not supporting or only partially supporting stream use classifications were Fork Creek, Bat Creek, Little Tennessee River, Abrams Creek, Centenary Creek, Sixmile Creek, Ninemile Creek, Little Baker Creek, Baker Creek, Cane Creek, Sinkhole Creek, Notchy Creek, Laurel Creek, Big Creek, Island Creek. All were listed as low or not applicable TMDL priority. Listed causes were: priority pollutant organics, organic enrichment, DO levels, high nutrient levels, siltation, and flow alterations (TDEC 2020). The Section 305(b) report lists the entirety of Tellico Reservoir as impaired due to mercury, in addition to PCBs, and advises that catfish should not be eaten (TDEC 2014; TDEC 2020).

3.6.2 Environmental Effects

The major source of potential adverse impacts to reservoir water quality is from land uses, such as construction, that result in increases in soil erosion and sediment transported into the reservoir. Land cover changes can cause an increase in the quantity and velocity of runoff leading to or increasing erosion of conveyances and streams. Also affected by a change in land cover, such as a change from natural land cover to a developed condition, is the potential of pollutants entering streams and conveyances. For example, nutrients applied for maintenance of landscaping have the possibility to increase the loading of nitrogen and phosphorus in surface runoff. Other pollutants, such as oil from vehicles, can also be found in surface water runoff from impervious surfaces, ultimately making their way to a stream or reservoir. Increased boat traffic in the reservoir could also cause potential water quality impacts due to leaking fuel and oil.

Potential impacts to water quality would be greater from parcels allocated to Zone 2 (Project Operations), Zone 5 (Industrial), or Zone 6 (Developed Recreation) where more development and intensive land use could occur. Activities allowed in Zone 7 (Shoreline Access) have the potential to have a direct impact on water quality due to soil erosion, but

development in Zone 7 is typically at a smaller scale and would likely cause minor and localized impacts.

3.6.2.1 Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not take any action to amend the 2000 RLMP for TVA managed lands on the Tellico Reservoir. TVA would continue to manage these parcels consistent with allocations in the 2000 Tellico RLMP under Alternative A.

Potential impacts to water quality would be anticipated with their existing zone allocations as discussed in the 2000 EIS. Some potential impacts identified were increased protection of water quality due to less development and use of best management practices to minimize negative impacts due to the reallocation of the general designations such as Cultural/ Public Use/ Open Spaces Areas to Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation). Allocated land to Zone 5 (Industrial), Zone 6 (Developed Recreation), and Zone 7 (Shoreline Access) had the potential to result in some degree of increased soil erosion due to clearing of woody vegetation and brush, increased runoff of agricultural/ lawn chemicals, increased sewage/septic loading, and an increase in currently unknown contaminants if additional point source permits were issued on the reservoir. These activities could cause increased turbidity, increased levels of substances toxic to aquatic life, increased bacteriological content, and an increase in nutrient loading, which was already occurring in the reservoir.

There has been no noticeable impact on sediment in Tellico Reservoir based on the 2000 allocations. In both 1999 and 2017, the rating for sediment was “good.” Increased nutrient loading was identified as a possible impact in the 2000 EIS. Chlorophyll has historically been rated “fair,” “poor,” and “good” in both the forebay and mid-reservoir and is currently rated “poor” and “fair” at the forebay and mid-reservoir. Under Alternative A, these potential impacts would still be applicable.

3.6.2.2 Alternative B - Proposed RLMP Alternative

Under Alternative B, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres (16.2%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Consistent with the TVA RLMP planning methodology, the public lands managed by TVA would be placed into one of the seven land zones consistent with existing land use and staff recommendations. Zone 2 (Project Operations) would increase by 341.9 acres (7.6%); Zone 3 (Sensitive Resource Management) would increase by 57.58 acres (17.5%); Zone 4 (Natural Resource Conservation) would decrease by 206.48 acres (54.6%); Zone 5 (Industrial) would decrease by 106.1 acres (1.8%); Zone 6 (Developed Recreation) would increase by 11.99 acres (14.9%); and Zone 7 (Shoreline Access) would decrease by 98.74 acres (3.6%).

- 73 of the parcels are proposed to be partially reallocated to Zone 2 (Project Operations), which increases the amount of acreage in this zone. These changes correspond to current land uses and conditions and are administrative in nature. Because this change would reflect current conditions, the impact to water quality would be minimal.

- Portions of parcels 5,10,37, 67, 85, 87, 97, 98, 106, 114, 116, 132, 134, 136, and 139 are proposed to be reallocated to Zone 3 (Sensitive Resource Management), increasing the zone in acreage. Uses of Zone 3 would have the lowest potential to adversely affect water quality; the change has potential to be a beneficial change.
- Portions of parcels 10, 13, 16, 26, 27, 30, 31, 41, 44, 46, 50, 52, 53, 63, 65, 67, 70, 91, 101, 107, 111, 117, 125, and 129 are proposed to be reallocated to Zone 4 (Natural Resource Conservation). The allocation to this zone has a low potential to affect water quality because few ground disturbing activities would be permitted.
- The overall acreage allocated Zone 4 (Natural Resource Conservation) would decrease under this alternative. A large portion of the acreage decrease is attributed to the reallocation of lands with existing roadways to Zone 2 (Project Operations). Such a change to Zone 2, when roadways are existing, has no potential to result in new effects to water quality.
- Any allocations to Zones 3 and 4 (Sensitive Resource Management and Natural Resource Conservation) would have minimal impacts to water quality because these zones have limited or no development and human intervention which would limit the potential to adversely affect water quality.
- 11.12 acres of previously unallocated land is proposed to be allocated to Zone 5 (Industrial), which has the potential to cause an impact to water quality. However, the overall decrease in Zone 5 allocations would add a potential benefit to water quality.
- Portions of parcels 2, 3, 11, 44, 45, 56, 74, 77, 79, 80, 104, 121, and 123 are proposed to be reallocated to Zone 6 (Developed Recreation), which has the possibility for impacts on water quality due to a possible increase in impervious area and other possible development.
- Portions of parcels 4, 9, 10, 14, 15, 22, 40, 47, 48, 51, 52, 64, 66, 74, 77, 79, 95, 97, 99, 102, 115, 116, 117, 119, 126, and 128 are proposed to be reallocated to Zone 7 (Shoreline Access). Much of the current Zone 7 is proposed to be reallocated to Zone 2 (Project Operations) and Zone 4 (Natural Resource Conservation). Overall, the acreage of parcels allocated to Zone 7 would decrease. The reallocation to Zone 7 is to reflect current easements and correct administrative errors. Because this change would reflect current easements, the impact is minimal.

Many of the changes associated with Alternative B generally correspond to a designation change to reflect current land uses and conditions, such as reallocation of land to Zone 2 (Project Operations) and Zone 7 (Shoreline Access). However, the change to allocations that allow future development increases the potential for adverse impacts to water quality because land would be allocated to zones that are not as protective of water quality. Allocations to Zones 2 (Project Operations), Zone 5 (Industrial), Zone 6 (Developed Recreation), and Zone 7 (Shoreline Access) would have the greatest potential for impacting water quality due to runoff and erosion from ground-disturbing activities. These zones would also allow for future development that have the greatest potential for increasing water supply demands and wastewater discharges. There would be a potential of changes in the existing land cover from construction activities due to future development. There would also be a potential for an increase in impervious surface area due to the additions of

buildings and parking lots. This increase of impervious surface area has the potential to concentrate storm water discharges, which could increase localized flooding, surface erosion and turbidity in local surface waters.

Prior to any development of TVA reservoir lands, additional site-specific environmental reviews would take place to address potential impacts to water quality. Many proposals would be subject to permitting to address water quality. Construction activities, including land disturbing activities of 1.0 acre or more, are regulated under the state's National Pollutant Discharge Elimination System (NPDES) programs for stormwater discharges from construction activities. Industrial discharges are required coverage under NPDES programs in which permit limits are set for new facilities with permitted discharges. These limits are designed to prevent degradation of applicable water quality criteria. The use of vegetated buffer zones and other BMPs would reduce the potential for negative impacts of riparian vegetation removal associated with development. The use of buffer zones and other BMPs are widely accepted as effective methods in removing water pollutants from surface water and protecting water quality. With the implementation of adequate BMPs and properly engineered stormwater controls, the impacts from future developments would be temporary and minimal. With knowledge of the condition of the reservoir and many changes being administrative in nature to reflect current conditions, activities under Alternative B would not significantly impact water quality.

3.6.2.3 Alternative C - Modified Proposed RLMP Alternative

Alternative C would be substantially similar to Alternative B with the following exceptions:

- Parcel 2 would remain as allocated in the 2000 Tellico RLMP as Zone 7 (Shoreline Access), whereas it is proposed to be changed to Zone 6 (Developed Recreation) in Alternative B.
- Parcel 3 would remain as allocated in the 2000 Tellico RLMP as Zone 4 (Natural Resource Conservation), whereas it is proposed to be changed to Zone 6 (Developed Recreation) in Alternative B.
- Two portions of parcel 44 (a total of 34.63 acres) would remain as allocated in the 2000 Tellico RLMP, rather than be allocated to Zones 4 and 6. .
- Parcel 74 would remain as allocated in the 2000 Tellico RLMP as Zone 4 (Natural Resource Conservation), whereas it is proposed to be changed to Zone 6 (Developed Recreation) in Alternative B.

Under Alternative C, fewer parcels are proposed to be reallocated for Zone 6 (Developed Recreation) than under Alternative B. These four parcels would be managed as currently allocated, so impacts would be less intensive than under Alternative B and comparable to the impacts described under the No Action Alternative. Parcels allocated to Zone 4 (Natural Resource Conservation) would be less likely to negatively impact water quality compared to parcels allocated to Zone 6 (Developed Recreation). For the other proposed changes, the impacts would be the same as those described under Alternative B.

3.7. Wetlands

3.7.1 Affected Environment

Wetlands are those areas inundated or saturated by surface or groundwater such that vegetation adapted to saturated soil conditions is prevalent (USACE 33 Code of Federal Regulations [CFR] § 328(b); EPA 40 CFR § 230.3(t)). Typically, wetland habitat represents transitional features between upland and open water. Examples include bottomland forests, swamps, wet meadows, isolated depressions, and shallows or shoreline fringe along watercourses or impoundments. Due to their landscape position, vegetation structure, and influence on downstream hydrology, wetlands provide a suite of benefits valued by society. These include toxin absorption and sediment retention for improved water quality, storm water impediment and attenuation for flood control, shoreline buffering for erosion protection, and fish and wildlife habitat for commercial, recreational, and conservation purposes.

Tellico Reservoir is predominantly located in the Ridge and Valley ecoregion (Level III, EPA 2021a), which is characterized by ridgelines and wide valleys trending northeast to southwest. Only the tailwaters immediately downstream of Chilhowee Dam are located in the Blue Ridge Mountains ecoregion (Level III, EPA 2021), which exhibits more rugged terrain. The hydrology of this area generally constitutes small upland drainage features intersecting lower gradient streams tributary to rivers meandering valley bottoms. Because of this topography, conditions for wetland development is limited to riparian floodplains of streams, rivers, and associated impoundments. Therefore, Tellico Reservoir provides adequate hydrology for wetland development in its shallow embayments and along the reservoir shorelines. Tellico Reservoir is located in the Tellico River, Upper Tellico, and Lower Tellico watersheds (HUC 06010204-03,04,05). The Tellico River and reservoir system is included on Tennessee's list of impaired waters, under Section 303(d) of the Clean Water Act. Therefore, wetlands within the reservoir system function in water quality improvement for this impaired water resource.

Previous wetland extent across all TVA parcels on Tellico Reservoir is incorporated by reference from the 2000 EIS (TVA 2000a). This analysis utilized photointerpretation of aerial imagery to identify approximately 900 wetland acres across the Tellico Reservoir system (TVA 1998a) (Table 3.7). Wetland community types were dominated by emergent, scrub-shrub, and forest habitat (Cowardin 1979). Emergent wetland often occurs as shoreline fringe or where water levels fluctuate to a depth that allows for establishment and growth of non-woody, herbaceous species. Dominant vegetation generally consists of emergent, erect, rooted, or floating hydrophytes such as water lilies, cattails, rushes, sedges, reeds, or forbs adapted to saturated soils. Scrub-shrub wetlands are dominated by woody plants less than 20 feet tall, and may include buttonbush, dogwood, or swamp rose. Scrub-shrub wetlands can also represent successional communities comprised of sapling species that have not yet achieved forest stature. Forested wetlands typically occur in bottomlands where moisture is relatively abundant, exhibiting a species composition of mature overstory trees, an understory shrub layer, and emergent vegetation as a ground cover (EPA 2021b).

Approximately 80% of all identified wetland area within Tellico Reservoir system was

previously allocated as Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) under the 2000 RLMP (TVA 2000b). This includes significant wetland resources previously identified in the 2000 EIS (TVA 2000a) on the upper reaches of Ballplay, Citico, Baker, and Notchy Creeks and the southern arm of the Tellico River. Zone 3 and 4 parcels received this allocation for sensitive resource management or natural resource conservation, respectively. These TVA zones ensured preservation or enhancement of wetland habitat where wetland occurs. Therefore, these wetlands' functions and values previously identified as important components of the Tellico Reservoir system have been protected or managed for overall ecological improvement since 2000.

The remaining 20% of wetland area occurred in zones previously allocated for some degree of development. However, in accordance with the 2000 EIS (TVA 2000a), proposed impacts to wetland areas would have been afforded individual review and avoidance, minimization, and compensatory mitigation would have been provided. TVA's Section 26a permitting process ensures wetland impacts have been avoided to the extent practicable. In addition, the 2000 EIS identifies improvements proposed to the majority of wetlands on the Tellico Reservoir as off setting wetland impacts elsewhere within the reservoir system.

Although an estimated 900 acres of wetland habitat was identified through photo interpretation across the Tellico Reservoir system, less than one third of this acreage (285 acres) is located on parcels proposed for potential zoning reallocation through TVA's current RLMP review (Table 3.7). The majority of wetland area identified within the reservoir system and potentially affected parcels is comprised of forest habitat, followed by a lesser representation of scrub-shrub wetlands, and a relatively small proportion of emergent wetland communities (Table 3.7).

Table 3.7 Photo interpreted wetland acreage by wetland type across Tellico Reservoir and on affected parcels

Wetland Type	Wetlands Reservoir Wide	Wetlands on Affected Parcels
Emergent	150	15
Scrub Shrub	260	70
Forested	490	200
Total	**900 acres**	**285 acres**

Approximately 285 wetland acres are located on parcels that TVA proposes to reallocate to land uses that would be more or less restrictive under their current zoned allocation. Some of this affected wetland acreage is located on parcels proposed for rezoning to align with existing rights-of-way or easements that allow land use that may contradict existing zoning.

Wetland trends nationwide have remained relatively stable in recent history (Dahl 2011), and TVA's reservoir land management plans, including for Tellico Reservoir, have contributed to this trend. In addition, existing wetland regulations that ensure no net loss of wetland resources (EPA 1990) would ensure wetland impacts are avoided and minimized to the extent practicable. Therefore, the majority of wetland area located on the affected parcels is anticipated to have remained relatively stable in area and quality, although some succession from shrub to forest in sapling dominated wetlands would have occurred.

Regardless, due to the overwhelming presence on affected parcels currently allocated for conservation under Zone 4 (Natural Resource Conservation) coupled with regulatory oversight that ensures wetland avoidance, affected wetland area is anticipated to reflect similar wetland extent and condition as documented in the 2000 EIS (TVA 2000a).

3.7.2 Environmental Effects

Executive Order 11990 (Protection of Wetlands) requires federal agencies, such as TVA, to avoid wetland impacts to the extent practicable, minimize wetland destruction, loss, or degradation, and preserve and enhance natural and beneficial wetland values, while carrying out agency responsibilities. In addition, activities in wetlands are regulated by state and federal agencies to ensure no net loss of wetland resources nationwide. The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material and associated secondary impacts to waters of the United States, including wetlands, under the CWA Section 404 [33 USC § 1344]. CWA section 401 mandates state water quality certification for projects requiring USACE approval and for TVA approvals under Section 26a of the TVA Act for activities that may result in a discharge.

In Tennessee, an aquatic resource alteration permit (ARAP) authorized by the Tennessee Department of Conservation (TDEC) and Environment provides water quality certification under CWA §401. An ARAP is required for any alteration to the physical, chemical, or biological properties of any waters of the state, including wetlands, pursuant to the Tennessee Water Quality Control Act (§69-3-108, 0400-40-07). TDEC's permit process ensures compliance with Tennessee's anti-degradation policy as well (§69-3-108, 0400-40-04). Tennessee's jurisdiction would apply to regulated activities affecting wetlands within the study area, including both isolated and hydrologically connected wetland features tributary to Tellico Reservoir, which is on TDEC's 303(d) list of impaired waters (EPA 2020). This regulatory oversight ensures no more than minimal impacts to the aquatic environment and no net loss of wetland resources (EPA 1990).

3.7.2.1 Alternative A – No Action Alternative

Under the No Action Alternative, TVA would continue to manage parcels on Tellico Reservoir consistent with allocations in the 2000 Tellico RLMP. In the 2000 EIS, TVA's selected alternative emphasized preservation and enhancement of wetland resources. This level of conservation would continue for wetlands located within natural resource conservation zoned parcels. Impacts to wetlands associated with public or commercial recreation were expected to be minor, and undergo individual environmental reviews to ensure no net loss of wetland resources. Current wetland protection and management paired with existing compliance mechanisms for proposed wetland impacts would continue to ensure wetland habitat remains relatively stable long term.

3.7.2.2 Alternative B - Proposed RLMP Alternative

Alternative B proposes land use reallocations across roughly 90 parcels containing approximately 285 acres of mapped wetland habitat. Of this wetland acreage, 50 acres overlay parcels proposed for reallocation to correct mapping errors, align with approved land use, or reflect road rights-of-way and existing recreation easements. Wetland areas within these parcels remain subject to individual environmental reviews and wetland

regulatory compliance. Revising the zone allocation for this wetland acreage is administrative in nature, and the new zoning would have no impacts to wetland resources within these parcels.

Of the remaining estimated 235 acres of wetland habitat on parcels proposed for rezoning under Alternative B, over half is identified on parcels currently zoned for conservation under Zone 4 (Natural Resource Conservation) that would be reallocated to Zone 3 (Sensitive Resource Management). This includes wetland acreage previously identified as important wetland habitat on the upper reaches of Ballplay, Baker, and Notchy Creeks and the upper arm of the Tellico River. Parcels containing this wetland area have been identified as important for sensitive resource designation. Zone reallocation for these parcels, however, will not change the management or use of these TVA lands. Wetlands on these parcels will continue to be protected and would be evaluated for management to the benefit of wetland function and value as the need arises.

A smaller acreage of wetland area along shorelines currently under Zone 7 (Shoreline Access) would also be reallocated to Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation), both of which are zones wherein it is unlikely that allowable uses would impact wetlands (Table 3.8).

Table 3.8 Photointerpreted wetland acreage on Current and Alternative B parcel zone reallocations

Current Zone (Alternative A)	Wetland Acreage Mapped on Reallocation Parcels (Alternative B)					
	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Zone 2	--	0	0	0	0	0
Zone 3	0	--	8	0	0	1
Zone 4	<1	156	--	0	12	1
Zone 5	0	0	1	--		
Zone 6	0	7	14	0	--	0
Zone 7	0	25	15	0	0	--

As shown in Table 3.9 below, 48 acres would be reallocated to a Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation), further promoting conservation of wetland areas within the Tellico Reservoir system. Whereas, 13 acres would be rezoned to an allocation that could allow for increased impacts. Prior to any potential impact to these wetland areas, however, TVA would conduct a site-specific environmental review of proposed plans to assess potential impacts to wetlands. Potential wetland impacts associated with any proposed development plans would be subject to TVA's compliance with Executive Order 11990 and wetland mandates ensuring no net loss of wetland resources across the landscape.

Table 3.9 Photointerpreted wetland acreage affected by Alternative B parcel zone reallocations

Impact Assumption	Zone Change (Alternative B)	Affected Wetland Acreage	Total Acres
Decreased Potential Impacts Increased Protection	Zone 5 to 4	1	**48**
	Zone 6 to 3	7	
	Zone 7 to 3	25	
	Zone 7 to 4	15	
Neutral Impacts	Zone 3 to 4	8	**164**
	Zone 4 to 3	156	
Increased Potential Impacts Decreased Protection	Zone 4 to 2	<1	**13**
	Zone 4 to 6	12	
	Zone 4 to 7	1	

Therefore, in consideration of total anticipated neutral impacts and the additional allocation of parcels containing wetland acreage to Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) for conservation purposes, the overall wetland impacts under Alternative B are anticipated to be of greater benefit to wetland resources on the Tellico Reservoir system compared to the No Action Alternative.

3.7.2.3 Alternative C - Modified Proposed RLMP Alternative

Alternative C is similar to Alternative B, with four fewer parcels reallocated to zones that would otherwise allow for new development. Under this alternative, Parcel 2 would be allocated to Zone 7 (Shoreline Access) rather than Zone 6 (Developed Recreation), under Alternative B. Under either zone allocation, the potential for wetland disturbance for this parcel, which contains an estimated half acre of wetland along the shoreline, would be equal, given the permissible actions under both zones. Although no mapped wetland resources are evident on the other three parcels, a site-specific environmental review would be conducted if development is proposed. Any wetlands identified on site would be subject to TVA's compliance with EO 11990 and state and federal wetland mandates that sufficiently ensure no significant wetland impacts through avoidance, minimization, and wetland compensatory mitigation. Therefore, proposed changes under Alternative C are anticipated to be the same as those under Alternative B.

3.8. Floodplains

3.8.1 Affected Environment

A floodplain is the relatively level land area along a stream or river that is subject to periodic flooding. The area subject to a 1% chance of flooding in any given year is normally called the 100-year floodplain. The area subject to a 0.2% chance of flooding in any given year is normally called the 500-year floodplain. It is necessary to evaluate development in the floodplain to ensure that the project is consistent with the requirements of EO 11988 (Floodplain Management) and EO 13690 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input).

With the exception of the 2000 alternative analyses, information on floodplains is incorporated by reference from the 2000 EIS (TVA 2000a). The 100- and 500-year flood elevations, as well as TVA's 1981 Class Review of Repetitive Actions in the 100-Year Floodplain are unchanged from 2000 (TVA 1981b).

3.8.2 Environmental Effects

As a federal agency, TVA adheres to the requirements of EO 11988 (Floodplain Management). The objective of EO 11988 is "…to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" (EO 11988, Floodplain Management). The EO is not intended to prohibit floodplain development in all cases, but rather to create a consistent government policy against such development under most circumstances (U.S. Water Resources Council, 1978). The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

3.8.2.1 Alternative A – No Action Alternative

Under Alternative A, development and/or management of properties would be made on a case-by-case basis, and evaluations would be done individually to ensure compliance with Executive Order 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that should result in minor impacts to floodplains and their natural and beneficial values. Therefore, the overall impacts to floodplains from Alternative A would be the same those described in the 2000 EIS.

3.8.2.2 Alternative B - Proposed RLMP Alternative

Under Alternative B, approximately 2,075.0 acres of land would change from one land allocation zone to another (see Table 2.4 above). About 303.78 acres of land already used for project operations and related infrastructure would be allocated to Zone 2 (Project Operations) from a different land use zone, primarily to reflect the actual use of the land. The 303.78 acres represents about 14.6 percent of the allocation changes proposed under Alternative B. As shown in Table 3.10, of the remaining areas, the land allocation changes would result in uses that would result in overall neutral to slightly adverse impacts to floodplains compared to the No Action Alternative.

Table 3.10 Relative potential for impacts due to allocation changes

Zone	Alternative B	Alternative C
3	Potential increase (beneficial)	Potential increase (beneficial)
4	Potential decrease (neutral)	Potential less decrease (neutral)
5	Potential decrease (beneficial)	Potential less decrease (beneficial but less so)
6	Potential increase (adverse)	Potential decrease (beneficial)
7	Potential decrease (adverse)	Potential less decrease (adverse but less so)

Compared to the No Action Alternative, Alternative B would result in a net slight increase of overall environmental impact to floodplains, if parcels allocated for more intensive uses are developed.

Under Alternative B, development and/or management of properties would be made on a case-by-case basis, and evaluations would be done individually to ensure compliance with floodplain management EO 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that should result in minor adverse impacts to floodplains and their natural and beneficial values. Therefore, the overall impacts to floodplains from Alternative B would be minor and insignificant relative to floodplains and their natural and beneficial values.

3.8.2.3 Alternative C - Modified Proposed RLMP Alternative

Under Alternative C, about 2,075.0 acres of land would change from one allocation zone to another in Alternative C (see Table 2.4 above). About 303.78 acres of land already used for project operations and related infrastructure would be allocated to Zone 2 (Project Operations) from a different zone to reflect the current use of the land. The 303.78 acres represents about 14.6 percent of the allocation changes proposed under Alternative C. As shown in Table 3.10. of the remaining areas, the land allocation changes would result in uses that have potential to result in overall neutral to slightly beneficial impacts to floodplains compared to the No Action Alternative, with relatively more beneficial impacts to floodplains than Alternative B.

The allocation to Zone 3 would be the same acreage for both Alternatives B and C. Other than the increased allocation to Zone 2 discussed above, the main differences between Alternative B and Alternative C would be more land allocated to Zones 4 and 5 and less land allocated to Zone 6 under Alternative C.

Under Alternative C, development and/or management of properties would be made on a case-by-case basis, and evaluations would be done individually to ensure compliance with floodplain management EO 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that should result in minor adverse impacts to floodplains and their natural and beneficial values.

3.9. Air Quality and Climate Change

3.9.1 Affected Environment

National Ambient Air Quality Standards (NAAQS) limit concentrations in the outside air of six pollutants: particulate matter, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead. These standards are designed to protect public health and welfare. An area where any air quality standard is violated is designated as a “nonattainment” area for that pollutant, and emissions of that pollutant from new or expanding sources are carefully controlled. Each of the three counties (Blount, Loudon, and Monroe) in the vicinity of Tellico Reservoir are designated as attainment areas.

In addition, prevention of significant deterioration (PSD) regulations protect national parks and wilderness areas that are designated PSD Class I air quality areas. A new or expanding major air pollutant source within 31 miles of a Class I area would be required to estimate potential impact on the air quality of that Class I area. In addition, the federal land manager having jurisdiction over the Class I area may request similar action for large sources at distances of 31 to 62 miles. There are three PSD Class I areas within 62 miles of Tellico Reservoir. The Great Smoky Mountains National Park is only 3 miles southeast of Tellico Reservoir, the Joyce Kilmer/Slickrock Wilderness Area is only 6 miles southeast of the reservoir, and the Cohutta Wilderness Area is approximately 41 miles southwest of Tellico Reservoir.

Any new industrial or commercial development would be expected to meet Clean Air Act standards in effect at the time. Any facilities on TVA land or facilities in the surrounding area may also require an air quality permit from the state of Tennessee. This would evaluate the magnitude of air emissions from the proposed source and from existing nearby sources, meteorological factors that affect dispersion of the pollutants, and the proximity to areas with special air quality requirements, such as nonattainment areas and PSD Class I areas.

Air emissions would be greatest from uses allowed in lands allocated to Zone 5 (Industrial). Based on the types of activities allowable on lands allocated to Zone 2 (Project Operations) and Zone 6 (Developed Recreation) (boat traffic around locks and dams, operating facilities, construction of public works projects and motor craft and vehicle use) air emissions would be minor. Uses allowed in lands allocated to Zones 3 (Sensitive Resource Management) 4 (Natural Resource Conservation) and 7 (Shoreline Access) generate little or no air emissions.

Pollution from fossil-fuel combustion in construction equipment, fugitive dust emissions from operation of this equipment during dry conditions, and increased traffic during construction would cause some minor and temporary air quality degradation in the vicinity of the reservoir. However, state air pollution rules require construction projects to use reasonable precautions to prevent fugitive dust emissions. After construction is completed, normal residential activities, such as wood stoves, fireplaces, and gas-powered lawnmowers, would contribute somewhat to deterioration in local air quality, though it is not expected to have any impact on regional air quality.

“Climate change” refers to any substantive change in measures of climate, such as temperature, precipitation, or wind (EPA 2016). The 2014 National Climate Assessment concluded that global climate is projected to continue to change over this century and beyond. The amount of warming projected beyond the next few decades, by these studies, is directly linked to the cumulative global emissions of greenhouse gasses (e.g., carbon dioxide [CO_2], methane) and particles. By the end of this century, the 2014 National Climate Assessment concluded a 3°Fahrenheit (F) to 5°F rise can be projected under the lower emissions scenario and a 5°F to 10°F rise for a higher emissions scenario (Melillo et al. 2014).

Activities that contribute greenhouse gas emissions include industrial activities, manufacturing activities, barge, truck, and personal use; motorized watercraft traffic; and other construction involving the use of fossil-fuel-powered equipment (e.g., bulldozers, loaders, haulers, trucks, generators, etc.). Reservoir land uses that generate greenhouse gas emissions primarily occur in Zones 2, 5 and 6 (Project Operations, Industrial and Developed Recreation). Management that decreases greenhouse gas emissions occur primarily on lands allocated for Zones 3 and 4 (Sensitive Resource Management and Natural Resource Conservation). For example, protecting forested areas that absorb and store C02 from the atmosphere via a process known as carbon sequestration reduces CO_2 in the atmosphere.

3.9.2 Environmental Effects

3.9.2.1 Alternative A – No Action Alternative

Under Alternative A, the 2000 Tellico RLMP would remain in place and any proposed industrial, commercial, or residential development would continue to be evaluated on a case-by-case basis. Under the 2000 RLMP, 22.4% of land would be allocated as Zone 2 (Project Operations), Zone 5 (Industrial/Commercial Development), or Zone 6 (Recreation), allocations with greatest potential for activities most likely to result in greenhouse gas emissions. Because any development would be subject to air quality standards, it is unlikely that there would be significant effects to local or regional air quality or to the climate.

Under Alternative A, approximately 73.3% of TVA lands on Tellico Reservoirs would remain allocated as Zones 3 and 4 (Sensitive Resource Management and Natural Resource Conservation), which are lands on which activities are unlikely to result in greenhouse gas emissions and highly likely to provide carbon sequestration. Approximately 22.4% of lands are allocated for Zones 2, 5 and 6 (Project Operations, Industrial/Commercial Development, and Recreation), where greenhouse gas emissions may occur. Only 2.6% of these lands would be allocated for industrial uses, the use most likely to result in future emissions of greenhouse gases. As current conditions would continue under this alternative, there would be no climate effects associated with this alternative.

3.9.2.2 Alternative B - Proposed RLMP Alternative

Under Alternative B, TVA would manage 24.3% lands as Zone 2 (Project Operations), Zone 5 (Industrial), or Zone 6 (Developed Recreation), representing a slight increase compared to Alternative A. However, allocation changes to Zone 2 (Project Operations) represents almost all of this increase in this percentage and these changes are made to reflect existing rights-of-way and Safety Landings. The reallocation would not represent any change compared to current conditions. Under Alternative B, there would be a decrease in lands allocated as Zone 5 (Industrial) and a slight (0.1%) increase in acreage allocated as Zone 6 (Developed Recreation). Therefore, the effects to air quality of Alternative B would be similar to the effects under Alternative A.

Under Alternative B, TVA's proposed changes to current allocations and uses would result in a slight decrease in lands allocated for Zones 3 and 4 (Sensitive Resource Management and Natural Resource Conservation), from 73.3% of lands to 72.1%. Slightly fewer lands

would be available for potential carbon sequestration. TVA's proposed changes would also increase areas allocated to Zone 2, Zone 5 and Zone 6 (Project Operations, Industrial and Developed Recreation, respectively), from approximately 22.4% (Alternative A) to 24.3%. Again, allocation changes to Zone 2 are made primarily to reflect current conditions. Zone 5 (Industrial) areas would actually decrease by 0.8% under Alternative B, when compared to Alternative A, thereby decreasing the potential for greenhouse gas emissions for those parcels. Such negligible changes would result in no effects to negligible effects, when comparing Alternative B to Alternative A.

3.9.2.3 Alternative C - Modified Proposed RLMP Alternative

Under Alternative C, TVA would manage 23.7% lands as Zone 2 (Project Operations), Zone 5 (Industrial), or Zone 6 (Developed Recreation), representing a slight increase compared to Alternative A but slight decrease compared to Alternative B. Therefore, the effects to air quality of Alternative C would be similar to the effects under Alternatives A and B. Similarly, the effects to climate of Alternative C would be similar to the effects of the other alternatives.

3.10. Cultural and Historic Resources

3.10.1 Affected Environment

Cultural resources include prehistoric and historic archaeological sites, districts, buildings, structures, and objects, as well as locations of important historic events that lack material evidence of those events. Cultural resources that are listed, or considered eligible for listing, on the National Register of Historic Places (NRHP) are called historic properties. To be considered an historic property, a cultural resource must possess both integrity and significance. A historic property's integrity is based on its location, design, setting, materials, workmanship, feeling, and association. The significance is established when historic properties meet at least one of the following criteria: (a) are associated with important historical events or are associated with the lives of significant historic persons; (b) embody distinctive characteristics of a type, period, or method of construction; (c) represent the work of a master, or have high artistic value; or (d) have yielded or may yield information important in history or prehistory (36 CFR Part 60.4).

Section 106 of the NHPA requires federal agencies to consider the effects of their proposed undertakings on historic properties. TVA determined that the Proposed RLMP Alternative is an "undertaking" as defined by the regulations under NHPA. Once an action is determined to be an undertaking, the regulations require agencies to consider whether the proposed activity has the potential to impact historic properties. If the undertaking is such an activity, then the agency must follow the following steps: (1) initiate and involve the appropriate consulting parties and define the area of potential effects (APE); (2) identify historic properties in the APE; (3) evaluate possible effects of the undertaking on historic properties in the APE; and (4) resolve adverse effects (36 CFR § 800.4 through 800.13). An APE is defined as the "geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR § 800.16.). Concerning cultural resources, the APE is taken as the affected environment for purposes of this EA. TVA defined the APE to be the approximately 2,075-acre area where TVA is proposing to change land use allocations.

Section 106 of the NHPA requires federal agencies to consult with the respective State Historic Preservation Officers (SHPO) and Indian tribes when proposed federal actions could affect historic and cultural resources, including archaeological resources, which are also protected under the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act, in addition to the NHPA. TVA consulted with the Tennessee SHPO and federally-recognized tribes who have expressed an interest in Blount, Loudon, and Monroe Counties on August 31, 2021. The SHPO concurred that the reallocation of properties constituted an undertaking and that each individual undertaking should be reviewed under the ratified Section 106 Programmatic Agreement.

3.10.1.1 Archaeological Resources

The Tennessee Valley has a rich cultural heritage. The temperate climate and abundant resources attracted nomadic hunters-gatherers into the region by 13,500 years ago. Through centuries of continuity and conflict, a rich diversity of Native American cultures evolved. Human occupation in the Valley includes five broad cultural periods: Paleo-Indian (Older than 9200 BC), Archaic (9200-1000 BC), Woodland (1000 BC-AD 900), Mississippian (AD 900-1500), and Historic (AD 1500-present). Prehistoric land use and settlement patterns vary during each period, but short- and long-term habitation sites are generally located on flood plains and alluvial terraces along rivers and tributaries. Specialized campsites tend to be located on older alluvial terraces and in the uplands. In the early Historic period, this location was largely populated by members of the Historic Indian tribes. The influx of European settlers into the region forced cession of Indian lands. The subsequent decades were marked by growth of urban centers, large plantations, and smaller subsistence farming homesteads. The construction of railroads furthered the growth of industry in the valley. The Civil War played a significant role in the development of the region. Archaeological resources associated with the antebellum and post-antebellum periods include remains associated with individual farmsteads or larger scale plantations and civic, ceremonial, and industrial sites.

The region subject to this EA represents a diverse cultural landscape that held special meaning to its past inhabitants and to their descendants. Some of these places can be considered Traditional Cultural Properties (TCP), which are defined as properties that are eligible for inclusion on the National Register of Historic Places because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998). It should be noted that TVA does not make public sensitive information regarding the location or other information regarding sacred sites or TCPs identified by consulting tribes.

Archaeological investigations in the TVA region began in the 19th century with the explorations of Cyrus Thomas, C.B. Moore, and the Smithsonian Institute. These early investigations focused on larger sites such as mound complexes. Between 1885 and 1887, J. W. Emmert of the Smithsonian Institution’s Division of Mound Exploration recorded 53 mound sites along the Little Tennessee River. He was followed in 1919 by M. R. Harrington of the Museum of the American Indian, who conducted extensive excavations at Bussell Island. The systematic survey of the Little Tennessee River valley began in 1967

ahead of the planned construction of Tellico Dam by TVA. The survey continued until 1979 when the reservoir was inundated (Chapman 1984).

In recent decades, TVA fee-owned land has been subject to both systematic and opportunistic archaeological surveys for TVA undertakings and land planning actions. Because survey coverage below summer pool elevation is inconsistent and due to the lack of comprehensive data on survey coverage throughout TVA's history, it is difficult to estimate the percentage of TVA lands associated with the RLMP that have been systematically surveyed. It is estimated that approximately 10% of lands within Tellico Reservoir have been subjected to systematic survey. Approximately 606 sites have been recorded on TVA property along Tellico Reservoir, 70 of which are on parcels being considered for reallocation. Many additional archaeological sites are likely present that have not been recorded as a result of the limited surveys conducted.

3.10.1.2 Historic Structures

A systematic identification survey for historic structures has not been conducted for TVA fee-owned land. Based on limited surveys, approximately 14 historic structures have been recorded on or near Tellico Reservoir. Six structures have been listed in the NRHP, not including Tellico Dam. The acquisition of land for construction of the TVA reservoirs resulted in the removal of many structures and other man-made features. The structures that remain represent all historical periods including individual farmsteads or larger scale plantations, civic or religious sites such as churches, cemeteries or schools, and industrial sites such as mills. The formation of reservoirs on the Tennessee River and its tributaries permanently changed the cultural geography of those regions. Due to the historic significance associated with the development of TVA Tellico Dam and contributing structures, these structures were listed in the NRHP in 2017.

3.10.2 Environmental Effects

As noted above, Federal agencies are required by the NHPA and NEPA to consider the possible effects of their undertakings on historic properties. Through the review and consultation process, agencies work to resolve adverse effects to historic properties of an undertaking. A project may have effects on a historic property that are not adverse, if those effects do not diminish the qualities of the property that identify it as eligible for listing on the National Register. However, if the agency determines (in consultation) that the undertaking's effect on a historic property within the APE would diminish any of the qualities that make the property eligible for listing on the National Register (based on the criteria for evaluation at 36 CFR Part 60.4), the effect is said to be adverse. Examples of adverse effects would be ground disturbing activity in an archaeological site, or erecting structures within the viewshed of a historic building in such a way as to diminish the structure's integrity of feeling or setting. Adverse effects must be resolved. Resolution may consist of avoidance (such as redesigning a project to avoid impacts or choosing a project alternative that does not result in adverse effects), minimization (such as redesign to lessen the effects, or planting visual screenings), or mitigation. Adverse effects to archaeological sites are typically mitigated by means of excavation to recover the important scientific information contained within the site. Mitigation of adverse effects to historic structures sometimes involves thorough documentation of the structure by compiling historic records, studies, and photographs. Agencies are required to consult with SHPOs, tribes, and others throughout

the process and to document adverse effects to historic properties resulting from agency undertakings.

Actions can affect historic properties directly or indirectly at a later time, at a distance from the action, or cumulatively. While this land plan does not directly affect historic properties, the plan allocates land for certain uses which could affect historic properties as land use projects materialize in the future. TVA will continue to conduct project related reviews of proposed activities in TVA-controlled areas where such activities could affect historic properties. Historic properties within these areas will be avoided and protected whenever possible. If avoidance is not possible, proper procedures would be implemented to mitigate any potential effects on the historic property. Under any alternative, any adverse effects to significant archaeological resources would be mitigated pursuant to Section 106 and its implementing regulations.

3.10.2.1 Alternative A – No Action Alternative

When developing the 2000 RLMP, TVA reviewed information and records about known cultural resources when determining the appropriate land use allocations, thereby protecting these resources. In the 2000 RLMP (TVA 2000b), parcels with important cultural resources were allocated to Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) management, because surface disturbing activities would generally not be permissible in these zones. Zone 3 properties include approximately 2,184.5 acres, or 17.1% of the allocated lands on Tellico, while Zone 4 properties include approximately 6,985.14 acres, or 56.2% of the total. Under Alternative A, these allocations would not change.

For all allocations, site-specific activities proposed in the future would continue to be subject to review under 36 CFR 800 and approved, approved with conditions, or denied according to the presence/absence of historic properties and the potential of the activity to adversely affect historic properties. If a historic property cannot be avoided or effects cannot be minimized and mitigation is required, appropriate archaeological investigation would be necessary, and potentially impacted resources would be mitigated in consultation with the applicable SHPO, federally recognized tribes, and other consulting parties. All projects and cultural resources would be subject to the regulatory requirements of the NHPA.

3.10.2.2 Alternative B – Proposed RLMP Alternative

Under Alternative B, TVA would continue to protect known cultural resources. In the 2000 RLMP (TVA 2000b), parcels with important cultural resources were allocated to Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation) management because surface disturbing activities would generally not be permissible in these zones. As noted above, under Alternative A, Zone 3 properties include approximately 2,184.5 acres, or 17.1% of the allocated lands on Tellico, while Zone 4 properties include approximately 6,985.14 acres, or 56.2% of the total.

Under Alternative B, the land allocated to Zone 3 (Sensitive Resource Management) would increase to 2,242.08 acres, or 17.5% of the allocated lands. The increase is due to the identification of additional areas containing sensitive resources. Land allocated to Zone 4 (Natural Resource Conservation) would decrease to 6,778.66 acres, or 54.6% of the total.

The reduction is due primarily to the reallocation of existing road rights-of-way and safety landings to Zone 2 (Project Operations).

The proposed reallocations under Alternative B have the potential to affect 70 previously recorded archaeological sites currently allocated on 33 TVA parcels, should specific ground-disturbing activities in the future be proposed on these parcels:

- There are eight recorded cultural sites on seven TVA parcels that are currently allocated as Zone 3 (Sensitive Resource Management) that would change under Alternative B. Under Alternative B, these eight sites would be managed on eight parcels. Six of the sites would be allocated to either Zone 2 (Project Operations) or Zone 7 (Shoreline Access), which are land use allocations with greater potential for development. Two parcels would be reallocated to Zone 4 (Natural Resource Conservation), which would be a similar type of management and has less potential for development than other land use allocations.
- There are 57 recorded cultural sites on 15 TVA parcels that are currently allocated as Zone 4 (Natural Resource Conservation) that would change under Alternative B. Under Alternative B, these 57 sites would be managed on 22 redrawn parcels under different allocations. Eleven of the cultural sites would change from Zone 4 (Natural Resource Conservation) to Zone 2 (Project Operations), primarily to reflect existing rights-of-way. Thirty-six sites would change to Zone 3 (Sensitive Resource Management), which is an allocation offering the highest level of protection for cultural resources. Three sites would be managed as Zone 6 (Developed Recreation) and seven would be managed as Zone 7 (Shoreline Access), which are both zones with increased potential for development.
- There are three recorded cultural sites located on one parcel that is currently allocated as Zone 5 (Industrial). Under Alternative B, the parcel would be divided into three parcels, with one cultural site on each parcel. Two of the sites and parcels would be reallocated to Zone 6 (Developed Recreation), which is an allocation with similar potential for development. The remaining site and parcel would be managed under a Zone 4 (Natural Resource Conservation) allocation, which is an allocation that provides greater protection of the cultural site.
- There are three recorded cultural sites located on two parcels currently allocated as Zone 6 (Developed Recreation) that would be reallocated under Alternative B. Under Alternative B, TVA would manage the three sites on three parcels. Two sites would be on parcels reallocated as Zone 2 (Project Operations) to reflect existing infrastructure. One site would be on a parcel allocated as Zone 3 (Sensitive Resource Management), which provides greater protection of the cultural site.
- There are 10 recorded cultural sites located on eight TVA parcels currently allocated as Zone 7 (Shoreline Access) that would be reallocated under Alternative B. Under Alternative B, TVA would reallocate these eight parcels to either Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation), which are both allocations that would be offer greater protection of the cultural sites than the current allocation under Alternative A.

- One currently unallocated parcel would be allocated as Zone 5 (Industrial), an allocation which allows development.

In summary, the 70 previously recorded sites would be managed under Alternative B on 41 different TVA parcels. A majority of allocation changes (about 66%) under Alternative B would result in management that is similar or more protective of these cultural sites when compared to the current Tellico RLMP (Alternative A), while about 33% of allocation changes would increase the potential for disturbance or development of parcels with cultural sites (although some of these changes were made to reflect existing right-of-way and infrastructure, thereby resulting in no change). The one site on a parcel currently unallocated would also be managed under an allocation (Zone 5) with potential for industrial development.

Allocation changes during the planning process would not result in effects until such time as activities are proposed for parcels. As under Alternative A, regardless of the zone allocation given to a parcel under the RLMP, TVA Cultural Resources staff would review any proposed site-specific development of a parcel to determine whether the development would impact known and/or unknown historic properties. If the resources cannot be avoided, then further investigations would be required to determine the resources' eligibility for inclusion in the NRHP.

For any proposed undertaking, TVA would take necessary steps to ensure compliance with the regulatory requirements under NHPA and consider the development's effects as they are proposed. TVA will review each individual undertaking under the Section 106 Programmatic Agreement

3.10.2.3 Alternative C - Modified Proposed RLMP Alternative

Alternative C would be substantially the same as Alternative B except that fewer parcels would be identified for potential new development under Alternative B. Original parcel numbers 2, 3, 74 and a portion of parcel 44 would not be proposed for reallocation and would instead remain allocated as approved in the 2000 Tellico RLMP. One site (40LD105) is located on one of these parcels and would remain allocated as Zone 5 (Industrial), while another site (40MR167) located on a second parcel would remain allocated as Zone 4 (Natural Resource Conservation).

3.11. Managed and Natural Areas

3.11.1 Affected Environment

Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, U.S. Department of Agriculture, U.S. Forest Service, State of Tennessee) to protect and maintain certain ecological and/or recreational features. Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; Nationwide Rivers Inventory streams; and wild and scenic rivers. Ecologically significant sites are either tracts of privately owned land that are recognized by resource biologists as having significant environmental resources or identified tracts on TVA lands

that are ecologically significant but not specifically managed by TVA's Natural Areas program.

TVA currently retains approximately 12,787.6 acres around Tellico Reservoir. The preliminary allocation is proposing to reallocate approximately 2,075.0 acres of this land, or approximately 16.2%. A review of the TVA Natural Heritage database identified the following 26 managed and natural areas within, adjacent to, or within three miles of the TVA reservoir lands on Tellico:

- Bat Creek Knobs Farm
- Browder Woods Registered State Natural Area
- Cherokee (South) State Wildlife Management Area (WMA)
- Cherokee National Forest
- Chilhowee Reservoir Reservation
- Chilhowee Reservoir State Recreation Area
- Chota Peninsula State Wildlife Observation Area (region within the Tellico Lake State WMA)
- Citco Creek Scenic Area
- Cline Property - Foothills Land Conservancy
- Designated Critical Habitat - Smoky Madtom
- Knobs Farm Conservation Easement – Foothills Land Conservancy
- Foothills WMA
- Ft. Loudoun State Historical Area
- Hall Bend TVA Habitat Protection Area and Small Wild Area
- Jerry L Lay II Farms
- Kyker Bottoms Wildlife Management Area (TWRA)
- Lenoir City Park
- Little Tennessee River
- Little Toqua Creek
- McGee Carson Peninsula (region within the Tellico Lake State WMA)
- Mizell Cave
- Tapoco Lands Conservation Area Easement – Nature Conservancy Conservation Easement
- Tellico Bluff TVA Ecological Study Area
- Tellico Lake State WMA
- Tellico River
- Tellico River Nonessential Experimental Fish Population

Of all Natural Areas on Tellico Reservoir within 3 miles of TVA lands, there are five Natural Areas that intersect with TVA parcels that are proposed to be reallocate from a land use zone with little development potential (Zones 3 and 4) to a zone with greater development potential (Zones 2, 5, 6, 7). These five Natural Areas are:

- Chota Peninsula State Wildlife Observation Area
- Fort Loudoun State Historic Area
- Little Tennessee River
- Tellico Lake State WMA
- Tellico River

Notably, two of these Natural Areas are the Tellico and Little Tennessee Rivers, which are arms of Tellico Reservoir; thus, the reservoir itself is considered a Natural Area under TVA's Natural Areas program.

3.11.2 Environmental Effects

Under these alternatives, between 72.1 and 73.3% of TVA land along the reservoirs is proposed for allocation to Zones 3 and 4; nearly three-fourths of TVA lands have management objectives that support and enhance the character of natural areas. Natural areas situated on property proposed for allocation to Zones 3 and 4 are managed for the protection and enhancement of resources and are not subject to adverse impacts; therefore properties located within these zones would remain "natural" and not be converted to other land uses, preserving the natural areas. Potential adverse impacts to a parcel and therefore, natural areas within or adjacent to the TVA parcel, could result from TVA proposed allocation changes from a zone with little development potential or fewer uses (Zones 3 and 4) to a zone with greater development potential or more uses (Zones 2, 5, 6, or 7).

3.11.2.1 Alternative A – No Action Alternative

Under the No Action Alternative, the proposed project allocation changes would not be implemented and no impacts on natural areas would be anticipated. Therefore, there would be no direct, indirect, or cumulative impact changes to Natural Areas from the 2000 RLMP and its parcel allocations. TVA would continue to manage these parcels consistent with allocations in the 2000 Tellico RLMP.

3.11.2.2 Alternative B - Proposed RLMP Alternative

Under Alternative B, TVA would amend the 2000 Tellico RLMP by reallocating land use zones on 102 parcels affecting approximately 2,075.0 acres (16.2%) of the 12,787.6 acres of TVA-managed public lands on Tellico Reservoir. Because there is greatest potential for an impact to a Natural Area when that area is within or intersects a TVA parcel, TVA narrowed its review to TVA parcels with Natural Areas intersecting the parcel and that would be reallocated from a zone with less potential impact (i.e., less intensive land uses) to a zone with greater potential for impacts (i.e., more intensive land uses). There are four Natural Areas that intersect with TVA parcels that are proposed to be reallocate from a less intensive land use zone (Zones 3 and 4) to a more intensive zone with development potential (Zones 2, 5, 6, and 7), as summarized below. See Table 3.11 for a list of these proposed allocation changes under Alternative B.

- Tellico Lake State WMA overlaps with multiple parcels.
- The Little Tennessee intersects new Parcel 51, which would be re-allocated from a Zone 4 (Natural Resource Conservation) to a Zone 2 (Project Operations). The Little Tennessee is in the Nationwide Rivers Inventory.
- The Chota Peninsula State Wildlife Observation Area overlaps with new Parcel 83 and would be reallocated from Zone 4 to Zone 2, and Parcel 84 would be changed from Zone 4 to Zone 6 (Developed Recreation); Chota is a unit of the Tellico Lake State WMA.
- The Tellico River intersects new Parcel 115, which would be comprised of several parcels with changes from Zones 4 and 3 to Zone 2. The Tellico River is in the Nationwide Rivers Inventory.

Table 3.11 provides a list of parcels that would be allocated to a more intensive land use under Alternative B that would also be intersected by a Natural Area.

Table 3.11 Natural Areas that Intersect Parcels that would be Reallocated to More Intensive Uses (Alternative B)

Parcel	Current allocation	Proposed Allocation Change Description	New Parcel #	Natural/Managed Area intersecting TVA Parcels
58	Zone 4	Zone 2 (30.72 acres) to reflect existing road ROW	Parcel 51	Tellico Lake State WMA
				Little Tennessee River
79	Zone 4	Zone 7 (2.39 acres) to reflect existing private easement	Parcel 85	Tellico Lake State WMA
79	Zone 4	Zone 2 (58.29 acres) to reflect existing road ROW	Parcel 57	Tellico Lake State WMA
			Parcel 74	Tellico Lake State WMA
			Parcel 78	Tellico Lake State WMA
			Parcel 83	Tellico Lake State WMA
				Chota Peninsula State Wildlife Observation Area
			Parcel 86	Tellico Lake State WMA
79	Zone 4	Zone 6 (5.4 acres) to correct administrative errors and reflect two recreation easements in place	Parcel 75	Tellico Lake State WMA
			Parcel 76	Tellico Lake State WMA
80	Zone 4	Zone 6 (0.12 acres) to correct an administrative error	Parcel 84	Tellico Lake State WMA
				Chota Peninsula State Wildlife Observation Area
85	Zone 4	Zone 2 (1.91 acres) to reflect existing road ROW	Parcel 78	Tellico Lake State WMA
104	Zone 4	Zone 2 (1.84 acres) to reflect existing road ROW	Parcel 88	Tellico Lake State WMA
104	Zone 4	Zone 6 (0.65 acres) for potential future recreation	Parcel 92	Tellico Lake State WMA
134	Zone 4	Zone 2 (1.2 acres) to reflect existing road ROW	Parcel 115	Tellico River

Parcel	Current allocation	Proposed Allocation Change Description	New Parcel #	Natural/Managed Area intersecting TVA Parcels
135	Zone 3	Zone 2 (1.31 acres) to reflect existing road ROW	Parcel 115	Tellico River
137	Zone 3	Zone 2 (1.86 acres) to reflect existing road ROW	Parcel 115	Tellico River
N/A	N/A	Previously unallocated TVA lands to be Zone 5 (11.12 acres)	Parcel 47	Tellico Lake State WMA

As shown in the table, almost all of the allocation changes are proposed to ensure the Tellico RLMP reflects existing road ROW or easement rights. Seven allocations would be changes to Zone 2 (Project Operations) to reflect existing road ROWs. Two areas (less than 6 acres in total) would be allocated to Zone 6 (Developed Recreation) to reflect existing recreation easements or correct an administrative error in the 2000 RLMP, and one area (2.39 acres) would be allocated to Zone 7 (Shoreline Access) to reflect an existing easement (another correction to the previous plan).

Of the proposed changes wherein a Natural Area intersects with a parcel, one proposed allocation change has potential to affect a Natural Area, the Tellico Lake State WMA. TVA would reallocate parcel 104 from Zone 4 to Zone 6 for future potential recreation development. However, this change is proposed so that a small area (0.65 acres in size) could be utilized in the future management of the Tellico Lake State WMA. Therefore, this change would have a minor beneficial effect to the management of the WMA.

Previously unallocated lands (new Parcel 47, approximately 11.12 acres) would be designated Zone 5 (Industrial) under Alternative B; these lands intersect with the Tellico Lake State WMA as well. The land is proposed for industrial use to reflect that TVA sold the backlying lands to TRDA for future industrial use. The effects of this allocation would be minor, given the current condition of the location.

Therefore, of the parcels that are intersected by a Natural Area and would be reallocated to a more intensive use, the impacts would be primarily neutral in nature, given that most allocations are proposed to reflect existing conditions or easements or to correct errors. Minor benefits would occur under one allocation. Only under one allocation (new Parcel 47) is there potential for a minor adverse effect to a Natural Area.

TVA also considered whether parcels adjacent to Natural Areas would be affected by a reallocation under Alternative B. In 40 instances, allocations would change for parcels that are adjacent to Natural Areas. In almost every instance, the allocation change is proposed to reflect existing easement rights, existing road ROWs or existing conditions. In the majority of those cases, the adjacent Natural Area is either the Tellico River or the Little

Tennessee River arm of Tellico Reservoir. The Tellico Lake State WMA is adjacent to several of these reallocated parcels. Almost all reallocations where there is an adjacent Natural Area reflect existing easement rights, existing road ROWs, or an existing land use; these are reallocations unlikely to result in any environmental changes compared to the current RLMP (Alternative A).

Generally, the proposed reallocations most likely to affect Natural Areas, whether those that intersect or are adjacent to reallocated TVA parcels, would result in negligible to minor effects to Natural Areas on Tellico Reservoir. Proposed changes to parcel allocations intersecting or adjacent to Natural Areas would affect a very small number of areas. As noted above, almost three-quarters of TVA lands would remain under protective or conservation management, therefore ensuring that the majority of TVA parcels on Tellico Reservoir would remain natural and managed in a way that preserves Natural Areas.

3.11.2.3 Alternative C - Modified Proposed RLMP Alternative

The potential effects to Natural Areas under Alternative C would be substantially the same as Alternative B, except that fewer parcels would be identified for potential new development under Alternative B. Like under Alternative B, there would be no additional adverse effects to Natural Areas under Alternative C.

3.12. Visual Resources

3.12.1 Affected Environment

This section provides a review and classification of the visual attributes of existing scenery, along with the anticipated attributes resulting from the proposed action. The classification criteria used in this analysis are adapted from a scenic management system developed by the U.S. Forest Service and integrated with planning methods used by TVA (U.S. Forest Service 1995). This analysis was included in the 2000 EIS and is incorporated by reference.

The visual landscape of an area is formed by physical, biological and man-made features that combine to influence both landscape identifiability and uniqueness. Scenic resources within a landscape are evaluated based on a number of factors that include scenic attractiveness, integrity and visibility. Scenic attractiveness is a measure of scenic quality based on human perceptions of intrinsic beauty as expressed in the forms, colors, textures and visual composition of each landscape. Scenic integrity is a measure of scenic importance based on the degree of visual unity and wholeness of the natural landscape character. The varied combinations of natural features and human alterations both shape landscape character and help define their scenic importance. The subjective perceptions of a landscape's aesthetic quality and sense of place is dependent on where and how it is viewed.

Scenic visibility of a landscape may be described in terms of three distance contexts: (1) foreground, (2) middleground and (3) background. In the foreground, an area within 0.5 mile of the observer, individual details of specific objects are important and easily distinguished. In the middleground, from 0.5 to 4 miles from the observer, object characteristics are distinguishable but their details are weak and they tend to merge into

larger patterns. In the distant part of the landscape, the background, details and colors of objects are not normally discernible unless they are especially large, standing alone, or have a substantial color contrast. In this review, the background is measured as 4 to 10 miles from the observer. Visual and aesthetic impacts associated with a particular action may occur as a result of the introduction of a feature that is not consistent with the existing viewshed. Consequently, the character of an existing site is an important factor in evaluating potential visual impacts.

Tellico Reservoir includes a variety of landscapes and natural features, including rivers, floodplains, islands, wetlands, and forests. Since the scenic features of the landscape around the reservoir are not limited by parcel boundaries, the aesthetics of the landscape extend across public and private land alike and combine with the adjacent land uses. The reservoir land has a mix of new homes, industrial development, new highways, and an ever-growing, lake-oriented recreational use. However, despite the changes that have occurred since impoundment of the Little Tennessee River in 1979, the valley-to-mountain setting is the valued, scenic resource that is still evident and dominant.

The reservoir offers abundant water-recreation opportunities; therefore the view of the landscape from on the water is important and can vary widely. Most creek embayments are broadly open at the mouth, while some wind over a greater distance to their headwaters.

Among the scenic resources of the reservoir, the water body itself is the most distinct and outstanding aesthetic feature. The horizontal surface provides visual balance and contrast to the islands and wooded hillsides. The reservoir weaves around ridges and bends, changing views periodically seen from the water. The reservoir also links the other landscape features together. To most observers, views across the water are generally satisfying and peaceful.

Islands are significant scenic features of Tellico Reservoir. These islands typically provide scenic accents and visual reference points throughout the reservoir and commonly serve as visual buffers for less desirable views. They may also provide a pleasing foreground frame for the distant shoreline or background. Other important scenic features include the secluded coves and steep, wooded ridges that occur around the reservoir. The isolated coves with wooded shoreline provide relatively private locations for dispersed recreation activities. Elevation changes along some stretches of shoreline provide a dramatic contrast to the surrounding reservoir and gently sloping countryside, particularly when they are viewed from background distances.

Most shorelines of the reservoir appear natural. Slopes and ridgelines seen from the reservoir are generally heavily vegetated with mature hardwood and evergreen trees and provide positive visual contrast to the reservoirs. On portions of the reservoir, there is development in the foreground distances.

Various combinations of development and land use patterns that are present in the viewed landscapes along the shoreline of the reservoir contribute to the overall visual character of the project area. These can range from the commercial and industrial developments to residential developments. Commercial and industrial developments generally create a lower level of scenic integrity. Residential areas and water-related facilities that include

docks, boathouses, stairways, and shoreline protection structures are becoming more common and reduce scenic integrity.

Land set aside through previous reservoir planning efforts and subsequent plan modifications (e.g., Rarity Bay) made available homesites in planned communities that take advantage of shoreline and backlying, lake view building sites. These controlled development efforts have resulted in visually acceptable subdivisions where uniform colors and building materials for the most part blend with the surroundings. While these homesites with their associated docking and lake use facilities are a visual departure from the previous landscape, their adherence to planned development has made them more visually acceptable. It is commonplace to see boaters idling along the shoreline admiring these lakefront homesites. Some scenic value exists for the shoreline viewer in viewing a passing boat or watching a fisherman sit quietly in an adjacent cove. However, at times boat traffic, personal watercraft operation, or a bass tournament "blast off" may greatly decrease the scenic/aesthetic values associated with the reservoir.

The Tellico dam structure contrasts visually with the lands that border them. The structure appears predominately industrial near the dam and its associated features. Transmission structures, including towers and lines, and fossil and nuclear plant structures generally can be seen up to middle-ground distances, depending on topography and viewer position. Farther away, closer to the borders on all sides, the landscape becomes natural appearing with slight human alterations. Residents and motorists along local roads have views up to middle-ground distances of the dam, depending on seasonal variations of vegetation and atmospheric conditions.

Industrial development currently exists in the midportion of the reservoir near the Highway 411 crossing and the town of Vonore. Most of this development is light industry and lies within planned industrial parks. Rail service exists in the area and a railroad bridge is visible just downstream of the Highway 411 bridge. Some of the boat manufacturing plants which are shoreline based have taken care to blend their facilities in ways that make them more visually appealing to the lake user.

Just upstream of Highway 411 are the British Fort Loudoun and the Tellico Blockhouse restorations which make up the Fort Loudoun State Historic Area. The Sequoyah Museum, owned by the Eastern Band of the Cherokee Indians, is also located in this area. The portion of Highway 411 that crosses the reservoir at this point and Highway 321 that connects Maryville to Lenoir City have the state's Scenic Parkway designation. A short distance upstream of the state park, the reservoir narrows, and the viewer experiences passing from the openness of the Toqua area into the foothills and backlying mountains of the Cherokee National Forest. Water temperature drops noticeably at this point, the shoreline is less developed, and the viewer can enjoy the scenic resources of the Tellico Reservoir Wildlife Management Area. Relatively few residences can be seen along this reach of the reservoir where it quickly returns to a clear, riverine character ending abruptly at Tallahassee and the Chilhowee Dam.

Areas of the reservoir which hold the greatest scenic value are those not yet developed, those that are a homeowner's predominant view, and the distinctive features in the landscape that are seen by the lake user and adjacent highway traveler. Undeveloped

coves which allow the boater an anchorage in calm water, scenic bluffs and steep shoreline exhibiting rock outcroppings, and unusual vegetative growth are held by the public as the most valuable of the reservoir's scenic resources. Twenty-nine miles of shoreline (as described under Alternative A below), have excellent and distinctive visual qualities (TVA 2000a).

3.12.2 Environmental Effects

The scenic value or quality of visual resources commonly is based on human perceptions of intrinsic beauty as expressed in the forms, colors, textures, and visual composition seen in each landscape. Human perceptions of shoreline development no doubt varies widely among users and recreationists depending on their preferences and expectations. The assessment of scenic quality is often evaluated using scenic attractiveness (e.g., outstanding natural features, scenic variety, seasonal change, and strategic location), scenic integrity (e.g., visual unity and wholeness of the natural landscape character), human sensitivity (e.g., the expressed concern of people for the scenic qualities of the project area derived or confirmed by public input), and viewing distance (i.e., how far an area can be seen by observers and the degree of visible detail). The impacts of the alternatives on visual resources were qualitatively evaluated considering the scenic quality characteristics described above. These measures help identify changes in visual character based on commonly held perceptions of landscape beauty and the aesthetic sense of place. Scenic Value Class is determined by combining the levels of scenic attractiveness, scenic integrity, and visibility.

The scenic character of wildlife management areas, islands, and wetlands would be preserved under both alternatives. This would preserve the scenic accent, attractive contrast, and visual richness these resources contribute to reservoir vistas. Several areas of the reservoirs would benefit as major sections of the riverine upper reservoirs would be protected or screened from further development. This would preserve the variety of natural features including the river, forest-covered mountainside along the banks, linear channel islands, and ridge landforms. The combined contributions of these attractive features would help sustain the scenic landscape character and aesthetically pleasing sense of place.

Because over 99% of the 361 miles of shoreline on Tellico Reservoir are owned by TVA, TVA land management decisions greatly influence the scenic character of the reservoir. RLMPs generally enhance conservation and protection of scenic resources as scenic values were considered during the allocation process. For instance, parcels having distinctive and valuable visual characteristics such as islands, rock bluffs, steep and wooded ridges, wetlands, and flowing shallow water areas were typically allocated to either Zone 3 (Sensitive Resource Management) or Zone 4 (Natural Resource Conservation). These Zone 3 and 4 lands typically provide valuable protective screening and important scenic buffers.

Lands having the greatest scenic qualities are often the most desirable for public preservation. Frequently, however, they are also the most sought-after for commercial and residential development. Under both alternatives, TVA would continue to conduct environmental reviews, including evaluation for potential visual impacts, prior to the approval of any proposed development on public land. These reviews may prevent the

most serious scenic disruptions or loss of visual resources by requiring mitigation measures to reduce potentially significant visual impacts.

3.12.2.1 Alternative A – No Action Alternative

Under the No Action Alternative, the allocation of selected lands based upon visual resource conservation concerns would continue to be based on the current RLMP developed in 2000. While the RLMP may not fully incorporate the current aesthetic resources within the reservoir that may have changed since 2000, the continued management by TVA of lands on Tellico Reservoir is unlikely to result in noticeable changes to visual resources of the reservoir.

Where TVA has custody of the land, future actions of TVA would be evaluated to determine potential visual effects prior to land use approval, thereby preventing serious visual disruptions or loss of scenic resources. Approval of some activities may also require avoidance or mitigation measures that reduce visual impacts, for example in the case of neighboring historic properties. Activities could also occur on lands adjacent to those owned by TVA that could change the aesthetic quality within the reservoir. There are no known county or local ordinances to protect aesthetics near Tellico Reservoir.

TVA would continue to apply guidelines developed for the 2000 RLMP to preserve the natural riverine settings of the Tellico River Corridor (Tellico River Miles 13.3-20.7). These guidelines, applied by TVA when reviewing applications for water-use facilities in the corridor, would continue to reduce visual impacts of such facilities along this corridor and preserve the area's scenic qualities.

3.12.2.2 Alternative B – Proposed RLMP Alternative

Under Alternative B, there would be minor changes in scenic resources on Tellico Reservoir. TVA would change allocations of approximately 2,075.0 acres of land (about 16.2% of TVA-managed lands on the reservoir). While the effects of Alternative B to visual resources would be limited to these parcels, many of the proposed changes are proposed in order for the RLMP to reflect existing land uses. For instance, while there would be an addition of 341.9 acres of land allocated Zone 2 (Project Operations), most (over 303 acres) of these areas are allocated due to existing road rights-of-way; an allocation change to reflect an existing use would have no effect to visual resources.

As a percentage of all TVA-managed lands on Tellico Reservoir (see Table 2.4), there would be a nominal increase in lands allocated to Zone 3 under Alternative B (0.4% decrease). For the Zone 3 allocation, TVA manages for protection of sensitive resources; Zone 3 has the greatest potential of the seven land use zones to result in beneficial changes to the scenic values within the vicinity of those parcels. The decreased acreage from Zone 4 (Natural Resource Conservation), which also provides protection of scenic resources, is primarily due to the reallocation of road ROWs and Safety Landings to Zone 2 as those were predominantly zoned for Natural Resource Conservation in the 2000 RLMP. Thus, the Zone 4 allocation changes would result in nominal to minor localized changes in visual resources.

The decrease under Alternative B of lands allocated as Zone 5 (Industrial) and Zone 7 (Shoreline Access) would result in beneficial impacts on visual resources, because there is increased potential for activities that may diminish scenic values in these two zones. However, the decrease in these zones is minor (i.e., a decrease of 0.8% of lands allocated as Zone 5 and 0.7% under Zone 7). There would be a negligible change in area allocated to Zone 6 (Developed Recreation) under Alternative B (i.e., about 12 additional acres or 0.1% of TVA-lands on Tellico Reservoir). Requests to allocate several parcels as Zone 6 (Developed Recreation) have greatest potential to result in changes to the scenic values within the vicinity of these parcels (Parcels 2 and 3, portions of Parcels 44, 56, and 74). Over 100 acres on these parcels would be changed from Zone 4 (Natural Resource Conservation) to Zone 6 (Developed Recreation)

Under Alternative B, TVA would continue to apply guidelines developed for the 2000 RLMP to preserve the natural riverine settings of the Tellico River Corridor (Tellico River Miles 13.3-20.7), thereby reducing visual impacts of water-based facilities in the corridor.

Generally, there would be minor effects on visual resources under Alternative B, although localized effects may be moderate, where new land use allocations allow for development.

3.12.2.3 Alternative C - Modified Proposed RLMP Alternative

Alternative C would be substantially the same as Alternative B except that fewer parcels would be identified for potential new development under Alternative B. Under Alternative C, TVA would not revise the allocations of parcels 2, 3, and 74 and a portion of parcel 44; these parcels would remain in the allocation identified in the 2000 Tellico RLMP.

Under Alternative C, Parcel 2 would be allocated to Zone 7 (Shoreline Access), Parcels 3 and 74 would be allocated to Zone 4 (Natural Resource Conservation), and a 64-acre portion of Parcel 44 would remain allocated as Zone 5, as approved in the 2000 Tellico RLMP.

As shown in Table 2.4, there would be minor changes to allocations under this alternative compared to the Alternatives A and B. The percentage of lands allocated to Zones 2, 3 and 7 would be the same for Alternatives B and C (i.e., the change from Alternative A would be the same). Under Alternative C, there would more acres allocated under Zone 4 than under Alternative B, which represents a negligible beneficial effect for visual resources. However, there would be more areas allocated under Zones 5 and 6 under Alternative C than under Alternative B. While both Zones 5 and 6 would allow similar development activities, affecting visual resources similarly, the interest by local officials in developing Parcels 2, 3, 74 and a portion of Parcel 44 makes the development of those areas more likely to be developed under Alternative B, than if the areas remain as allocated under Alternatives A and C. Therefore, while the effects of Alternative C would be similar to Alternative B, there would be slightly fewer impacts to visual resources under Alternative C than Alternative B. Those impacts would be associated entirely with potential changes to visual resources of Parcels 2, 3, 74 and 44.

3.13. Socioeconomics

3.13.1 Affected Environment

The Tellico Reservoir lies in Blount, Loudon, and Monroe Counties in east Tennessee, largely within the western part of the Knoxville metropolitan statistical area, and well within the Knoxville labor market area.

The 2020 population of the three counties in the Tellico area is estimated by the U. S. Bureau of the Census to be 236,416, a 28.6% increase over the 2000 population of 183,859. This growth rate is faster than that of the state, which is estimated to have grown by 21.5%, and the nation, which is estimated to have grown by 18.2% (UTK 2021b). Over the past 10 years, growth is greatest in the northern and western counties within the review area, with an 11.3% increase in the population of Blount County and an 8.1% increase in the population of Loudon County between 2010 and 2020 (USCB 2021). Monroe County's population grew by 4.6% during this period (USCB 2021).

This general growth pattern is expected to continue. As noted in the Recreation discussion above, the population for this three-county region is projected to reach 266,446 by 2040, an increase of 12.7% over 20 years (UTK 2021a). The continued growth of the population within the region is expected to lead to continued increases in demand for both dispersed and developed outdoor recreation. The major population centers near the reservoir are Knoxville in Knox County and Oak Ridge in Anderson County. Smaller population centers are Maryville and Alcoa in Blount County, Lenoir City and Loudon in Loudon County, and Madisonville and Sweetwater in Monroe County.

In 2021, the civilian labor force of the three-county area was over 101,000, as shown in Table 3.12. Of those, over 4,100 were unemployed, for an unemployment rate of 4.4%. The unemployment rates of Blount and Loudon Counties were similar at 3.89 and 3.85% respectively. Monroe County had a higher unemployment rate of 5.84%. The unemployment rate for the area, as a whole, was lower than both the state and national rates.

Table 3.12 Tellico Area, Labor Force Data, 2020 Annual Average

County	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Blount	61,568	57,555	4,013	3.89%
Loudon	21,420	19,812	1,608	3.85%
Monroe	18,695	16,539	2,156	5.84%
Area Total	**101,799**	**93906**	**4,167**	**4.43%**
Tennessee	**3,175,503**	**2,937,131**	**238,372**	**4.56%**
United States	**160,744,000**	**152,344,000**	**8,400,000**	**5.2%**

Source: US Census, QuickFacts (USCB 2021); U.S. Bureau of Labor Statistics (BLS 2021)

Income levels within the three-county area vary, with residents of Monroe County more likely to be in poverty and have lower incomes when compared to the other two counties, to the rest of Tennessee and the United States (Table 3.13). The upper reaches of Tellico Reservoir in Monroe County (above the town of Vonore and along the Little Tennessee River) have the highest concentration of lower-income residents, with approximately 43% of the population considered low income (EPA 2021c).

Monroe County is also more rural than Blount and Loudon counties. The population of the counties is predominantly white, with minority populations of less than 7%. The percentage of minority populations in the three counties is far smaller than state and national averages.

Table 3.13 Tellico Area, Population Characteristics

	Blount	Loudon	Monroe	Tennessee	United States
Per capita income in past 12 months (in 2019 dollars), 2015-2019	$30,548	$31,478	$23,207	$29,859	$34,103
Persons in poverty, percent	10.5	9.7	16.5	13.9	11.4
Population per square mile, 2010	220.2	211.8	70	153.9	87.4
White	93.7	95.4	94.8	78.4	76.3
Black or African American	3	1.6	2.2	17.1	13.4
American Indian or Native Alaskan	0.4	0.6	0.7	0.5	1.3
Asian	1	0.9	.4	2	5.9
Native Hawaiian or Pacific Island	0.1	0.2	0.1	0.1	0.2
2 or more races	1.7	1.3	1.8	2	2.8
Hispanic or Latino	3.6	9.2	4.6	5.7	18.5

Source: USCB 2021.

Occupations within Blount and Loudon counties are similarly proportionate, as shown in Table 3.14 below. Monroe County, however, has fewer management/business occupations but a higher percentage of those employed in production, transportation and material moving occupations. Service occupations are similarly proportioned across the three counties.

Table 3.14 Tellico Area, County Occupation Profiles

County	Civilian Employed Population 16 Years and Over	Management and Business Science and Arts	Service Occupations	Sales and Office	Natural Resources, Construction, and Maintenance	Production, Transportation and Material Moving
Blount, TN	60,847	19,380 (31.9%)	10,648 (17.5%)	15,006 (24.7%)	5,965 (9.8%)	9,848 (16.2%
Loudon, TN	21,396	6,103 (28.5%)	3,874 (18.1%)	4,650 (21.7%)	2,446 (11.4%)	4,323 (20.2%)
Monroe, TN	17,730	4,092 (23.1%)	3,080 (17.4%)	3,474 (19.6%)	2,076 (11.7%)	5,008 (28.2%)

Source: USCB 2019.

Providing accessible natural resources and recreational opportunities for the people of the Tennessee Valley is a key component of the TVA stewardship mission. Management of TVA land for recreational use as well as for preservation of cultural and natural resources contributes to the local economy through promotion of tourism. TVA reservoirs and the land surrounding them support a variety of recreational activities including camping, hiking, fishing, swimming and boating. These opportunities attract millions of visitors each year which has positive direct and indirect impact on the local economies around the reservoirs (TVA 2016). Positive direct impacts include expenditures at marinas, hotels and other businesses. Indirect impacts of tourism affect most sectors of the economy including secondary sales, income and employment within the region.

3.13.2 Environmental Effects

Potential socioeconomic impacts of the Tellico RLMP would be associated with direct effects of jobs created by development on TVA-managed lands that would support future development (e.g., development of industrial facilities, campgrounds, marinas, etc.). Effects to socioeconomics could also occur because of changes in developed and dispersed recreation opportunities, as well as changes in the overall attractiveness of the area as a place to live or visit. Additionally, there could be indirect effects associated with population growth in response to new development and changes in tax revenues, employment and property values.

The TVA Land Policy clarifies the availability of TVA-managed lands for industrial, residential, and recreational uses, which in turn determines the potential for development. However, future industrial, commercial, and residential development is likely to occur in the region on private land, regardless of the uses and availability of TVA public lands.

3.13.2.1 Alternative A - No Action Alternative

Under Alternative A, TVA would continue to manage its public lands on Tellico Reservoir according to the 2000 RLMP. TVA incorporates the analysis of the 2000 EIS pertaining to the potential impacts of the RLMP, which found that, generally, the allocations provide for recreation uses and additional recreation development with some positive impact on local income and employment. Yet, the effects of TVA allocations would be unlikely to have a

discernible impact on the local economy because many of the activities that could occur on developable TVA lands may occur nearby on non-TVA lands.

3.13.2.2 Alternative B - Proposed RLMP Alternative

Compared to Alternative A, this alternative would include allocation changes that could slightly decrease opportunity for development that could impact the local economy and residents. Zone 7 (Shoreline Access) allocations would decrease slightly (by 0.7%) and Zone 5 (Industrial) allocations would decrease by 0.8% as well. There would be about 12 additional acres made available to developed recreation under this alternative, representing an increase in Zone 6 (Developed Recreation) of 0.1% under this alternative compared to the 2000 RLMP.

As described in Section 2.4.1 above, local stakeholders and officials have requested that TVA change allocations of four parcels (parcels 2 and 3, and portions of parcels 44, and 74) to provide for additional developed recreation, which suggests that under Alternative B, the potential for economic impacts are greater than other alternatives. Developed recreation at these parcels would result in temporary job creation during construction and long-term jobs associated with the recreational services provided. Visitation and tourism may increase from such development. These effects would provide a marginal benefit to the local economy and would be subject to additional economic and environmental review as specific proposals for development are considered in the future.

Similar to TVA's conclusion in 2000, when issuing the previous Tellico RLMP, there would be no important difference among the alternatives with regard to impacts on minority and low-income populations (TVA 2000a). TVA proposes only minor changes to allocations of lands within the portion of Monroe County with a greater proportion of low income populations (above Vonore and along the Little Tennessee River arm). Under this alternative, there would continue to be large amounts of land available to the public and there would be no impacts that would disproportionately affect minorities or low-income residents within the three-county area.

3.13.2.3 Alternative C - Modified Proposed RLMP Alternative

Socioeconomic impacts associated with Alternative C would be similar to those of Alternative A. The four parcel allocation changes requested by local stakeholders and officials would not take place under Alternative C, thereby decreasing the potential for developed recreation of these areas. Alternative C would have slightly greater allocations that could provide for development of TVA lands (under Zones 5, 6 and 7) than Alternative A but fewer allocations than Alternative B. As with Alternative B, there would be no impacts under this alternative that would disproportionately affect minorities or low-income residents.

3.14. Cumulative Impacts

Future cumulative impacts can result not only from possible actions of TVA in accordance with the proposed reallocation of lands under Alternative A, B, or C but also from those of other agencies and the public. However, the assessment of potential impacts from land use allocations and allocation changes is inherent in the analyses performed for each of the resource sections considered in Chapter 3. Therefore, this cumulative effects analysis

considers the effects of potential future actions by others based on general trends that are anticipated within the Tellico Reservoir area and the counties it is located in.

Anticipated trends within the region surrounding Tellico Reservoir include increasing populations, increased demand for developed and dispersed recreation opportunities, and some further development of rural areas. It is expected that federal, state, and local agencies as well as some conservation organizations will continue efforts to conserve natural resources while providing dispersed recreation opportunities and selected areas for accommodating developed recreation. On Tellico Reservoir, a large percentage of reservoir lands will continue to be allocated to Zones 3 and 4 and will be managed to protect and maintain their natural character. In addition, the construction of recreation amenities to accommodate dispersed and developed recreation would be subject to environmental analysis and potential impacts associated with proposed actions would be subject to applicable BMPs and other mitigation actions to minimize potential impacts on sensitive resources. For these reasons, cumulative impacts related to developed and dispersed recreation are expected to be minor.

Regional resource quality is influenced by the aggregate actions of all landowners within the reservoir's watershed. For instance, increasing population, increasing demand for recreational opportunities, and the conversion of undeveloped land for residential, commercial, and industrial purposes all lend themselves to a possible cumulative impact on water quality. State agency efforts would also include reducing regional impacts to water quality through the total maximum daily load, water quality certifications, and other programs. Shoreline development spurred by population growth and the desire for more recreational activities can cause increased impervious surfaces, extensive clearing and grading, and possible point source pollution to the adjoining reservoir. Development in the watershed on non-TVA lands also has the potential to influence water quality within the reservoir by increasing loading of pollutants that drain onto TVA lands.

However, regulatory guidelines from the state and federal governments, municipal/local programs, and TVA's monitoring programs help mitigate the magnitude of possible impacts, resulting in an expectation that cumulative impacts to environmental resources would be minor. For instance, planned or foreseeable developments would also be subject to environmental regulation (CWA jurisdiction), ensuring current and foreseeable wetland impacts are considered, permitted, and/or mitigated in accordance with wetland regulations. This regulatory oversight ensures maintenance of the chemical, biological, and physical integrity of the aquatic environment, including wetlands, within the Tellico River watershed long term. Cumulative effects are considered in the CWA permitting process to ensure individual wetland impacts do not collectively result in degradation to the nation's waters, including wetland resources. In addition, TVA's Tellico RLMP has and would continue to emphasize the importance of wetland conservation and protection of wetland functions and values. Therefore, the proposed alternatives are not anticipated to contribute to detrimental cumulative wetland impacts at the watershed scale. Similarly, floodplain development would be subject to state and local floodplain regulations, as well as to TVA's Section 26a regulations and Flood Storage Loss Guideline and EO 11988, all of which serve to minimize adverse impacts to floodplains, residents, and property at the watershed scale.

New facilities with permitted discharges would be required to meet regulatory guidelines designed to prevent degradation of applicable water quality criteria, protection of endangered species, and preservation of cultural resources, among other factors. The efforts of federal and state water quality regulators, municipal/local programs, and others including TVA's own environmental monitoring programs would combine in an effort to offset threats to environmental resources from uncontrolled economic growth and development.

3.15. Unavoidable Adverse Environmental Effects

A decision on the proposed alternatives in this planning document would not in itself result in unavoidable adverse effects. Potential effects may occur later when specific future projects are proposed and implemented. Project-specific NEPA reviews will be conducted for these future proposed projects and unavoidable adverse effects would be determined at that time.

3.16. Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires consideration of the "relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR § 1502.16). For RLMPs, short-term uses generally are those that occur within a 10-year period, and long-term uses refers to later decades. Productivity is the capability of the land to provide beneficial outputs and values for future generations (e.g., industrial/business, recreational, or natural resource protection opportunities).

Generally, the land planning process results in few actions that adversely affect long-term productivity. Where practicable, TVA manages public lands for multiple uses, including recreation, natural resources, and protection of sensitive resources, for the goal of protecting these values for the public. Many changes are proposed to ensure that the allocation of land accurately reflects current use or property rights.

Commitments of the land for developed uses (e.g., residential, industrial facilities, certain project operations facilities, some types of recreational development) have potential to decrease the productivity of land for agriculture, forestry, wildlife, certain recreational activities, and other natural resources management actions. Because under Alternative B, more lands are proposed for potential development, that alternative has the greatest potential to result in adverse impacts to productivity of the land.

The allocation to Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation) increases the likelihood of long-term productivity of those lands. The percentage of lands allocated to Zone 3 (Sensitive Resource Management) and Zone 4 (Natural Resource Conservation) is approximately 73.3% under Alternative A, 72.1% under Alternative B, and approximately 72.7% under Alternative C. Alternative A provides slightly more potential for conserving the long-term productivity of these lands.

The scenic and recreational values of Tellico Reservoir are factors in attracting new residents and visitors to the region. The current regional trends of minor increasing population and development are expected to continue. New jobs and income would be

generated by spending activities of new residents and visitors, which may lead to enhanced long-term socioeconomic productivity. Allocation of lands to zones that enhance scenic and dispersed recreational uses (i.e., Zones 3 and 4) is greatest under Alternative A, while allocation to developed recreational uses is greatest under Alternative B.

3.17. Irreversible and Irretrievable Commitments of Resources

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be recovered or reversed. Irreversible is a term that describes the loss of future options and applies primarily to the effects of the use of nonrenewable resources that are only renewable over long periods of time. Irretrievable is a term that applies to the loss of production of renewable resources such as timber, agricultural land, or wildlife habitat as a result of the proposed action. The production lost is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume production.

A decision on the proposed alternatives in this planning document would not in itself result in irreversible and irretrievable commitments. TVA zone allocations are not irreversible or irretrievable commitments as zone allocations can be changed. Potential effects may occur later when specific future projects are proposed and implemented. Project-specific NEPA reviews will be conducted for proposed projects and irreversible and irretrievable commitments would be determined at that time. For example, construction of project operation, industrial, and recreational facilities/structures would involve irreversible commitment of fuel, energy, and building material resources. Use of these resources could occur in the future under both alternatives. However, irreversible impacts would be potentially greater under Alternative B due to the larger total number of acres allocated to Zones 2, 5, and 6 (Project Operations, Industrial, and Developed Recreation) as compared to the total acres allocated to those zones under Alternative A or Alternative C.

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APPENDIX A – TVA LAND POLICY

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POLICY GOVERNING THE TENNESSEE VALLEY AUTHORITY'S RETENTION, DISPOSAL AND PLANNING OF INTERESTS IN REAL PROPERTY

The Tennessee Valley Authority (TVA) has been charged by Congress with improving navigation, controlling floods, providing for the proper use of marginal lands, providing for industrial development and providing power at rates as low as feasible, all for the general purpose of fostering the physical, economic, and social development of the Tennessee Valley region. The lands which TVA stewards in the name of the United States are some of the most important resources of the region. They have provided the foundation for the great dams and reservoirs that protect the region from flooding and secure for its residents the benefits of a navigable waterway and low-cost hydro-electricity. TVA's lands are the sites for its power generating system and the arteries for delivering power to those that need it. Many of the region's parks, recreation areas, and wildlife refuges that are so important for the region's quality of life grew up from lands that TVA made available. Also, TVA's lands often have been the catalyst for public and private economic development activities that support all of these activities.

TVA originally acquired approximately 1.3 million acres of land in the Tennessee Valley. The construction and operation of the reservoir system inundates approximately 470,000 acres with water. TVA has already transferred or sold approximately 508,000 acres, the majority of which was transferred to other federal and state agencies for public uses. TVA currently owns approximately 293,000 acres which continue to be managed pursuant to the TVA Act.

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

Reservoir Properties

Land Planning- TVA shall continue to develop reservoir land management plans for its reservoir properties with substantial public input and with approval of the TVA Board of Directors. The land use allocations will be determined with consideration of the social, economic and environmental conditions around the reservoir. TVA shall consider changing a land use designation outside of the normal planning process only for water-access purposes for industrial or commercial recreation operations on privately owned back-lying land or to implement TVA's Shoreline Management Policy. Reservoir properties that have become fragmented from the reservoir will be evaluated to determine their public benefit. If

it is determined by TVA's Chief Executive Officer that these fragmented properties have little or no public benefit, they shall be declared surplus and sold at public auction to the highest bidder in the same manner as surplus power or commercial properties.

Residential Use- TVA shall not allocate lands or land rights for residential use or dispose of reservoir properties for residential use.

Economic Development- TVA shall consider disposing of reservoir lands or land rights for industrial purposes or other businesses if the TVA property is located in an existing industrial park, or is designated for such purposes in a current reservoir land management plan and verified as suitable for such use by RSO&E and ED staff in a property survey. The TVA Board directs staff to complete this survey within six months of the approval of this policy. The TVA Board recognizes that property with water access, for either navigation or water supply, is a limited resource in the Valley and has preference for businesses that require water access. Future reservoir land management plans will consider industrial development opportunities as land allocations are made. TVA shall consider disposing of non-waterfront reservoir properties in industrial parks for any purpose permitted by the industrial park covenants. TVA shall not allocate lands or land rights for retail use or dispose of reservoir land or land rights for such use.

Recreation- TVA shall consider leasing or granting limited easements over lands for the development of commercial recreation facilities or public recreation purposes if the property is so designated in a reservoir land management plan and a survey conducted by RSO&E determines that the site remains suitable for recreational uses and a continued need exists for such use. The TVA Board directs staff to complete this survey within six months of the approval of this policy. Commercial recreation is defined as recreation with facilities that are provided for a fee to the public intending to produce a profit for the owner/operator. Public recreation is defined as recreation on publicly owned land with facilities developed by a public agency (or their concessionaire) and provides amenities open to the general public.

Commercial Recreation- TVA leases or easements for commercial recreation purposes shall limit the use primarily to water-based recreation designed to enhance the recreation potential of the natural resources of the river and be a stimulus for regional economic development. TVA leases or easements for commercial recreation purposes will contain restrictions against residential use, and no long term accommodations or individually owned units will be permitted.

Public Recreation- TVA leases or easements for public recreation purposes will contain restrictions against residential use, cabins, or other overnight accommodations (other than campgrounds) except if a recreation area is owned by a State or State agency and operated as a component of a State Park system in which case cabins and other overnight accommodations will be permitted.

Deed Restrictions over Private Lands- The TVA Board recognizes that much of TVA's lands were transferred upon specific agreement among the parties to conduct activities that would enhance recreation opportunities in the Valley. TVA will continue to consider the release or modification of flowage rights no longer necessary to TVA to operate the river system. TVA will consider the removal or modification of deed provisions to facilitate industrial

development. TVA will also consider the removal or modification of deed restrictions that result in the public having recreational access to the tract, or if the tract is already open to the public, maintains that access. TVA will not remove or modify other deed restrictions for the purpose of facilitating residential development. To the extent permitted by the language of deed or other transfer or contractual instrument, TVA will administer its interest in former TVA land to achieve the goals of this policy.

Operational Uses of TVA Properties- TVA shall continue to utilize reservoir properties to meet the operational needs of the agency and its distributors as well as provide for public infrastructure needs such as roads, water and sewer lines, and other utilities, but will only consider requests for private infrastructure where TVA determines no other practicable alternative exists. Nothing in this policy is intended to prevent the disposal of tracts of land upon the recommendation of the General Counsel to settle claims or litigation or to address issues of contamination or potential contamination. In addition, TVA will continue to work with development agencies (and other partners) throughout the Valley to implement previously executed agreements.

Power & Commercial Properties

TVA's nonreservoir property—primarily power and commercial properties and mineral holdings--shall continue to be managed as power assets. The TVA Board directs staff to undertake a review of TVA mineral holdings for later policy consideration. Retention and disposal decisions will be primarily based on business considerations consistent with the TVA Act and other applicable requirements. TVA may enter into special arrangements with the distributors of TVA power. In addition, TVA may relinquish transmission line rights, if they are determined to be unnecessary for present or future operations and the current owner agrees to pay the enhanced fair market value of the property. In all other instances, TVA shall emphasize sales that generate the maximum competition among bidders at public auction and where possible shall not include use restrictions other than those designed to protect TVA's program interests or to meet legal or environmental requirements.

APPENDIX B – LISTED IMPAIRED WATERS IN THE LITTLE TENNESSEE RIVER WATERSHED

Appendix B - TDEC 303(d) Listed Impaired Waters in the Little Tennessee River Watershed

Waterbody ID	Impacted Waterbody	County	Water Type	Water Size (Acres)	Cause
TN06010204001_1000	Tellico Reservoir	Loudon	Lake/Reservoir/Pond	16500	POLYCHLORINATED BIPHENYLS (PCBS)
TN06010204001_1000	Tellico Reservoir	Monroe	Lake/Reservoir/Pond	16500	POLYCHLORINATED BIPHENYLS (PCBS)
TN06010204002_1000	Fork Creek	Loudon	River	19.3	ESCHERICHIA COLI (E. COLI)
TN06010204002_1000	Fork Creek	Monroe	River	19.3	ESCHERICHIA COLI (E. COLI)
TN06010204002_1000	Fork Creek	Loudon	River	19.3	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204002_1000	Fork Creek	Monroe	River	19.3	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204002_1000	Fork Creek	Loudon	River	19.3	SEDIMENTATION/SILTATION
TN06010204002_1000	Fork Creek	Monroe	River	19.3	SEDIMENTATION/SILTATION
TN06010204004_0100	Unnamed Trib to Bat Creek	Monroe	River	2.66	ESCHERICHIA COLI (E. COLI)
TN06010204004_0100	Unnamed Trib to Bat Creek	Monroe	River	2.66	PHOSPHORUS, TOTAL
TN06010204004_0100	Unnamed Trib to Bat Creek	Monroe	River	2.66	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204004_0110	Unnamed Trib to Unnamed Trib to Bat Creek	Monroe	River	2.54	ESCHERICHIA COLI (E. COLI)
TN06010204004_0110	Unnamed Trib to Unnamed Trib to Bat Creek	Monroe	River	2.54	PHOSPHORUS, TOTAL
TN06010204004_0110	Unnamed Trib to Unnamed Trib to Bat Creek	Monroe	River	2.54	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204004_0110	Unnamed Trib to Unnamed Trib to Bat Creek	Monroe	River	2.54	DISSOLVED OXYGEN
TN06010204004_1000	Bat Creek	Monroe	River	7.09	ESCHERICHIA COLI (E. COLI)
TN06010204004_1000	Bat Creek	Monroe	River	7.09	ESCHERICHIA COLI (E. COLI)
TN06010204004_2000	Bat Creek	Monroe	River	6.86	PHOSPHORUS, TOTAL
TN06010204004_2000	Bat Creek	Monroe	River	6.86	PHOSPHORUS, TOTAL
TN06010204004_2000	Bat Creek	Monroe	River	6.86	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204004_2000	Bat Creek	Monroe	River	6.86	NITRATE/NITRITE (NITRITE + NITRATE AS N)
TN06010204004_2000	Bat Creek	Monroe	River	6.86	ESCHERICHIA COLI (E. COLI)
TN06010204004_2000	Bat Creek	Monroe	River	6.86	ESCHERICHIA COLI (E. COLI)

Waterbody ID	Impacted Waterbody	County	Water Type	Water Size (Acres)	Cause
TN06010204020_1000	Little Tennessee River	Monroe	River	1.1	FLOW REGIME MODIFICATION
TN06010204020_1000	Little Tennessee River	Blount	River	1.1	FLOW REGIME MODIFICATION
TN06010204039_1000	Abrams Creek	Blount	River	13.18	MERCURY
TN06010204042_0100	Centenary Creek	Blount	River	6.13	ESCHERICHIA COLI (E. COLI)
TN06010204042_0100	Centenary Creek	Blount	River	6.13	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS
TN06010204042_0100	Centenary Creek	Blount	River	6.13	SEDIMENTATION/SILTATION
TN06010204042_0300	Sixmile Creek	Blount	River	16.4	ESCHERICHIA COLI (E. COLI)
TN06010204042_0311	Unnamed Trib to Big Springs Branch	Blount	River	0.2	TEMPERATURE
TN06010204042_1000	Ninemile Creek	Blount	River	17.1	ESCHERICHIA COLI (E. COLI)
TN06010204043_0200	Binfield Branch	Blount	River	3.9	ESCHERICHIA COLI (E. COLI)
TN06010204043_0400	Little Baker Creek	Blount	River	6.1	SEDIMENTATION/SILTATION
TN06010204043_0400	Little Baker Creek	Blount	River	6.1	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS
TN06010204043_0400	Little Baker Creek	Blount	River	6.1	ESCHERICHIA COLI (E. COLI)
TN06010204043_1000	Baker Creek	Loudon	River	9.18	ESCHERICHIA COLI (E. COLI)
TN06010204043_1000	Baker Creek	Blount	River	9.18	ESCHERICHIA COLI (E. COLI)
TN06010204043_2000	Baker Creek	Loudon	River	9.04	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS
TN06010204043_2000	Baker Creek	Blount	River	9.04	ALTERATION IN STREAM-SIDE OR LITTORAL VEGETATIVE COVERS
TN06010204043_2000	Baker Creek	Loudon	River	9.04	ESCHERICHIA COLI (E. COLI)
TN06010204043_2000	Baker Creek	Blount	River	9.04	ESCHERICHIA COLI (E. COLI)
TN06010204044_0100	Cane Creek	Monroe	River	29.3	ESCHERICHIA COLI (E. COLI)
TN06010204044_1300	Sinkhole Creek	Monroe	River	13.66	ESCHERICHIA COLI (E. COLI)
TN06010204044_1300	Sinkhole Creek	Monroe	River	13.66	ESCHERICHIA COLI (E. COLI)
TN06010204045_1000	Notchy Creek	Monroe	River	11.2	ESCHERICHIA COLI (E. COLI)
TN06010204056_0150	Laurel Creek	Monroe	River	0.47	FLOW REGIME MODIFICATION
TN06010204056_1000	Big Creek	Monroe	River	14.65	ESCHERICHIA COLI (E. COLI)
TN06010204065_1000	Island Creek	Monroe	River	10	ESCHERICHIA COLI (E. COLI)