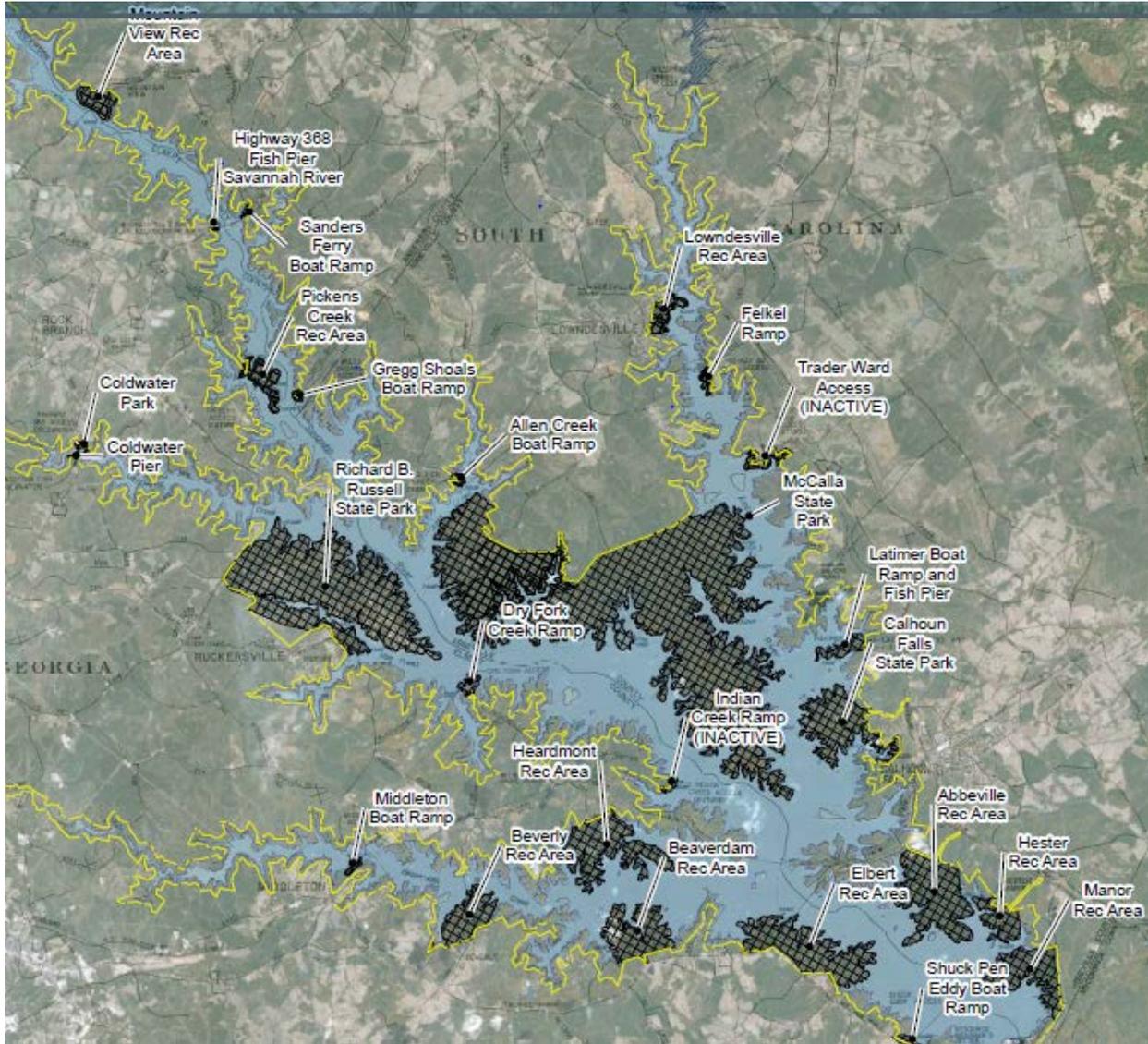


DRAFT MASTER PLAN

Richard B. Russell Dam and Lake Project

Savannah River, Georgia and South Carolina



**US Army Corps
of Engineers®**
Savannah District

December 2016

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EXECUTIVE SUMMARY

The Master Plan (MP) provides a programmatic approach to the management of all the lands included within the Richard B. Russell Project boundary (Russell Project). The Master Plan is the basic document guiding the United States Army Corps of Engineers (USACE) responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the project's lands, waters, and associated resources. The MP is a planning document anticipating what could and should happen and is flexible based upon changing conditions. Master Plans are required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural and manmade resources.

The primary goals of the MP are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which: (1) Provide the best possible combination of responses to regional needs, resource capabilities and suitability, and expressed public interests and desires consistent with authorized project purposes; (2) Contribute towards providing a high degree of recreation diversity within the region; (3) Emphasize the particular qualities, characteristics, and potentials of the project; (4) Exhibit consistency and compatibility with national objectives and other state and regional goals and programs; and (5) Continue to meet the project's mitigation mandates for fisheries and wildlife management.

Current guidance includes revised categories of Land Classifications used to define project lands, as well as shifting from a construction-based document to a policy-based document. All lands are acquired for authorized project purposes and allocated for these uses. The classification process is a further distribution of project lands by management categories which, based upon resources available and public needs, will provide for full utilization while protecting project resources. The current guidance also includes requirements for an interdisciplinary team approach for MP supplements or revisions. Coordination with other agencies and the public is an integral part of the master planning process.

The MP includes a Geographic Information Systems (GIS) database. Management can continually update the database throughout the life of the plan to allow USACE to take proactive management actions and adapt existing strategies.

The MP serves two primary purposes that are equal in importance. First, it is the primary management document for the project and provides direction for many of the other plans that guide the management of Russell Project. Second, it is a land use management tool. This MP sets the stage for the update of many of the project's resource management plans, such as the Operational Management Plan. For example, the Resource Objectives approved in this plan will serve as a basis for developing plans to manage natural resources and recreational facilities at the project. As a land use tool, this MP provides USACE and the public with the current classification and preferred future uses of project lands. The current land classification

of project lands allows USACE and the public to visually evaluate the distribution of uses of project lands. For example, the identification of project lands that are suitable for the development of a new recreation facility by USACE, a current lease holder, or a future development is beneficial. Maintaining an up-to-date MP allows USACE to respond effectively to development plans made internally or by outside parties as well as identify laws and policies that govern management of Russell Project.

This policy-based MP, along with the accompanying EA, provide USACE with a document that sets goals and objectives, but does not establish concrete development plans. This allows USACE flexibility in the management and development of Russell Project, within a clear policy framework.

RICHARD B. RUSSELL LAKE MASTER PLAN

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1.0 INTRODUCTION

1.1 PROJECT AUTHORIZATION

A general plan on the comprehensive development of the Savannah River Basin for flood control and other purposes was approved by the Flood Control Act of 1944, Public Law 534, and the 18th Congress. Construction of the Richard B. Russell Dam and Lake (RBR, formerly Trotter Shoals Lake) was authorized by the Flood Control Act of 1966, Public Law 89-789, 89th Congress, HR 18233, 7 November 1966. A bill was enacted on 29 October 1973, renaming the Trotter Shoals Lake to Richard B. Russell Dam and Lake. The original project authorization specifically excluded pumped storage. The Water Resources Development Act of 1976, Section 182a, removed this restriction concerning pumped storage from the original authorization. On 19 January 1977, the Assistant Secretary of the Army for Civil Works authorized the inclusion of minimum provisions for pumped storage in the RBR Project in accordance with Section 203 of the Flood Control Act of 1966.

1.2 PROJECT PURPOSE

As authorized, the Richard B. Russell Dam and Lake Project (also referred to as Russell Project or Russell Lake) is a multiple purpose project which includes flood control, hydroelectric power generation, fish and wildlife, water quality, water supply and recreation. Hydroelectric power is produced by four 75-megawatt conventional units with four 75-megawatt pump units.

1.3 PURPOSE AND SCOPE OF MASTER PLAN

The Richard B. Russell Lake Master Plan, hereafter referred to as the Master Plan (MP), is the strategic land use management document that guides the comprehensive management and development for recreation, natural resources, and cultural resources that is efficient and cost-effective throughout the life of the Russell Project. The MP is a vital tool for responsible stewardship and sustainability of the facilities' resources for the benefit of present and future generations.

Engineer Pamphlet (EP) 1130-2-550 dated 30 January 2013, states that one of the requirements of Master Plans is to evaluate specific land classification categories. One of the categories, Multiple Resource Management Lands, was not considered under Design Memorandum (DM) 31. Also, because DM 31 was completed in 1981, mitigation, a major component of the Richard B. Russell project, was not considered. Project mitigation requirements were codified in House Document 97-244, September 20, 1982 and authorized by the Water Resources Development Act (WRDA) of 1986. The revised MP will prescribe an overall land and water management plan, resource objectives, and associated design and management concepts compliant with EP 1130-2-550, which:

1. Provide the best possible combination of responses to regional needs, resource capabilities and suitability, and expressed public interests and desires consistent with authorized project purposes;
2. Will facilitate recreation improvements (e.g. cabins, marina, trails) at Richard B. Russell State Park;
3. Contribute towards providing a high degree of recreation diversity within the region;
4. Emphasize the particular qualities, characteristics, and potentials of the project such as mitigation and the private exclusive use policy; and,
5. Exhibit consistency and compatibility with national objectives and other state and regional goals and programs.

This MP guides and articulates US Army Corps of Engineers' (USACE) responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop the land, water, and associated resources. This MP focuses on goals and objectives. This MP does not address the specifics of regional water quality, shoreline management, or water level management. In addition, the operation and maintenance of project operations facilities is not included in this MP.

This report proposes public use development and conservation measures necessary to develop and conserve existing project lands to realize the optimal potential of the project. This MP incorporates conservation, enhancement, development, operation, management, and public interest use of all project lands, waters, forests, and other resources throughout the life of the project, and includes plans showing the most desirable and feasible locations and types to meet these goals. Emphasis has been placed on a balanced approach to public access, camping, water based recreation, and conservation. Adequate facilities and land-based requirements are proposed to insure all desired recreational opportunities are achieved and assure compliance with applicable environmental regulations, laws and policies. This MP also proposes proper utilization of natural resources and recreational facilities in regards to available funding while at the same time preserving the biological, scenic, scientific, and wildlife resources, plus protecting and enhancing the primary project purposes and benefits.

1.4 DESCRIPTION OF PROJECT AND WATERSHED

Russell Project is operated by the USACE and includes approximately 26,653 acres of open water at maximum pool of 475 feet mean sea level, with a storage capacity of approximately 1,000,000 acre-feet. It covers parts of Elberton and Hart Counties in Georgia and Abbeville and Anderson Counties in South Carolina. Recreation is cost-shared as the project is an 89-72 project (See paragraph 6.3).

The dam is located approximately 37.4 miles above the J. Strom Thurmond Dam and 29.9 miles below the Hartwell Dam. At maximum pool elevation, the lake extends from the dam up the Savannah River to the vicinity of the Highway 29 crossing. From the Savannah River, the lake extends up Rocky River for about 17.9 miles to Lake Succession Dam above Lowndesville, South Carolina, and from the Savannah River up Beaverdam Creek for about 16.7 miles near Elberton, Georgia.

Funds for the initial phase of land acquisition were released 14 August 1974. The first construction contract was awarded 15 November 1974. Filling the lake began in October 1983 and was completed in December 1984, for a full pool elevation of 475 feet. The lake levels do not change much because the lake is designed to operate within 5 feet of full pond, compared to Hartwell and Thurmond that have 35 and 18 feet of conservation storage, respectively.

The Savannah River forms part of the boundary line between the States of Georgia and South Carolina, and divides the total lake acreage of 26,653 into 11,783 acres in Georgia and 14,870 acres in South Carolina. The project includes an area of 53,270 acres acquired in fee; 159 acres of flowage easement; and a usable land area of 26,458 acres when the lake is at normal pool elevation. Under current management proposals, all project land is considered necessary for project purposes. Additionally, separable mitigation lands were authorized for purchase totaling 21,788 acres. Mitigation details are in Section 4.1.4. Pool fluctuation was considered in the planning and construction of the public-use facilities which have been developed in accordance with the approved DM 31 for the project. The facilities are designed primarily to serve the visitation demands of the population within a 100-mile radius. Emphasis has been directed toward day-use facilities in order to obtain maximum benefits for the public.

Maintenance of the project buildings and grounds, overlook structures, earthen embankment portion of the dam, spillway, and channel is performed by USACE project personnel and/or service contracts. Other activities include maintenance of project-owned equipment, replacement of riprap on the embankment and outlet channel, and construction of erosion control structures and public-use facilities. Periodic inspections are made of all public-use areas (inspections of state lease areas are completed every 3 years) and major repairs are scheduled for off-season recreation periods.

With the exception of operational lands and visitor centers, management of all other recreational areas and facilities is done by Georgia Department of Natural Resources (GADNR) and South Carolina Department of Parks, Recreation and Tourism (SCPRT). Twenty-four strategically situated public-use areas are actively managed by GADNR and SCPRT. In addition, due to changes in the original cost share agreement, three recreation areas were leased to South Carolina Department of Natural Resources (SCDNR) and one recreation area to the Town of Calhoun Falls. Types of work include resurfacing of roads and parking areas, mowing around project buildings and structures, preventive maintenance, general upkeep, painting, and repairs and replacements caused by wear and tear or vandalism on project buildings, structures, and public-use facilities.

The public-use facilities are planned to provide a complete, safe, and healthful recreation experience in a manner that will minimize impacts to the natural assets of the area.

1.5 PRIOR DESIGN MEMORANDA

Table 1: Design Memoranda

Design Memo	Title
3 Supp. IA to DM 3	Pumped Storage
Supp. 2	Water Quality Control System
6A	Real Estate Design Memorandum, Area II
15	Relocation of Cemeteries, Group I
15B	Relocation of Cemeteries, Group II
15C	Relocation of Cemeteries, Group III
15D	Relocation of Cemeteries, Group IV
16, Supp. 1	Relocation of SCL RR
19, Vol I & II	Relocation of Elbert County Roads
20	Relocation of City of Abbeville Raw Water Pump Station
21	Relocation of City of Calhoun Falls Raw Water Pump Station
22	Relocation of GA State Roads
23	Relocation of Carolina Natural Gas Pipeline
24, Vol. I of II	Relocation of SC State Roads
24, Vol. II of II	Necessity and Plan for relocation of SC State Road Appendices
25	Sedimentation Ranges
26	Relocation of Abbeville and Anderson County Roads
27	Reservoir Clearing and Mosquito Control
28	Relocation of Power Lines
29	Relocation of Telephone Lines
30	Initial Reservoir Filling Plan
31	Master Plan for Resource Development and Management

32	Resource Manager's Office and Operational Boat Ramps
33	GA Recreational Boat Ramps, Fishing Piers and Swimming Beach
34	SC Recreational Boat Ramps and Fishing Piers
35	Oxygenation Treatment and Diffusing System
35, Supp. 1	Oxygen Production and Storage Facility
36, Vols. I - IV	Analysis of Design Power Plant
37	Pump/Turbines, Generator/Motors, and Governors for Pumped Storage
38, Vols. 1-6	SC State Parks
39	GA State Parks
41	Operational Roads & Land Erosion Control

1.6 PERTINENT PROJECT INFORMATION

The following table provides pertinent information regarding existing reservoir storage capacity at Russell Project.

Table 2: Water Storage Capacities

Feature	Elevation (feet)	Area (acres)	Capacity (acre-feet)
Top of Dam	495	38,750	1,690,000
Spillway Crest	490	11,250	330,000
Top of Flood Control Pool	480	29,340	1,166,166
Top of Conservation Pool	475	26,653	1,026,200
Bottom of Conservation Pool	470	24,117	899,400
Conservation Storage, usable	470-475	-	126,800
Flood Storage	475-480	-	140,000
Surcharge Storage	480-490	-	322,000

2.0 PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT

2.1 DESCRIPTION OF RESERVOIR

Russell Project is located on the Savannah River 37.4 miles above Thurmond Dam and 29.9 miles below the Hartwell Dam. The purpose is flood control, fish and wildlife, water quality, water supply, hydroelectric power, and recreation. Construction began in November 1974; filling of the lake began in October 1983 and was completed in December 1984. The dam consists of a 195-foot high, 1,884 foot long concrete gravity structure, flanked by two earth embankments. The Georgia embankment is 2,180 feet long; the South Carolina embankment is 460 feet long. Russell project also maintains a saddle dike on the South Carolina side of the reservoir. The powerhouse has four 75-megawatt conventional units with four 75-megawatt pump units.

2.2 HYDROLOGY AND GROUNDWATER

The sub-basin drainage area between Richard B. Russell dam and Hartwell dam totals 802 square miles which represents 13% of the 6,144 square miles of the Savannah River Basin above Thurmond Dam. However, the primary source of hydrology occurs through controlled releases at Hartwell dam. In most years, Hartwell releases contribute over 80% of the total inflow to Russell.

The lake at the top of the conservation pool elevation of 475 feet above mean sea level (amsl) extends up the Savannah River to approximately 2,200 feet downstream of Hartwell Dam. The Rocky River in South Carolina below Lake Secession creates the major eastern arm of the lake, and Beaverdam Creek in Georgia forms the major western arm of the lake. Several minor creeks, including Van, Coldwater, English, Pickens, Bond, Allen, Dry Fork, and Bowman Branch create an irregular lake shoreline of great natural scenic value that extends 540 miles.

One major highway (Highway 72) and one railroad cross the lake. These major crossings are to a 16-foot 0-inch minimum bridge clearance, with bridge clearances on tributaries a minimum of 11-foot 0-inch. These crossings restrict the travel of sailboats but will provide adequate clearance for most other recreational boating.

Many of the major creeks forming an arm of the lake are fed by surface waters designated as either streams or rivers. In several cases these designated streams and rivers are mere extensions of the creek, e.g. Beaverdam Creek and Coldwater Creek. Three of the designated recreation areas, Elbert, Coldwater, and McCalla are also shown as having ponds of less than 5 acres in size. Other recreation areas are either bordered by streams, such as Mountain View, or have streams within the park itself, such as McCalla.

2.3 SEDIMENTATION AND SHORELINE EROSION

Typical with a majority of reservoirs, throughout the lifespan, siltation accumulates from areas uncontrolled by USACE. Rip rap is placed in areas for protection of project facilities. USACE is also responsible for placement of rip rap for erosion control along the shoreline in state-leased areas.

2.4 WATER QUALITY

This variable is actually composed of Water Quality Management Units (WQMU) within the State of Georgia and watersheds within South Carolina. The WQMU's were designated by the Environmental Protection Division of the Georgia Department of Natural Resources, and defined as individual watersheds or sections of watersheds that make up units for the planning and management of water quality concerns.

Water quality at Russell Lake is dependent upon many factors. The location and watershed are two primary factors which contribute to general water quality. As a reservoir ages, water quality declines can be attributed to many factors, individually and collectively. Factors which contribute to declining water quality in aging reservoirs include sedimentation, increased human habitation within the vicinity of the lake, changing land management practices within the watershed, increased urbanization and associated urban runoff, and increased reliance on allocated water supply. Adverse impacts to the local economy due to water quality and quantity issues have been an increasing matter of local, state, and regional concern throughout the contiguous United States in recent years.

Private developments adjacent to USACE lands can affect fish and wildlife adversely if not planned and managed properly. Siltation interferes with fish reproduction by smothering egg masses. Siltation can further limit primary productivity (i.e., plankton) which provides the basic food supply of all fish.

To maintain and enhance the water quality of Russell Lake, project and District personnel will diligently pursue enforcement of State and Federal pollution control laws. Sources of pollution not covered under Federal regulations will be reported by District Office personnel to the Georgia Environmental Protection Division and/or South Carolina Department of Department of Health and Environmental Control for appropriate action.

2.5 CLIMATE

The climate of Russell Lake has relatively short, mild winters and long, hot summers, thus creating a favorable environment for year-round outdoor recreation. The average daily temperatures range from 47 degrees in December to 81 degrees in July, with a frost-free season of 220 days. The average rainfall for the Savannah River Basin above Calhoun Falls is approximately 47 inches. There are two general periods of heavy precipitation, one in February and March and the other in July and August.

2.6 TOPOGRAPHY, GEOLOGY AND SOILS

The land acquired for the project contained a very small amount of open farmland. There were large amounts of land owned by paper and utility companies that were planted in pine plantations. When considering the total acquisition as a complete unit, there is a mix of about half pine and half hardwood, even though there are large consolidations of pine plantations. The marketable timber held by some of the large land holding companies was sold or harvested prior to the Government acquiring the land. The removal of mature trees by previous owners adversely impacted some areas within the two major park areas of McCalla and Coldwater at that time. The most severely cut areas were in the interior of the park. Since initial development occurred nearer the shoreline, there was time for recovery before recreational development.

Low and high density impervious land cover includes gravel roads, rock outcroppings and quarries. The project area's coniferous forests are typified by shortleaf and loblolly pine. These coniferous forests are generally widespread throughout the project area, with the primary exception being concentrated upland commercial pine plantations encompassing hundreds of acres.

Slope is defined in terms of percentages, determined by dividing the number of feet rise (vertical distance) in 100 feet of horizontal distance. For example, a rise of 20 feet in 100 feet would be 0.20 or a 20 percent slope. Coding the exact slope throughout each of the project's 4,889 acre cells would have been too time-consuming for the needs of this MP. Therefore, slope zones were defined, e.g. 0-4 percent, 4-8 percent, etc. These zones became the data items for the slope variable, and are listed as follows: water, 0-4 percent, 4-8 percent, 8-12 percent, 12-16 percent, 16-25 percent, and 25 percent plus.

Lands within the project boundary are generally rolling with moderate to steep slopes (8-25 percent ranges), the latter occurring primarily along the shoreline. Zones of slight to moderate slopes (less than 8 percent) are found within the project boundaries; however, except in the case of former agricultural lands, these areas are relatively small and scattered. The McCalla and Hester recreation areas are the only park sites with relatively extensive areas of slight to moderate terrain.

2.7 RESOURCE ANALYSIS

2.7.1 Fish and Wildlife Resources

Hardwood and mixed pine-hardwood sites within the project area are presently supporting expanding deer and turkey populations. Other species of small game and fur-bearing animals found throughout the project include: gray squirrel, coyote, feral hog, mourning dove, red and gray fox, cottontail rabbit, muskrat, opossum, raccoon, beaver, and skunk. Of these, the doves, squirrels, and rabbits are the most important to the small game hunter. Extensive trapping of fur bearing animals has not occurred

within the project area. Waterfowl observed in the project area include: mallard, pintail, green-winged and blue-winged teal, gadwall, wood duck, ring neck duck, ruddy duck, and Canada goose. There are also many non-game animals found in the project area including indigenous species of songbirds, and several species of raptors, reptiles, and amphibians.

Game fish species found in Russell Lake include: largemouth bass, spotted bass, catfish, crappie, and striped bass. Additionally, a 1-mile stretch of the Savannah River below Hartwell Dam serves as a put-and-take trout fishery. The feasibility of this fishery is due to the cold water discharges from Hartwell Dam.

2.7.2 Vegetative Resources

Mixed forests generally occur along the Savannah River corridor, with a sizeable percentage of this forest type occurring on the South Carolina side. In addition to the pines previously mentioned, hardwoods found in this forest are typical to the oak-hickory association.

Lowland areas and valley slopes are common locations for deciduous forest types of vegetation including poplar, sweetgum, sycamore, black locust, American holly, red maple, and a number of small flowering trees such as dogwood, redbud, and sourwood. Pasture or herbaceous land cover and bare or plowed earth typical of agrarian communities are generally found in large concentrations around the project's fringe. The vegetative resources of the Russell Lake were classified using information derived from FY2016 Project Site Vegetative Resource Records reported in Operations and Maintenance Business Information Link (OMBIL). These data are displayed in Table 3.

Table 3: Vegetative Resources

Division	Order	Class	Sub-Class	Acreage
Vegetated	Herb Dominated	Herbaceous Vegetation	Annual Graminoid or forb vegetation	996
Vegetated	Tree Dominated	Closed Canopy	Deciduous Closed Tree Canopy	2,651
Vegetated	Tree Dominated	Closed Canopy	Evergreen Forest	3,587
Vegetated	Tree Dominated	Closed Canopy	Mixed Evergreen-Deciduous Closed Tree Canopy	17,805
Vegetated	Tree Dominated	Open Canopy	Evergreen Open Tree Canopy	350
Total Vegetated				25,389

2.7.3 Federally-listed Threatened and Endangered Species (TES)

Based upon a list published by the U.S. Fish and Wildlife Service (USFWS), Department of Interior, there are no identified endangered botanical, zoological species or habitat for endangered species within the project area. However, there are several plants which are considered rare to this area and worth protecting. Some of these plants represent flora generally found in the Appalachian Mountains or along the Coastal Plain.

On the Russell Project mitigation lands managed by GADNR there is one federally-listed species, Michaux's sumac (*Rhus michauxii*) located in Elbert County on Broad River Wildlife Management Area at Thurmond Lake.

Section 7(a)(2) of the Endangered Species Act requires federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to:

- 1) Jeopardize the continued existence of any endangered or threatened species, or
- 2) Result in the destruction or adverse modification of critical habitat.

The term, "jeopardize the continued existence of" means to reduce appreciably the likelihood of both the survival and recovery of listed species in the wild by reducing the species' reproduction, numbers, or distribution. Jeopardy opinions must present reasonable evidence that the project will jeopardize the continued existence of the listed species or result in destruction or adverse modification of critical habitat.

If a survey for a project site is positive for any TES, the following best management practices would be implemented:

- Project footprint will be minimized to the greatest extent practicable.
- Equipment will utilize existing roads and all equipment will use the same path to minimize disturbance.
- Vegetation will be established in areas not permanently impacted that were disturbed during project construction as soon as possible following construction. This will be accomplished with an appropriate mix of plant species native to the project site. Plants listed as invasive by the U.S. Department of Agriculture or the State of Georgia and/or South Carolina should not be used.
- At least an area equal to the suitable habitat impacted by the project actions (impacts of existing flood pools excluded) will be replaced through improved management or restoration of habitat suitable for TES. USACE will prepare a TES habitat plan outlining proposed habitat improvements and the improved or restored habitat must be in a location approved by the USFWS. Management and monitoring of these improved habitat areas must be

incorporated to maintain these areas and such actions will be included in an annual report to the USFWS.

Other threatened and endangered species having potential habitat at Russell Lake fee lands, as identified by the USFWS, can be found in Table 4.

Table 4: Threatened and Endangered Species

	Status	Has Critical Habitat
Birds		
Red Cockaded Woodpecker	E	No
Wood Stork	T	No
Clams		
Carolina Heelsplitter	E	No
Flowering Plants		
Miccosukee Gooseberry	T	No
Michaux's Sumac	E	No
Smooth Coneflower	E	No
Mammals		
Northern Long-eared Bat	T	No

2.7.4 Invasive Species

Georgia and South Carolina have 207 state-listed invasive species. Invasive terrestrial animals known to occur at Russell Project are the red imported fire ant (*Solenopsis invicta*) and the wild boar (*Sus scrofa*). Invasive terrestrial plants known to occur on Russell Project lands include Japanese honeysuckle (*Lonicera japonica*), Johnson grass (*Sorghum halepense*), Kudzu (*Pueraria lobata*), and Russian Olive (*Elaeagnus angustifolia*). Water primrose (*Ludwigia uruguayensis*) is found in scattered locations near the shoreline. Historically, there have been scattered occurrences of hydrilla (*Hydrilla verticillata*) and elodea (*Egeria densa*); however, hydrilla has not been seen within the reservoir in recent years. Scattered locations of elodea occur in the Savannah River portion of the reservoir north of Hwy 184, but there have been no negative impacts or significant spread of the plant in that area. With the exception of some of the wildlife openings, invasive species have not resulted in negative impacts to land or water at Russell.

Table 5 lists invasive species that occur on Richard B. Russell fee lands. Data was retrieved from the FY16 Project Site Invasive Species Records reported in OMBIL.

Table 5: Invasive Species

Species Group	Species Common Name	Type of Occurrence	Acreage Impacted	Percent Acreage Impacted
Aquatic and Wetlands Plants	Water Primrose	Minor	10	0.02%
Terrestrial Animals	Red imported fire ant	Minor	300	0.59%
Terrestrial Animals	Wild Boar	Minor	1000	1.96%
Terrestrial Plants	Japanese Honeysuckle	Minor	500	0.98%
Terrestrial Plants	Johnson Grass	Moderate	150	0.29%
Terrestrial Plants	Kudzu	Minor	100	0.20%
Terrestrial Plants	Russian Olive	Minor	30	0.06%
Total Impacted			2090	4.10%

2.7.5 Ecological Setting

Russell Lake is located approximately 37.4 miles above the Thurmond Dam and 29.9 miles below the Hartwell Dam. At maximum pool elevation, the lake extends from the dam up the Savannah River to the vicinity of the Highway 29 crossing. From the Savannah River, the lake extends up Rocky River for about 17.9 miles to Lake Succession Dam above Lowndesville, South Carolina, and from the Savannah River up Beaverdam Creek for about 16.7 miles near Elberton, Georgia.

Russell Lake occupies the upper Piedmont region. This region encompasses a wide variety of natural vegetation that includes oak/hickory, hickory/shortleaf pine forest, bottomland hardwood forest, and loblolly pine forest. The dry forest areas are dominated by blackjack oaks, post oak, scattered hickory species, and sweetgum. The mixed forests are dominated by species such as oak, maple, elms, sweetgum, and loblolly pine. Vines such as muscadine, poison ivy, and green briar are mixed with a variety of grasses and other herbaceous species in the understory.

2.7.6 Wetlands

Table 6 lists the acreages of various types of wetlands present in and around Russell Lake. Data was retrieved from the FY16 Project Records reported in OMBIL.

Table 6: Wetland Summary

Wetland Class	Subtotals	Total Acres
Palustrine		281
Emergent Wetland	73	
Forested Wetland	107	
Scrub-Shrub Wetland	101	
Lacustrine		26,653
	<u>Total</u>	26,934

2.8 CULTURAL RESOURCES

The archaeological record details a long and continuous occupation of the Savannah River Valley extending from the Paleoindian period (ca 14,000 to 8,000 BC) through the Historic period (post-1930 AD). Ethnohistorical research indicates that many of the archaeological sites at Russell Project are affiliated with the Muskogean-speaking and Cherokee tribes (Adams 2009). A generalized cultural overview for the Savannah River Valley, and in particular, the Upper Savannah River Valley, presented below, provides an understanding of the various prehistoric and historic time frames documented in the region.

Cultural resources at Richard B. Russell consist of prehistoric and historic archaeological sites, isolated finds and cemeteries. There are no identified Traditional Cultural Properties (TCP). A TCP is a property or a place that is eligible for inclusion on the National Register of Historic Places (NRHP) because of its association with cultural practices and beliefs that are rooted in the history of a community. One hundred thirty-nine (139) archaeological sites have been formally determined eligible for listing in the NRHP. Numerous other sites have unknown NRHP status or require additional investigation before eligibility can be determined. These sites are afforded the same protections as NRHP-eligible sites until fully evaluated.

Table 7: NRHP Eligible Sites

Component	Number
Historic	28
Prehistoric	74
Multi-component	28
Unknown	9
Total	139

Most prehistoric archaeological sites recorded at Richard B. Russell are low density artifact concentrations that are interpreted as lithic workshops, resource extraction locales, or in rare instances, base camps. These sites are located in areas that were utilized for upland hunting and foraging and not for semi- or permanent settlement. Historic sites locations are nineteenth and twentieth century occupations; many of which were abandoned in the mid twentieth century prior to reservoir construction. Several historic sites contain exposed features such as scattered bricks from chimney falls and foundation stones. When lying exposed on the ground surface, these types of resources can be easily impacted by activities, including artifact collection, prescribed fire, erosion and trampling.

A number of isolated finds are documented at Richard B. Russell. Isolated finds often contain isolated artifacts or features that, on their own, are not considered archaeological sites, but when taken together provide information on the prehistoric or historic use of the landscape. Isolated finds are primarily prehistoric in nature.

Cultural Chronology

Prehistoric Periods

Paleoindian Period (ca 14,000 – 8000 BC)

The earliest evidence of human settlement in North America dates to the Paleoindian period. This cultural period corresponds with the terminal Pleistocene when the climate was generally much colder and sea levels were lower than today. Archaeological evidence suggests that sparse human populations followed the migratory cycles of the mega-fauna such as mammoth, and mastodons over wide-ranging physiographic environments. In the Savannah River Valley the majority of Paleolithic sites are surface finds consisting of well-made fluted projectile points, or semi-fluted lanceolate points. Anderson et al. (1990) divide the Paleoindian period in the Southeast into three subperiods, each defined by differing projectile point types: Early (Clovis); Middle (Cumberland, Suwannee, Simpson); and Late (Dalton). Three sites with Paleoindian period components at RBR suggest minimal use of the Upper Savannah River Valley during the Early and Middle Paleoindian periods and increased use during the Late Paleoindian period and subsequent Early Archaic periods.

Archaic Period (8000 – 1000 BC)

During the Archaic period population density increased as did technology. During this period the large lanceolate points of the Paleoindian period were replaced with smaller corner- or side-notched points. During the latter part of the Archaic period (3500 – 1000 BC), steatite and ceramic vessels appear in the archaeological record, indicative of increased sedentism. Sites that contain low frequencies of ceramics are interpreted as short term seasonal camps. Approximately 16 percent of sites recorded in the Savannah River Valley date to the Archaic Period.

Woodland Period (1000 BC – 900 AD.)

Increased sedentism and larger populations are the hallmarks of the Woodland period. Subsistence during this period began to focus on maize, beans, and squash, and the necessity for planting and maintaining the crops helped establish more stable and settled societies. Woodland period sites, represented by diagnostic materials such as small, square-based contracting stemmed projectile points, triangular points, copper or polished slate spearheads, tubular stone pipes and trade goods, account for nearly 15 percent of the recorded sites in the Savannah River Valley. Sites dating to the Early (1000 – 100 BC) and Middle (100 BC – 500 AD.) occur more frequently in the Upper Savannah River Valley than do Late Woodland (500 – 900 AD.) sites. Evidence of access to exotic trade goods and craft specialization are much more common during the latter part of the period.

Mississippian Period (900 – 1600 AD)

It was during this period that regional chiefdoms and trade networks fully evolved throughout the Southeast. Based on ceramic sequences, Anderson (1994) divides the period into Early (900–1250 AD), Middle (1250 - 1450 AD) and Late (1450 – 1600 AD). During the Early Mississippian period, Savannah River people constructed small hamlets, medium-sized unfortified communities and large palisaded villages. Large earthen mounds appear around 1100 AD. Settlements were located along major rivers

on wide, alluvial floodplains. During the Middle Mississippian mound-building intensifies. The Late Mississippian period includes large villages located on major river floodplains with platform mounds, plazas, and fortifications. The archaeological record suggests a decline in occupation of the Savannah River Valley during the Late Mississippian period.

Historic Periods

Contact Period (1540 – 1717 AD)

The Contact period in the Southeast is a time in which native communities were transformed by a series of European-influenced factors or encounters. The abandonment of the Middle and Upper Savannah River Valley was historically documented in four different narratives of the Hernando de Soto expedition, which passed through the area in April 1540. The interior of South Carolina and Georgia remained largely unexplored by Europeans until the settling of Charles Towne in 1670.

Colonial (1700 – 1781 AD)

By the mid-eighteenth century Europeans from the Lowcountry and the Carolina Piedmont began encroaching on Cherokee Territory in the northwest portion of South Carolina. Ties between the colonists and the Cherokees slowly disintegrated resulting in the Cherokee War of 1759 -1761. In an effort to keep peace between Euro-Americans and the Cherokee, a boundary line was drawn between the Savannah River and the Reedy River (present day South Carolina Counties Anderson and Abbeville) in 1766 that officially prohibited white settlement in Cherokee territory. Prior to and during the Revolutionary War the area was inhabited by Euro-American squatters who had settled the area to escape colonial authorities. Relations between settlers and the Cherokee again disintegrated during the 1770s when the Cherokee were brought into the War, siding with the British and often attacking frontier settlements.

Antebellum (1782 – 1865 AD)

Settlement of the Upper Savannah River region increased after the Revolutionary War and the subsequent fall of the Cherokee towns. Following the war, the area's population continued to grow, and the state legislature created Elbert County on December 10, 1790, which was named after Revolutionary War general and former governor of Georgia, Samuel Elbert. Hart County, Georgia was established in 1853 out of parts of Elbert and Franklin Counties and was named for the previously mentioned Revolutionary War hero Nancy Hart.

In South Carolina, lands of the Cherokee were granted to settlers in 1784, and in 1785, South Carolina was divided into six districts, each consisting of multiple counties. Between 1786 and 1790 the former Cherokee lands were divided into Pendleton and Greenville Counties. The county seat of Anderson was established in 1828.

The area developed a subsistence agrarian economy. Early crops such as corn, oats, wheat, rye, barley, cotton, and tobacco became staples. The introduction of the cotton gin and increases in cotton prices following the War of 1812, solidified cotton's position

as the dominant cash crop of the region's economy. The natural transportation networks established by the Savannah and Broad Rivers propelled the success of cotton for Elbert County, and by 1849, the county yielded 500 pounds of cotton to the acre. As cotton grew in popularity in the region, so too did slave holdings. In Abbeville County, white population decreased from 1810-1850 as the number of slaves in the county more than doubled.

Postbellum Period (1865 – 1930 AD)

None of the Richard B. Russell project area was directly affected by Civil War military activities, however, lifeways and the economy changed dramatically after the war's end. The post-war reconstruction period in the region reflected the transition that was occurring throughout the rest of the South, when the agricultural system changed from a slave-based labor system to a sharecropper or share-renter system. Beginning with the establishment of the first granite quarry near the north fork of the Broad River in 1882, the granite industry quickly replaced cotton as Elbert County's economic base, and it continued to grow for the next 40 years. Railroads provided the impetus for settlement and economic growth of communities such as Calhoun Falls, South Carolina. Hydropower and industrialization were emphasized and textile mills started to appear in the region. From 1880 to 1890 the number of textile mills in South Carolina more than doubled. Although the Elbert County granite industry quickly rose in the economy's importance, farming continued to be a source of income and way of life in the region. The area population and the number of farms declined during the decade following 1920, reflecting the devastating impact of the boll weevil on cotton in the county and throughout the state.

Modern Period (post - 1930 AD)

During the Great Depression, the region continued to shift away from cotton production. Federal New Deal programs (1933-1938) encouraged farmers to take their cotton fields out of production and plant trees. As a result, many farm workers moved from rural areas to cities and towns to work at textile or lumber mills. Beginning in the 1940s, agriculture in Elbert and Hart Counties began to decline noticeably as the number of farms lessened and continued to decline over a span of 40 years. Elbert County's granite industry reached its most successful period in the years following World War II and extended well into the late 1950s. Textile production still remains a dominant force in the local economy, however manufacturing has been supplemented by an increase in the service industry.

Previous Investigations

Areas that would be submerged by the impoundment of Richard B. Russell Lake or impacted by construction or relocation activities were subjected to archaeological investigations in the 1970s – 1980s. Over 700 site locations were recorded and thirty (30) archaeological sites were chosen for more intensive investigation as part of the Richard B. Russell Cultural Resource Mitigation Program, which was directed by Savannah District and the National Park Service.

The district has also completed small surveys for individual projects such as construction of access roads, vegetation clearing, or food plot creation to comply with Section 106 of the NHPA. Two large scale Phase I Section 110 surveys were completed in 2010 and 2016, respectively (Sweeney and Whitley 2011; Pope 2016). A total of 2,465 acres were completed in 2010 and 2,561 acres in 2016 and were prioritized based on areas where the project may conduct forest and wildlife management activities. Approximately 8,900 acres remain for future Phase I investigation at RBR; however, these areas are the least accessible with no plans for any land disturbing activities in the foreseeable future.

2.9 SOCIOECONOMIC RESOURCES

Socioeconomic resources describe the existing setting related to population, employment, income, and ethnicity.

2.9.1 Affected Environment

The affected environment includes regional and local demographic and economic information as it relates to the Russell Project and the surrounding area. For the purposes of this section, the socioeconomic study area includes all of McCormick, Abbeville, and Anderson counties in South Carolina, and Elbert, Hart, Lincoln, Madison, Oglethorpe and Wilkes Counties in Georgia.

2.9.2 Population Demographics

The total population for the zone of interest is 332,983, as shown in Table 8. Almost 61% of the population is in Anderson County, 10.7% in Hart County. Each of the remaining counties makes up less than 7% each of the total population. The population in the zone of interest makes up approximately 1.0% of the total population of Georgia and 4.8% of South Carolina.

From 2014 to 2060, the population in the zone of interest is expected to increase to 409,166, an annual growth rate of 0.46% per year. By comparison, the population of Georgia is projected to increase at an annual rate of 0.74% per year and South Carolina 0.73% per year. The distribution of the population among gender is approximately 48.7% male and 51.3% female in most geographical areas with the male/female ratio reversed in McCormick, South Carolina as shown in Table 9.

Table 8: 2014 Population Estimates and 2060 Projections

Geographical Area	2014	2060 Projection	Percent of Zone of Interest
Georgia	10,097,343	14,085,359	
South Carolina	4,832,482	6,714,826	
Abbeville, SC	24,965	26,515	6.50%

Anderson, SC	192,810	249,713	61.00%
McCormick, SC	9,846	7,188	1.80%
Elbert, GA	19,438	23,084	5.60%
Hart, GA	25,377	43,964	10.70%
Lincoln, GA	7,622	5,947	1.50%
Madison, GA	28,312	27,904	6.80%
Oglethorpe, GA	14,673	14,218	3.50%
Wilkes, GA	9,940	10,633	2.60%
Zone of Interest Total	332,983	409,166	

Source: U.S. Bureau of the Census, 2014 Estimate; Proximityone.com/demographics2060.htm

Table 9: Percent of Population Estimate by Gender

Geographical Area	Male	Female
Georgia	4,927,503	5,169,840
South Carolina	2,348,586	2,483,896
Abbeville, SC	12,108	12,857
Anderson, SC	93,127	99,683
McCormick, SC	5,425	4,421
Elbert, GA	9,311	10,127
Hart, GA	12,587	12,790
Lincoln, GA	3,758	3,864
Madison, GA	13,958	14,354
Oglethorpe, GA	7,234	7,439
Wilkes, GA	4,751	5,189
Zone of Interest Total	162,259	170,724
Percent	48.7%	51.3%

Source: U.S. Bureau of the Census, American Fact Finder (2014)

Table 10 shows the population composition by age group. The distribution by age group is similar among the counties, zone of interest, and the state overall. The largest age group is the 35 to 54, with 26.9% of the total population for each geographic area.

Approximately 23.6% of the total population for each area is between 15 and 34. McCormick County has a slightly older population with 15.3% of its residents between 65 and 74 years old, while the other counties have an average closer to 11% of their populations in this age group.

Table 10: Age Distribution

Geographical Area	Under 15	15 to 34	35 to 54	55 to 69	70 and Over
Georgia	21.0%	28.0%	28.1%	15.5%	7.4%
South Carolina	19.1%	26.8%	26.4%	18.1%	9.6%
Abbeville, SC	18.2%	22.7%	26.3%	21.1%	11.7%
Anderson, SC	19.6%	24.0%	27.2%	18.1%	11.1%
McCormick, SC	10.8%	20.1%	24.4%	29.3%	15.3%
Elbert, GA	18.5%	24.0%	26.3%	20.2%	11.3%
Hart, GA	18.0%	23.1%	25.5%	20.4%	13.1%
Lincoln, GA	16.0%	20.4%	27.8%	24.9%	11.1%
Madison, GA	19.3%	24.6%	28.1%	19.2%	8.8%
Oglethorpe, GA	18.2%	23.6%	28.3%	20.1%	9.9%
Wilkes, GA	18.2%	21.9%	25.1%	21.6%	13.2%
Zone of Interest	18.8%	23.6%	26.9%	19.4%	12.7%

Source: U.S. Bureau of the Census, 2014 Estimate

Population by Race and Hispanic Origin is displayed in Table 11. For the zone of interest, 74.9% of the population is White, 19.2% is Black, and 1.4% are two or more races. The remainder of the races makes up less than 1% each.

By comparison, for the state of South Carolina, 68.3% of the population is White, 27.8% is Black or African American, and the remaining races constitute a slightly greater percentage of the total population than in the zone of interest. The Hispanic or Latino population, which is a non-racial categorization, constitutes 3.4% of the zone of interest's residents. For Georgia, 62.1% of the population is White, 31.5% is Black or African American and the remaining races constitute a slightly greater percentage of the total population than in the zone of interest.

Table 11: 2014 Population Estimate by Race/Hispanic Origin

Geographical Area	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Two or more races:	Hispanic or Latino:
Georgia	62.1%	31.5%	0.5%	3.8%	0.1%	2.0%	9.3%
South Carolina	68.3%	27.8%	0.5%	1.5%	0.1%	1.7%	5.4%
Abbeville, SC	69.7%	28.3%	0.3%	0.4%	0.0%	1.2%	1.2%
Anderson, SC	80.6%	16.6%	0.3%	0.9%	0.0%	1.5%	3.5%
McCormick, SC	49.6%	48.6%	0.2%	0.5%	0.1%	1.1%	1.2%
Elbert, GA	68.2%	29.4%	0.4%	0.9%	0.0%	1.1%	5.5%
Hart, GA	78.4%	18.8%	0.2%	1.0%	0.0%	1.5%	3.6%
Lincoln, GA	66.6%	31.6%	0.4%	0.5%	0.0%	0.9%	1.3%
Madison, GA	87.7%	9.4%	0.4%	1.2%	0.0%	1.3%	4.7%
Oglethorpe, GA	79.5%	17.7%	0.3%	0.7%	0.0%	1.8%	3.9%
Wilkes, GA	54.9%	42.6%	0.2%	0.8%	0.0%	1.6%	3.9%
Zone of Interest	74.9%	19.2%	0.3%	0.8%	0.0%	1.4%	3.4%

Source: U.S. Bureau of the Census, 2014 Estimate

2.9.3 Education and Employment

Table 12 shows the population over 25 years of age by highest level of educational attainment for each of the geographical areas. In the zone of interest, for 6.6% of the population 25 years old and older, the highest level of education attained is below the ninth grade level. Another 12.5 percent attended high school, but did not graduate. For 34.9% of the population, the largest in the zone of interest, a high school degree is the highest level of educational attainment. Another 20.6% attended some college, but did not graduate. Bachelor's degrees were the highest educational attainment of 10.7%, while associate's degrees were such for 8.4%. The smallest group is those that have graduate or professional degrees, at 6.3%.

By comparison, in Georgia 5.6% have less than ninth grade education, 9.4% attended some high school, 28.6% graduated high school, 21.1% attended some college, 7.0% obtained an associate's degree, 17.9% obtained a bachelor's degree, and 10.4% have a graduate or professional degree. For South Carolina, 5.2% have less than ninth grade education, 9.8% attended some high school, 30.0% graduated high school, 21.0% attended some college, 8.7% obtained an associate's degree, 16.2% obtained a bachelor's degree, and 9.2% have a graduate or professional degree.

Table 12: Population Highest Level of Education Attainment

Geographical Area	Less than 9th grade	9th to 12th grade, no diploma	High school graduate (includes equivalency)	Some college, no degree	Associate's degree	Bachelor's degree	Graduate or professional degree
Georgia	5.6%	9.4%	28.6%	21.1%	7.0%	17.9%	10.4%
South Carolina	5.2%	9.8%	30.0%	21.0%	8.7%	16.2%	9.2%
Abbeville, SC	7.8%	14.4%	35.7%	20.3%	9.4%	8.3%	4.0%
Anderson, SC	6.5%	11.5%	31.5%	21.5%	9.7%	12.3%	6.9%
McCormick, SC	7.4%	14.4%	31.6%	20.8%	8.0%	10.8%	7.0%
Elbert, GA	7.6%	14.3%	47.9%	15.6%	3.8%	6.3%	4.4%
Hart, GA	5.1%	14.1%	38.0%	21.3%	6.9%	9.1%	5.5%
Lincoln, GA	4.8%	12.9%	43.1%	20.7%	7.6%	5.9%	5.0%
Madison, GA	6.4%	13.2%	39.5%	19.6%	6.5%	8.6%	6.2%
Oglethorpe, GA	6.7%	11.4%	37.7%	20.0%	6.1%	10.6%	7.6%
Wilkes, GA	8.2%	14.0%	42.8%	16.0%	3.8%	8.7%	6.6%
Zone of Interest	6.6%	12.5%	34.9%	20.6%	8.4%	10.7%	6.3%

Source: U.S. Bureau of the Census, 2014 Estimate

Employment by sector is presented in Table 13. Each figure represents the percentage of the employed civilian population in each area. In the zone of interest, the largest sectors are educational services, health care, and social assistance, with 23.6% of the civilian employed population. The second largest sector is manufacturing, which employs 20.8%. This is followed by retail trade with 12.3%. The remaining sectors each fall under 7%.

Similarly, the largest employment sectors for Georgia and South Carolina are also educational services, health care and social assistance, with 21.1% and 21.7%, respectively, of the total employment. While manufacturing has importance in both the zone of interest and state, it is evident that the economies are driven by service sector employment.

Table 13: Employment by Sector (percentage of employed civilian population by area)

Geographical Area	Agriculture, forestry, fishing and hunting, and mining	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing, and utilities	Information	Finance and insurance, and real estate and rental and leasing	Professional, scientific, and management, and administrative and waste management services	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation and food services	Other services, except public administration	Public administration
Georgia	1.2	6.4	10.6	2.9	12.0	6.0	2.5	6.3	11.4	21.1	9.2	5.0	5.4
South Carolina	1.1	6.5	13.7	2.7	12.2	4.6	1.8	5.8	9.5	21.7	10.5	4.9	5.0
Abbeville, SC	1.1	5.9	24.5	1.8	8.0	7.1	1.8	3.3	5.9	25.0	8.2	3.8	3.5
Anderson, SC	0.7	5.8	20.9	3.6	13.2	3.9	1.3	3.8	7.3	22.9	7.7	5.3	3.6
McCormick, SC	0.9	9.7	16.8	1.9	8.2	3.3	3.2	3.0	4.5	26.4	5.5	6.2	10.2
Elbert, GA	4.0	4.3	28.9	4.4	12.2	3.2	0.2	2.5	4.7	20.5	4.2	5.6	5.3
Hart, GA	4.1	7.4	27.3	2.2	10.8	2.8	1.3	3.0	5.0	21.7	5.0	4.8	4.6
Lincoln, GA	6.2	8.8	11.4	1.4	13.7	5.8	2.4	6.3	3.7	21.7	8.3	4.7	5.6
Madison, GA	3.0	8.2	15.5	2.9	13.3	4.8	0.8	3.6	8.1	24.8	4.9	6.4	3.8
Oglethorpe, GA	4.6	7.0	12.2	2.1	9.9	3.9	0.7	3.5	6.2	35.2	4.1	3.4	7.2
Wilkes, GA	7.4	5.3	19.4	4.8	12.6	3.4	0.9	2.3	3.0	22.2	6.2	6.3	6.2
Zone of Interest	1.9	6.3	20.8	3.2	12.3	4.1	1.3	3.6	6.6	23.6	6.9	5.2	4.2

Source: U.S. Bureau of the Census, 2014 Estimate

As shown in Table 14, the unemployment rate for the zone of interest is in line with that of Georgia and South Carolina at 10.7%. Oglethorpe County's unemployment rate of 6.0% is significantly lower than that of any other county. McCormick County is another outlier, with a 16.5% unemployment rate.

Table 14: Labor Force, Employment and Unemployment Rates, 2014 Annual Averages

Geographical Area	Labor Force	Employed	Unemployed	Unemployment Rate
Georgia	4,819,365	4,300,074	519,291	10.8%
South Carolina	2,274,142	2,031,997	242,145	10.6%
Abbeville, SC	10,710	9,361	1,349	12.6%
Anderson, SC	88,206	79,245	8,961	10.2%
McCormick, SC	3,588	2,995	593	16.5%
Elbert, GA	8,304	7,287	1,017	12.2%
Hart, GA	10,709	9,818	891	8.3%
Lincoln, GA	3,635	3,231	404	11.1%
Madison, GA	12,777	11,771	1,006	7.9%
Oglethorpe, GA	6,734	6,328	406	6.0%
Wilkes, GA	4,257	3,810	447	10.5%
Zone of Interest	7,242,427	6,465,917	776,510	10.7%

Source: U.S. Bureau of the Census, 2014 Estimate

2.9.4 Households and Income

There are approximately 128,037 households in the zone of interest with an average household size of 2.48 persons. For Georgia, there are 3.5 million households and in South Carolina, 1.7 million, with an average size of households at 2.72 for Georgia and 2.56 for South Carolina, as shown in Table 15.

Table 15: 2014 Households and Household Size

Geographical Area	Households	Persons per Household
Georgia	3,540,690	2.72
South Carolina	1,795,715	2.56
Abbeville, SC	9,752	2.49
Anderson, SC	73,669	2.54
McCormick, SC	4,058	2.14
Elbert, GA	7,786	2.50
Hart, GA	10,050	2.45
Lincoln, GA	3,397	2.27
Madison, GA	9,819	2.84
Oglethorpe, GA	5,428	2.68
Wilkes, GA	4,078	2.44
Zone of Interest	128,037	2.48

Source: U.S. Bureau of the Census, 2014 Estimate

As shown in Table 16, the zone of interest is poorer than Georgia and South Carolina overall. In the counties in zone of interest, the median household income is \$38,000, compared to the state median household incomes of \$45,000 in South Carolina and \$49,000 in Georgia.

Similarly, the zone of interest has a lower per capita income (\$20,500) compared to Georgia (\$25,400) and South Carolina (\$24,200). Within the zone of interest, Anderson County has the highest per capita income (\$22,200).

Table 16: Median and Per Capita Income, 2014

Geographical Area	Median household income (2014 dollars)	Per capita income (2014 dollars)
Georgia	\$ 49,342	\$ 25,427
South Carolina	\$ 45,033	\$ 24,222
Abbeville, SC	\$ 35,409	\$ 18,303
Anderson, SC	\$ 41,822	\$ 22,216
McCormick, SC	\$ 38,919	\$ 21,730
Elbert, GA	\$ 35,170	\$ 19,709
Hart, GA	\$ 36,867	\$ 20,881
Lincoln, GA	\$ 34,596	\$ 21,579
Madison, GA	\$ 43,746	\$ 20,661
Oglethorpe, GA	\$ 46,901	\$ 21,764
Wilkes, GA	\$ 30,729	\$ 17,753
Zone of Interest	\$ 38,240	\$ 20,511

Source: U.S. Bureau of the Census, 2014 Estimate

The percentage of persons whose income was below the poverty level in the zone of interest was consistent with that of Georgia and South Carolina. A “low-income” person is defined as a person whose household income is at or below the income level stated in the U.S. Department of Health and Human Services’ poverty guidelines, which in the 2014 guidelines was \$23,850 for a family of four.

Most of the counties in the zone of interest showed between 18% and 25% of all persons having incomes below the poverty level, with Oglethorpe and Anderson Counties having less than 18% of their populations below the poverty level.

Wilkes County had the greatest percentage of people below the poverty level at 29.5%.

Table 17: Percent of Families and People Whose Income in the Past 12 Months is Below the Poverty Level (2014)

Geographical Area	Population below poverty level	Percent of total population
Georgia	1,781,388	18.5%
South Carolina	840,141	18.3%
Abbeville, SC	5,618	23.1%
Anderson, SC	31,366	16.8%
McCormick, SC	1,881	21.6%
Elbert, GA	3,977	20.5%
Hart, GA	6,049	24.6%
Lincoln, GA	1,878	24.3%
Madison, GA	5,168	18.5%
Oglethorpe, GA	2,121	14.6%
Wilkes, GA	2,925	29.5%
Zone of Interest	60,983	18.31%

Source: U.S. Bureau of the Census, 2014 Estimate

2.10 RECREATION FACILITIES, ACTIVITIES, AND NEEDS

2.10.1 Zones of Influence

The primary area of economic influence encompasses portions of Abbeville, Anderson, Elbert, and Hart Counties with additional economic influence from within a 100 mile radius of the lake. This four county region has been utilized as the basis in summarizing the population characteristics of Russell Lake.

2.10.2 Visitation Profile

The majority of visitors to Russell Lake come from within a 100 mile radius of the lake area. Russell Lake visitors are a diverse group ranging from campers who utilize the campgrounds around the lake; full time and part time residents of the private housing developments that border the lake; hunters who utilize the Wildlife Management Areas and collar lands around the lake; day users who picnic in the city, state and federally operated parks; marina customers; and many other user groups.

2.10.3 Recreation Analysis

Recreational use at Russell Lake continues to evolve. While visitation in recreational areas remains strong, facilities (e.g., marina and cabins) in outgranted areas indicate that there is demand for recreational opportunities not offered in traditional USACE parks.

2.10.4 Recreation Carrying Capacity

The recreation carrying capacity of a lake is the amount of development, use, and activity any lake and associated recreational lands can sustain without being permanently adversely impacted. Lake staff in conjunction with Lessee's will continue to identify possible causes and effects of overcrowding and overuse and apply appropriate best management practices including: site management, regulating visitor behavior, and modifying visitor behavior.

2.11 REAL ESTATE

Russell Project lands were purchased under the 1962 Joint Land Acquisition Policy, as amended in 1971. Land acquisition involved the purchasing of fee titles to all land acquired for the dam site, construction area, permanent structure area, and reservoir area lying below a block-out purchase line encompassing the acquisition guideline with a minimum distance of 300 feet horizontally from the top of the 475.0' amsl conservation pool in steep areas; and to the acquisition line on gentle slopes in order to contain the flowage easement. The effect would protect against wave action, back erosion, induced surcharge, and backwater effects. The acquisition guide contour for fee acquisition is at elevation 485.0' amsl, or the 300' minimum being the estimated elevation to which the reservoir will reach once in every 5 years.

The project includes an area of 53,111 acres acquired in fee with an additional 159 acres of flowage easement and a land area of 26,458 acres when the lake is at normal pool elevation. Total project lands and water at Russell Project equal 53,270 acres. Neither surface nor minerals were acquired below the normal high water line of the natural river channel. This was generally defined on the ground as the vegetative line on the riverbank. Permanent inundation precludes use by the surface owner; however, sand, gravel, and minerals could possibly be removed subject to operation of the project, including the navigation channel.

Government property is monitored by lake personnel to identify and correct instances of unauthorized use. When permanent encroachments are discovered, Savannah District - Real Estate Division will be notified after the project exhausts all efforts to resolve it in the field

Forest products generated through clearing, flood damage and salvage operations, or incidental to implementation of the approved Forest Management Plan, and not required for USACE use, will be sold. Disposal procedure for standing timber is a Real Estate Division function and all proposed sales will incorporate a disposal plan. Generally, the plan will indicate extent, volume, and justification for such sales, and will be accomplished through the Real Estate Division, Savannah District.

2.12 PERTINENT PUBLIC LAWS

The following public laws are applicable to Russell Lake:

- a. Public Law 59-209, Antiquities Act of 1906 - The first Federal law established to protect what are now known as "cultural resources" on public lands. It provides a permit procedure for investigating "antiquities" and consists of two parts: An act for the Preservation of American Antiquities, and Uniform Rules and Regulations.
- b. Public Law 74-292, Historic Sites Act of 1935 - Declares it to be a national policy to preserve for (in contrast to protecting from) the public, historic (including prehistoric) sites, buildings, and objects of national significance. This act provides both authorization and a directive for the Secretary of the Interior, through the National Park Service, to assume a position of national leadership in the area of protecting, recovering, and interpreting national archeological historic resources. It also establishes an "Advisory Board on National Parks; Historic Sites, Buildings, and Monuments, a committee of eleven experts appointed by the Secretary to recommend policies to the Department of the Interior".
- c. Public Law 75-761, Flood Control Act of 1938 - This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- d. Title 16 U.S. Code §§ 668-668a-d, 54 Stat. 250, Bald Eagle Protection Act of 1940, as amended. This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The Act defines "take" as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.
- e. Public Law 78-534, Flood Control Act of 1944 - Section 4 of the act as last amended in 1962 by Section 207 of Public Law 87-874 authorizes USACE to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant leases and licenses for lands, including facilities, preferably to Federal, State or local governmental agencies.
- f. Public Law 79-525, River and Harbor Act of 1946 - This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- g. Public Law 83-780, Flood Control Act of 1954 - This act authorizes the construction, maintenance, and operation of a public park and recreational facilities in reservoir areas under the control of the Department of the Army and

authorizes the Secretary of the Army to grant leases of lands in reservoir areas deemed to be in the public interest.

- h. Public Law 85-624, Fish and Wildlife Coordination Act 1958 - This act as amended in 1965 sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.
- i. Public Law 86-523, Reservoir Salvage Act of 1960, as amended. This Act provides for: (1) the preservation of historical and archeological data that might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any Federal reservoir construction projects; (2) coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistoric, or archeological data; and (3) expenditure of funds for recovery, protection, and data preservation. This Act was amended by Public Law 93-291.
- j. Public Law 86-717, Forest Conservation - This act provides for the protection of forest cover for reservoir areas under this jurisdiction of the Secretary of the Army and the Chief of Engineers.
- k. Public Law 87-88, Federal Water Pollution Control Act Amendments of 1961, as amended. Section 2(b)(1) of this Act gives USACE responsibility for water quality management of USACE reservoirs. This law was amended by the Federal Water Pollution Control Act Amendment of 1972, Public Law 92-500.
- l. Public Law 87-874, Rivers and Harbors Act of 1962 - This act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes.
- m. Public Law 88-578, Land and Water Conservation Fund Act of 1965 - This act established a fund from which Congress can make appropriations for outdoor recreation. Section 2(2) makes entrance and user fees at reservoirs possible by deleting the words "without charge" from Section 4 of the 1944 Flood Control Act as amended.
- n. Public Law 89-72, Federal Water Project Recreation Act of 1965 - This act requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body.
- o. Public Law 89-90, Water Resources Planning Act (1965) - This act established the Water Resources Council and gives it the responsibility to encourage the

development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.

- p. Public Law 89-272, Solid Waste Disposal Act, as amended by PL 94-580, dated October 21, 1976 - This act authorized a research and development program with respect to solid-waste disposal. It proposes (1) to initiate and accelerate a national research and development program for new and improved methods of proper and economic solid-waste disposal, including studies directed toward the conservation of national resources by reducing the amount of waste and unsalvageable materials and by recovery and utilization of potential resources in solid waste; and (2) to provide technical and financial assistance to State and local governments and interstate agencies in the planning, development, and conduct of solid-waste disposal programs.
- q. Public Law 89-665, Historic Preservation Act of 1966 - This act provides for: (1) an expanded National Register of significant sites and objects; (2) matching grants to states undertaking historic and archeological resource inventories; a program of grants-in aid to the National Trust for Historic Preservation; and the establishment of an Advisory Council on Historic Preservation. Section 106 requires that the President's Advisory Council on Historic Preservation have an opportunity to comment on any undertaking which adversely affects properties listed, nominated, or considered important enough to be included on the National Register of Historic Places.
- r. Public Law 90-483, River and Harbor and Flood Control Act of 1968, Mitigation of Shore Damages - Section 210 restricted collection of entrance fee at USACE lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel.
- s. Public Law 91-190, National Environmental Policy Act of 1969 (NEPA) - NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a "continuing policy of the Federal Government... to use all practicable means and measures... to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Section 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public law of the United States shall be interpreted and administered in accordance with the policies of the Act.
- t. Public Law 91-611, River and Harbor and Flood Control Act of 1970 - Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.

- u. Public Law 92-347, Golden Eagle Passbook and Special Recreation User Fees - This act revises Public Law 88-578, the Public Land and Water Conservation Act of 1965, to require Federal agencies to collect special recreation user fees for the use of specialized sites developed at Federal expense and to prohibit the Corps of Engineers from collecting entrance fees to projects.
- v. Public Law 92-500, Federal Water Pollution Control Act Amendments of 1972 - The Federal Water Pollution Control Act of 1948 (PL 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (PL 91- 224), established the basic tenet of uniform State standards for water quality. Public Law 92-500 strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical and biological integrity of the Nation's waters."
- w. Public Law 92-516, Federal Environmental Pesticide Control Act of 1972 - This act completely revises the Federal Insecticide, Fungicide and Rodenticide Act. It provides for complete regulation of pesticides to include regulation, restrictions on use, actions within a single State, and strengthened enforcement.
- x. Public Law 93-81, Collection of Fees for Use of Certain Outdoor Recreation Facilities. - This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended to require each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense.
- y. Public Law 93-205, Conservation, Protection, and Propagation of Endangered Species Act of 1973, as amended. This law repeals the Endangered Species Conservation Act of 1969. It also directs all Federal departments/agencies to carry out programs to conserve endangered and threatened species of fish, wildlife, and plants and to preserve the habitat of these species in consultation with the Secretary of the Interior. This Act establishes a procedure for coordination, assessment, and consultation. This Act was amended by Public Law 96-159.
- z. Public Law 93-251, Water Resources Development Act of 1974 - Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local governmental entities in the costs of sewage treatment plan installations.
- aa. Public Law 93-291, Archeological Conservation Act of 1974 - The Secretary of the Interior shall coordinate all Federal survey and recovery activities authorized under this expansion of the 1960 act. The Federal Construction agency may transfer up to one percent of project funds to the Secretary with such transferred funds considered non-reimbursable project costs.
- bb. Public Law 93-303, Recreation Use Fees - This act amends Section 4 of the Land and Water Conservation Act of 1965, as amended, to establish less

restricted criteria under which Federal agencies may charge fees for the use of campgrounds developed and operated at Federal areas under their control.

- cc. Public Law 93-523, Safe Drinking Water Act - The act assures that water supply systems serving the public meet minimum national standards for protection of public health. The act (1) authorizes the Environmental Protection Agency to establish Federal standards for protection from all harmful contaminants, which standards would be applicable to all public water systems, and (2) establishes a joint Federal-State system for assuring compliance with these standards and for protecting underground sources of drinking water.
- dd. Public Law 94-422, Amendment of the Land and Water Conservation Fund Act of 1965 - Expands the role of the Advisory Council. Title 2 - Section 102a amends Section 106 of the Historical Preservation Act of 1966 to say that the Council can comment on activities which will have an adverse effect on sites either included in or eligible for inclusion in the National Register of Historic Places.
- ee. Public Law 95-217, Clean Water Act of 1977, as amended. This Act amends the Federal Water Pollution Control Act of 1970 and extends the appropriations authorization. The Clean Water Act is a comprehensive Federal water pollution control program that has as its primary goal the reduction and control of the discharge of pollutants into the nation's navigable waters. The Clean Water Act of 1977 has been amended by the Water Quality Act of 1987, Public Law 100-4.
- ff. Public Law 95-341, American Indian Religious Freedom Act of 1978. The Act protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.
- gg. Public Law 95-632, Endangered Species Act Amendments of 1978. This law amends the Endangered Species Act Amendments of 1973. Section 7 directs agencies to conduct a biological assessment to identify threatened or endangered species that may be present in the area of any proposed project. This assessment is conducted as part of a Federal agency's compliance with the requirements of Section 102 of NEPA.
- hh. Public Law 96-95, Archeological Resources Protection Act of 1979. This Act protects archeological resources and sites that are on public and tribal lands, and fosters increased cooperation and exchange of information between governmental authorities, the professional archeological community, and private individuals. It also establishes requirements for issuance of permits by the Federal land managers to excavate or remove any archeological resource located on public or Indian lands.
- ii. Public Law 98-63, Supplemental Appropriations Act of 1983. This Act authorized the Corps of Engineers Volunteer Program. The United States Army Chief of

Engineers may accept the services of volunteers and provide for their incidental expenses to carry out any activity of the USACE, except policymaking or law or regulatory enforcement.

- jj. Public Law 99-662, The Water Resources Development Act 1986 - Provides for the conservation and development of water and related resources and the improvement and rehabilitation of the Nation's water resources infrastructure.
- kk. Public Law 110-114, Water Resources Development Act of 2007, Section 3134 - This act requires lakes within the State of Oklahoma under Corps of Engineers jurisdiction research methods for demonstration projects to benefit and enhance recreation.

3.0 RESOURCE OBJECTIVES

3.1 PROJECT-WIDE RESOURCE OBJECTIVES

Resource considerations at the Russell Project exist primarily due to user demands. Multiple user types have interests in the project lands, recreation facilities, and waters, and such demands regularly create conflicts. USACE is also obligated to manage these resources for the overall interest of the public and not just for a select group of individuals. It is the responsibility of the project and the agency to attempt to provide an environmentally sound balance of these demands.

The project-wide resource management objectives involve the long-term development and management goals of project resources to guide proposed future actions for the public benefit, consistent with resource capabilities within the framework of the USACE Environmental Operating Principles. Resource objectives are attainable goals for development, conservation, and management of natural, cultural, and manmade resources at a project. They are guidelines for obtaining maximum public benefits while minimizing adverse impacts to the environment and are developed in accordance with: 1) authorized project purposes; 2) applicable laws and regulations; 3) resource capabilities and suitability; 4) regional needs; 5) other governmental plans and programs; and 6) expressed public desires.

The project-wide resource objectives for Russell Lake, not in priority order, are listed below:

1. To increase the benefit of all project lands and waters for recreation, fisheries, and wildlife.
2. Manage the existing natural resources and recreation facilities in compliance with all pertinent laws, regulations, and policies.

3. Develop and manage the area for maximum enjoyment of the recreating public to the extent compatible with other authorized purposes.
4. Protect and conserve the existing native wildlife species and improve habitat now and in the future.
5. To manage habitat for fish, game, and non-game species, thereby providing a quality hunting, fishing, and wildlife viewing experience.
6. To protect and conserve Government property from erosion through natural resource management and fostering good stewardship by minimizing encroachments and other unauthorized uses.
7. To inform the public, through programs, public outreach, education, and personal contacts, about the project and resource management purposes and objectives.
8. Integrate fish and wildlife management practices with other natural resource management practices while working closely with state and local natural resource agencies. Forest management techniques (i.e., timber thinning and prescribed burning) will be utilized to improve wildlife habitat and as a forest management tool to improve insect and disease resistance in forest stands.
9. Identify safety hazards or unsafe conditions; correct infractions and implement safety standards in accordance with EM 385-1-1.
10. Encourage hunting and fishing participation through special events, habitat management, and programs as well as other outdoor recreation pursuits compatible with project purposes.
11. To preserve and protect important cultural, ecological, and aesthetic resources in compliance with existing federal statutes and regulations.
12. Detect invasive species and minimize impacts to authorized project purposes in a cost-effective and environmentally sound manner. Monitor invasive species populations accurately and reliably, and if feasible, provide for restoration of native species and habitat.

Implementation of these objectives is based upon time, manpower, and budget. The objectives provided in this chapter are established to provide high levels of stewardship to USACE managed lands and resources while still providing a high level of public service. These objectives will be pursued through the use of a variety of mechanisms such as assistance from volunteer efforts, partnerships, hired labor, contract labor, remediation, and special lease conditions. It is the intention of Russell Lake staff to provide a realistic approach to the management of all resources.

The natural resource elements within the identified objectives come in several different categories of work at Russell Lake. They can be broken into recreation, fisheries, game, and non-game. Management objectives for these categories are dependent on the individual resource, location, and lead agency.

3.1.1 Aids to Navigation Management

The Russell Lake aids to navigation (ATON) management program provides for the maintenance of navigation markers with a focus on providing safe recreational opportunities. ATONs are maintained by USACE staff and through contracts.

3.1.2 Wildlife and Fisheries Management

Wildlife and fisheries are managed cooperatively between the GADNR, SCDNR, and USACE. USACE currently outgrants 4,823 acres of land to GADNR and 7,640 acres of land to SCPRT and SCDNR for recreation. This licensed land comprises several Wildlife Management Areas. The primary objective in these areas is to manage game species with the understanding those actions benefit both game and non-game species. As addressed in the mitigation section 4.1.4, the States and USACE also manage additional lands for wildlife.

USACE in cooperation with GADNR and SCDNR are the agencies responsible for performing fisheries management. Objectives for fisheries are to continue to monitor current populations, insure the populations are healthy and stable, and provide a quality fishery for recreation. Agencies conduct annual sampling and data analysis to assess fisheries populations. They also make adjustments in creel and size limits as necessary to keep existing populations healthy. Striped bass are routinely stocked in Russell Lake.

In addition to these licensed areas, USACE manages additional areas established for the purpose of wildlife management located on mitigation “collar lands” surrounding the lake. The objectives for these lands are to provide a contiguous corridor of habitat and intensive management that will preserve the existing native wildlife species and improve their habitat.

3.1.3 Recreation

Recreation falls within two categories and can be identified as either land or water based recreation. Management objectives for each type vary depending on the location and the intensity of use. General objectives are provided in this master plan as to the work necessary to meet the public’s needs for land and/or water based recreation. As a PL 89-72 project, initial development and construction of recreation facilities were cost-shared with state agencies. This law requires that not less than one-half the separable costs of developing recreational facilities and all operation and maintenance costs at Federal reservoir projects shall be borne by a non-Federal public body.

Land-based recreation includes activities that typically occur on, or adjacent to USACE land and water, such as camping, hiking, hunting, picnicking, wildlife/bird viewing, sightseeing, etc. Land-based recreation areas include campgrounds, day-use areas, overlooks, roads, and wildlife management areas. Facility types typically found within these recreation areas include campsites, picnic sites, hunting areas, and trails. These recreation areas are managed by several entities: state agencies, USACE, and city governments. In addition, restroom facilities, boat ramps, and courtesy docks that are land-based for the purposes of water dependent recreation are operated and maintained by the state agencies.

Water-based outdoor recreation includes opportunities, activities, areas, and facilities that occur on water managed by USACE. These activities include; fishing, boating, swimming, scuba diving, kayaking, etc. Unlike land-based recreation under PL 89-72, water-based recreation is managed by USACE with cooperation from the state agencies. The objective of this program is to insure public safety while providing recreational opportunities on the water. This program will involve looking at recreation carrying capacity vs. current use patterns, zoning requirements for no-wake or restricted areas, and areas to remain open for public recreation. USACE will keep in close coordination with the state agencies in determining use patterns within the water portions of the project and promote water safety.

3.1.4 State Comprehensive Outdoor Recreation Plan (SCORP)

Both Georgia and South Carolina have State Comprehensive Outdoor Recreation Plans (SCORP), which make the states eligible to receive federal grant dollars through the Land and Water Conservation Fund. These plans are typically updated every five years.

The Georgia 2014-2016 SCORP stresses the positive impacts provided by outdoor recreation by highlighting the value that parks and recreation bring to protecting natural resources, maintaining healthy populations, and adding to local economic vitality. Their priority is to attend to the urgent needs of current outdoor recreation facilities.

The South Carolina 2014 SCORP face the same issues as Georgia with regards to funding, maintaining recreational and natural resources, providing recreational opportunities to all populations, create economic benefits for the surrounding communities.

One of the unique challenges identified in the SCORP is the increase in resource user groups that have historically represented ethnic and racial minorities. These groups have differences in preferences for space, facilities, and amenities. The SCORP also demonstrated that low-income and rural constituents often face unique challenges in accessing outdoor recreation resources. Further depletion of the available outdoor recreation resource base would increase the negative impacts on these population groups. Maintaining what is currently held in the public sector and managing some of these spaces for outdoor recreation use would address these needs.

4.0 LAND ALLOCATION, LAND CLASSIFICATION, WATER SURFACE, AND PROJECT EASEMENT LANDS

Land allocation categories identify the congressionally authorized purpose for which project lands were acquired, whether by fee simple purchase or through other means as described below. The four categories of land allocation potentially applicable to project lands include: Operations, Recreation, Fish and Wildlife, and Mitigation.

4.1 LAND ALLOCATION

Approximately 53,270 acres were acquired in fee for the creation of Russell Lake (includes 159 acres of easement lands covered in section 4.3). Of the acres acquired, 26,458 acres were above the normal pool elevation of 475' amsl. All project lands are needed to carry out project purposes and are allocated as described in the following paragraphs.

4.1.1 Operations

These lands, totaling 4,064 acres, were acquired specifically to meet the requirements of the congressionally authorized purpose of constructing and operating the project for flood control, and hydroelectric power generation.

4.1.2 Recreation

A total of approximately 14,443 acres were acquired specifically for the congressionally authorized purpose of recreation development. These include high density recreation lands, low density recreation lands, and lands simply designated recreation.

4.1.3 Fish and Wildlife

A total of approximately 6,861 acres of land and water were purchased specifically for the congressionally authorized purpose of managing or protecting fish and wildlife. An additional 1,090 acres were designated as natural areas and serve a purpose for fish and wildlife.

4.1.4 Mitigation

This category includes lands purchased for the specific purpose of offsetting fish and wildlife habitat losses associated with the creation and operation of the project. The mitigation requirement was established pursuant to Section 2 (c) of the Fish and Wildlife Coordination Act of 1958 (PL 85-624) with detailed requirements established in House Document (HD) 97-244 dated 20 September 1982. The Final Environmental Impact Statement (EIS) was completed for the project in 1974, however, the Corps determined that additional studies were needed to develop a mitigation plan. A final Supplement to

the EIS was completed in 1981 containing a mitigation plan which was incorporated into HD 97-244. Section 601 of the Water Resources Development Act (WRDA, PL 99-662) authorized the implementation of the Russell Project Mitigation Plan. A detailed Mitigation Implementation Plan incorporating all RBR mitigation requirements was completed in 1995.

The total land mitigation requirement to offset the 26,653 acres of habitat losses was determined to be 49,236 acres. When HD 97-244 was prepared, USACE was required to assume maximum use of the management potential of Russell lands and selected Thurmond project lands to credit against the mitigation requirement. As a result, 20,590 acres of “collar lands” around Russell Lake were designated to be managed by the Corps. These mitigation “collar lands” are comprised of lands designated for other uses: recreation, operations, fish and wildlife management, and natural areas. An additional 6,853 acres were designated adjacent to JST and managed through license agreements to GADNR and SCDNR. The states are reimbursed annually for managing those lands. GADNR manages 2,773 acres and SCDNR manages 4,085 acres of the JST lands.

The remaining 21,788 acres needed for mitigation were purchased as separable mitigation lands in Georgia and South Carolina. Separable lands include 11,623 acres in Georgia managed by GADNR and located in Burke and Screven counties. The Burke County land was purchased in September 1992 and consists of 8,046 acres identified as DiLane Plantation. The Screven County tract was purchased in November 1992 and consists of 3,577 acres within the Tuckahoe WMA. The remaining 10,165 acres were purchased in South Carolina. In August 1992, 3,408 acres were purchased as part of the Donnelly WMA; 5,878 acres were purchased in November 1993 and designated as the Palachucola WMA. In addition, two small tracts were purchased adjacent to the Webb WMA. The Manor tract (297 acres) was purchased in July 1994 and the Treadwell tract (582 acres) was purchased in September 1994. In September 2005, as authorized by WRDA 2000, the South Carolina separable lands were conveyed to SCDNR along with a single payment for future management of those lands.

In addition, because the inundation of Russell Lake eliminated 8 miles of cold water stream habitat and 20 miles of warm water stream habitat, fisheries mitigation was required. Fisheries mitigation requirements are as follows: leave 1,500 acres of timber shelters and approximately 160 acres of fish attractors in Russell Lake and provide SCDNR with annual reimbursements to provide approximately 22,000 pounds of 12-inch trout for stocking in state waters.

4.2 LAND CLASSIFICATION

Land Classifications are determined based on characteristics that make an area suitable for a particular land use and is largely dictated by resource capability (i.e., soils, topography, and vegetation) and location. There are six categories of classification for the Master Plan identified as: Project Operations, High Density Recreation, Mitigation,

Environmentally Sensitive Areas, Multiple Resource Management Lands, and Surface Water. Each classification may have sub classifications. For example, recreation areas are classified based on three designations: 1) High Density for intensive use, 2) Recreation which are lands purchased for recreation adjacent to high density areas previously known as separable recreation lands, and 3) Low Density recreation sites which are identified under the Multiple Resource Management category. Maps showing the various land classifications can be found in Appendix A.

4.2.1 Project Operations

Project Operations includes the lands categorized as restricted use that are managed for the dam, spillway, hydropower plant, and project office. It likewise included an area identified for dredge disposal during construction; this areas is currently managed for wildlife. There are 651 acres of Project Operations lands specifically managed for these features. Additional lands are designated for operations limited public use which were also acquired for safe and efficient operations of authorized project purposes. A total of 3,413 acres were designated as Operations for limited public use. These smaller tracts of land often include the “collar lands” and may serve to connect other designations. For example individual recreation areas with small tracts of land between may have the Operations limited public use designation. Limited public use lands can be included in lease agreements if compatible with project purposes and land uses.

4.2.2 High Density Recreation

These are lands that typically occur near the shoreline and are developed for intensive recreational activities for the visiting public including day use areas, campgrounds, and concession areas. There are 6,101 acres of land classified for high density recreation. However, to date, approximately 5,473 acres have been developed to some extent for high density recreational use. Some of these areas may only have a boat ramp so there is potential for additional development based on the original design for each recreation area. Additionally, there are five recreation areas designated as inactive that have no recreational development. These areas have 628 acres designated for intensive or high density recreation that have the potential for future development. These areas are identified in Table 5.1 below.

4.2.3 Recreation (Separable Lands)

Additional lands may adjoin High Density recreation lands and were purchased as separable lands for the purpose of recreation. A total of 6,362 acres were purchased as separable recreation lands. These areas are designated as recreation and were allocated for any recreational use.

4.2.4 Mitigation

This classification is only used for the lands allocated for mitigation for the purpose of offsetting losses associated with the development of the project. Mitigation lands,

acreages, authorities, and requirements are addressed in detail above in the Land Allocation section. Management of mitigation lands, responsibilities, lease and license agreements, and funding are detailed in the 1995 Mitigation Implementation Plan.

4.2.5 Environmentally Sensitive Areas

These are areas where scientific, ecological, cultural, and aesthetic features have been identified. This designation limits and can prohibit any further development within the area. There are 1,090 acres classified for environmentally sensitive areas.

4.2.6 Multiple Resource Management Lands

This classification is divided into four subcategories identified as: Low Density Recreation, Wildlife Management, Vegetative Management, and Future/Inactive Recreation Areas. A given tract of land may be classified using one or more of these subcategories. The following identifies the amount contained in each subcategory of this classification.

- a. Low Density Recreation. These are lands with minimal development or infrastructure that support passive public recreational use (e.g., fishing, hunting, wildlife viewing, shoreline use, hiking, etc.). They were lands purchased for recreation and classified for low density recreation. The intention of these classified lands is to assure available lands for low density recreation serving as a buffer between areas classified as recreation intensive use and wildlife management. There are 1,980 acres under this classification at Russell Lake.
- b. Wildlife Management. These are lands designated for the stewardship of wildlife resources. There are 6,861 acres of land under this classification. The focus of these areas is providing public access and habitat management through maintained wildlife openings and prescribed burning.
- c. Vegetative Management. These are lands designated for stewardship of forest, prairie, and other native vegetative cover. There is no acreage under this classification at Russell Lake.
- d. Future or Inactive Recreation. These are lands designated for recreation with site characteristics compatible with potential future recreation development. These areas will be managed as low density recreation lands which will still provide for recreational benefits until there is an identifiable need and opportunity to develop these areas. There are five areas: Trader Ward, Beverly, Heardmont, Indian Creek, and Pickens Creek. These inactive sites have 997 acres designated for recreation (628 intensive use and 369 separable lands purchased specifically for recreation).

4.2.7 Surface Water

The project does have a surface water management program for project operations and public safety. The navigation channel and hazard buoys are managed by the USACE.

- a. Restricted. These are water areas restricted for project operations, safety, and security purposes. The area around the dam and hydropower intakes in the forebay has been identified for no boat entry which covers an area of approximately 15.76 acres. The area restricted in the tailwater encompasses 23.55 acres for a total of 39.31 acres of restricted surface water.
- b. Designated No-Wake. Russell Lake has approximately 25 acres of no-wake areas surrounding the 25 boat ramps. Another no-wake zone is located at the 15 bridges resulting in an additional 37 acres of no-wake area. Marina sites have approximately 17 acres of no-wake area. A total of approximately 79 acres of surface water is designated as no-wake.
- c. Fish and Wildlife Sanctuary. These areas are managed with annual or seasonal restrictions to protect fish and wildlife species during periods of migration, resting, feeding, nesting, and/or spawning. Russell Lake does not have surface water designated for this purpose. However, there are spring water level restrictions for the purpose of maintaining largemouth bass spawning habitat (ER 1130-2-16, March 2001). The spawning period is defined as beginning when water temperatures reach 65 degrees Fahrenheit and lasts until three weeks after water temperatures reach 70 degrees. The spawning period usually starts around the first of April and lasts 4 to 6 weeks. Past studies indicate that the 4-week period of April 1-28 is the peak spawning period. Stable lake levels should be provided during this peak spawning period to prevent the stranding of eggs and abandonment of nests. Throughout the spawning season, water levels should not be lowered more than six inches below the highest lake elevation recorded during the operational spawning window. If inflows during the spawning season cause lake levels to rise to flood levels, managers have the authority to lower lake levels more than 6 inches, since flood control takes precedence over fish spawn. Additionally, maintaining these stable lake levels may not always be possible during drought.
- d. Open Recreation. Other than the restricted areas near the dam, the remainder of the lake is open to recreational use. There is no specific zoning for these areas, but there is a buoy system in place to help aid in public safety. These buoys mark hazards in the navigation channel, no wake areas, boat restriction, and navigational channel and direction.

Table 18 provides a summary of land classifications at Russell Reservoir. A map representing these areas can be found in Appendix A.

Table 18: Land and Water Classifications

Land Classification	Acres
Project Operations (Restricted Use)	651
Operations Limited Use	3,413
High Density Recreation (includes Future/Inactive)	6,101
Recreation-Separable (includes Future/Inactive)	6,362
Environmental Sensitive and Natural Areas	1,090
MULTIPLE RESOURCE MANAGED LANDS	
Low Density Recreation	1,980
Wildlife Management	6,861
Vegetative Management	0
TOTAL LANDS	26,458
Future/Inactive Recreation (included under Recreation above)	997
Water Classification	
Surface Water: Restricted	39
Surface Water: Designated No-Wake	79
Surface Water: Fish and Wildlife Sanctuary	0
Surface Water: Open Recreation	26,535
TOTAL WATER	26,653

4.3 PROJECT EASEMENT LANDS

These are lands on which easement interests were acquired. Fee title was not acquired on these lands but the easement interests convey to the Federal government certain rights to use and or restrict the use of the land for specific purposes. Easement lands are typically classified as Operations Easement, Flowage Easement, and/or Conservation Easement. There are 159 acres of easement lands at Russell Lake.

4.3.1 Operations Easement

These are easements the USACE purchases for the purpose of project operations. There are no acres of operations easements at Russell Lake.

4.3.2 Flowage Easement

These are easements purchased by the USACE giving the right to temporarily flood private land during flood risk management operations. There are 159 acres of flowage easement lands located at Russell Lake.

4.3.3 Conservation Easement

These are easements purchased by the USACE for the purpose of protecting wildlife, fisheries, recreation, vegetation, archeological, threatened, and endangered species, or other environmental benefits. There are no conservation easements at Russell Lake.

4.4 LAND CLASSIFICATION OBJECTIVES

4.4.1 Operations

USACE will operate and maintain the Russell Project based on authorized project purposes with a priority on security and safety. For lands designated for operations, USACE will conserve and improve natural resources through management activities and restrict access as needed for security and safety purposes. In addition, these lands will be used to promote hunting and fishing through special events.

4.4.2 High Density Recreation

Because high density recreation can include concessions, camping, boat ramps and day use areas, often in close proximity to each other, the Russell Project will coordinate planning with state partners while ensuring that use of project lands is compatible with sound stewardship of the natural resource. In cooperation with our state partners, USACE will develop and manage project resources to support types and levels of recreation activities indicated by visitor demand and consistent with carrying capacities, mitigation requirements, and natural resources capabilities.

4.4.3 Recreation

Recreation lands will include coordination with state partners and have objectives similar to high density recreation; however, these lands will have less intense use than the high density recreation and may include camping, trails, and cabins, and other approved uses that are compatible with resource capabilities and public use.

4.4.4 Mitigation

USACE will ensure that the project complies with mitigation mandates and commitments by programming for funding while ensuring management is cost-effective and meets the mitigation goals established in HD 97-244 and the Mitigation Implementation Plan of 1995.

4.4.5 Multiple Resource Management

4.4.5.1 Low Density Recreation

USACE will manage areas designated for low density recreation to accommodate and support a variety of uses such as hiking, wildlife observation, hunting, and fishing.

Forest and wildlife management techniques such as thinning, prescribed burns, and planting wildlife openings may be used. However, the low density designated areas occupy small acreages making some management techniques impractical.

4.4.5.2 Wildlife Management

Utilize both forest management and agricultural techniques to maintain or improve wildlife populations with consideration of land capabilities. Promote hunting opportunities and improve public access.

4.4.6 Surface Water

4.4.6.1 Restricted

Maintain buoy lines for safety purposes. These areas occur in the forebay and the tailrace.

4.4.6.2 No Wake

Maintain no wake buoys in designated areas. Typically, these areas are in close proximity to boat ramps and bridges.

4.4.6.3 Open Recreation

The USACE will provide and maintain ATONs which will include both channel and hazard markers. Both types of markers improve safety for boaters and fishermen.

4.4.7 Easement

Inspect flowage easements periodically and evaluate for encroachments. Execution of resource objectives at a large multi-purpose project such as Russell Lake is difficult. It is a balance between priorities that compete for funds, time, and other resources. Priority will be given to those items required by law with an attempt to provide continued public use of Government land. Public access will still be a priority to service all ethnic and economic groups.

5.0 RESOURCE PLAN

The overall objective of the resource plan is to maximize recreational benefits while maintaining the projects unique natural resources and scenic qualities. There are 30 recreation areas ranging from developed state parks to access areas (boat ramps). Of the 30 recreation areas, five are inactive: Trader Ward Access, Heardmont Recreation Area, Wilson Creek Access, Indian Creek Access, and Pickens Creek Access. The primary lessee for all of the recreation areas is the GADNR, SCDNR, or SCPRT.

Flowage easement lands total approximately 159 acres. These lands occur along tributaries outside the project boundaries and are not included as part of the resource

plan. The sections below provide a detailed description of each area. The descriptions are organized according to the following categories:

- **Management Agency** – The agency responsible for the day-to-day operations and maintenance of an area
- **Land Classification** – The designated land use as defined in Section 4.2
- **Location** – A brief description of the areas location including the plate number
- **Description** – A brief description of the area, focusing on recreation features currently on site
- **Future Development** – Lists the potential for future development based on the features originally in the design, but due to various constraints were not constructed. Also, includes those features being proposed for development, but not in the original design (Richard B. Russell State Park only)

5.1 SHUCK PEN EDDY ACCESS

Management Agency: GADNR

Land Classification: Recreation

Location: East of Bobby Brown Road

Description: This 24-acre area is for boat launching only. Facilities include a 3-lane boat ramp, 71 car and trailer parking spaces, vault toilets and a floating courtesy dock.

Future Development: No further development is planned or authorized.

5.2 ELBERT PARK

Management Agency: GADNR

Land Classification: Recreation

Location: Located north and south of Hwy 72.

Description: This 670-acre area is bisected by GA Hwy 72. The approximately 270 acres north of the highway is used for boat launching. Facilities presently include one 3-lane boat ramp, 78 car and trailer spaces and vault toilets. The approximately 470 acres south of Hwy 72 is for future day use facilities, but is presently subleased to GADNR as a WMA.

Future Development: Although currently there is no additional development planned, future use could allow for primitive camping south of Hwy 72.

5.3 BEAVERDAM MARINA

Management Agency: GADNR with private sublease

Land Classification: Recreation

Location: The marina is located north of Hwy 72 approximately 7 miles east of Elberton, GA.

Description: This 361-acre area serves as one of two marina sites on Lake Russell. Facilities include a one lane boat ramp with courtesy dock, fuel pump, bath house, restaurant (seasonal), residence, maintenance building, 112 wet slips, 12 dry storage slips, and dump station.

Future Development: No further development is planned or authorized.

5.4 BEVERLY TRACT – PEARL MILL ACCESS

Management Agency: GADNR

Land Classification: Recreation

Location: The tract is located east and west of Pearl Mill Rd. approximately 6 miles east of Elberton, GA.

Description: The 274-acre tract has one 2-lane boat ramp with courtesy dock, vault toilet, and parking for 32 vehicle with trailers. The remaining area away from the ramp is used by GADNR as an archery only wildlife management area.

Future Development: No further development is planned or authorized.

5.5 MIDDLETON ACCESS

Management Agency: GADNR

Land Classification: Recreation

Location: The area is located 6 miles east of Elberton, GA on Middleton Church Road.

Description: This 12-acre site has a 2-lane boat ramp with courtesy dock, vault toilet, and parking for 40 vehicles with trailers.

Future Development: No further development is planned or authorized.

5.6 HEARDMONT RECREATION AREA (INACTIVE)

Management Agency: GADNR

Land Classification: Recreation

Location: The area is located 9 miles east of Elberton, GA on Johnstown Rd.

Description: This site has 540 acres and has been used for forest management (timber thinning in 2004) and is currently managed by GADNR as a wildlife management area.

Future Development: No future development is planned. The site is authorized for primitive camping.

5.7 INDIAN CREEK ACCESS (INACTIVE)

Management Agency: GADNR

Land Classification: Recreation

Location: The area is located 10 miles east of Elberton, GA south of Dan Tucker Road.

Description: This 12-acre site has not been developed

Future Development: No future development is planned, but the site is authorized for a boat ramp with courtesy dock.

5.8 DRY FORK ACCESS

Management Agency: GADNR

Land Classification: Recreation

Location: The area is located 8 miles east of Elberton, GA at the end of Dry Fork Landing Dr.

Description: This 36-acre site has a 2-lane boat ramp, courtesy dock, vault toilet, and parking for 27 vehicles with trailers.

Future Development: No future development is planned or authorized.

5.9 LAKE RICHARD B. RUSSELL STATE PARK

Management Agency: GADNR

Land Classification: Recreation

Location: The Park is located on a peninsula southeast of Ruckersville Road.

Description: This 2,736-acre State Park has two, 2-lane ramps and one 6-lane ramp. Each ramp has a floating courtesy dock. A total of 65 parking spaces for vehicles with trailers are available at the ramps. In addition, a beach with concessions and bathrooms is open during the recreation season with a 128 space parking area. There are 26 picnic sites, 3 group shelters, 28 tent, trailer, RV campsites, a lakeside pavilion, rowing course and dock, disc golf, and 17 cabins available to the public. The cabin area also has a one-lane boat ramp. This area also includes an 18-hole golf course with clubhouse. A GADNR ranger lives on site.

Future Development: The GADNR has conducted a preliminary market analysis identifying several needs. This site has been identified for the addition of a marina site, 33 additional cottages (total of 50) and a walking trail. When GADNR has funds available they will complete a market analysis along with the necessary environmental surveys and documentation prior to any land disturbing activity.

5.10 COLDWATER PIER (HWY 368)

Management Agency: GADNR

Land Classification: Recreation

Location: The pier is located west of Highway 368 at Coldwater Creek approximately 9 miles northeast of Elberton, GA.

Description: This 6-acre area serves as a fishing pier. There are no facilities except for the abandoned bridge segment used as a pier. There are spaces for 20 vehicles.

Future Development: No further development is planned or authorized.

5.11 COLDWATER ACCESS (HWY 368)

Management Agency: GADNR

Land Classification: Recreation

Location: The ramp is located east of Highway 368 at Coldwater Creek approximately 9 miles northeast of Elberton, GA.

Description: This 12-acre site consists of a 2-lane boat ramp with courtesy dock. There are 34 parking spaces for vehicles with trailers.

Future Development: No further development is planned or authorized.

5.12 PICKENS CREEK ACCESS (INACTIVE)

Management Agency: GADNR

Land Classification: Recreation

Location: The area is located 12 miles northeast of Elberton, GA south of Highway 368 on Greg Shoals Drive.

Description: This 122-acre area is undeveloped and currently serves as a Wildlife Management Area for GADNR.

Future Development: Though no development is planned at this time; this site is authorized for a boat ramp and courtesy dock.

5.13 SAVANNAH RIVER PIER at HWY 368 (INACTIVE)

Management Agency: GADNR

Land Classification: Recreation

Location: This site is located 12 miles northeast of Elberton, GA north of Highway 368/184 across from Sanders Ferry ramp.

Description: This 6-acre site with a pier serves for fishing only, but is currently closed. There are no additional facilities at this site.

Future Development: No additional development is planned or authorized.

5.14 HIGHWAY 181 FISHING PIER

Management Agency: GADNR

Land Classification: Recreation

Location: This site is located approximately 2.5 miles south of Hartwell dam and south of Highway 181.

Description: This 12-acre area has a fishing pier and 14 vehicle parking spaces.

Future Development: No additional development is planned or authorized.

5.15 SMITH MCGEE ACCESS (HIGHWAY 181)

Management Agency: SCPRT

Land Classification: Recreation

Location: This site is located approximately 2.5 miles south of Hartwell dam and south of Highway 181 on the South Carolina side.

Description: This 6-acre site consists of a one-lane ramp with courtesy dock and 24 spaces for vehicles with trailers.

Future Development: No additional development is planned or authorized for this site.

5.16 MOUNTAIN VIEW RECREATION AREA

Management Agency: SCPRT

Land Classification: Recreation

Location: This site is located approximately 6 miles south of Hartwell dam on Craft McGee Road approximately 2 miles east of Hwy 187.

Description: This 92-acre area consists of steep topography, with a 2-lane boat ramp and 65 spaces for vehicles with trailers. This site is subleased to Anderson County.

Future Development: No additional development is planned or authorized.

5.17 SANDERS FERRY ACCESS

Management Agency: SCPRT

Land Classification: Recreation

Location: This site is located approximately 6 miles west of Iva, SC along Highway 184.

Description: This 12-acre site has a 3-lane boat ramp with courtesy dock, vault restroom, and parking for 57 vehicles with trailers.

Future Development: No additional development is planned or authorized.

5.18 GREGG SHOALS ACCESS

Management Agency: SCPRT

Land Classification: Recreation

Location: This site is located approximately 5 miles west of Lowndesville at the end of Gregg Shoals Road.

Description: This 12-acre site consists of a one-lane boat ramp, 2 vault toilets, and parking for 18 vehicles with trailers.

Future Development: No additional development is planned or authorized.

5.19 ALLEN CREEK ACCESS

Management Agency: SCPRT

Land Classification: Recreation

Location: The site is located approximately 4 miles west of Lowndesville on Horseshoe Road.

Description: This 18-acres site has a 2-lane boat ramp, 2 vault restrooms, and parking for 40 vehicles with trailers.

Future Development: No additional development is planned or authorized.

5.20 MCCALLA STATE PARK

Management Agency: SCPRT

Land Classification: Recreation

Location: This site is located 4 miles southeast of Lowndesville on Harpers Ferry Road.

Description: The 5,647-acre site has a historic farm complex, Hutchinson Farm. The area is subleased to SCDNR as a WMA. A total of 5,309 acres are WMA and managed for wildlife. McCalla is a Quality Deer Management Area with minimum requirements of 4 points on a side or 12-inch outside spread for bucks harvested. Approximately 620 acres of the WMA are managed as special use WMA. The special use area has 10 miles of horse trails and is used for special hunts scheduled by SCDNR. The remaining 338 acres are still used as State Park which includes a boat ramp and historic site. The area has a 3-lane boat ramp with courtesy dock and parking for 55 vehicles with trailers.

Future Development: Although there are no plans for future development, many options for development were authorized in the original Design Memorandum as indicated on maps 20a and 20b.

5.21 JIM RAMPEY RECREATION AREA

Management Agency: SCPRT

Land Classification: Recreation

Location: This 152-acre recreation area is located approximately one-mile east of Lowndesville, SC on Highway 81.

Description: The area has a 2-lane boat ramp, courtesy dock, and parking for 26 vehicles with trailers. There are 3 water borne restrooms, 70 picnic areas, 2 group shelters, one-mile of multipurpose trail, and 2 playgrounds.

Future Development: No additional development is planned or authorized.

5.22 WILSON CREEK ACCESS (INACTIVE)

Management Agency: SCPRT

Land Classification: Recreation

Location: This area is located 3 miles east of Highway 81 and south of Vernon Church Road.

Description: This 12-acre site was constructed for a boat ramp, but heavy siltation has made the site unusable.

Future Development: No additional development is planned or authorized. There are no plans to improve this ramp due to ongoing siltation issues.

5.23 FELKEL ACCESS

Management Agency: SCPRT

Land Classification: Recreation

Location: The site is located one-mile west of Highway 81 and south of Tom Young Bridge Road.

Description: This 24-acre site consists of one 2-lane boat ramp, courtesy dock, and parking for 54 vehicles with trailers. The site has 2 vault toilet restrooms.

Future Development: No additional development is planned or authorized.

5.24 TRADER WARD ACCESS (INACTIVE)

Management Agency: SCPRT

Land Classification: Recreation

Location: This area is located west of Highway 81 near Beulah Land Farms.

Description: This 49-acre site was never developed due to access issues.

Future Development: Future development of a boat ramp and parking area are unlikely unless access issues are resolved. A former county road accessing the property is now privately owned.

5.25 LATIMER RECREATION AREA

Management Agency: SCPRT

Land Classification: Recreation

Location: The site is located 2 miles north of Calhoun Falls, west of Highway 81 on Sawmill Road.

Description: The site consists of 61-acres, a 2-lane boat ramp, courtesy dock, and fishing pier. There are 4 vault toilet restrooms.

Future Development: No additional development is planned or authorized.

5.26 CALHOUN FALLS STATE PARK

Management Agency: SCPRT

Land Classification: Recreation

Location: The Park is located 0.5-mile north of Calhoun Falls, SC and west of Highway 81 on Calhoun Falls State Park Road.

Description: This site has 432 acres, a total of 377 parking spaces and includes a 2-lane boat ramp with courtesy dock and fish cleaning station. There are 100 campsites all with water; 86 sites have 20/30 amp power. There are 2 dump stations; 2 restrooms with vault toilets; 5 restrooms with water and 4 of those contain showers. There are 2 tennis courts; 1 basketball court; 106 picnic sites; 4 playgrounds; swim beach, 1.25-mile golf cart trail, and a 0.25-mile hiking trail. The Park has a marina site with 36 wet slips

and gas available. Buildings include a store, maintenance center, amphitheater, and administrative building.

Future Development: There are no plans for further development of the site. However, under the Design Memorandum, the park could construct a total of 100 slips at the marina, 2 additional tennis courts, 11 cabins and a number of other amenities as indicated on Map 26.

5.27 BLUE HOLE RECREATION AREA

Management Agency: Town of Calhoun Falls

Land Classification: Recreation

Location: The area is located in Calhoun Falls, west of Highway 81.

Description: The 123-acre site was formerly part of Calhoun Falls State Park. The site has a one-lane boat ramp, courtesy dock, and fishing pier. Parking is available for 15 vehicles with trailers. Additional parking includes 70 spaces for day use. There are 10 picnic sites, 2 group shelters, swim beach (currently closed) and one playground. The site has 2 restrooms and one amphitheater.

Future Development: There are no future plans for further development; however, in the original Design Memorandum a bathhouse, beach, and paddle boat rental area are also authorized.

5.28 ABBEVILLE RECREATION AREA

Management Agency: SCDNR

Land Classification: Recreation

Location: The area is located one-mile south of Calhoun Falls, SC, west of Highway 81.

Description: This 552-acre site was formerly leased to SC Department of Commerce. The site is currently leased to SCDNR, primarily for wildlife management. However, the site contains a 3-lane boat ramp, Millwood, has 2 vault toilets but does not have a courtesy dock. Parking is available for 65 vehicles with trailers. Additionally, the site has a 2-lane ramp, Beergarden, with 30 spaces for vehicles with trailers and 2 vault toilets.

Future Development: There are no future plans for further development. The original Design Memorandum authorizes 3 camping areas.

5.29 HESTER'S RECREATION AREA

Management Agency: SCDNR

Land Classification: Recreation

Location: The area is located 2.6 miles south of Calhoun Falls, SC and west of Highway 81.

Description: This 211-acre site was formerly leased to SC Department of Commerce. The site is currently leased to SCDNR, primarily for wildlife management. The site was constructed with a 2-lane boat ramp and parking for 10 vehicles and trailers; however, the site has been closed and not maintained.

Future Development: There are no plans for further development or maintenance of the ramp and parking lot. The area will be used for wildlife management. The original design did include a marina site, cabins, camping, and a day use area.

5.30 MANOR RECREATION AREA

Management Agency: SCDNR

Land Classification: Recreation

Location: The area is located 1.25 miles north of Richard B. Russell dam and west of Russell Dam Overlook Road.

Description: This 378-acre site was formerly leased to SC Department of Commerce. The site is currently leased to SCDNR, primarily for wildlife management. The site has 2 vault toilets, a 2-lane boat ramp, and 36 parking spaces for vehicles with trailers.

Future Development: There are no plans for further site development. Authorization under the original Design Memorandum includes 3 picnic areas, 2 swim beaches, a bank fishing area, and a group use area.

Table 19: Recreation Area Managing Agency

PARK	Map	Acres High Density Recreation	Acres Recreation	TOTAL ACRES	AGENCY
Shuck Pen Eddy Access	1	24	0	24	GADNR
Elbert Rec Area	2	321	349	670	GADNR
Beaverdam Marina	3	183	178	361	GADNR
Beverly Tract – Pearl Mill Access	4	122	152	274	GADNR
Middleton Rec Area	5	12	0	12	GADNR
Heardmont Rec Area (INACTIVE)	6	323	217	540	GADNR
Indian Creek Access (INACTIVE)	7	12	0	12	GADNR
Dry Fork Access	8	36	0	36	GADNR
Richard B. Russell State Park	9	1,342	1,394	2,736	GADNR
Coldwater Pier	10	6	0	6	GADNR
HWY 368 Coldwater Access	11	12	0	12	GADNR
Pickens Creek Rec Area (INACTIVE)	12	122	0	122	GADNR
Hwy 368 Savannah River Pier (INACTIVE)	13	6	0	6	GADNR
Hwy 181 Fish Pier	14	12	0	12	GADNR
Smith McGee Hwy 181 Access	15	6	0	6	SCPRT
Mountain View Rec Area	16	37	55	92	SCPRT
Sanders Ferry Access	17	12	0	12	SCPRT
Gregg Shoals Access	18	12	0	12	SCPRT
Allen Creek Access	19	18	0	18	SCPRT
McCalla State Park	20a – 20b	2,501	3,146	5,647	SCPRT
Jim Rampey Rec Area	21	122	30	152	SCPRT
Wilson Creek Access (INACTIVE)	22	12	0	12	SCPRT
Felkel Access	23	24	0	24	SCPRT
Trader Ward Access (INACTIVE)	24	49	0	49	SCPRT
Latimer Rec Area	25	61	0	61	SCPRT
Calhoun Falls State Park	26	244	188	432	SCPRT
Blue Hole Rec Area	27	69	54	123	City of C. Falls
Abbeville Rec Area	28	183	369	552	SCDNR
Hester's Rec Area	29	122	89	211	SCDNR
Manor Rec Area	30	183	195	378	SCDNR

6.0 SPECIAL TOPICS/ISSUES/CONSIDERATIONS

6.1 COMPETING INTERESTS ON THE NATURAL RESOURCES

Russell Lake is a medium sized multi-purpose project with numerous authorized purposes. These authorized purposes have municipal and private users which have developed over time and are reliant on their provided benefits. These benefits are critical to the local and regional economies and are of great interest to the public. As a result, competing interests may attempt to influence the utilization of federal lands and water. USACE will balance these interests so the public can benefit by implementing sound management practices and minimizing any adverse impacts per the USACE environmental stewardship mission.

6.2 PRIVATE EXCLUSIVE USE

The USACE private exclusive use policy of 1974 states that “Private shoreline uses are not allowed on water resources projects where construction was initiated after December 13, 1974, or on water resources projects where no shoreline use existed as of that date.” This policy applies to the Russell Project as well as over 300+ other water resources projects in the USACE portfolio. Only about 100 USACE water resources projects have an active shoreline management plan, all of which existed prior to 1974. Though rare in Georgia and South Carolina, Russell Project is one of many USACE water resource projects nationwide without any permitted private exclusive use permits for private boat docks.

This means that privately-owned boat docks, launching ramps, driveways, gardens, buildings, developed walkways, under-brushing, and other private lakeshore uses will not be permitted. This policy does not mean that landowners who share a common boundary with public property at the lake cannot use the lakeshore lands. There is no prohibition against pedestrian use of any public property at the lake except in restricted areas near the dam.

Even without this national policy, the mandates for collar lands to be utilized for wildlife mitigation at Russell Project also prohibits the use of these lands for private exclusive use. Public boating access and boat storage on federal lands and waters is conducted through authorized public recreation area leases and commercial marinas with each state cost share partner.

6.3 COST SHARE PARTNERS

Pursuant to the Federal Water Project Recreation Act of 1965 (P.L. 89-72), the USACE is required to cost share acquisition and construction costs of public recreation areas with a non-federal sponsor along with long-term operations and maintenance completed by the non-federal sponsor. Cost share agreements with Georgia and South Carolina were signed in 1972. Once cost share construction was complete, the recreation areas were turned over to either Georgia or South Carolina.

6.4 ENVIRONMENTAL FEATURES REQUIRED FOR HYDROPOWER PUMPED STORAGE OPERATION

Requirements for pumped storage commercial operation are considered environmental features of the Russell Project as a result of the EA for pumped storage. There are several requirements:

1. Limited pumping is required during the spring months to minimize entrainment of important gamefish with a maximum of one unit pump operation in March, no pumping in April and one unit in May;

2. The Thurmond Oxygen Injection System, installed approximately 5.5- miles upstream from the Thurmond Dam in the vicinity of Modoc, SC, is designed to maintain: (1) a minimum of one mile of striped bass habitat (temperature 18 to 24 degrees Celsius, dissolved oxygen greater than or equal to 5 mg/l) in the system vicinity from June 1 to September 30; (2) a minimum of four miles of enhanced deep water habitat (temperature 18 to 24 degrees Celsius, dissolved oxygen greater than or equal to 3 mg/l) in lower Thurmond Lake from June 1 to September 30; and (3) a minimum of 3 mg/l dissolved oxygen at Thurmond Dam intakes from June 1 until fall (approximately November 1).
3. At least six unit-hours of pre-pump generation must be completed from June through September within 12 hours of pumping;
4. Pumping is limited to night hours only (one hour after sunset until one hour prior to sunrise);
5. An oxygen system in Russell Lake is operated during the summer to maintain 5 mg/L in turbine generation releases;
6. Continue the operation and maintenance of the permanent fish protection systems for the life of the project (high frequency sound, lights and bar screens on pump intakes).

6.5 POWERHOUSE AND HYDROPOWER

The powerhouse is an integral-type structure with four conventional units capable of 75 MW and four pump back units capable of 75MW. More information can be found at <http://www.sas.usace.army.mil/About/Divisions-and-Offices/Operations-Division/Richard-B-Russell-Dam-and-Lake/Hydropower/>

7.0 PUBLIC AND AGENCY COORDINATION

The USACE began planning to revise the Russell Project MP in the fall of 2015. The objectives for a MP revision were: update land classifications to reflect changes in USACE land management policies since 1980, and new agency requirements for MP documents in accordance with ER 1130-2-550, Change 7, January 30, 2013 and EP 1130-2-550, Change 5, January 30, 2013.

The first action was a scheduled public scoping meeting providing an avenue for public and agency stakeholders to ask questions and provide comments. This public scoping meeting was held on September 14, 2015 at Elberton Civic Center, GA and September 15, 2015 at Calhoun Falls, SC. Russell Project Office placed advertisements on the USACE webpage, social media, and ads published in several local papers (Elberton Star and Abbeville Press and Banner) on multiple dates during the two weeks prior to the public scoping meeting.

USACE employees hosted the workshop, which was conducted in an open format. Participants were provided with comment forms at each topic-specific information table. Large-scale boards were displayed at each table to convey information about the following topics:

- a. Public Involvement Process
- b. Project Overview
- c. Overview of the National Environmental Policy Act (NEPA) Process
- d. Master Plan and current land classifications
- e. How to Submit Comments

At each of the information tables and throughout the meeting room, USACE representatives were available to answer questions and receive comments. Interested persons had the opportunity to comment about the project using a variety of methods, including the following:

- a. Filling out a comment form at the open house
- b. Submitting a comment using electronic mail

There were a total of 22 comments received during and following the public scoping meeting for interest groups, partner agencies, other government agencies, and businesses. In total, approximately 18-24 individuals, not including USACE personnel, attended these public scoping meetings. They are listed in Appendix B.

The comments ranged from not making any changes to the Russell Project to creating a mega tourist attraction to include the Russell Project and all surrounding communities.

8.0 SUMMARY OF RECOMMENDATIONS

8.1 SUMMARY OVERVIEW

The following is the recommended course of action necessary to manage Russell Lake's current and future issues. The factors considered cover a broad spectrum of public use, environmental, socioeconomic, and workload. The final Master Plan for Russell Lake will continue to provide for and enhance recreational opportunities for the public, improve the environmental quality, and create a management philosophy that recognizes the unique qualities, characteristics, and potentials of the project.

8.2 LAND RECLASSIFICATION PROPOSALS

A public workshop was developed as part of the initial process for revising the Russell Lake MP. During this process there were no land classification changes proposed.

9.0 BIBLIOGRAPHY

Adams, Natalie

2008 *Native American Traditional Ranges in Georgia and Parts of South Carolina: A Report Prepared to Support NAGPRA Consultation*. Contract No. W912-HN-05-0014, Work Order No. 0036. Prepared by New South Associates, Inc., Stone Mountain, Georgia, through Dial Cordy Associates. Submitted to U.S. Army Corps of Engineers, Savannah District.

Anderson, David G., R. Jerald Ledbetter, and Lisa O'Steen

1990 *Paleoindian Period Archaeology of Georgia*. University of Georgia, Laboratory of Archaeology, Athens.

Pope, Natalie Adams

2016 *Phase I Archaeological Survey of 2,561 Acres, Richard B. Russell Dam and Lake, Elbert and Hart Counties, Georgia and Abbeville County, South Carolina*. Draft Report. Contract Number W912HN-12-D-0016, Task Order 0031. Report prepared by New South Associates through Dial Cordy Associates. Submitted to U.S. Army Corps of Engineers, Savannah District.

Sweeney, Alex and Thomas G. Whitley

2011 *American Recovery and Reinvestment Act 2009 Section 110 Compliance Report for the U.S. Army Corps of Engineers, Savannah District NHPA, Cultural Resources Investigations Technical Report No. 22 Section 110 Survey of 3,727 acres at Lake Hartwell, Hart County, Georgia, and Oconee and Anderson Counties, South Carolina, and 2,465 acres at Richard B. Russell Reservoir, Elbert County, Georgia, and Abbeville County, South Carolina*. Prepared by Brockington and Associates, Stone Mountain, Georgia. Submitted to US Army Corps of Engineers, St. Louis District.

USACE. 1966. Design Memorandum No. 4(B), Master Plan (Updated). USACE, Savannah District, Georgia.

USACE. 1994. Operations Management Plan, Richard B. Russell Project. USACE, Savannah District, GA.

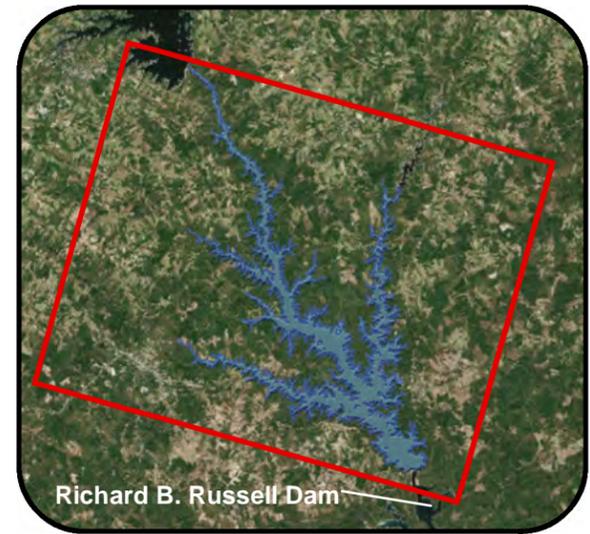
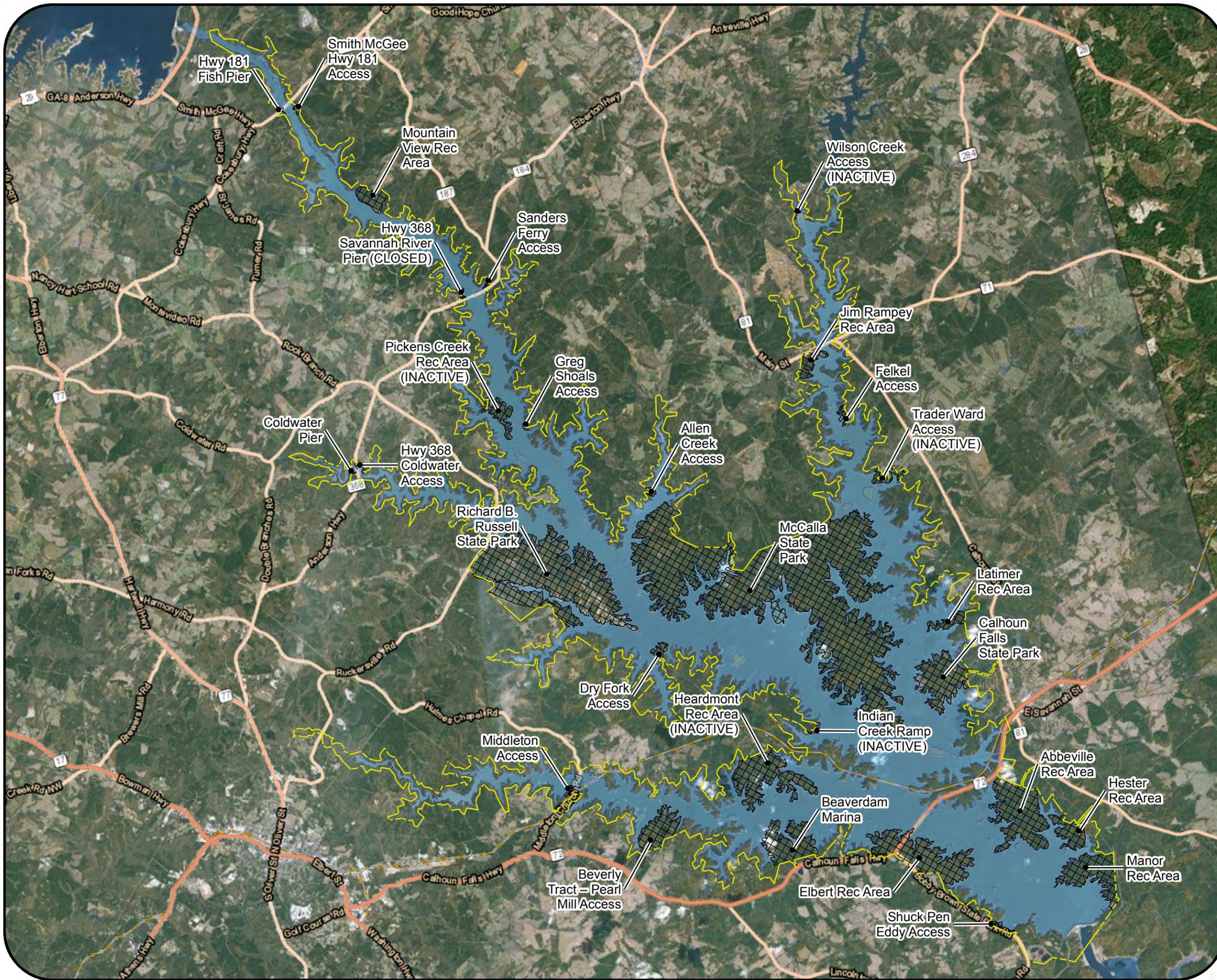
USACE. 2013. ER 1130-2-550, Project Operations, Recreation Operations and Maintenance Guidance and Procedures. HQ, USACE.

USACE. 2015. OMBIL Environmental Stewardship Module. USACE, Savannah District, GA.

USACE. 2015. OMBIL Recreation Module. USACE, Savannah District, GA.

Appendix A

MAPS



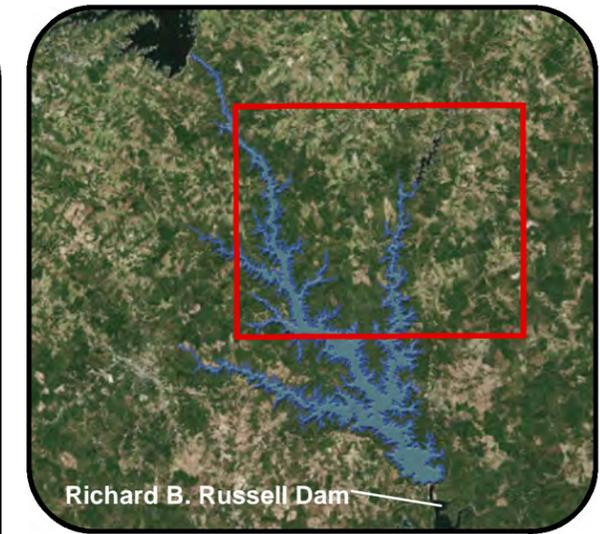
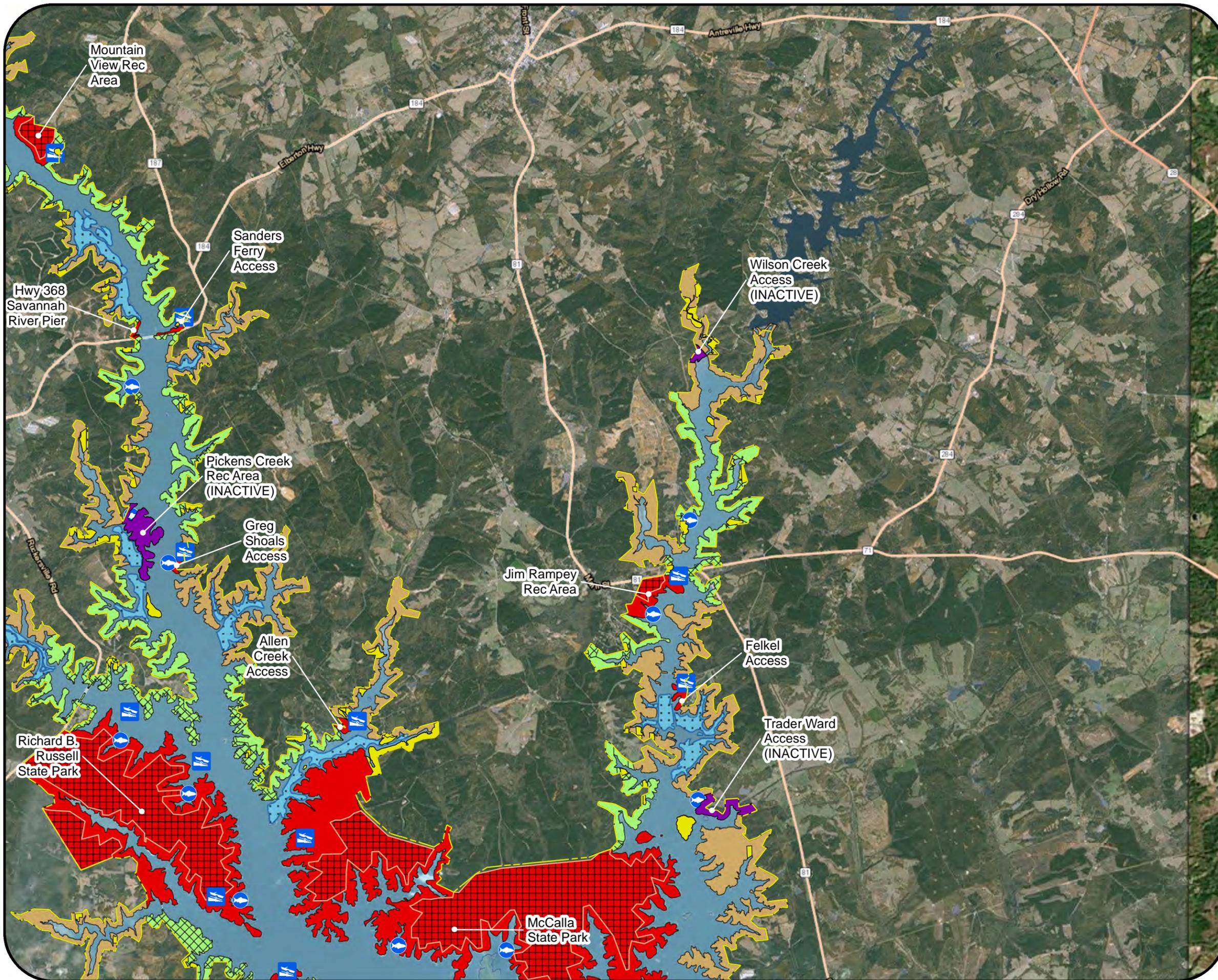
Legend

- Boundary Line
- Recreation Sites or Areas
- Richard B. Russell Lake Boundary

PROJECT LAND ACREAGE

FEE	
HART CO.	630
ELBERT CO.	23,057
ABBEVILLE CO.	25,053
ANDERSON CO.	1,902
TOTAL FEE ACREAGE	50,642
EASEMENTS	
RIVERBED	159
TOTAL PROJECT ACREAGE	53,270

0 5,000 10,000 20,000
Feet

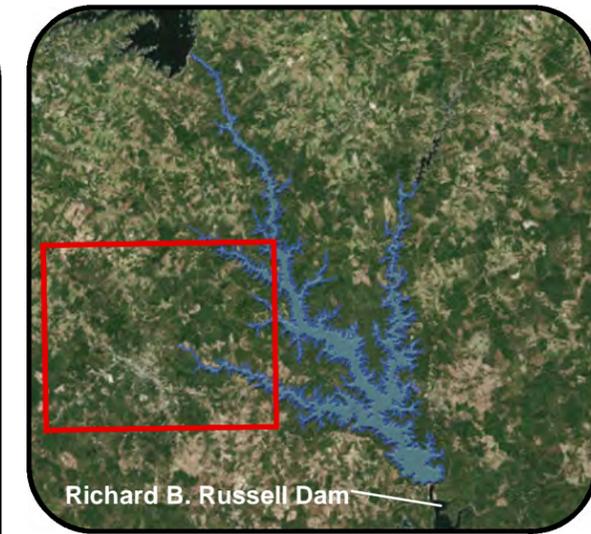
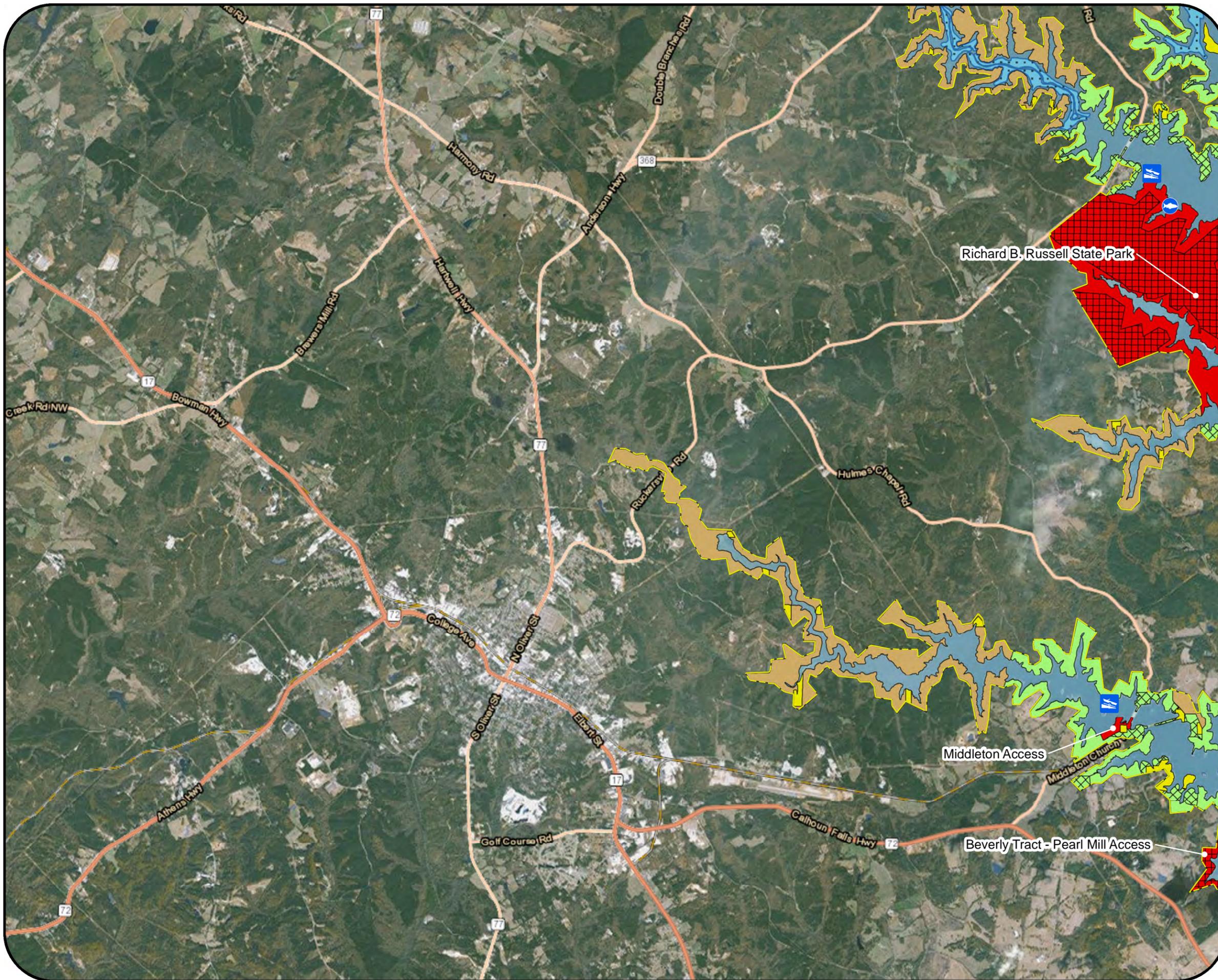


Richard B. Russell Dam

Legend

- Boundary Line
- Boat Ramp
- Fish Attractors
- Standing Timber
- Inactive
- Environmentally Sensitive
- Multiple Resource Management
- Operational / Restricted Use
- Recreation
- Recreation - Intensive Use
- Recreation - Low Density
- Wildlife Management
- Richard B. Russell Lake Boundary

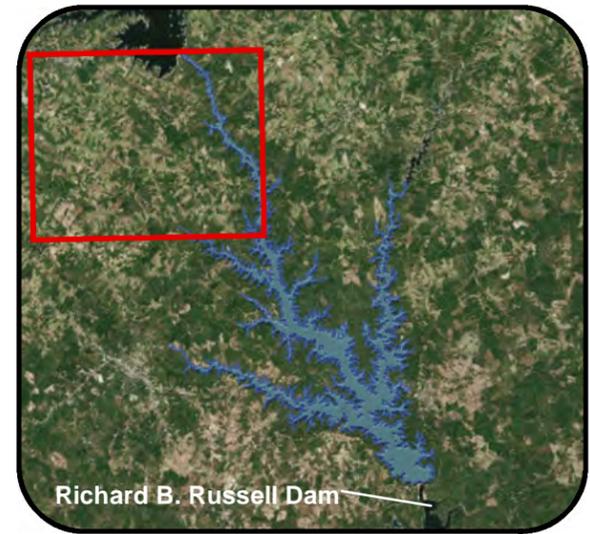
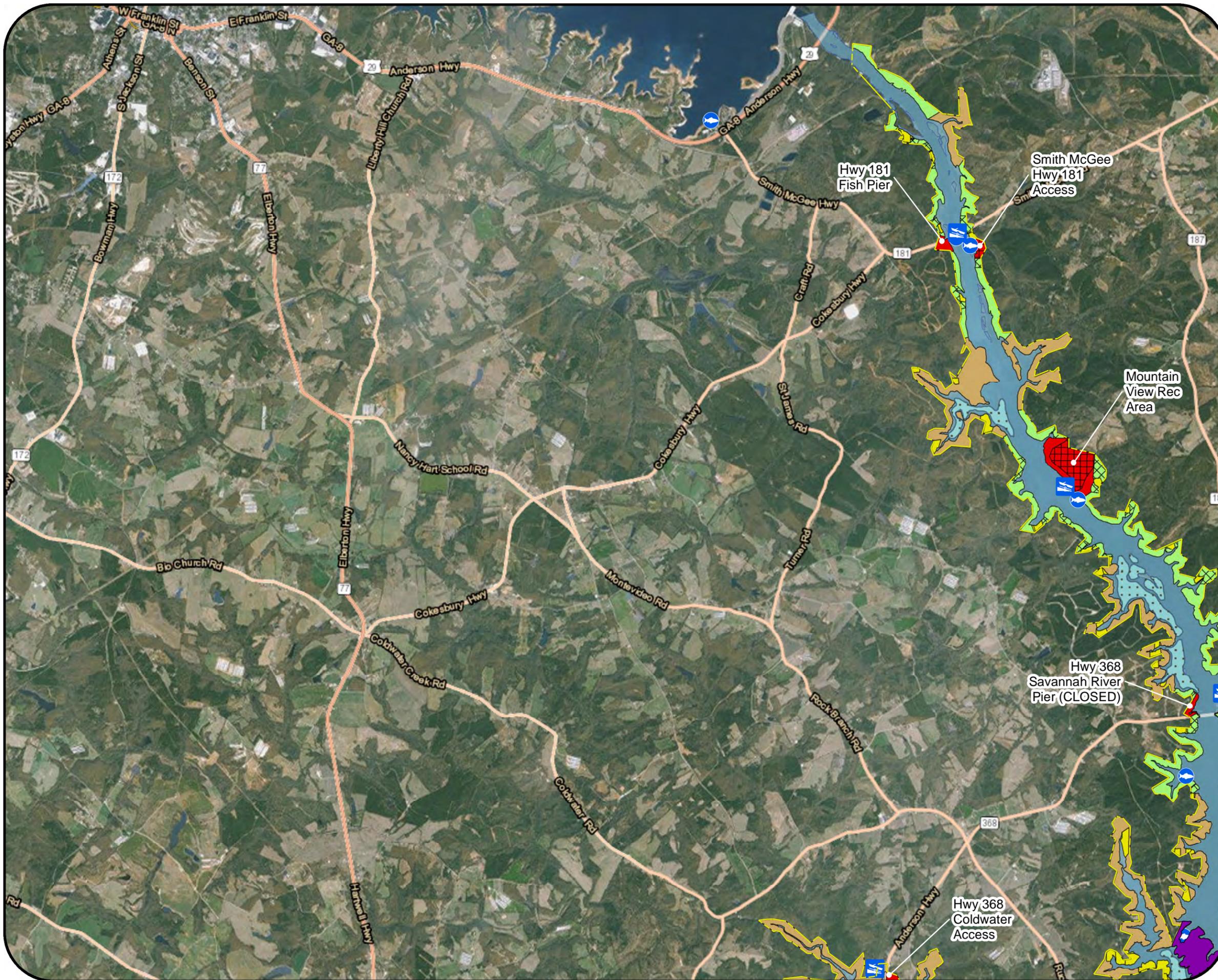
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Legend

- Boundary Line
- Boat Ramp
- Fish Attractor
- Standing Timber
- Inactive
- Environmentally Sensitive
- Multiple Resource Management
- Operational / Restricted Use
- Recreation
- Recreation - Intensive Use
- Recreation - Low Density
- Wildlife Management
- Richard B. Russell Lake Boundary

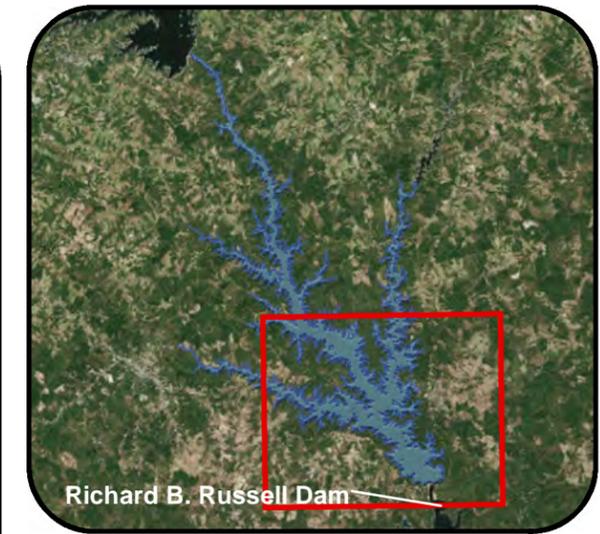
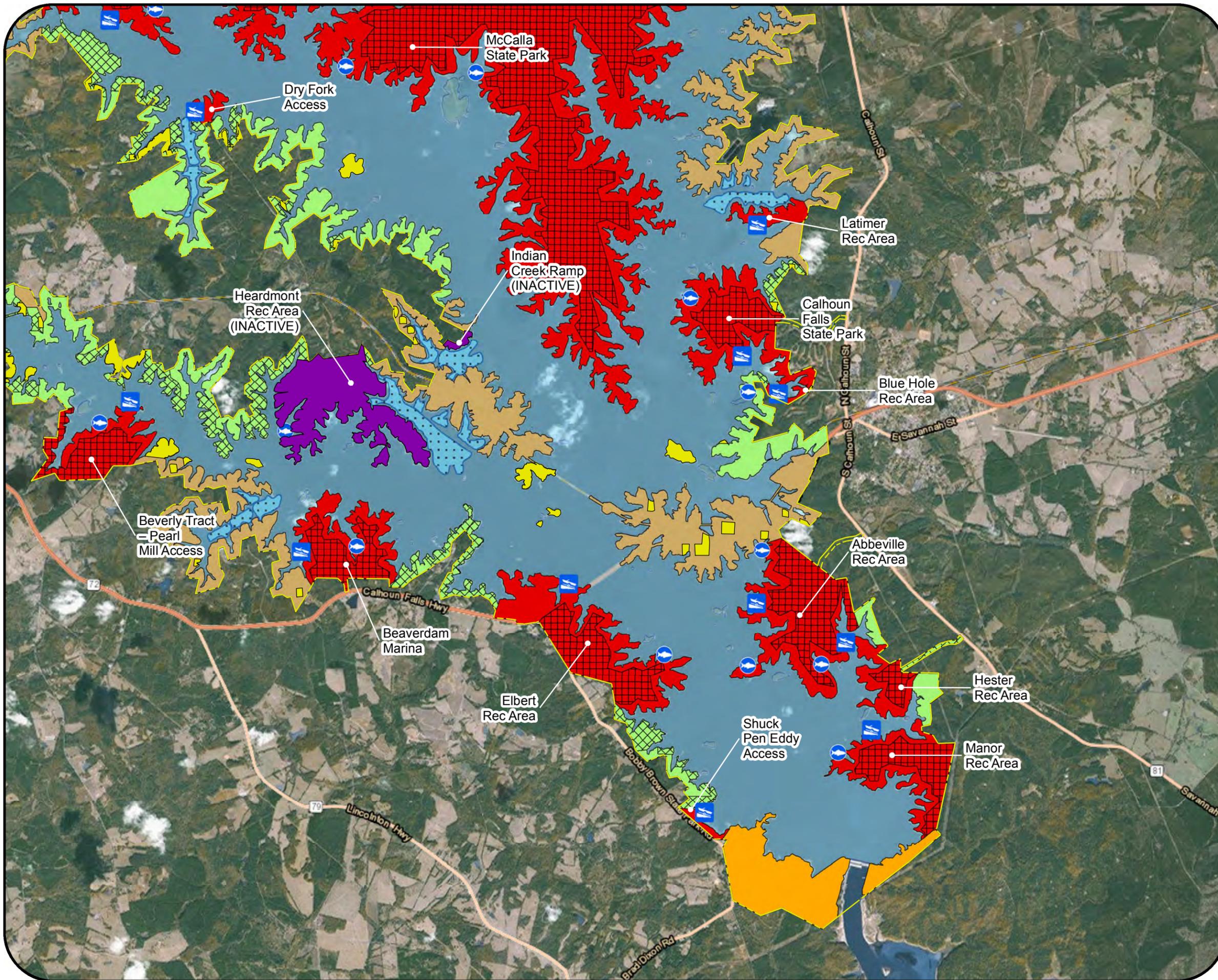
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Richard B. Russell Dam

Legend

- Boundary Line
- Boat Ramp
- Fish Attractor
- Standing Timber
- Inactive
- Environmentally Sensitive
- Multiple Resource Management
- Operational / Restricted Use
- Recreation
- Recreation - Intensive Use
- Recreation - Low Density
- Wildlife Management
- Richard B. Russell Lake Boundary

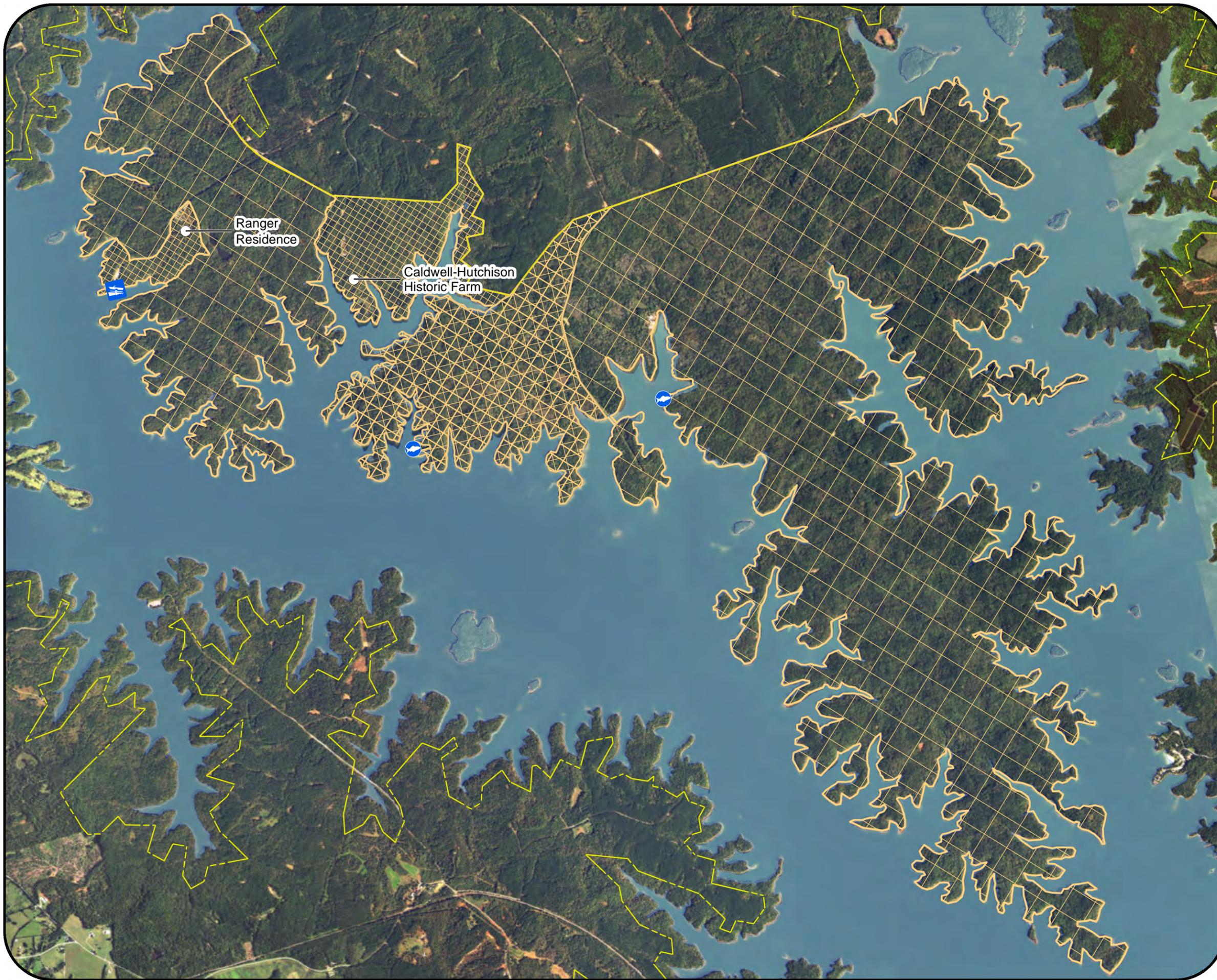


Richard B. Russell Dam

Legend

- Boundary Line
- Boat Ramp
- Fish Attractor
- Standing Timber
- Inactive
- Environmentally Sensitive
- Multiple Resource Management
- Operational / Restricted Use
- Recreation
- Recreation - Intensive Use
- Recreation - Low Density
- Wildlife Management
- Richard B. Russell Lake Boundary

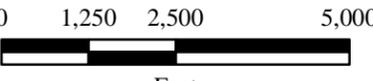
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Feet



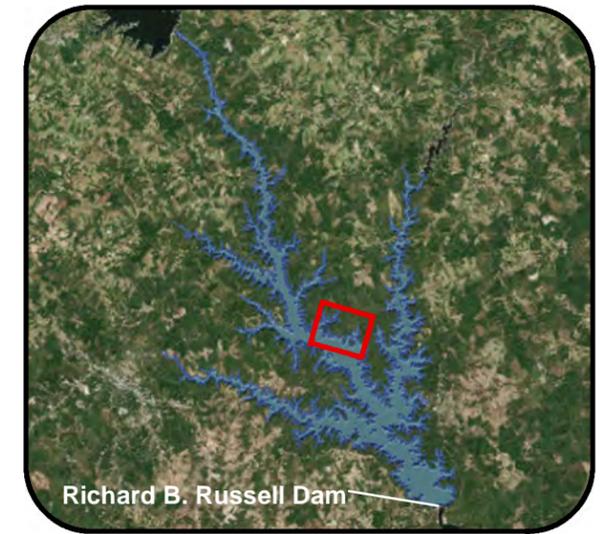
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-  Boat Ramp
-  Recreation Feature
-  Boundary Line
-  Road
-  South Carolina DNR Wildlife Management Area Special Use Area
-  South Carolina DNR Wildlife Management Area
-  McCalla State Park
-  Richard B. Russell Lake Boundary





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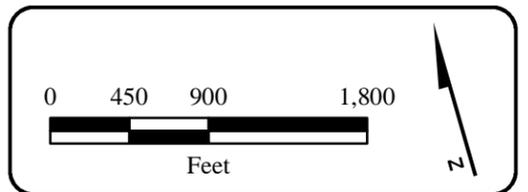
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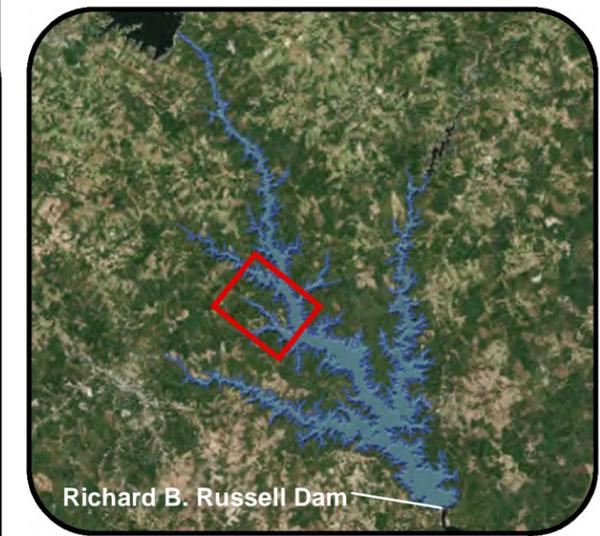
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- Road
- Boundary Line
- Richard B. Russell Lake Boundary

Recreation Feature

- Exists
- Proposal in Original Design (DM 31)





Legend

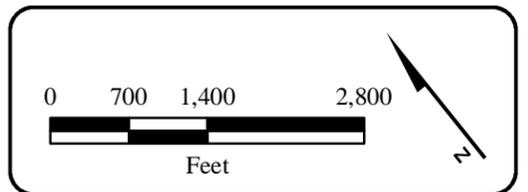
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- Boat Ramp
- Road
- Boundary Line
- Richard B. Russell Lake Boundary

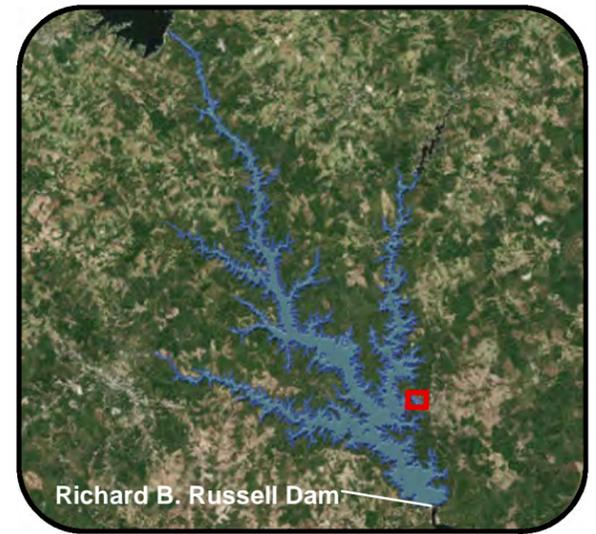
New Proposal

- Proposed Trail
- Proposed Camping/Cabins
- Proposed Marina

Recreation Feature

- Proposed in Original Design (DM 31)
- Exists

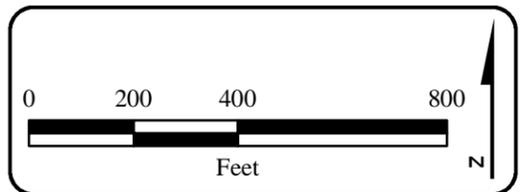




Richard B. Russell Dam

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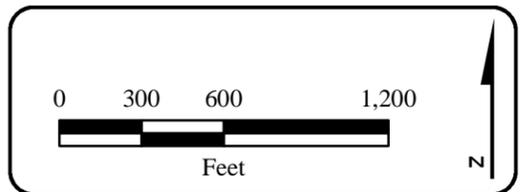
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-  Fish Attractor
-  Recreation Feature
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary





Legend

-  Boat Ramp
-  Fish Attractor
-  Recreation Feature
-  Boundary Line
-  Existing Road
-  Proposed Road
-  Area Limits
-  Richard B. Russell Lake Boundary

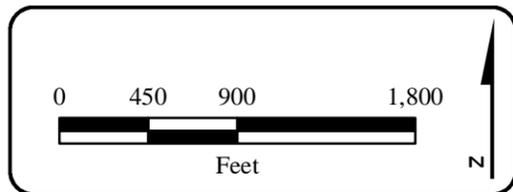


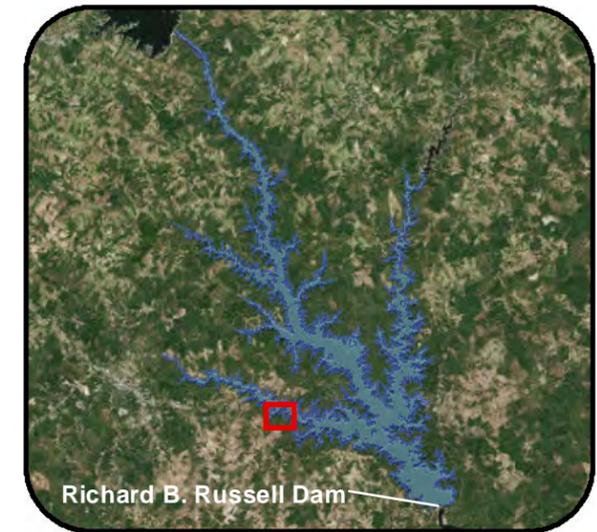
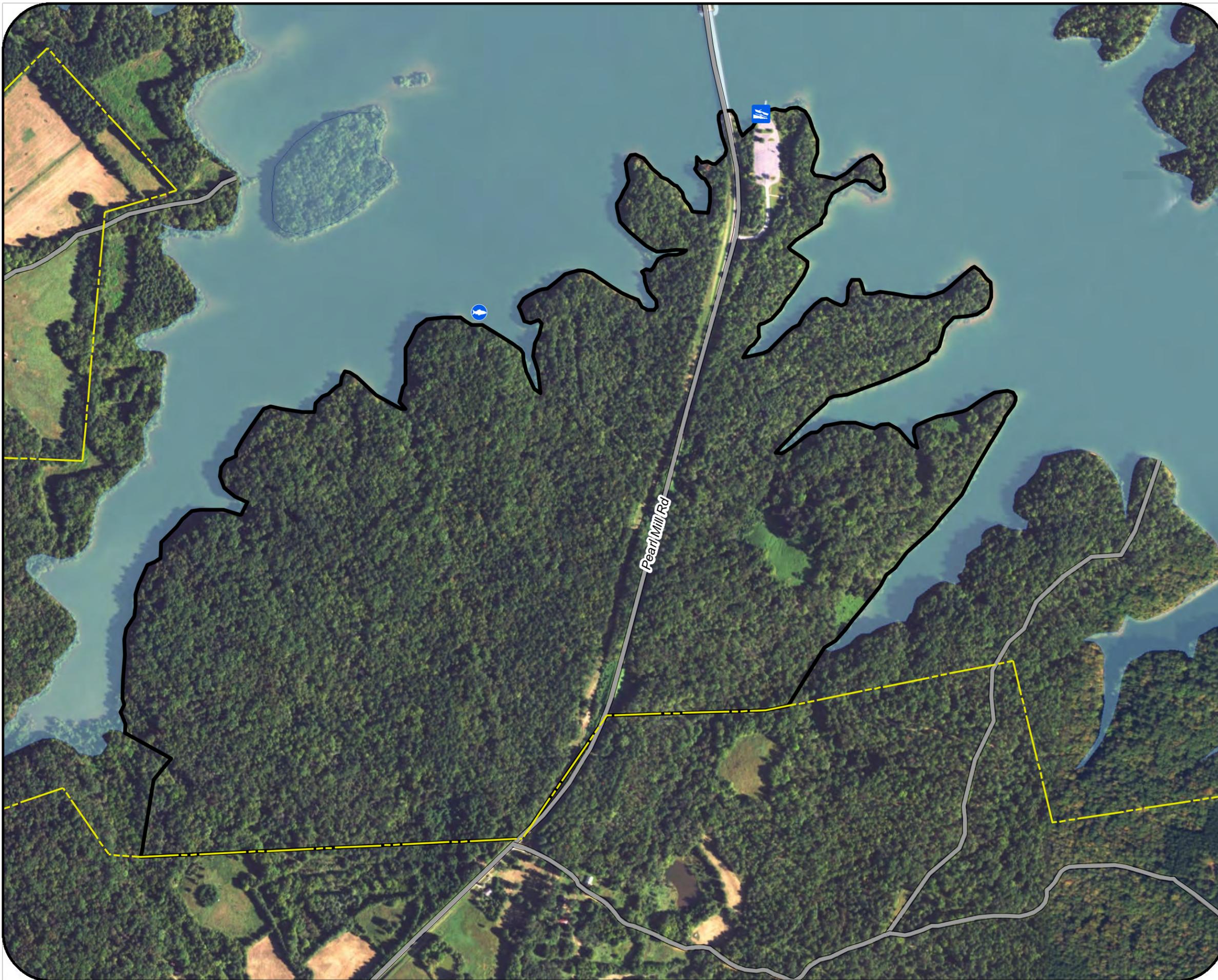


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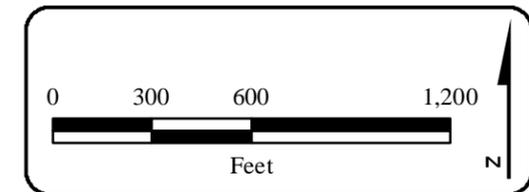
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-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary





Legend

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-  Fish Attractor
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary

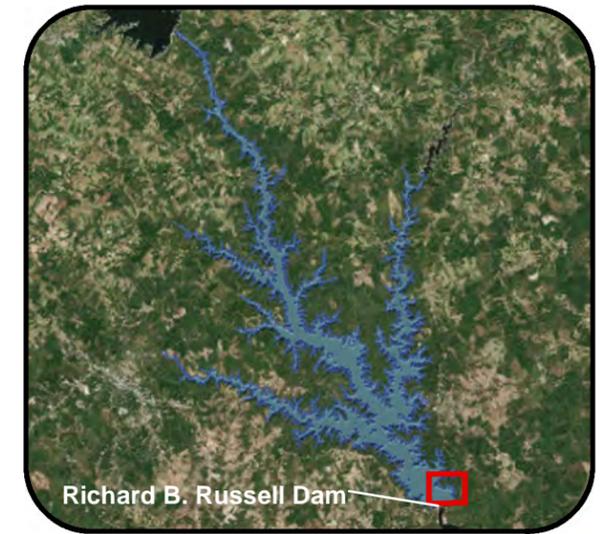


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**BEVERLY TRACT
PEARL MILL ACCESS**

Richard B. Russell Lake
Georgia and South Carolina

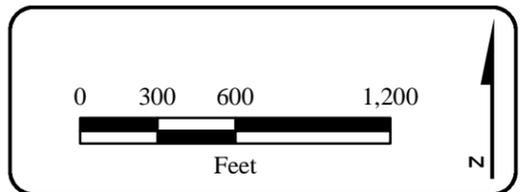
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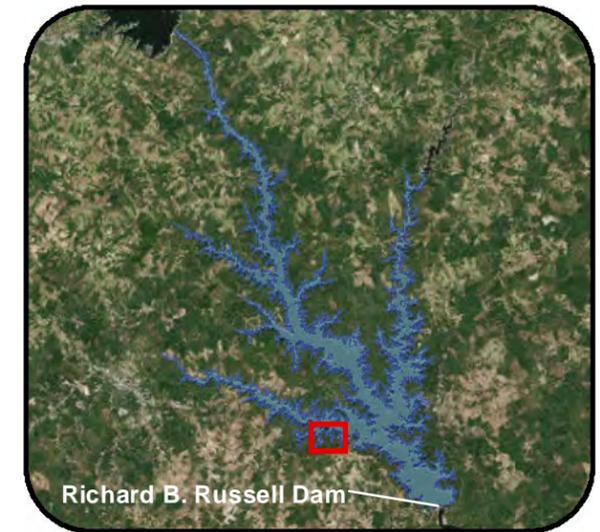


Richard B. Russell Dam

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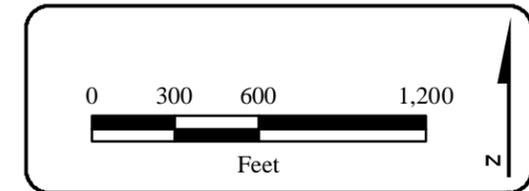
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-  Fish Attractor
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary





Legend

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-  Fish Attractor
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary

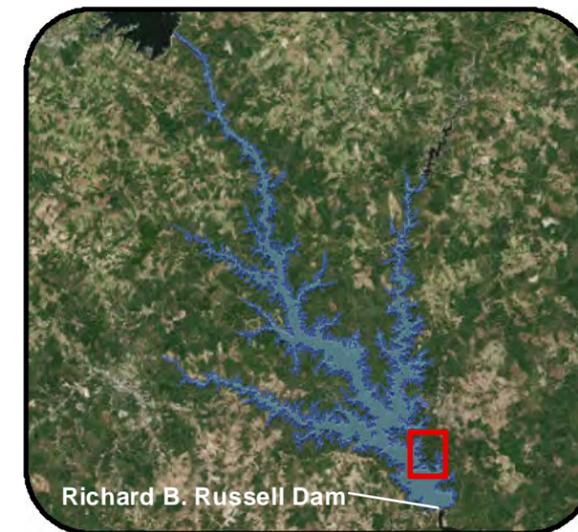


**BEAVERDAM
MARINA**

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Richard B. Russell Lake
Georgia and South Carolina

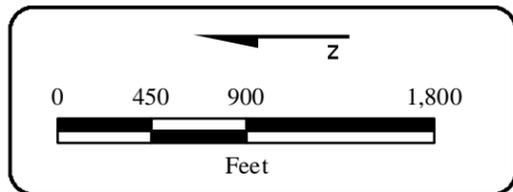
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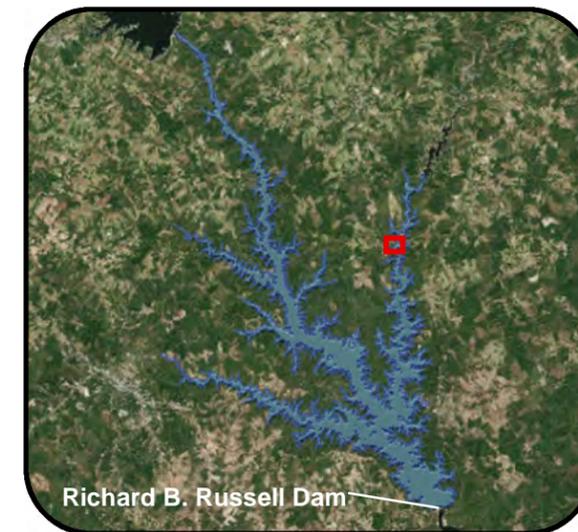


Richard B. Russell Dam

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-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary

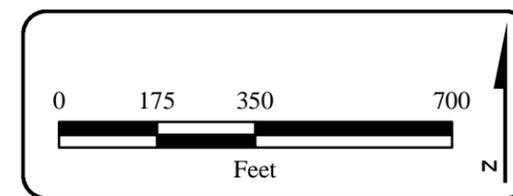


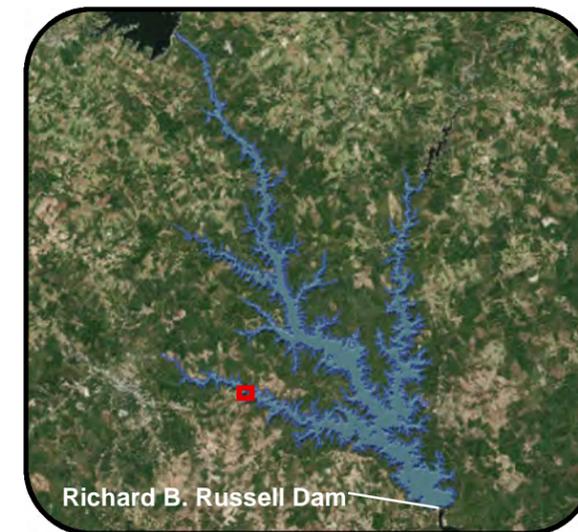


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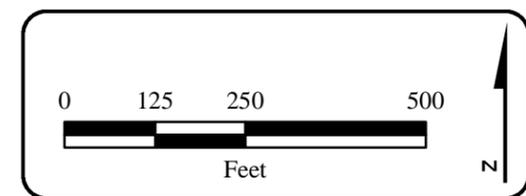
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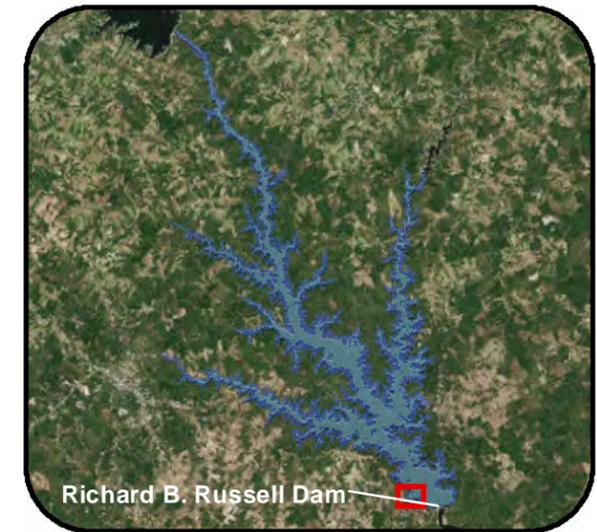




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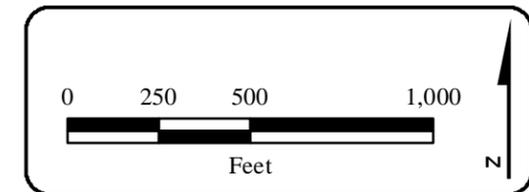




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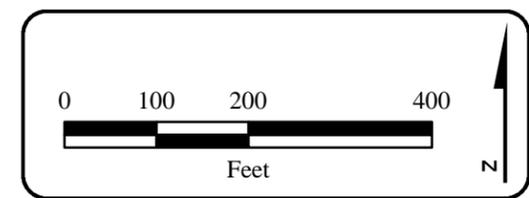
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-  Road
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-  Richard B. Russell Lake Boundary





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-  Area Limits
-  Richard B. Russell Lake Boundary

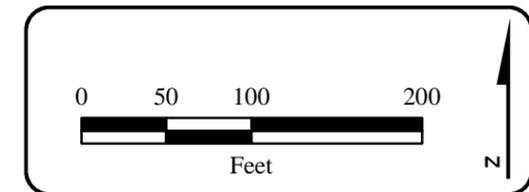




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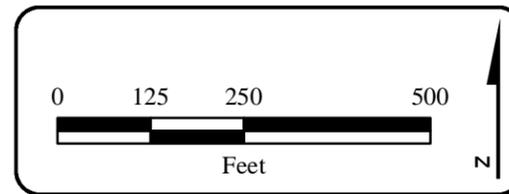
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-  Area Limits
-  Richard B. Russell Lake Boundary





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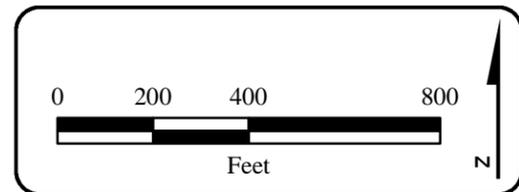
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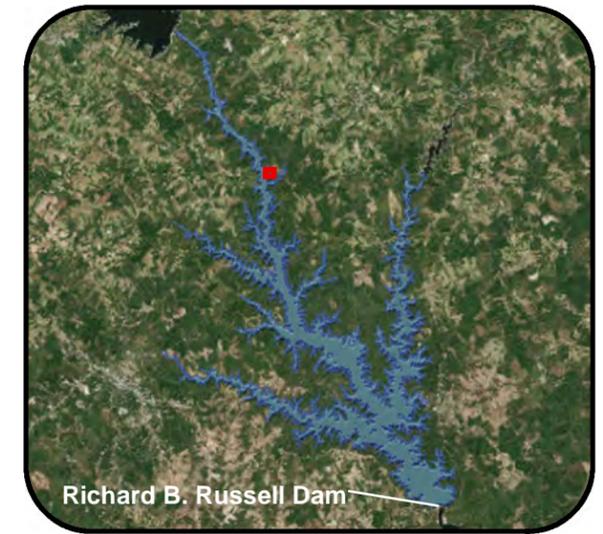




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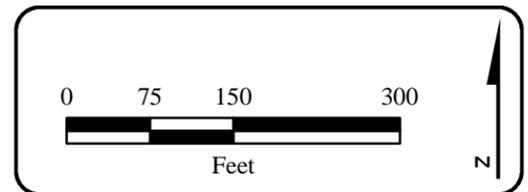
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-  Richard B. Russell Lake Boundary

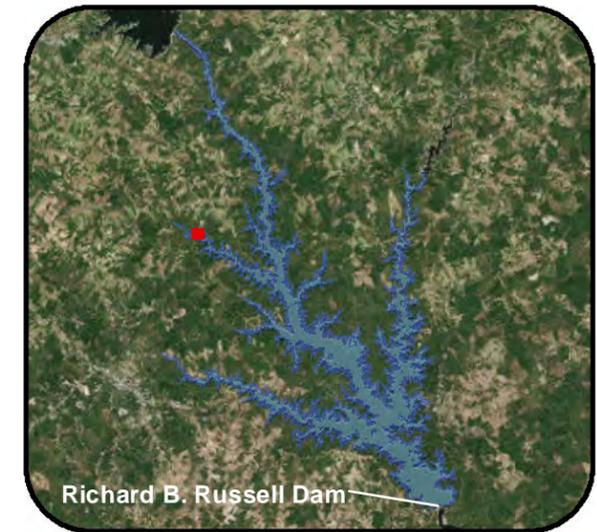




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-  Richard B. Russell Lake Boundary

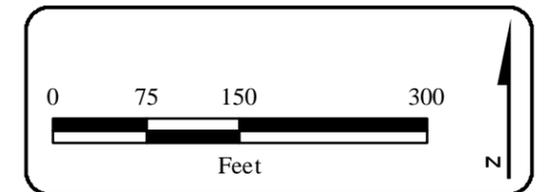




Richard B. Russell Dam

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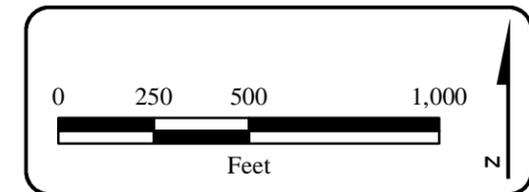
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-  Richard B. Russell Lake Boundary

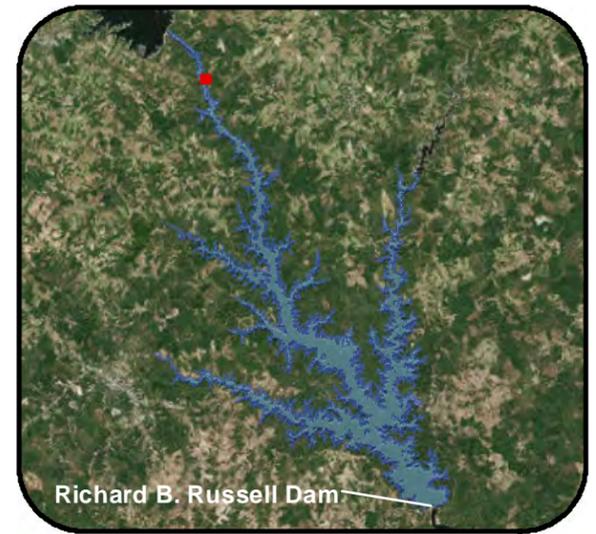




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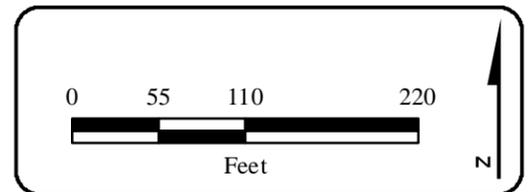
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-  Road
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-  Richard B. Russell Lake Boundary





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-  Area Limits
-  Richard B. Russell Lake Boundary

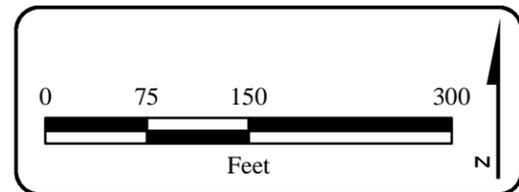




Richard B. Russell Dam

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-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary

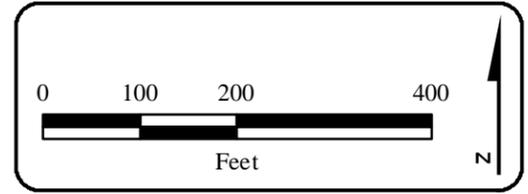


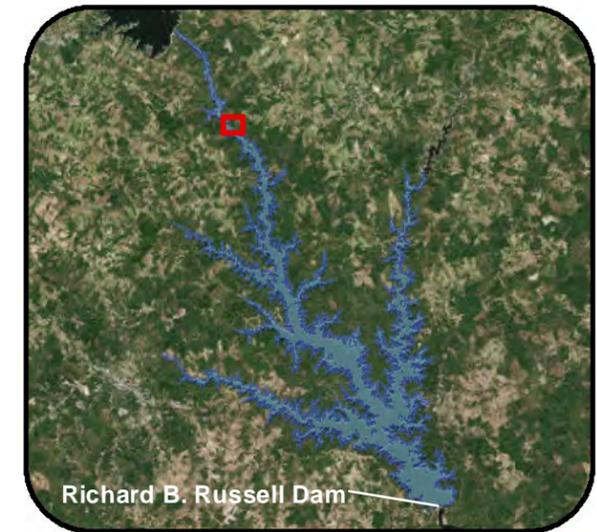


Richard B. Russell Dam

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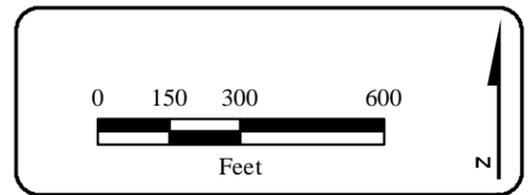
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-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary





Legend

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-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary



MOUNTAIN VIEW Page
REC AREA 29
of
42

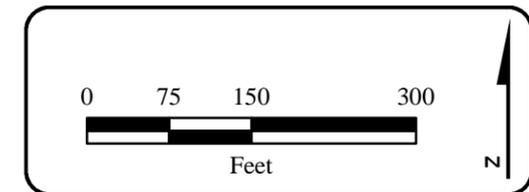
Richard B. Russell Lake
 Georgia and South Carolina

MASTER PLAN



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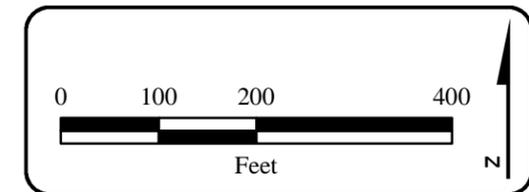
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-  Richard B. Russell Lake Boundary





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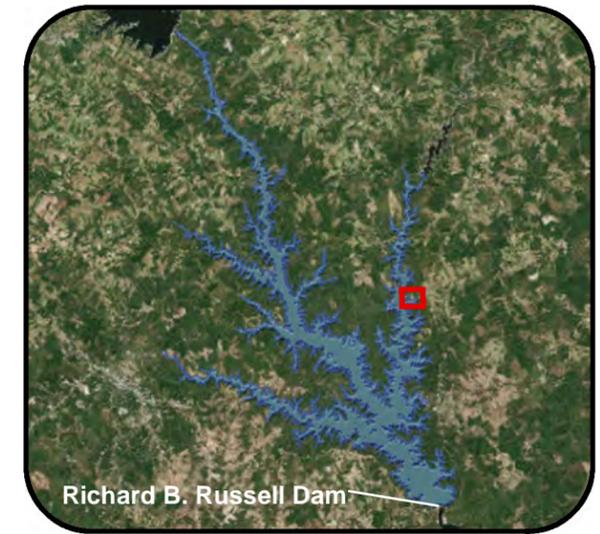
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- Area Limits
- Richard B. Russell Lake Boundary



INDIAN CREEK Page
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(INACTIVE) of
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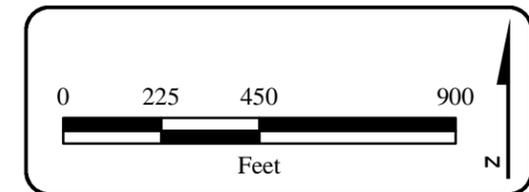
Richard B. Russell Lake
 Georgia and South Carolina

MASTER PLAN



Legend

-  Boat Ramp
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary



TRADER WARD Page
 ACCESS 32
 (INACTIVE) of
 42

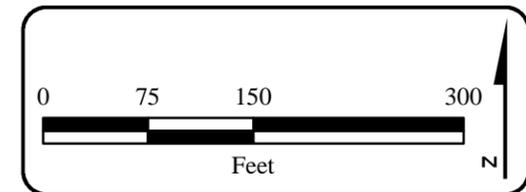
Richard B. Russell Lake
 Georgia and South Carolina

MASTER PLAN



Legend

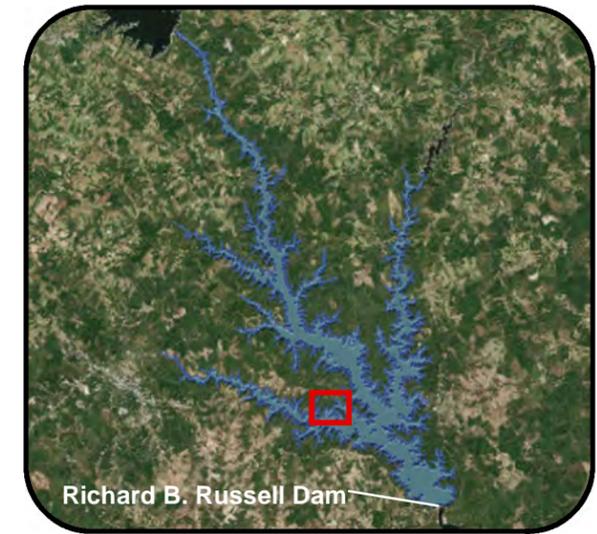
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary



WILSON CREEK Page
ACCESS 33
(INACTIVE) of
 42

Richard B. Russell Lake
Georgia and South Carolina

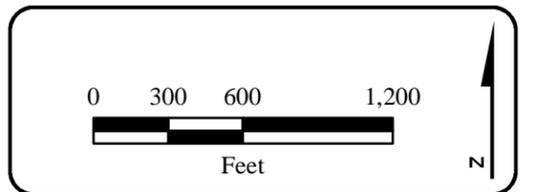
MASTER PLAN



Richard B. Russell Dam

Legend

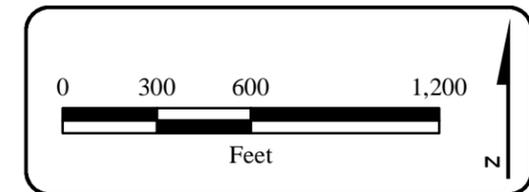
-  Fish Attractor
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary





Legend

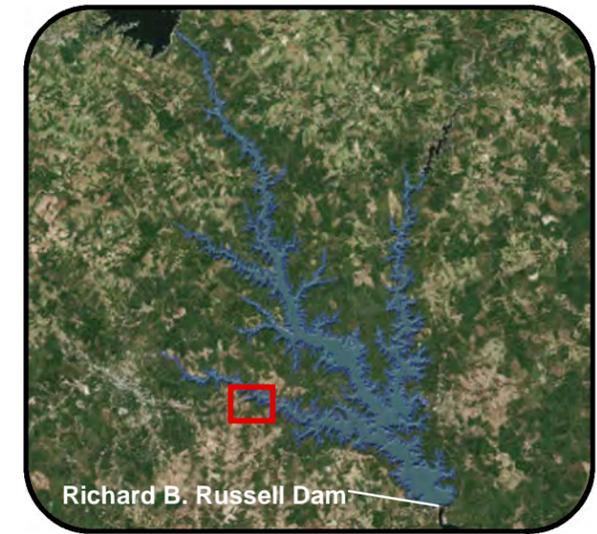
-  Fish Attractor
-  Boundary Line
-  Road
-  Area Limits
-  Richard B. Russell Lake Boundary



PICKENS CREEK Page
 REC AREA 35
 (INACTIVE) of
 42

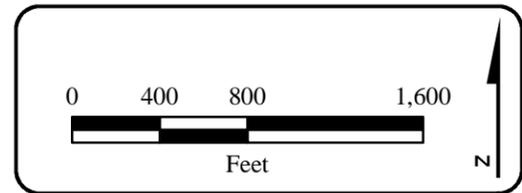
Richard B. Russell Lake
 Georgia and South Carolina

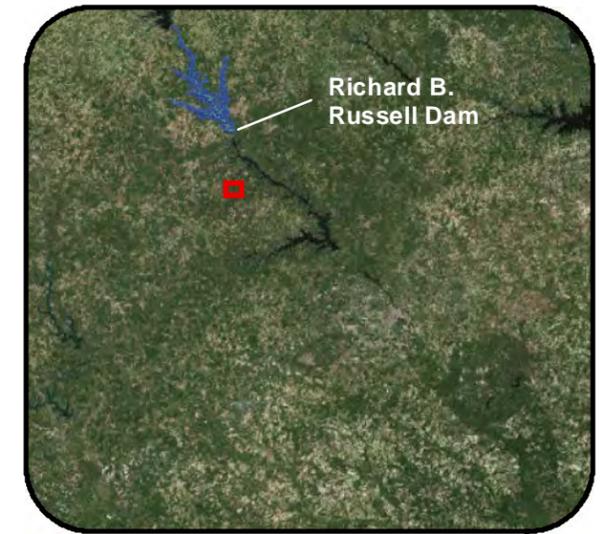
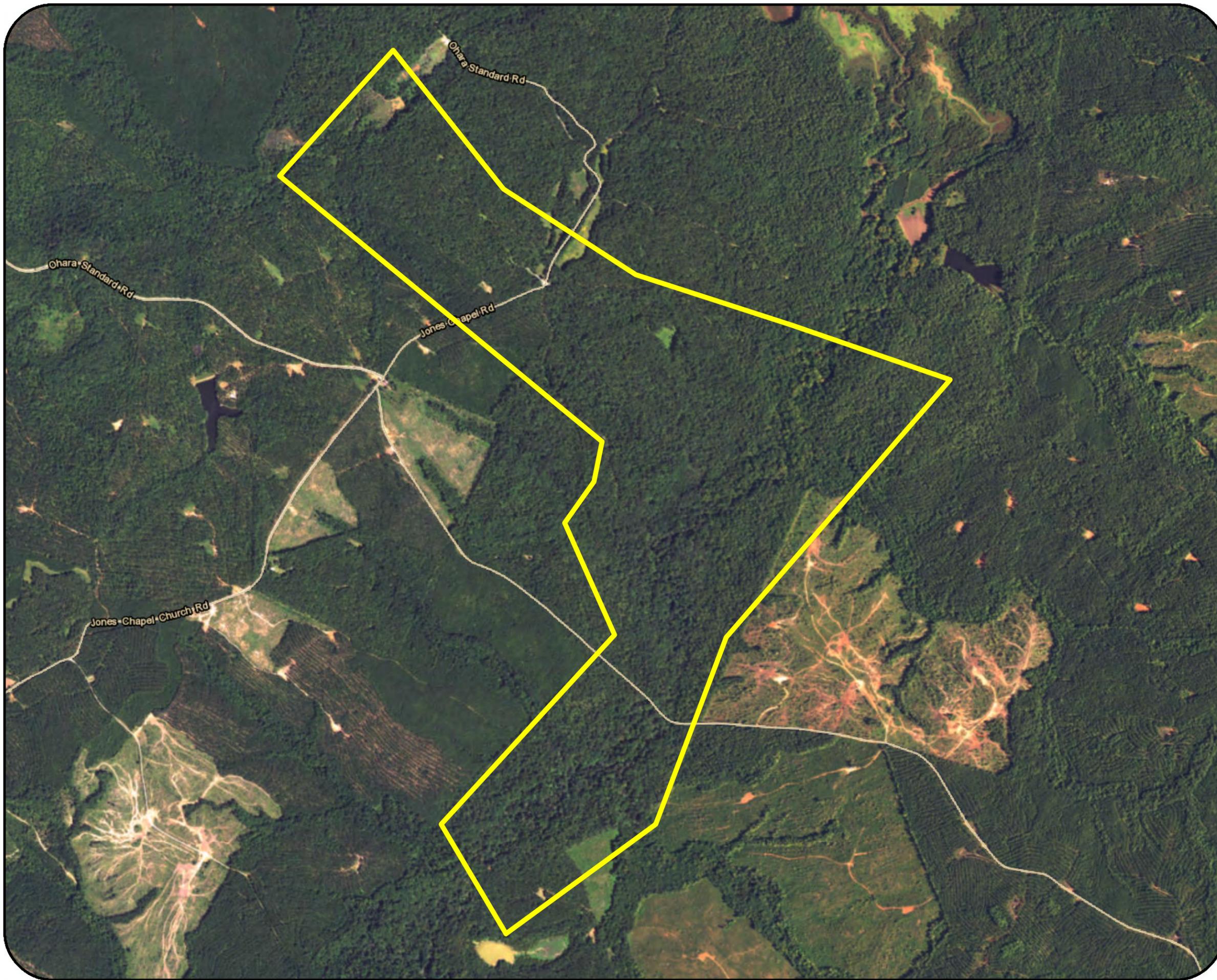
MASTER PLAN



Legend

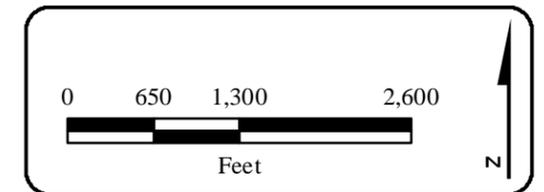
- Easement
- Road
- Boundary Line
- Richard B. Russell Lake Boundary





Legend

 Mitigation Tract

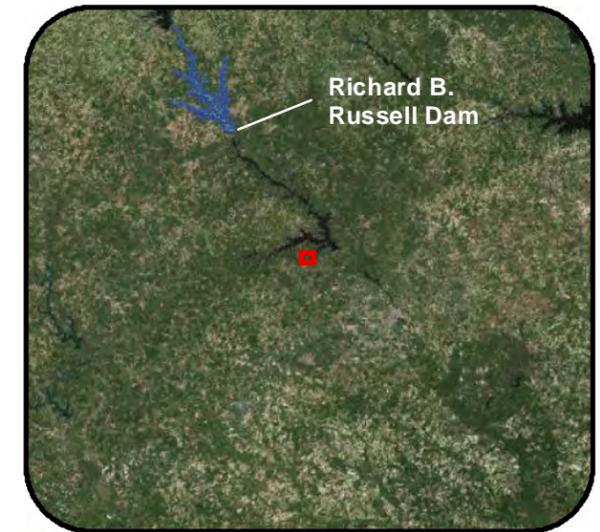
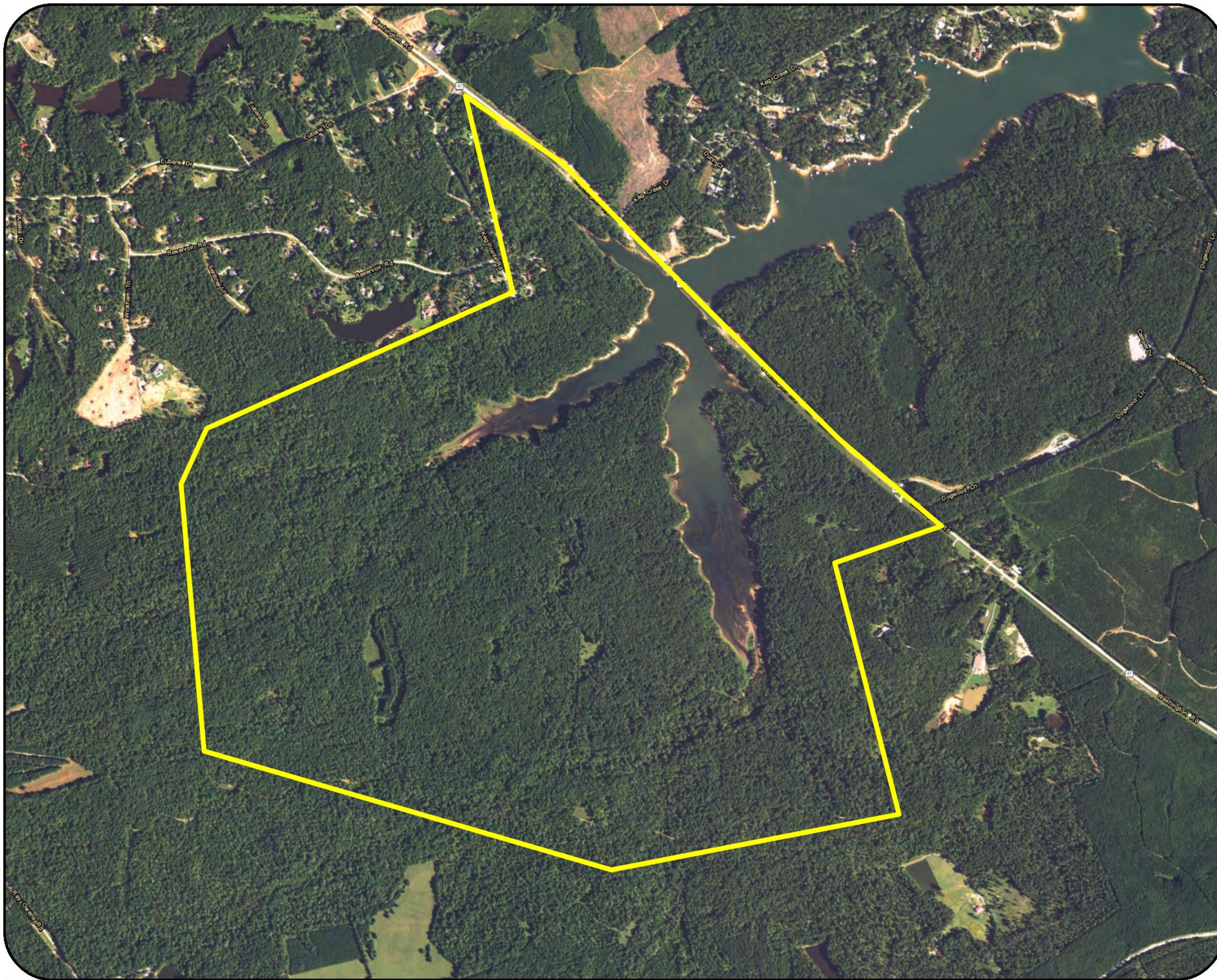


MITIGATION TRACT
FISHING CREEK WMA
340 ACRES
WILKES COUNTY, GEORGIA

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of
42

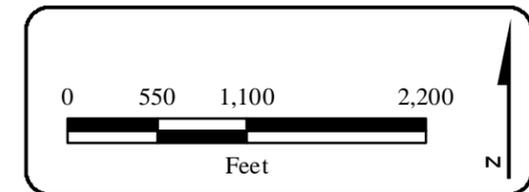
Richard B. Russell Lake
Georgia and South Carolina

MASTER PLAN



Legend

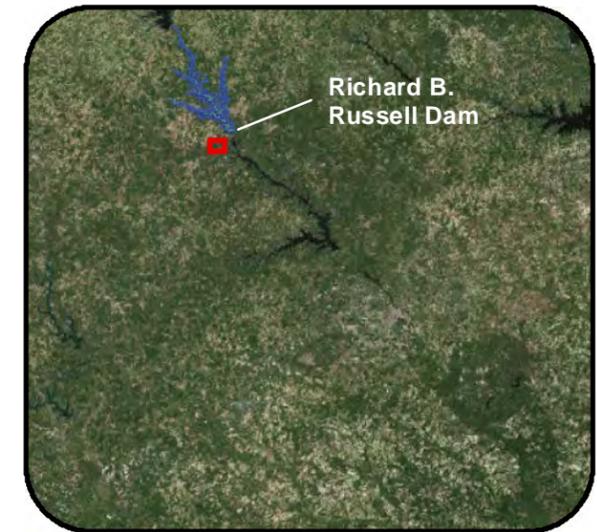
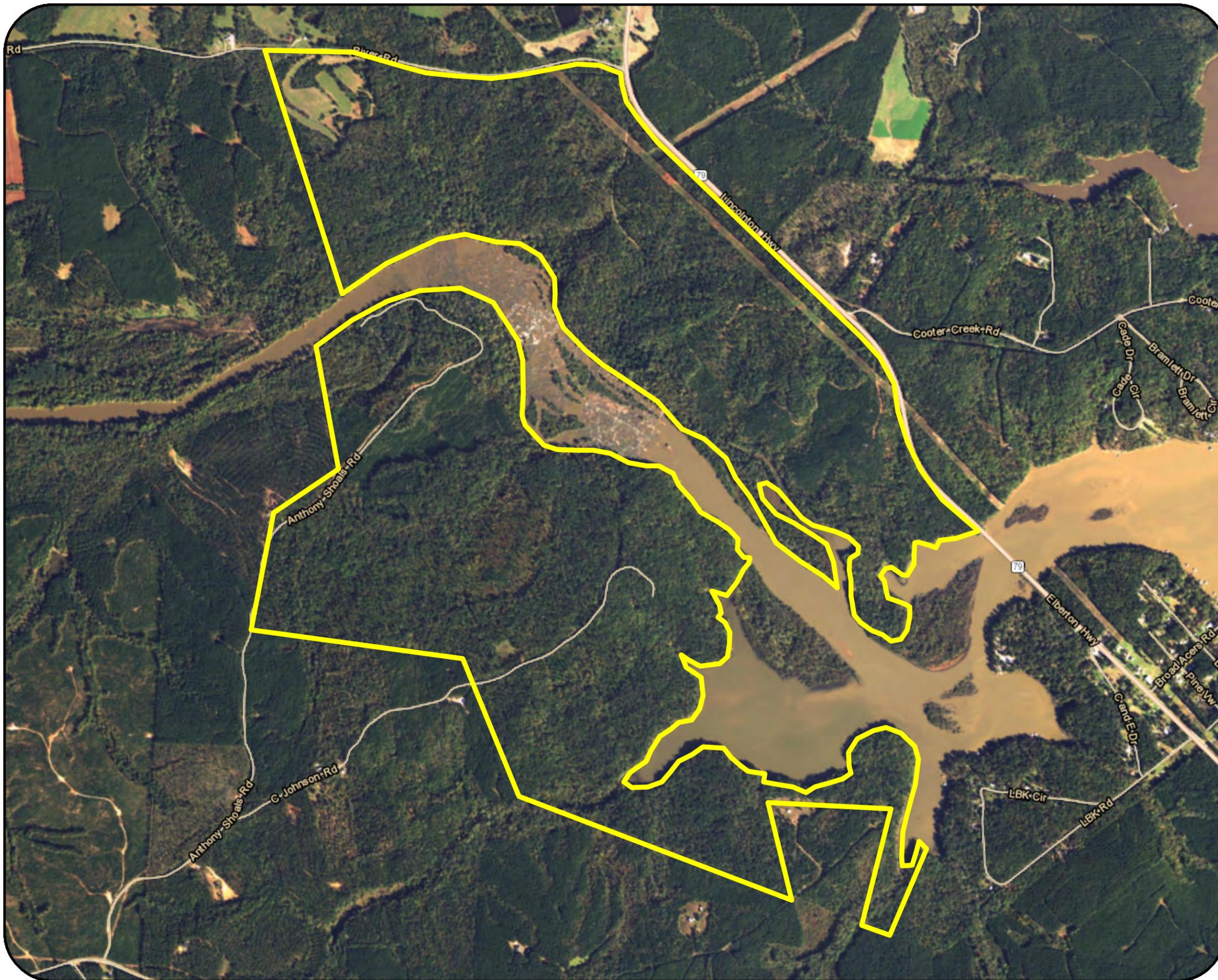
Mitigation Tract



MITIGATION TRACT Page
 KEG CREEK WMA 38
 883 ACRES of
 COLUMBIA COUNTY, GEORGIA 42

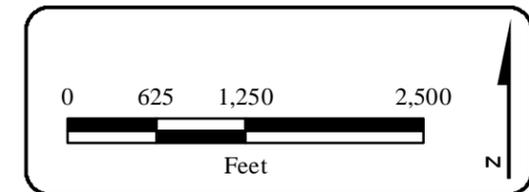
Richard B. Russell Lake
 Georgia and South Carolina

MASTER PLAN



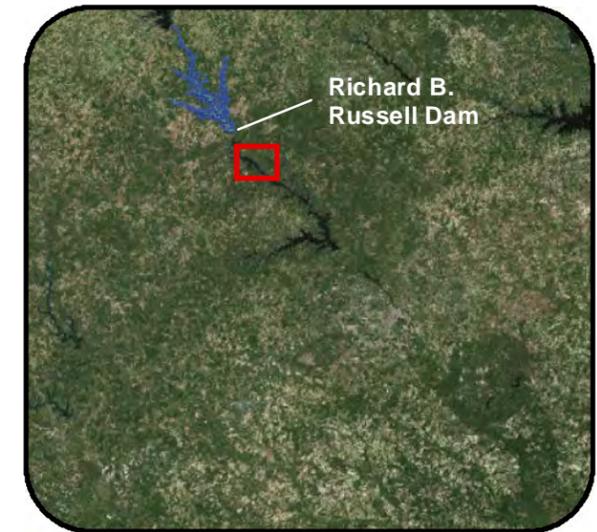
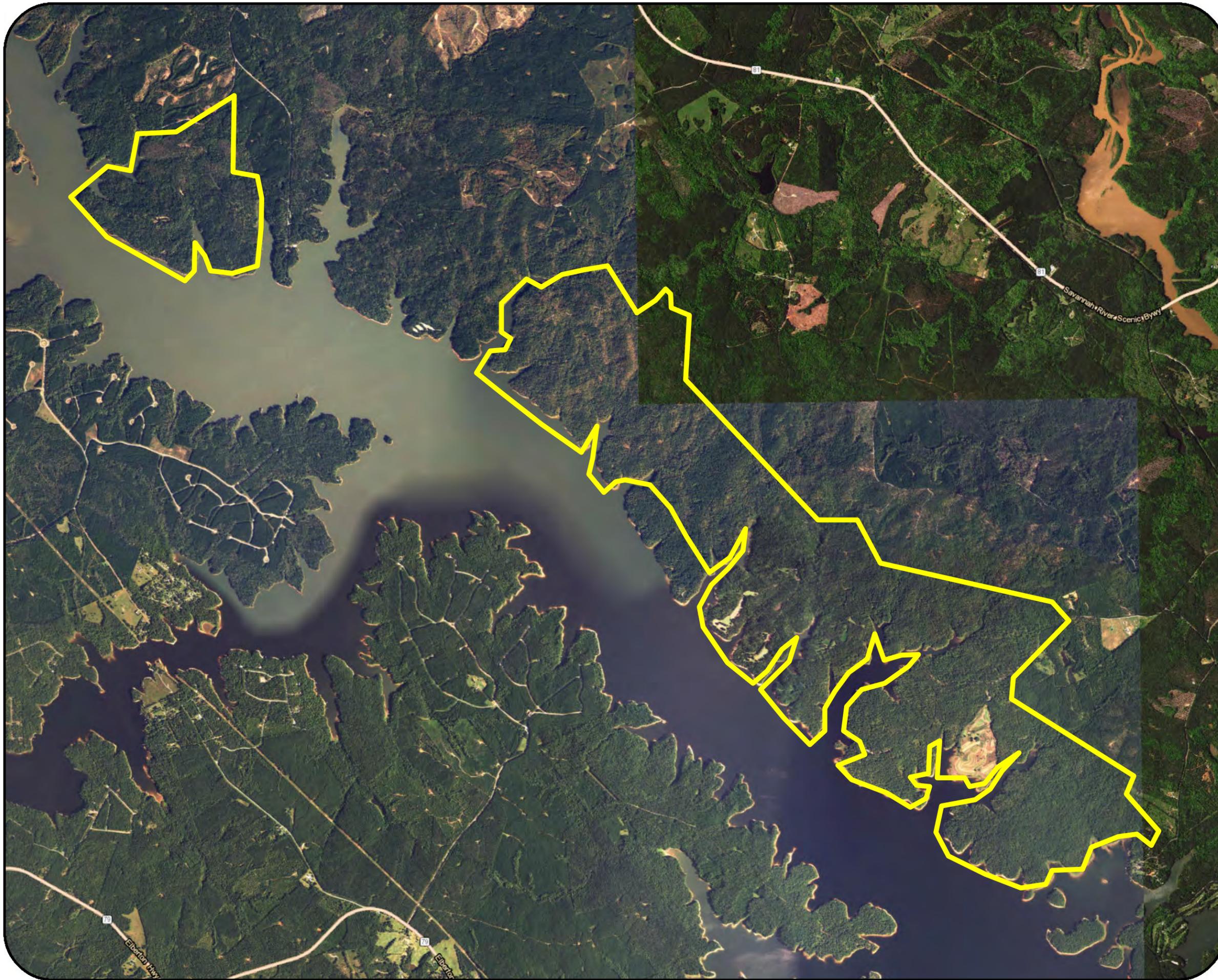
Legend

Mitigation Tract



MITIGATION TRACT Page
BROAD RIVER WMA 39
1,550 ACRES of
ELBERT, LINCOLN, AND WILKES COUNTIES, SOUTH CAROLINA 42

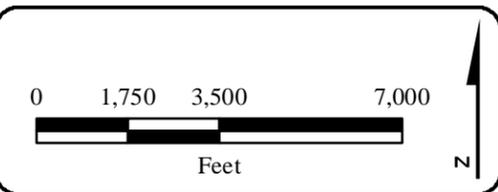
Richard B. Russell Lake
 Georgia and South Carolina
MASTER PLAN



Richard B.
Russell Dam

Legend

 Mitigation Tract

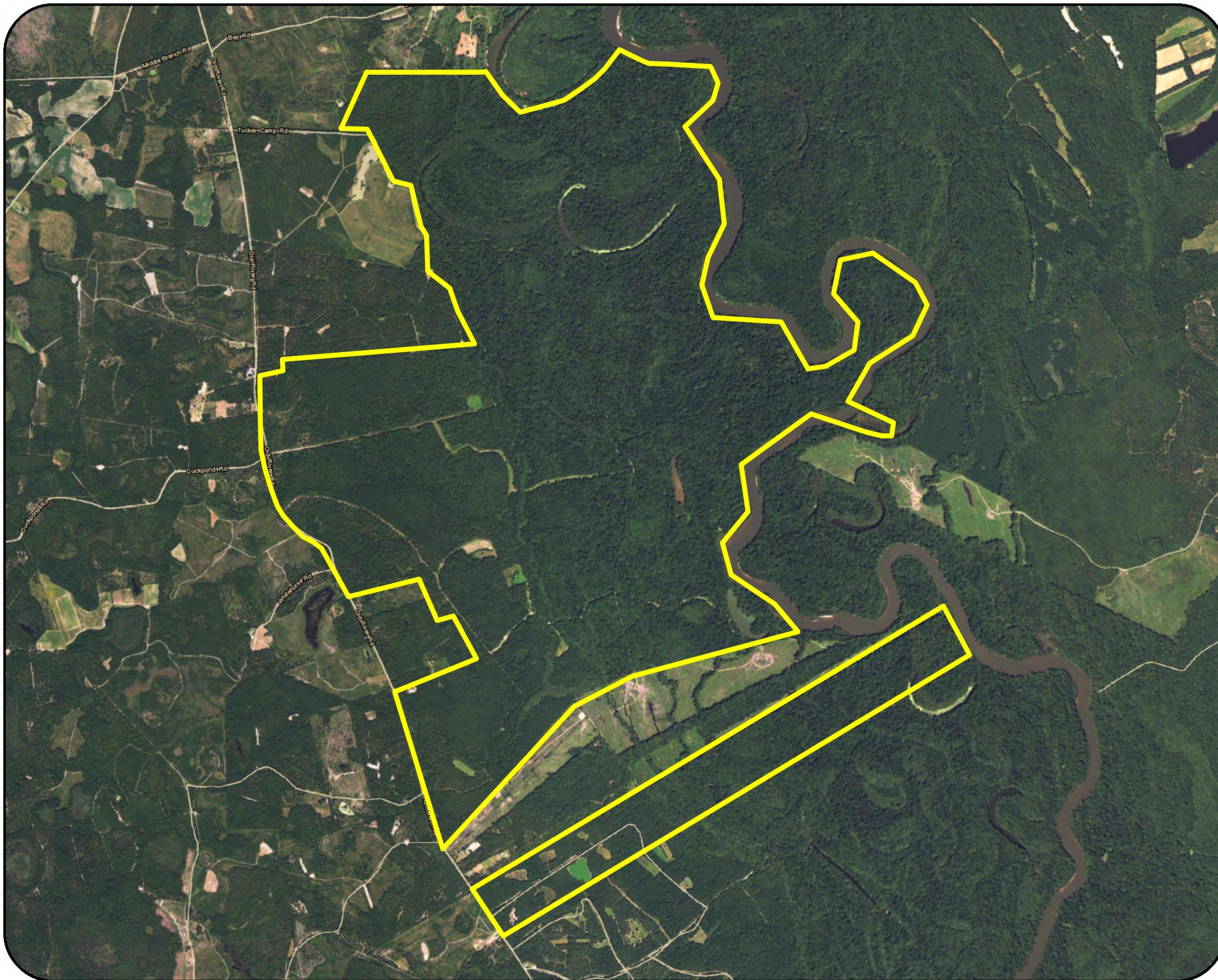


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of
42

MITIGATION TRACTS AT THURMOND
4,085 ACRES
MCCORMICK COUNTY, SOUTH CAROLINA

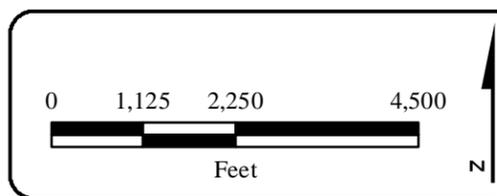
Richard B. Russell Lake
Georgia and South Carolina

MASTER PLAN



Legend

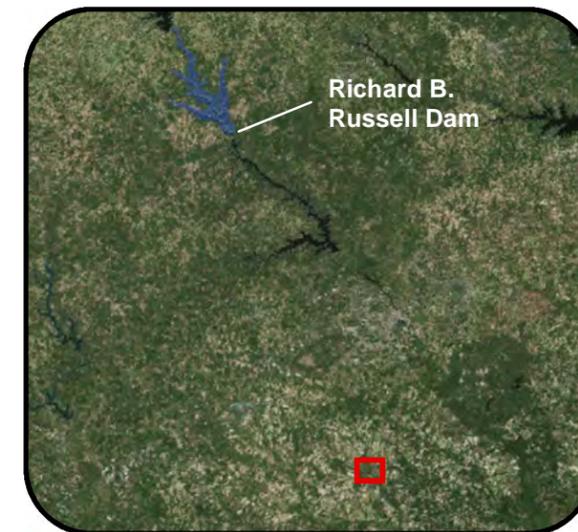
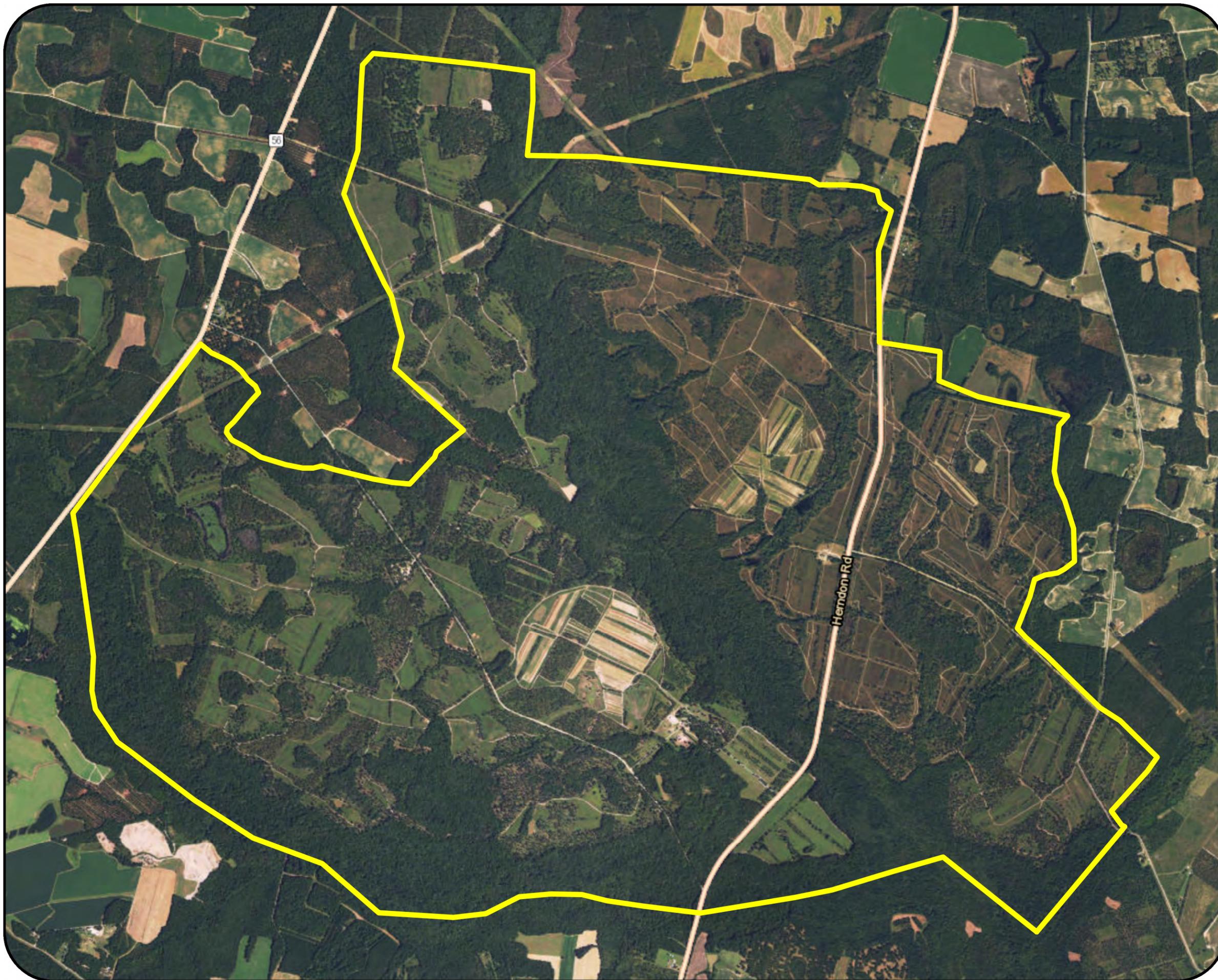
 Mitigation Tract



MITIGATION TRACT	Page
SPRING LAKE	41
3,577 ACRES	of
SCREVEN COUNTY, GEORGIA	42

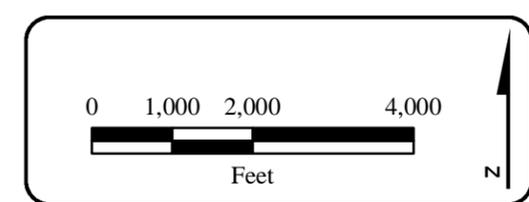
Richard B. Russell Lake
Georgia and South Carolina

MASTER PLAN



Legend

 Mitigation Tract



MITIGATION TRACT	Page
DILANE PLANTATION	42
8,046 ACRES	of
BURKE COUNTY, GEORGIA	42

Richard B. Russell Lake
Georgia and South Carolina

MASTER PLAN

Appendix B

Comments

COMMENTS - Master Plan Public Workshops 2015

GA - Elberton Civic Center 14 September

SC - Calhoun Falls Civic Center 15 September

Name	GA/SC	COMMENT
Tim & Glenna Hamilton our bdmglenna@bellsouth.net glad to	GA	No gas on north end of lake. We at Beaverdam marina hear this from our customers. Many of boating customers would like to have gas and a marina at the north end and we would be glad to provide that service as an expansion of our business.
Mike Fernandez	GA	Please consider a revision to the shoreline management policy to allow for cart paths to be cleared/constructed (with permits). As I get older it becomes more difficult to negotiate uneven terrain and growth (underbrush). Thank you for your consideration.
Walter McNeely	GA	KEEP THE LAKE AS IS. Lots of recreation—No private development of any kind. No private docks. Corps is doing a great job in management.
Terry O. Brown Timbers terryowenbrown@gmail.com and GA development	GA	PRECEDENT – Public/Private partnership on Corp lakes. (A) Lake Skiatook – Cross resort/Oklahoma. (B) Lake Lanier – Lake Lanier Islands/Georgia. Can/Will – The Corps Dept of Natural Resources work together with private industry to all public/private (at any level) on Lake Russell? Elbert Co. needs development like this.
Evelyn Bounds use evelynbounds@yahoo.com	SC	I would like to see more advertisement of our state, we as citizens of Calhoun Falls need to and support our State park and advertise to see surrounding town. We should be nothing short of a little Myrtle Beach.
Tuck Hanna Lines. tuckhanna@wctel.net	SC	Blue Hole - Construct walking/bike trail from Blue Hole to CF State Park. Construct Zip Lines. Construct frisbee Golf Course.
Chris Cowan would cowanchr@yahoo.com water	SC	I think the Blue Hole could have some additional parking for events, even if just gravel. I like to see more camping sites. During the season it is always full. Would like to see more sports.
Gregory	SC	We need you guys to come to council meeting we would like water rides. You guys doing great job at Blue Hole.

COMMENTS RECEIVED AFTER THE PUBLIC WORKSHOP PRIOR TO 15 OCTOBER DEADLINE

Jimmy Moss
jmoss2moss@yahoo.com

Fishing Tournaments, more campsites on lake.

Faye Crocker
Lines fcrocker@gafcu.net

Please consider yurts, cabins, RV on fixed sites to rent near Blue Hole. Disk Golf – Zip would be great as well.

Lyn Ellis
lyn@gmail.com

More lighting and security at boat ramps.

Elaine Barrett
MEABarrett@msn.com

Covered Boat Docks, Yurts, cabins, ziplines, safari tents.

Linda B. Quede
fishing lbq@wctel.net

Cabins at the Blue Hole, zip line from Blue Hole to State Park, more boat slips, tournaments.

Robert Hester

Restaurant – year round at the State Park; Frisbee golf; wave pool at the Park; skeet; paint ball; putt putt golf.

Ken Tinsley
archery RKTinsley@AOL.com
park,

More local emphasis in Calhoun Falls area for development; cabins at Blue Hole Area; course nearby; shooting sports nearby; more trails connecting corps lands, blue hole, state more funding support for local activities due to loss of tax revenue from not having forests and free flowing stream; more local funding and emphasis on shoreline activities such as better bank access to elderly and handicapped with shore lined golf cart trails to compensate for project not meeting original recreational financial justification to Congress; redirect Corp missions to prioritize helping communities adversely impacted by the project especially those with high, low to moderate income populations.

Lynne Hester

Calhoun Falls State Park paint the water tower like a fishing bobber red/white. Please add Frisbee golf to the State Park. Maybe add a community pool (wave) to the State Park. Add a restaurant like Hickory Knob has to the State Park.

J. Crawford
dangerous jcrawford@wctel.net

Expand the Calhoun Falls State Park camping area; improve walking trails; some are with reed bar sticking up, wood is rotten.

Buster Taylor
Corps FRANKIETAYLORF@aol.com

The entire shoreline on SC side of Russell borders Abbeville County. I would like to see work with our county leader in having some type of development on Russell.

Debra Moss
jmoss2moss@yahoo.com

I would like to see yurts, cabins, and more camp sites.

Jim Mason
move samjim@wctel.net

Clean up the right of way to the gate going to Hester Bottoms boat ramp (now closed) then the gate closer to HWY 81. Trees have been down for several months. This will help stop poachers!

UNIDENTIFIED

QUIT BEING the Gestopo! Release some Lake Front land for Private Development; ie Clark Hill – Hartwell; Help Calhoun Falls GROW!

Windell Cleveland
706-283-5482; cell -706-988-3722

We was told in 1978-1980 the corps engineers said that the boundary line would never change around the lake. The Cleveland Farm has been running by Three Family – We do not want it to change.