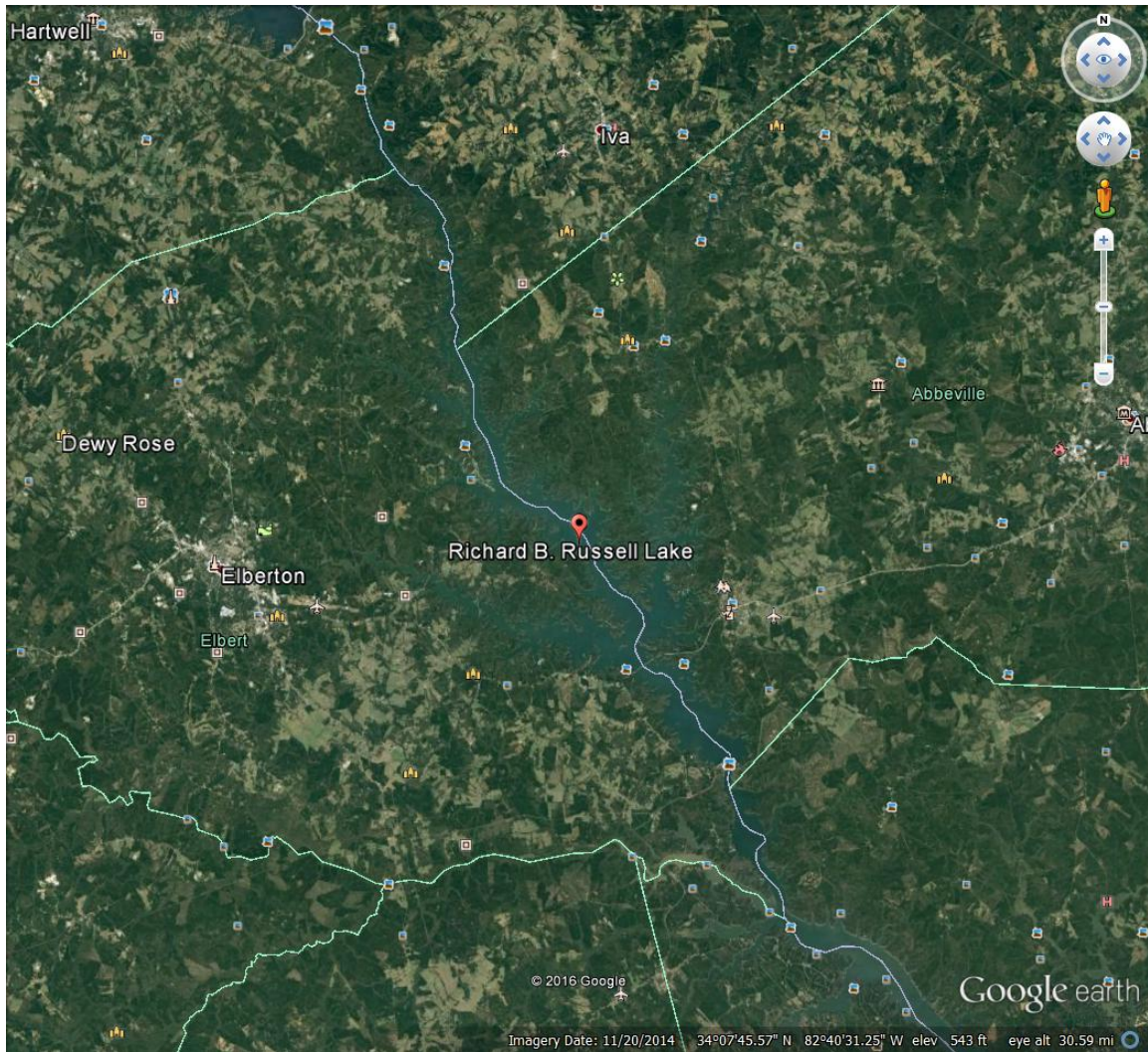


DRAFT ENVIRONMENTAL ASSESSMENT

Richard B. Russell Project Master Plan

Savannah River, Georgia and South Carolina

(Elberton and Hart Counties in Georgia and
Abbeville and Anderson Counties in South Carolina)



June 2017



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

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Table of Contents

1.0 INTRODUCTION.....	1
1.1 Proposed Action.	1
1.2 Purpose and Need for the Proposed Action.	1
1.3 Authority.	3
1.4 Prior Reports.....	3
1.5 NEPA Scoping.....	3
2.0 ALTERNATIVES TO THE PROPOSED ACTION.....	4
2.1 Alternative 1 – Future without Project Condition.	4
3.0 AFFECTED ENVIRONMENT	4
3.1 General.....	4
3.1.1 ENVIRONMENTAL SETTING.....	4
3.1.2 DESCRIPTION OF THE WATERSHED.....	5
3.1.3 CLIMATE.....	5
3.1.4 GEOLOGY	6
3.2 RELEVANT RESOURCES	6
3.2.1 WETLANDS	7
3.2.2 AQUATIC RESOURCES/FISHERIES.....	7
3.2.3 FLOODPLAINS	7
3.2.4 TERRESTRIAL RESOURCES.....	7
3.2.5 BOTTOMLAND HARDWOOD FOREST	8
3.2.6 WILDLIFE.....	8
3.2.7 THREATENED AND ENDANGERED SPECIES (TES)	8
3.2.8 WATER BODIES.....	9
3.2.9 CULTURAL RESOURCES.....	9
3.2.10 RECREATIONAL RESOURCES.....	10
3.2.11 AESTHETICS (VISUAL RESOURCES).....	10
3.2.12 SOCIO-ECONOMIC RESOURCES	11
3.2.13 ENVIRONMENTAL JUSTICE	13
3.2.14 AIR QUALITY	13
3.2.15 WATER QUALITY	14
3.2.16 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)	14
4.0 ENVIRONMENTAL CONSEQUENCES	15
4.1 WETLANDS.....	15

4.2 AQUATIC RESOURCES/FISHERIES	15
4.3 FLOODPLAINS.....	15
4.4 TERRESTRIAL RESOURCES	16
4.5 BOTTOMLAND HARDWOOD FOREST	16
4.6 WILDLIFE	16
4.7 THREATENED AND ENDANGERED SPECIES	17
4.8 WATERBODIES	17
4.9 CULTURAL RESOURCES	17
4.10 RECREATION RESOURCES.....	18
4.11 AESTHETICS	18
4.12 SOCIO-ECONOMIC RESOURCES.....	19
4.13 ENVIRONMENTAL JUSTICE	19
4.14 AIR QUALITY	19
4.15 WATER QUALITY	20
4.16 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW).....	20
4.17 CUMULATIVE IMPACTS.....	20
5.0 COORDINATION (Relevant agencies).....	21
6.0 MITIGATION	21
6.1 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS.....	22
7.0 CONCLUSION	23
8.0 PREPARED BY.....	23
9.0 REFERENCES.....	23

List of Figures

Figure 1: The Russell Project.....	5
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List of Tables

Table 1: Wetland Summary.....	7
Table 2: Threatened and Endangered Species.....	9
Table 3: Population Area of Interest.....	11
Table 4: Housing Information	11
Table 5: Income	12
Table 6: Labor Force	12
Table 7: Labor Force Employment Percentages.....	12
Table 8: Environmental Justice Characteristics.....	13
Table 9: Compliance of the Proposed Action with Executive Orders	22

APPENDICES

Appendix A: Commonly Occurring Terrestrial and Aquatic Plants, Mammals, Reptiles,
Amphibians, Birds and Fish of Richard B. Russell

Appendix B: Eight Step Process for Floodplain Management

ENVIRONMENTAL ASSESSMENT

Richard B. Russell Project Master Plan

Savannah River, Georgia and South Carolina

1.0 INTRODUCTION.

The U.S. Army Corps of Engineers (USACE), Savannah District (SAS), has prepared this Environmental Assessment (EA) to evaluate the potential impacts of updating the Richard B. Russell Dam and Lake Project (Russell Project or Project) Master Plan (MP) heretofore incorporated by reference. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality's (CEQ) Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2. This EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, USACE - SAS, to make an informed decision on the appropriateness of preparing an Environmental Impact Statement (EIS) or signing a Finding of No Significant Impact (FONSI).

1.1 Proposed Action.

The proposed action consists of updating the MP which is required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural and manmade resources. The current MP is Design Memorandum #31, dated 1981. The only changes proposed are the addition of cabins, a marina and hiking trails at Richard B. Russell State Park.

The MP provides a programmatic approach to the management of all the lands included within the Russell Project boundary and serves as the basic document guiding USACE responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the projects lands, waters, and associated resources.

The MP is a planning document anticipating what could and should happen and is flexible based upon changing conditions. Detailed management and administration functions are handled in the Operational Management Plan (OMP), which translates the concepts of the MP into operations terms.

1.2 Purpose and Need for the Proposed Action.

The purpose of the proposed action, updating the MP, is 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; and,
4. Exhibit consistency and compatibility with national objectives and other state and regional goals and programs.

Current guidance includes revised categories of Land Classifications used to define project lands, as well as a 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 the development, re-evaluation, and supplementation or updating of the MP. Coordination with other agencies and the public is an integral part of the MP process.

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 also guide the management of the Russell Project. Second, it is a land use management tool. This MP sets the stage for the update of many of the resource management plans, such as the OMP.

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.

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 policy-based MP, with maps (Appendix A of MP), along with this 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.

1.3 Authority.

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 Russell Dam and Lake (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 Russell Project in accordance with Section 203 of the Flood Control Act of 1966.

Although the construction and operation of the Russell Project required the purchase of additional 21,788 acres of separable mitigation lands, the authorization for operation and maintenance of those lands and associated environmental documentation is detailed in a separate document, Mitigation Implementation Plan 1995, and is not part of this EA.

Pursuant to USACE Engineer Regulation (ER) 1130-2-550, a MP is required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural, recreational, and cultural resources throughout the life of the water resource project.

1.4 Prior Reports

See Prior Design Memoranda in Table 1 of MP.

1.5 NEPA Scoping

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 on September 15, 2015 at Calhoun Falls, SC.

Comments received as a result of the Public Workshops are summarized as follows:

- Requests for and against private docks or development of any kind allowed;
- Development of public/private partnerships;
- The need for another vessel fueling location (marina) in the upper portion of the lake;

- Increasing advertisement for the State Park and surroundings; and
- Expanding opportunities for facilities and businesses, such as: addition of zip lines, Frisbee golf course, bike trails, skeet, wave pool, miniature golf, campsites and cabins, a restaurant; and hosting more fishing tournaments.

2.0 ALTERNATIVES TO THE PROPOSED ACTION

The one alternative to the proposed action considered was no-action, or future without project condition.

2.1 Alternative 1 – Future without Project Condition.

In the future without project condition (a.k.a. no-action), Russell Project would continue to operate under Design Memorandum #31. In accordance with Engineering Regulation (ER) 1130-2-550, a MP is required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural, recreational and cultural resources throughout the life of the water resource project.

3.0 AFFECTED ENVIRONMENT

3.1 General

3.1.1 ENVIRONMENTAL SETTING

The Russell Project (figure 1 and Appendix A of MP) is operated by USACE and includes approximately 26,653 acres of open water at maximum power pool of 475 feet mean sea level (msl), 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. Information about the Russell Project can be found on the District website at:

<http://www.sas.usace.army.mil/About/Divisions-and-Offices/Operations-Division/Richard-B-Russell-Dam-and-Lake/>.

The dam is located approximately 37.4 miles above the J. Strom Thurmond Dam (Thurmond), and 29.9 miles below the Hartwell Dam. At maximum power 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 on August 14, 1974. The first construction contract was awarded on November 15, 1974. Filling the lake began in October 1983 and was completed in December 1984, for a full pool elevation of 475 feet msl. The lake levels do not change much because the lake is

designed to operate within five (5) feet of full pond, compared to Hartwell and Thurmond which have 35 and 18 feet of conservation storage, respectively.

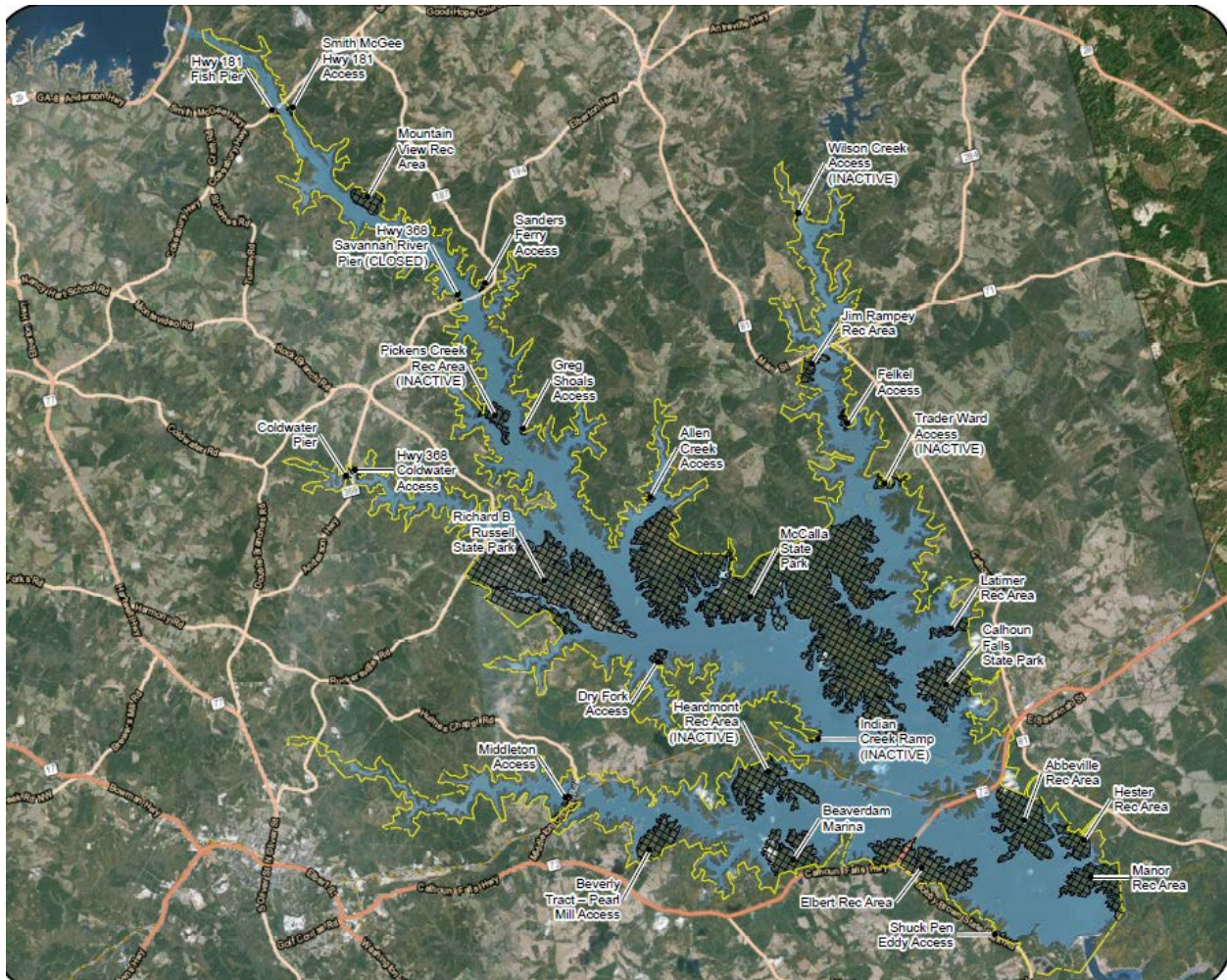


Figure 1: The Russell Project

3.1.2 DESCRIPTION OF THE WATERSHED

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 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. There is also a saddle dike located on the South Carolina side of the dam.

3.1.3 CLIMATE

The climate of the Russell Project 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 60 inches. There are two general periods of heavy precipitation, one in February and March and the other in July and August.

3.1.4 GEOLOGY

The land acquired for the project contained a very small amount of open farmland, and a large amount of land owned by paper and utility companies that were sited 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 had 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 areas' 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 vertical distance (rise) in 100 feet of horizontal distance, then multiplying by 100. 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, 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.

3.2 RELEVANT RESOURCES

This section contains a description of relevant resources that could be impacted by the project. The important resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. The following resources have been considered and found to not be

affected by the alternative under consideration because there are none in the project area: Essential Fish Habitat and Beaches.

3.2.1 WETLANDS

Table 1 lists the acreages of various types of wetlands present at the Russell Project. Data was retrieved from the FY14 Project Records reported in Operations and Maintenance Business Information Link (OMBIL).

Table 1: Wetland Summary

<u>Wetland Class</u>	<u>Subtotals</u>	<u>Total Acres</u>
Palustrine		281
Emergent Wetland	73	
Forested Wetland	107	
Scrub-Shrub Wetland	101	
Lacustrine		26,650
Overall Total		26,931

3.2.2 AQUATIC RESOURCES/FISHERIES

Game species found in the Savannah River in Russell Lake include: largemouth and spotted bass, catfish, crappie, and striped bass. Additionally, a 10-mile stretch of the Savannah River below Hartwell Dam serves as a marginal put-and-take trout fishery. The feasibility of this operation is due primarily to the cold water discharges from Hartwell Dam.

3.2.3 FLOODPLAINS

Russell Lake’s normal full pool elevation is 475 feet above msl. The lake levels do not change much because the lake is designed to operate within 5 feet of full pond.

3.2.4 TERRESTRIAL 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: yellow 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 Russell Project’s fringe.

3.2.5 BOTTOMLAND HARDWOOD FOREST

Hardwood and mixed pine-hardwood sites within the project area are presently supporting expanding deer and turkey populations.

3.2.6 WILDLIFE

Waterfowl observed in the project area include: mallard, pintail, teal, gadwall, black duck, wood duck, canvasback, 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.

Other species of animals found throughout the project include: white-tailed deer, gray squirrel, bobwhite quail, mourning dove, American woodcock, red and gray fox, cottontail rabbit, muskrat, opossum, raccoon, beaver, and skunk. Of these, quail, 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.

3.2.7 THREATENED AND ENDANGERED SPECIES (TES)

United States Fish & Wildlife Services (USFWS) has identified several wildlife species currently on the endangered species list which could occur in or move through the area. The red-cockaded woodpecker was historically known to be present on Thurmond lands; however, none have been observed at the Russell Project. The complete list of TES at Russell Project can be found in Appendix A.

The potential of endangered species must be recognized in all planning for development at the project to insure compatibility with any habitat needed by these species. Although the red-cockaded woodpecker historically occurred at the Thurmond Project, the likelihood of a similar observance occurring at Russell Project is remote due to a lack of mature tree stands which are required habitat for this species. Other threatened and endangered species having potential habitat at Russell Project fee lands, as identified by the USFWS, can be found at the website <https://ecos.fws.gov/ipac/project/WXYTZH7Z7VEWBGG4IRS2SGVAP4/resources.pdf> (table 2).

Table 2: Threatened and Endangered Species

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

3.2.8 WATER BODIES

Filling of the lake began in October 1983 and was completed in December 1984, for a full pool elevation of 475 feet msl. The lake levels do not change much because the lake is designed to operate within 5 feet of full pool, compared to Hartwell and Thurmond which have 35 and 18 feet of conservation storage, respectively.

3.2.9 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). Archaeological data for the region shows increased occupation of the Savannah River Valley and utilization of resources such as chert, quartz, and steatite, during the earlier prehistoric periods (Paleoindian - Woodland [1000 BC to 900 AD]) as population density increased and groups became more sedentary. The Mississippian period (900-1600 AD) in the region is characterized by regional chiefdoms and extensive trade networks. The societies established permanent settlements and became increasingly dependent on agriculture. Groups constructed earthwork mounds for burials and possibly for religious purposes. The historic period spans from 1540 AD when Europeans and native communities first interacted through the modern period (post-1930 AD). Ethno-historical research indicates that many of the archaeological sites at Russell Project are affiliated with the Muskogean-speaking and Cherokee tribes (Adams 2009).

Traditional Cultural Properties (TCPs) are areas tied to beliefs, customs, and practices of a living community. They may coincide with the boundaries of archaeological sites or be comprised of a number of landscape features. Details can be found online at www.nps.gov/nr/publications/bulletins/nrb38. To date, no tribes have identified any areas on Russell Project as a TCP.

Cultural resources at Russell Project consist of prehistoric and historic archaeological sites, standing structures, isolated finds and cemeteries. One thousand and eighty-five (1,085) sites have been identified at Russell Project. Of those, one hundred thirty-nine (139) archaeological sites have been formally determined eligible for the National Register of Historic Places (NRHP). Numerous other sites at the project have unknown NRHP status or require additional investigation before eligibility can be determined. Sites with undetermined status are afforded the same protections as NRHP-eligible sites until fully evaluated.

Most prehistoric archaeological sites recorded at Russell Project 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.

A number of isolated finds are documented at Russell Project. 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 at Russell Project are primarily prehistoric in nature. Russell Project contains approximately 9,000 acres that remain to be surveyed.

3.2.10 RECREATIONAL RESOURCES

The Russell Project has diverse users of recreational resources including campers at 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 around the lake; day users who picnic in the city, state and federally operated parks; marina customers; and many other user groups. More information on the recreational uses of the Russell Project can be found at:

<http://www.sas.usace.army.mil/About/Divisions-and-Offices/Operations-Division/Richard-B-Russell-Dam-and-Lake/Plan-a-Visit/>.

3.2.11 AESTHETICS (VISUAL RESOURCES)

The natural beauty of Russell Project is an aesthetic asset which offers almost unlimited opportunities for outdoor oriented activities such as sightseeing and hiking, as well as providing a pleasant environment for campers, mountain bikers, horseback riders, hunters, and fishermen. The 300-foot “collar lands” ensure very limited views of private homes and when combined with the “no private exclusive use policy” resulting in no private docks, the result is a pristine, natural viewscape unique to the region.

3.2.12 SOCIO-ECONOMIC RESOURCES

The communities surrounding the Russell Project include Abbeville and Anderson Counties in South Carolina, and Elbert and Hart counties in Georgia. All information in this section is derived from the American Community Survey's 2014 figures for the Counties in question. Pertinent demographic information for these areas is displayed in Table 3.

Table 3: Population Area of Interest

Geographical Area	Population	Percent Total
Abbeville, SC	24,965	9.51%
Anderson, SC	192,810	73.43%
Elbert, GA	19,438	7.40%
Hart, GA	25,377	9.66%
Total	262,590	

The total population for the area of interest amounts to 262,590. The most populous county is Anderson, which comprises 73.43 percent of the total population of the area of concern.

Housing information for the area of interest is displayed in Table 4. The area of interest has a total of 101,257 households with an average of 2.52 persons per household.

Table 4: Housing Information

Geographical Area	Households	Persons per Household
Abbeville, SC	9,752	2.49
Anderson, SC	73,669	2.54
Elbert, GA	7,786	2.50
Hart, GA	10,050	2.45
Total	101,257	
Average		2.52

Income information for the area of interest is displayed below in Table 5. Anderson County has both the highest median household and per capita income, while Elbert County has the lowest in both measures.

Table 5: Income

Geographical Area	Median household income (2014 dollars)	Per capita income (2014 dollars)
Abbeville, SC	\$ 35,409	\$ 18,303
Anderson, SC	\$ 41,822	\$ 22,216
Elbert, GA	\$ 35,170	\$ 19,709
Hart, GA	\$ 36,867	\$ 20,881

Labor force information is displayed in Table 6. The combined labor force for the area of interest is 117,929, and the unemployment rate is 10.36 percent. Anderson County easily has the largest labor force amongst the counties in question, totaling 88,206.

Table 6: Labor Force

Geographical Area	Labor Force	Employed	Unemployed	Unemployment Rate:
Abbeville, SC	10,710	9,361	1,349	12.6%
Anderson, SC	88,206	79,245	8,961	10.2%
Elbert, GA	8,304	7,287	1,017	12.2%
Hart, GA	10,709	9,818	891	8.3%
Total	117,929	105,711	12,218	10.36%

Table 7 displays the percentage of the civilian labor force employed in each sector. The largest sector in the area of concern is educational services and health care and social assistance, which employs 22.8 percent of the total employed civilian labor force; manufacturing follows with 22.4 percent.

Table 7: Labor Force Employment Percentages

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	Educational services, and health care and social assistance	Arts, entertainment, and recreation, and accommodation	Other services, except public administration	Public administration
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
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
Total	1.3	5.9	22.4	3.4	12.4	4.0	1.3	3.6	6.8	22.8	7.3	5.1	3.8

3.2.13 ENVIRONMENTAL JUSTICE

The Department of Defense’s Strategy on Environmental Justice of 1995 directs Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population.

Table 8: Environmental Justice Characteristics

Geographical Area	Percent Minority	Percent Below Poverty Line
Abbeville, SC	30.2%	23.1%
Anderson, SC	19.3%	16.8%
Elbert, GA	31.8%	20.5%
Hart, GA	21.5%	24.6%
Total	21.47%	18.43%

As shown in Table 8, none of the counties in question have a disproportionately high minority or low-income population. In addition, the zone of interest as a whole does not have a disproportionately high minority or low-income population.

3.2.14 AIR QUALITY

The Russell Project extends into parts of Elbert and Hart Counties in Georgia, and Abbeville and Anderson Counties in South Carolina. The air quality is regulated under Section 176(c) of the Clean Air Act, which is administered by the Environmental Protection Agency (EPA), and by South Carolina Department of Health & Environmental Services (SC DHEC) and Georgia Department of Natural Resources – Environmental Protection Division (GA DNR-EPD) by delegation. The air quality standards are defined in the National Ambient Air Quality Standards. Actions which result in increased emissions may require a permit issued by SC DHEC or GA DNR-EPD.

All of these counties are considered to be in “Attainment” for all federal air quality standards (EPA 2014). Despite being in compliance for these standards, portions of the area that contains the Reservoir are at times subjected to temporary impacts to air quality as a result of activities like large-scale construction projects.

Air quality within the project boundary is influenced by exhaust from motor vehicles and boats, the use of grills and fire pits, and other regional activities (such as large-scale construction projects as well as timber industry logging operations). The large open area that is created by the Reservoir allows for strong air currents to reduce and/or eliminate any localized air quality concerns caused by these pollutants. Air quality is strongly influenced by external factors, such as urban areas and factories located as far away as Augusta, GA and Atlanta, GA.

3.2.15 WATER QUALITY

This variable is actually composed of Water Quality Management Units (WQMU) within Georgia and watersheds within South Carolina. The WQMU's were designated by the GA DNR-EPD 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 Project is dependent upon many factors. The location and watershed are two primary factors which contribute to general water quality. Russell Project is typical of many of the reservoirs that were constructed in the 20th century. As a reservoir ages, water quality declines can be attributed to many factors, individually and collectively. Factors which generally 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, increase 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.

To maintain and enhance the water quality of Russell Project, SAS personnel will diligently pursue enforcement of State and Federal pollution control laws. Sources of pollution not covered under Federal regulations will be reported by SAS personnel to the Georgia and/or South Carolina Department of Environmental Quality for appropriate action.

3.2.16 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Under ER 1165-2-132, USACE assumes responsibility for the reasonable identification and evaluation of all Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of proposed actions. That policy avoids the use of project funds for HTRW removal and remediation activities.

In accordance with ER 1165-2-132, Section 13b, USACE conducts Environmental Review Guide for Operations (ERGO) inspections every five years, using an external team. In addition, SAS performs an internal ERGO review annually. Those inspections include developed areas around the lake that are operated by the USACE, as well as outgrant areas for commercial concession (marinas) and state parks. USACE tracks the results and findings of these inspections in the OMBIL to better track any needed corrective actions.

USACE prepares an Environmental Condition of Property (ECP) report (in place of a Phase 1 Site Assessment in accordance with ASTM standards) on lands that the USACE leases to other agencies, non-profit organizations and private entities.

4.0 ENVIRONMENTAL CONSEQUENCES

The changes being considered from the original Design Memorandum to this MP are: an addition of a marina site to Russell Lake, additional trails for hiking, and additional cabins at the Richard B. Russell State Park, all of which have already been designated as recreational areas.

4.1 WETLANDS

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts. The MP would not be updated.

Future Conditions with the Proposed Action

With implementation of the proposed action, the MP has been updated and includes maps attached as an appendix. An additional marina would have no direct or indirect adverse impacts on wetlands, nor would additional trails or cabins. Any proposed pathway or dock would avoid any impacts to wetland resources. The outgrant holder would be required to use the regulatory process to obtain a 404 permit for any impacts to wetlands.

4.2 AQUATIC RESOURCES/FISHERIES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to the aquatic resources/fisheries.

Future Conditions with the Proposed Action

With implementation of the proposed action, there may be direct or indirect adverse impacts to the aquatic resources/fisheries due to the increase of marina capacity. With an additional marina on the Russell Project, there would be more access to accommodate more fishermen.

4.3 FLOODPLAINS

In accordance with Executive Order 11988, federal agencies must avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains, and avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Future Conditions with No Action

The No Action alternative would result in no adverse impacts to the floodplain or management of the floodplain.

Future Conditions with the Proposed Action

The Proposed Plan would result in no adverse impacts to the floodplain or management of the floodplain.

4.4 TERRESTRIAL RESOURCES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to the terrestrial resources.

Future Conditions with the Proposed Action

With implementation of the proposed action, a marina, trails and cabins may be added to the Russell Project. The cabins would be constructed in an area that is designated for recreational activity. The trails would minimize adverse impacts to the surroundings as much as possible.

4.5 BOTOMLAND HARDWOOD FOREST

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to the bottomland hardwoods.

Future Conditions with the Proposed Action

With implementation of the proposed action, there could be minor direct or indirect adverse impacts to the bottomland hardwoods due to an increase in hiking trails and hikers.

4.6 WILDLIFE

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to the wildlife.

Future Conditions with the Proposed Action

With implementation of the proposed action, there could be minor direct or indirect adverse impacts to wildlife due to an increase in campers, hikers, and boaters.

4.7 THREATENED AND ENDANGERED SPECIES (TES)

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to any TES, or their designated critical habitats.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no direct or indirect adverse impacts to any TES, or their designated critical habitats.

4.8 WATERBODIES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to Russell Lake.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no direct or indirect adverse impacts to Russell Lake. If the marina were to be added, there would be a minor direct impact. The amount of property the marina would occupy would be de minimis compared to the lake.

4.9 CULTURAL RESOURCES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect impacts on any cultural resources. Management of Russell Project would continue under the current Design Memorandum without changes to the land classifications or recreational facilities. Management of cultural resources would continue in accordance with Russell Project's Historic Properties Management Plan, dated January 1998. This plan defines policies and procedures implemented at Russell Project to assure compliance with federal cultural resources laws and regulations.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no direct adverse impacts on any cultural resources. Management of cultural resources would continue in

accordance with the Historic Properties Management Plan, dated January 1998. Development proposed within Richard B. Russell State Park would be located in areas that have been previously classified for High Density Recreation. A cultural resources assessment would need to be performed prior to siting and constructing new facilities.

Efforts would be taken to place the facilities in areas that do not contain historic properties. Coordination with Georgia Historic Preservation Division (GHPO) would be required to comply with Section 106 of the National Historic Preservation Act. In the event the facilities could not be sited to avoid significant resources, an agreement document would be prepared and executed to mitigate any adverse effects.

Minor indirect adverse impacts could occur due to increased visitor use of Russell State Park. Historic sites that contain exposed features such as scattered bricks or chimney falls, when lying exposed on the ground surface, could be impacted by activities, including artifact collection and trampling.

4.10 RECREATION RESOURCES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts to any recreation resources.

Future Conditions with the Proposed Action

There could be both direct and indirect positive impacts to recreation due to the updated MP. With implementation of the proposed action, more recreation resources may be provided. The additional cabins, hiking trails and marina are proposed in recreational areas.

4.11 AESTHETICS

Future Conditions with No Action

Without implementation of the proposed action, there would be no adverse impacts to aesthetics or any view of the watershed.

Future Conditions with the Proposed Action

With implementation of the proposed action, an additional marina, cabins, and hiking trails would not have an adverse impact to the aesthetics or view of the watershed since these areas are already classified for recreation use and have existing cabins and boat ramps nearby.

4.12 SOCIO-ECONOMIC RESOURCES

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts on the socio-economic resources.

Future Conditions with the Proposed Action

Implementation of the proposed action provides for economically and socially productive uses of the project. Beneficial impacts on the socio-economic resources are expected to result. Enhancing the recreational capacity of the project will increase public use and draw more visitors to the area to the benefit of the local economy. Positive effects on residential property values in the surrounding area can also be expected, which can lead to proportionally higher property tax revenues for local governments.

The 2017 Russell Project MP is not expected to have any significant negative impacts on the area's socioeconomic well-being. Community benefits from recreation, power generation, and water supply for industrial and residential use will not be adversely impacted. There are no specific impacts on general health or quality of life that would adversely or disproportionately impact the surrounding population.

4.13 ENVIRONMENTAL JUSTICE

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts on environmental justice.

Future Conditions with the Proposed Action

With implementation of the proposed action, there would be no direct or indirect adverse impacts on environmental justice.

4.14 AIR QUALITY

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts on air quality.

Future Conditions with the Proposed Action

With implementation of the proposed action, the air quality impacts would be due to construction, therefore, de minimis, and temporary. A potential increase of boaters, campers, and camp fires may cause minor increases to the impacts on air quality that

would be seasonal but would be a de minimis increase overall. All of the counties that contain part of the Russell Project would continue to be considered in “Attainment” for all federal air quality standards (EPA 2014).

4.15 WATER QUALITY

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts on water quality.

Future Conditions with the Proposed Action

With implementation of the proposed action, there could be direct or indirect adverse impacts on water quality due to an increased number of boats. A Clean Water Act Section 404(b)(1) analysis is not required for this proposed action, as there will not be any discharge of dredged materials into jurisdictional waters of the United States.

4.16 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Future Conditions with No Action

Without implementation of the proposed action, there would be no direct or indirect adverse impacts on HTRW.

Future Conditions with the Proposed Action

With implementation of the proposed action, the probability of encountering HTRW is low. If a new environmental condition is identified in relation to the project site, SAS would take the necessary measures to avoid that recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

4.17 CUMULATIVE IMPACTS

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the NEPA of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as:

“The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)”. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around the Russell Project.

Past actions include the construction and operation of the Reservoir, the recreation sites surrounding the Reservoir, as well as residential, commercial, and industrial facilities throughout the region. All of these developments have had varying levels of impacts on the physical and natural resources in the region. Implementing management plans like the MP help to ensure a balance between public uses and stewardship of the natural environment. The proposed updates to the MP involve the additions of a marina, cabins and hiking trails as a possibility. These additions would occur in areas that are already designated for recreational use. Therefore, cumulative impacts would be minimal.

5.0 COORDINATION (Relevant agencies)

Preparation of this EA and draft FONSI is being coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. The following is a list of the federal and state agencies and Non-Governmental Organizations (NGO's) that were contacted during the evaluation and will receive a copy of the EA for review.

Federal Agencies

- National Marine Fisheries Service - Southeast Regional Office
- US Department of the Interior - Office of Environmental Policy & Compliance
- US Fish and Wildlife Service

State Agencies

South Carolina

- South Carolina Department of Archives and History
- South Carolina Department of Health and Environmental Control
- South Carolina Department of Natural Resources
- South Carolina Department of Parks, Recreation & Tourism

Georgia

- GA Department of Natural Resources, Environmental Protection Division
- GA Department of Natural Resources, Historic Preservation Division
- GA Department of Natural Resources, Wildlife Resources Division

Conservation Groups

- The Nature Conservancy
- The Georgia Conservancy

6.0 MITIGATION

The appropriate application of mitigation is to formulate an alternative that first avoids adverse impacts, then minimizes adverse impacts, and lastly, compensates for unavoidable impacts.

The proposed additional trails, cabins, and marina would be in existing recreational areas. They would be designed, constructed, and maintained to avoid any sensitive or cultural resource areas. If avoidance is not feasible, then impacts would be minimized to the extent possible.

At this time, compensation for unavoidable impacts is not warranted, nor included as part of the proposed action.

6.1 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon:

- Coordination of this EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; and USFWS and National Marine Fisheries Service (NMFS) concurrence that the proposed action would not be likely to adversely affect any endangered or threatened species;
- Receipt of the Georgia and South Carolina Historic Preservation Officer concurrence in the District’s determination of No Effect on cultural resources;
- Receipt and acceptance or resolution of all USFWS Fish and Wildlife Coordination Act recommendations; and

The draft FONSI will not be signed until the proposed action achieves environmental compliance (table 9) with all applicable laws and regulations.

Executive Orders	Number	Compliance Status
Invasive Species	13112	In Compliance
Equal Opportunity	11246	In Compliance
Protection and Enhancement of Environmental Quality	11514/ 11991	In Compliance
Protection and Enhancement of the Cultural Environment	11593	In Compliance
Convict Labor	11755	In Compliance
Floodplain Management	11988	In Compliance
Protection of Wetlands	11990	In Compliance
Federal Compliance with Pollution Control Standards	12088	In Compliance
Environmental Effects Abroad of Major Federal Actions	12114	In Compliance
Federal Compliance with Right-To-Know Laws and Pollution Prevention	12856	In Compliance
Federal Actions to Address Environmental Justice and Minority and Low-Income Populations	12898	In Compliance

Implementation of the North American Free Trade Agreement	12889	In Compliance
Energy Efficiency and Water Conservation at Federal Facilities	12902	In Compliance
Federal Acquisition and Community Right-To-Know	12969	In Compliance
Protection Of Children from Environmental Health Risks and Safety Risks	13045	In Compliance
Environmental Justice	12898	In Compliance
National Invasive Species Council	13112	In Compliance
Responsibilities of Federal Agencies to Protect Migratory Birds	13186	In Compliance

7.0 CONCLUSION

The proposed action consists of updating the Russell Project MP. USACE has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no adverse or beneficial impact upon cultural resources and only minor adverse cumulative impacts on other resources associated with the proposed action. The creation of trails, cabins, and marina would provide for recreational benefits at Richard B. Russell State Park.

8.0 PREPARED BY

The EA and the associated draft FONSI were prepared by Cynthia A Gose, Environmental Engineer, and Nathan Dayan, Biologist, with relevant sections prepared by: Julie Morgan, Archaeologist - Cultural Resources; Glenn Kowalski - Recreational Resources; Marty Harm,- Socio Economics, and Mr. Jeff Brooks, District Wildlife Biologist. The address of the preparers is: U.S. Army Corps of Engineers, Savannah District, 100 W. Oglethorpe Ave. Savannah, GA 31401.

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Appendix A

Appendix A

Commonly Occurring Terrestrial and Aquatic Plants, Mammals, Reptiles, Amphibians, Birds, and Fish of Richard B. Russell Project

Commonly Occurring Plant Species

Overstory

Common Name	Scientific Name
Southern Sugar Maple	<i>Acer barbatum</i>
Red Maple	<i>Acer rubrum</i>
Silver Maple	<i>Acer saccharum</i>
River Birch	<i>Betula nigra</i>
Bitternut Hickory	<i>Carya cordiformis</i>
Pignut Hickory	<i>Carya glabra</i>
Shagbark Hickory	<i>Carya ovata</i>
Mockernut Hickory	<i>Carya tomentosa</i>
White Ash	<i>Fraxinus americana</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Yellow Poplar	<i>Liriodendron tulipifera</i>
Southern Magnolia	<i>Magnolia grandiflora</i>
Blackgum	<i>Nyssa sylvatica</i>
Shortleaf Pine	<i>Pinus echinata</i>
Slash Pine	<i>Pinus elliottii</i>
Longleaf Pine	<i>Pinus palustris</i>
Loblolly Pine	<i>Pinus taeda</i>
Sycamore	<i>Platanus occidentalis</i>
Eastern Cottonwood	<i>Populus deltoides</i>
White Oak	<i>Quercus alba</i>
Scarlet Oak	<i>Quercus coccinea</i>
Southern Red Oak	<i>Quercus falcata</i>
Laurel Oak	<i>Quercus laurifolia</i>
Blackjack Oak	<i>Quercus marilandica</i>
Water Oak	<i>Quercus nigra</i>
Pin Oak	<i>Quercus palustris</i>
Willow Oak	<i>Quercus phellos</i>
Swamp Chestnut Oak	<i>Quercus prinus</i>
Northern Red Oak	<i>Quercus rubra</i>
Post Oak	<i>Quercus stellata</i>
Black Oak	<i>Quercus velutina</i>
Winged elm	<i>Ulmus alata</i>
American elm	<i>Ulmus americana</i>

Midstory

Common Name	Scientific Name
Boxelder	<i>Acer negundo</i>
Beauty-berry	<i>Callicarpa americana</i>
American Hornbeam, Musclewood	<i>Carpinus caroliniana</i>
Hackberry	<i>Celtis occidentalis</i>
Redbud	<i>Cercis canadensis</i>
Fringetree	<i>Chionanthus virginicus</i>
Dogwood	<i>Cornus florida</i>
Hawthorn	<i>Craetagus sp.</i>
Persimmon	<i>Diospyros virginiana</i>
Honeylocust	<i>Gleditsia triacanthos</i>
American Holly	<i>Ilex opaca</i>
Black Walnut	<i>Juglans nigra</i>
Eastern Red Cedar	<i>Juniperus virginiana</i>
Red Mulberry	<i>Morus rubra</i>
Waxmyrtle	<i>Myrica cerifera</i>
Eastern Hop Hornbeam, Ironwood	<i>Ostrya virginiana</i>
Sourwood	<i>Oxydendron arboreum</i>
Black Cherry	<i>Prunus serotina</i>
Wild Plum	<i>Prunus sp.</i>
Winged Sumac	<i>Rhus copallina</i>
Blacklocust	<i>Robinia pseudoacacia</i>
Palmetto	<i>Sabal minor</i>
Black Willow	<i>Salix nigra</i>
Sassafras	<i>Sassafras albidum</i>
Sparkleberry	<i>Vaccinium arboreum</i>
High-bush Blueberry	<i>Vacinium corymbosum</i>

Ground Covers

Common Name	Scientific Name
Trumpet Creeper	<i>Campis radicans</i>
Yellow jessamine	<i>Gelseminum sempervirens</i>
Virginia Creeper	<i>Parthenocissus quinquefolia</i>
Ferns	<i>Polystichum sp.</i>
Poison Oak	<i>Rhus quercifolia</i>
Poison Ivy	<i>Rhus radicans</i>
Poison Sumac	<i>Rhus vernix</i>
Blackberry	<i>Rubus sp.</i>
Greenbrier, Smilax	<i>Smilax sp.</i>
Wood grass	<i>Uniola sessiliflora</i>
Periwinkle	<i>Vinca minor</i>
Muscadine	<i>Vitis rotundifloia</i>

Aquatic Plants

Common Name	Scientific Name
Brazilian elodea, egeria	<i>Egeria densa</i>
Water primrose	<i>Ludwigia hexapetala</i>
Parrotfeather	<i>Myriophyllum aquaticum</i>
American lotus, lotus lily	<i>Nelumbo lutea</i>
Alligatorweed	<i>Alternanthera philoxeroides</i>
Fanwort	<i>Cabomba caroliniana</i>
Coontail, hornwort	<i>Ceratophyllum demersum</i>
Chara, musk grass	<i>Chara sp.</i>
Marsh Hibiscus	<i>Hibiscus moscheutos</i>
Southern watergrass	<i>Hydrochloa caroliniensis</i>
Water pennywort	<i>Hyrocotyle umbellata</i>
Waterwillow	<i>Justicia americana</i>
Southern naiad	<i>Najas guadalupensis</i>
Slender naiad, spiny-leaf naiad	<i>Najas minor</i>
Water paspalum	<i>Paspalum fluitans</i>
Pickernelweed	<i>Pontederia cordata</i>
Pondweed	<i>Potamogeton sp.</i>
Arrowheads	<i>Sagittaria sp.</i>
Cattail	<i>Typha sp.</i>
Bladderwort	<i>Utricularia sp.</i>

Exotics

Common Name	Scientific Name
Japanese honeysuckle	<i>Lonicera japonica</i>
China-berry	<i>Melia azedarach</i>
Kudzu	<i>Pueraria lobata</i>
Wisteria	<i>Wisteria frutesus</i>
Chinese Tallow	<i>Sapium sebiferum</i>
Giant Reed	<i>Arundo donax</i>
Chinese Privet	<i>Ligustrum sinense</i>
Old World Climbing Fern	<i>Lygodium microphyllum</i>
Johnson Grass	<i>Sorghum halepense</i>
Autumn Olive or Elaeagnus	<i>Elaeagnus umbellata</i>
Bamboo	<i>Phyllosachys sp</i>

Commonly Occurring Bird Species

Common Name	Scientific Name	
Wood Duck	<i>Aix sponsa</i>	Summer
Mallard	<i>Anas platyrhynchos</i>	Summer
Canada Goose	<i>Branta canadensis</i>	Summer
Hooded Merganser	<i>Lophodytes cucullatus</i>	Summer
Blue-winged Teal	<i>Anas discors</i>	Winter
Green-winged Teal	<i>Podilymbus podiceps</i>	Winter
Northern Shovelers	<i>Anas clypeata</i>	Winter
Canvasback	<i>Aythya valisineria</i>	Winter
Redhead	<i>Aythya americana</i>	Winter
Ring-necked Duck	<i>Aythya collaris</i>	Winter
Greater Scaup	<i>Aythya marila</i>	Winter
Lesser Scaup	<i>Aythya affinis</i>	Winter
Long-tailed Duck	<i>Clangula hyemalis</i>	Winter
Bufflehead	<i>Bucephala albeola</i>	Winter
Common Golden eye	<i>Bucephala clangula</i>	Winter
Common Merganser	<i>Mergus merganser</i>	Winter
Red Breasted Merganser	<i>Mergus serrator</i>	Winter
Ruddy Duck	<i>Oxyura jamaicensis</i>	Summer
Pacific Loon	<i>Gavia Pacifica</i>	Winter
Common Loon	<i>Gavia immer</i>	Winter
Red Throated Loon	<i>Gavia stellata</i>	Winter
Pied Billed Grebe	<i>Podilymbus podiceps</i>	Summer/Winter
Horned Grebe	<i>Podiceps auritus</i>	Winter
Eared Grebe	<i>Podiceps nigricollis</i>	Winter
American Coot	<i>Fulica americana</i>	Winter
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Summer/Winter
Anhinga	<i>Anhinga anhinga</i>	Summer
Belted Kingfisher	<i>Megaceryle alcyon</i>	Summer
Great Egret	<i>Ardea alba</i>	Summer
Great Blue Heron	<i>Ardea herodias</i>	Summer
Green Heron	<i>Butorides virescens</i>	Summer
White Ibis	<i>Eudocimus albus</i>	Summer
Least Bittern	<i>Ixobryhus exilis</i>	Summer
Wood Stork	<i>Mycteria americana</i>	Late summer
Brown Pelican	<i>Pelecanus occidentalis</i>	Winter
White Pelican	<i>Pelecanus erythrorhynchos</i>	Winter
Chimney Swift	<i>Chaetura pelagica</i>	Summer
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	Summer
Chuck-will's-widow	<i>Caprimulgus carolinensis</i>	Summer
Whip-poor-will	<i>Caprimulgus vociferus</i>	Summer
Common Nighthawk	<i>Chordeiles minor</i>	Summer

Continued		
Killdeer	<i>Charadrius vociferus</i>	Summer
Cooper's Hawk	<i>Accipiter cooperii</i>	Summer
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Summer
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Summer
Broad-winged Hawk	<i>Buteo playtypterus</i>	Summer
Red-shouldered Hawk	<i>Buteo lineatus</i>	Summer
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Summer/Winter
Osprey	<i>Pandion haliaetus</i>	Summer/Winter
Turkey Vulture	<i>Cathartes aura</i>	Summer/Winter
Black Vulture	<i>Coragyps atratus</i>	Summer/Winter
Peregrine Falcon	<i>Falco peregrinus</i>	Winter
American Kestrel	<i>Falco sparverius</i>	Winter
Mourning Dove	<i>Zenaida macroura</i>	Summer/Winter
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Summer
Northern Bobwhite	<i>Colinus virginianus</i>	Summer/Winter
Wild Turkey	<i>Meleagris gallopavo</i>	Summer/Winter
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Winter
Northern Cardinal	<i>Cardinalis cardinalis</i>	Summer/Winter
American Crow	<i>Corvus brachyrhynchos</i>	Summer/Winter
Fish Crow	<i>Corvus ossifragus</i>	Summer/Winter
Blue Jay	<i>Cyanocitta cristata</i>	Summer/Winter
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	Summer/Winter
American Goldfinch	<i>Carduelis tristis</i>	Summer/Winter
House Finch	<i>Carpodacus mexicanus</i>	Summer/Winter
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Summer
Orchard Oriole	<i>Icterus spurius</i>	Summer
Brown-headed Cowbird	<i>Molothrus ater</i>	Summer
Common Grackle	<i>Quiscalus quiscula</i>	Summer
Eastern Meadowlark	<i>Sturnella magna</i>	Summer
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Summer
Northern Mockingbird	<i>Mimus polyglottos</i>	Summer/Winter
Brown Thrasher	<i>Toxostoma rufum</i>	Summer/Winter
Tufted Titmouse	<i>Baeolophus bicolor</i>	Summer/Winter
Carolina Chickadee	<i>Poecile carolinensis</i>	Summer/Winter
Pine Warbler	<i>Dendroica pinus</i>	Summer/Winter
Yellow-breasted Chat	<i>Icteria virens</i>	Summer
Prothonotary Warbler	<i>Protonotaria citrea</i>	Summer
American Redstart	<i>Setophaga ruticilla</i>	Summer
Hooded Warbler	<i>Wilsonia citrina</i>	Summer
Ovenbird	<i>Seiurus aurocapilla</i>	Summer
Louisiana Waterthrush	<i>Seiurus motacilla</i>	Summer
Black-and-White Warbler	<i>Mniotilta varia</i>	Summer
Kentucky Warbler	<i>Oporornis formosus</i>	Summer
Common Yellowthroat	<i>Geothlypis trihas</i>	Summer

Continued		
Hooded Warbler	<i>Wilsonia citrina</i>	Summer
Northern Parula	<i>Parula Americana</i>	Summer
Pine Warbler	<i>Dendroica pinus</i>	Summer
Yellow-throated Warbler	<i>Dendroica dominica</i>	Summer
Prairie Warbler	<i>Dendroica discolor</i>	Summer
Yellow-Breasted Chat	<i>Icteria virens</i>	Summer
Bachman's Sparrow	<i>Aimophila aestivalis</i>	Summer/Winter
Chipping Sparrow	<i>Spizella passerine</i>	Summer/Winter
Field Sparrow	<i>Spizella pusilla</i>	Summer/Winter
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Summer/Winter
Song Sparrow	<i>Melospiza melodia</i>	Summer/Winter
White-throated Sparrow	<i>Zonotrichia albicollis</i>	Winter
Summer Tanager	<i>Piranga rubra</i>	Summer
Northern Cardinal	<i>Cardinalis cardinalis</i>	Summer/Winter
Blue Grosbeak	<i>Passerina caerulea</i>	Summer/Winter
Indigo Bunting	<i>Passerina cyanea</i>	Summer
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Summer/Winter
Eastern Meadowlark	<i>Sturnella magna</i>	Summer
House Finch	<i>Carpodacus mexicanus</i>	Summer/Winter
American Goldfinch	<i>Carduelis tristis</i>	Summer/Winter
Ruby-crowned Kinglet	<i>Regulus calendula</i>	Winter
Brown-headed Nuthatch	<i>Sitta pusilla</i>	Summer/Winter
European Starling	<i>Sturnus vulgaris</i>	Summer/Winter
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	Summer
Summer Tanager	<i>Piranga rubra</i>	Summer
Carolina Wren	<i>Thryothorus ludovicianus</i>	Summer/Winter
Wood Thrush	<i>Hylocichla mustelina</i>	Summer
Eastern Bluebird	<i>Sialia sialis</i>	Summer/Winter
American Robin	<i>Turdus migratorius</i>	Summer/Winter
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	Summer
Eastern Phoebe	<i>Sayornis phoebe</i>	Summer
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Summer
Red-eyed Vireo	<i>Vireo olivaceus</i>	Summer
White-eyed Vireo	<i>Vireo Grieus</i>	Summer
Pileated Woodpecker	<i>Dryocopus pileatus</i>	Summer/Winter
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	Summer/Winter
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Summer/Winter
Downy Woodpecker	<i>Picoides pubescens</i>	Summer/Winter
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Winter
Great Horned Owl	<i>Bubo virginianus</i>	Summer/Winter
Eastern Screech-Owl	<i>Megascops asio</i>	Summer/Winter
Barred Owl	<i>Strix varia</i>	Summer/Winter

**compiled from "Georgia Breeding Bird Atlas", Georgia Ornithological Society Records, UGA Museum of Natural History Records, and field observations.

Mammals	
Common Name	Scientific Name
Hispid Cotton Rat	<i>Sigmodon hispidus</i>
Golden Mouse	<i>Ochrotomys nuttalli</i>
Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>
White-footed Mouse	<i>Peromyscus leucopus</i>
Cotton Mouse	<i>Peromyscus gossypinus</i>
Common Muskrat	<i>Ondatra zibethicus</i>
Oldfield Mouse	<i>Peromyscus polionotus</i>
Southern Flying Squirrel	<i>Glaucomys volans</i>
Eastern Gray Squirrel	<i>Sciurus carolinensis</i>
Eastern Fox Squirrel	<i>Sciurus niger</i>
Eastern Chipmunk	<i>Tamias striatus</i>
Southern Short-tailed Shrew	<i>Blarina carolinensis</i>
Least Shrew	<i>Cryptotis parva</i>
Eastern Mole	<i>Scalopus aquaticus</i>
Eastern Cottontail	<i>Sylvilagus aquaticus</i>
Swamp Rabbit	<i>Sylvilagus floridanus</i>
Eastern Pipistrelle (Tri-colored bat)	<i>Pipistrellus subflavus</i>
Rafineque's Big Eared bat	<i>Corynorhinus rafinesquii</i>
Southeastern Myotis	<i>Myotis austroriparius</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Little Brown Bat	<i>Myotis lucifugus</i>
Silver-haired Bat	<i>Lasionycteris noctivagans</i>
Eastern Red Bat	<i>Lasiurus borealis</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Seminole Bat	<i>Lasiurus seminolus</i>
Evening Bat	<i>Pipistrellus subflavus</i>
Coyote	<i>Canis latrans</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
Red Fox	<i>Vulpes vulpes</i>
Bobcat	<i>Lynx rufus</i>
Striped Skunk	<i>Mephitis mephitis</i>
Spotted Skunk	<i>Spilogale putorius</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>
Northern Raccoon	<i>Procyon lotor</i>
Northern River Otter	<i>Lontra canadensis</i>
Virginia Opossum	<i>Didelphis virginiana</i>
American Beaver	<i>Castor canadensis</i>
Nine-banded Armadillo	<i>Dasypus novemcinctus</i>
White-tailed Deer	<i>Odocoileus virginianus</i>
Northern Long-eared bat	<i>Myotis septentrionalis</i>

Reptiles	
Common Name	Scientific Name
Snakes	
Eastern Black Racer	<i>Coluber constrictor</i>
Corn Snake	<i>Elaphe guttata</i>
Rat Snake	<i>Elaphe obsoleta</i>
Eastern Hognose Snake	<i>Heterodon platirhinos</i>
Mole Snake	<i>Lampropeltis calligaster</i>
Eastern King Snake	<i>Lampropeltis getula</i>
Scarlet King	<i>Lampropeltis triangulum elapsoides</i>
Coachwhip	<i>Masticophis flagellum</i>
Plain-bellied Watersnake	<i>Nerodia erythrogaster</i>
Northern Watersnake	<i>Nerodia sipedon</i>
Brown Watersnake	<i>Nerodia taxispilota</i>
Rough Green Snake	<i>Opeodrys aestivus</i>
Queen Snake	<i>Regina septemvittata</i>
Brown Snake	<i>Storeria dekayi</i>
Red-bellied Snake	<i>Storeria occipitomaculata</i>
Southeastern Crowned Snake	<i>Tantila coronata</i>
Eastern Ribbon Snake	<i>Thamnophis suaritus</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Rough Earth Snake	<i>Virginia striatula</i>
Smooth Earth Snake	<i>Virginia valeriae</i>
Copperhead	<i>Agkistrodon contortrix</i>
Cottonmouth	<i>Agkistrodon piscivorus</i>
Timber Rattlesnake	<i>Crotalus horridus</i>
Pygmy Rattlesnake	<i>Sistrurus miliarius</i>
Lizards	
Common Name	Scientific Name
Eastern Fence Lizard	<i>Sceloporus undulatus</i>
Green Anole	<i>Anolis carolinensis</i>
Five-lined Skink	<i>Eumeces fasciatus</i>
Southeastern Five-lined Skink	<i>Eumeces inexpectatus</i>
Six-lined Racerunner	<i>Cnemidophorus sexlineatus</i>
Slender Glass Lizard	<i>Ophisaurus attenuatus</i>
Broadhead Skink	<i>Eumeces laticeps</i>
Ground Skink	<i>Scincella lateralis</i>
American Alligator	<i>Alligator mississippiensis</i>
Turtles	
Common Name	Scientific Name
Common Snapping Turtle	<i>Chelydra serpentina</i>
Eastern Box Turtle	<i>Terrapene carolina</i>
Pond Slider	<i>Trachemys scripta</i>
Painted Turtle	<i>Chrysemys picta</i>
River Cooter	<i>Pseudemys coninna</i>
Eastern Musk Turtle	<i>Kinosternon subrubrum</i>
Common Musk Turtle	<i>Sternotherus odoratus</i>
Spiny Softshell	<i>Apalone spinifera</i>

Amphibians	
Common Name	Scientific Name
Frogs and Toads	
American Toad	<i>Bufo americanus</i>
Fowler's Toad	<i>Bufo fowleri</i>
Northern Cricket Frog	<i>Acris crepitans</i>
Bird-voiced Treefrog	<i>Hyla avivoca</i>
Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>
Green Treefrog	<i>Hyla cinerea</i>
Barking Treefrog	<i>Hyla gratiosa</i>
Squirrel Treefrog	<i>Hyla squirella</i>
Spring Peeper	<i>Pseudacris crucifer</i>
Upland Chorus Frog	<i>Pseudacris feriarum</i>
Southern Chorus Frog	<i>Pseudacris nigrita</i>
Eastern Narrowmouth Toad	<i>Gastrophryne carolinensis</i>
Eastern Spadefoot Toad	<i>Scaphiopus holbrookii</i>
Bullfrog	<i>Rana catesbeiana</i>
Green Frog / Bronze Frog	<i>Rana clamitans</i>
Pickerel Frog	<i>Rana palustris</i>
Southern Leopard Frog	<i>Rana sphenoccephala</i>
Salamanders	
Spotted Salamander	<i>Ambystoma maculatum</i>
Marbled Salamander	<i>Ambystoma opacum</i>
Mole Salamander	<i>Ambystoma talpoideum</i>
Two-toed Amphiuma	<i>Amphiuma means</i>
Spotted Dusky Salamander	<i>Desmognathus conanti</i>
Two-lined Salamander	<i>Eueycea bislineata complex</i>
Three-lined Salamander	<i>Eueycea guttolineata</i>
Atlantic Coast Slimy Salamander	<i>Plethodon chlorobryonis</i>
Savannah Slimy Salamander	<i>Plethodon savannah</i>
Mud Salamander	<i>Pseudotriton montanus</i>
Red Salamander	<i>Pseudotriton ruber</i>

**Compiled utilizing "Amphibians and Reptiles of Georgia"
and the UGA Museum of Natural History Records website

Commonly Occurring Fish Species

Common Name	Scientific Name
Game Fish	
Bass	<i>Serranidae</i>
Striped bass*	<i>Morone saxatilis</i>
White bass	<i>Morone chrysops</i>
Hybrid bass*	<i>Morone saxatilis x Morone chrysops</i>
White perch	<i>Morone americana</i>
Sunfish	<i>Centrarchidae</i>
Largemouth bass	<i>Micropterus salmoides</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
White crappie	<i>Pomoxis annularis</i>
Bluegill	<i>Lepomis macrochirus</i>
Redbreast	<i>Lepomis auritus</i>
Green sunfish	<i>Lepomis cyanellus</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Flier	<i>Centrarchus macropterus</i>
Warmouth	<i>Chaenobryttus coronaris</i>
Red ear	<i>Lepomis microlophus</i>
Alabama Bass	<i>Micropterus henshalli</i>
Red-eye bass	
Yellow perch	<i>Perca flavescens</i>
Rough Fish	
Catfish	<i>Lepisosteidae</i>
Channel catfish	<i>Ictalurus punctatus</i>
White catfish	<i>Ictalurus catus</i>
Flat bullhead	<i>Ictalurus platycephalus</i>
Brown bullhead	<i>Ictalurus nebulosus</i>
Flathead catfish	<i>Pylodictis olivaris</i>
Other	
Longnose gar	<i>Lepospsteus osseus</i>
Chain pickerel (jack)	<i>Esox niger</i>
Redhorse sucker	<i>Maxostoma spp.</i>
Northern hogsucker	<i>Hypentelium nigricans</i>
Spotted sucker	<i>Minytrema melanops</i>
Carp	<i>Cyprinus carpio</i>

* Stocked Species

Commonly Occurring Fish Species
(Con't)

Forage Species	
Shad and herring	<i>Clupeidae</i>
Gizzard shad	<i>Dorosoma cepedianum</i>
Threadfin shad	<i>Dorosoma petenense</i>
Blueback herring	<i>Alosa aestivalis</i>
Minnows	<i>Cyprinidae</i>
Spottail shiner	<i>Notropis hudsonius</i>
Golden shiner	<i>Notemigonus chrysoleucas</i>
Livebearers	<i>Poeciliidae</i>
Mosquito fish	<i>Gambusia affinis</i>

Appendix B

APPENDIX B

8-Step Process for Executive Order 11988: Floodplain Management

8-Step Process for EO 11988: Floodplain Management

Richard B. Russell Lake Master Plan

- ER 1130-2-550

--Decision Process for E.O. 11988 as Provided by 24 CFR §55.20

Step 1: Determine whether the action is located in a 100-year flood plain (or a 500-year flood plain for critical actions).

Part of this action is located in a 100-year flood plain. Based on FEMA Flood maps the elevation of the 100 year flood plains is 480 msl. Richard B. Russell Lake (Russell Project) will be above and below this flood plain. The Preferred alternative is the update of the Master Plan. Therefore, E.O. 11988 applies and an evaluation of direct and indirect impacts associated with construction, occupancy, and modification of the flood plain is required.

Step 2: Notify the public for early review of the proposal and involve the affected and interested public in the decision making process.

The Russell Project MP was last updated in 1984. Over the past 32 years, changes have occurred that warrant an update to the MP. These include: changes in policy, changes in regulations, increases in economic growth, increase in surrounding community growth and increases in recreational use. Pursuant to ER 1130-2-550, the MP is the strategic land use management document that guides the comprehensive management and development of all project recreational, natural and cultural resources throughout the life of the water resource project. The MP and Operations Management Plan (OMP) are intended to work in tandem, as the OMP implements the resource objectives and development needs identified in the MP.

The proposed MP update meets the following goals:

- Updates policies and regulations pertaining to the Master Plan of Russell Project.
- Maintains recreational, natural and cultural resources of the lake for the full benefit of the general public.
- Ensures that program management actions are based on current information and regulations through collaboration with the public, stakeholders, and subject matter experts.

Step 3: Identify and evaluate practicable alternatives.

- A. Locate the Project Within the Flood plain

The Proposed MP was developed in accordance with the criteria outlined within the USACE Master Plan regulation (ER 1130-2-550). The preferred alternative will meet Russell Project master plan goals and responsibilities while protecting the recreational, natural, and cultural resources.

A. No Action or Alternative Actions that Serve the Same Purpose

The Russell Project Environmental Assessment also considered a No Action Alternative which involves the continued use of Design Memorandum #31, dated 1981 as the current MP. This would not allow the Russell Project to operate under an up-to-date Master Plan, in accordance with ER 1130-2-550.

Step 4: Identify Potential Direct and Indirect Impacts of Associated with Flood plain Development.

Section 4.3 of the Environmental Assessment for this project describes the impacts to the flood plain that would be expected under each alternative. With implementation of either Alternative, the existing flood plain would not have adverse impacts.

Step 5: Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the flood plain and to restore, and preserve the values of the flood plain.

Russell Lake's normal full pool elevation is 475 feet msl. The lake levels do not change much because the lake is designed to operate within 5 feet of full pond. The Proposed Plan and the No Action alternative would result in no adverse impacts to the floodplain or management of the floodplain.

Step 6: Reevaluate the Alternatives.

Although the MP is in a flood plain, the project has been designed in order to minimize effects on flood plain values.

Step 7: Determination of No Practicable Alternative

It is our determination that there is no practicable alternative for locating the project out of the flood zone. This is due to the need to mitigate and minimize impacts on human health, public property, and flood plain values. A final notice will be published during the public review of these documents.

Step 8: Implement the Proposed Action

USACE will assure that this plan, as modified and described above, is executed and necessary language will be included in all agreements with participating parties. USACE will also take an active role in monitoring the process to ensure no unnecessary impacts occur nor unnecessary risks are taken.