



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

**ENVIRONMENTAL ASSESSMENT
SHORELINE MANAGEMENT PLAN
JOHN H. KERR RESERVOIR, BOYDTON, VA**

**US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

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TABLE OF CONTENTS

1.0 INTRODUCTION 1

 1.1 Background 1

 1.2 Description of the Project Area..... 1

 1.3 Shoreline Allocation 2

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION 2

3.0 ALTERNATIVES..... 3

 3.1 Proposed Shoreline Management Plan (Preferred Alternative) 3

 3.2 No Action..... 5

4.0 AFFECTED ENVIRONMENT AND IMPACTS 5

 4.1 Physical Environment..... 5

 4.1.1 Geology, Topography and Soils..... 5

 4.1.4 Floodplains 6

 4.1.5 Surface Hydrology 7

 4.1.6 Water Quality..... 7

 4.1.7 Air Quality 7

 4.1.8 Noise 8

 4.1.9 Cultural Resources 8

 4.1.10 Hazardous and Toxic Wastes Sites..... 9

 4.1.11 Aesthetics..... 9

 4.2 Natural Resources..... 9

 4.2.1 Vegetation..... 9

 4.2.2 Fish and Wildlife..... 10

 4.2.3 Threatened and Endangered Species 11

 4.2.4 Wetlands 16

 4.3 Socioeconomic Resources..... 16

 4.3.1 Land Use..... 16

 4.3.2 Recreation 17

 4.3.3 Water Supply..... 17

 4.3.4 Safety 17

 4.4 Environmental Impact Comparison of Alternatives 18

4.5 Unavoidable Adverse Impacts of the Proposed Action	19
5.0 CUMULATIVE EFFECTS	19
6.0 PUBLIC INVOLVEMENT	20
6.1 Public Information Sessions	20
6.2 Recipients of the Environmental Assessment	20
7.0 POINT OF CONTACT	22
8.0 DRAFT FINDING OF NO SIGNIFICANT IMPACT	22
9.0 REFERENCES	23

LIST OF TABLES

Table 1: Comparison of 1995 SMP and Proposed SMP	4
Table 2: Summary of Shoreline Re-allocated.....	5
Table 3: Federal and State Listed Species.....	12
Table 4: Environmental Impact Comparison of Alternatives.....	19

APPENDICES

Appendix A: 2015 Shoreline Management Plan (SMP)

1.0 INTRODUCTION

The John H. Kerr Dam and Reservoir (The Reservoir) is operated by the U.S. Army Corps of Engineers (USACE) and includes approximately 48,900 acres of water and an additional 55,000 acres of surrounding land, referred to as project lands, along the border of the Commonwealth of Virginia and the State of North Carolina. The USACE is the federal agency responsible for maintaining and operating the dam, as well as the lands and water that comprises and surrounds the reservoir. The Reservoir has a shoreline of approximately 800 miles and a water surface area of approximately 48,900 acres. The Reservoir extends approximately 39 miles upstream of the dam on the Roanoke River and approximately 19 miles upstream on the Dan River above its junction with the Roanoke River.

Engineering Regulation (ER) 1130-2-406 Project Operation – Shoreline Management at Civil Works Projects, requires that a Shoreline Management Plan (SMP) be prepared for each Corps project where private shoreline use is allowed. The current John H. Kerr SMP was approved in 1995. Further, the ER requires the SMP be reviewed at least every 5 years and revised as necessary. Shoreline Management Plan updates must be in compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and public participation to the maximum extent practicable during plan formulation, preparation and revisions is required.

This document evaluates the impacts associated with implementation of the proposed updated SMP for John H. Kerr Dam and Reservoir. This EA addresses the environmental effects of the changes to the existing conditions as a result of the proposed 2014 Draft Shoreline Management Plan (Draft SMP) (Appendix A). The potential impacts to the biological, physical, and human environments located within the United States Army Corps of Engineers (Corps) property are addressed in this document.

1.1 Background

Pursuant to ER 1130-2-406 Shoreline Management at Civil Works Projects, it is the policy of the Corps of Engineers to protect and manage all Civil Works water resources development projects in a manner that promotes the safe and healthful use of the shorelines by the public while maintaining environmental safeguards to ensure a quality resource for use by the public. The objectives include maintenance of the aesthetic and environmental characteristics of the Reservoir for the full benefit of the general public.

1.2 Description of the Project Area

John H. Kerr is located within the piedmont along the border of Virginia and North Carolina. In Virginia, the reservoir is located within Mecklenburg, Charlotte, and Halifax Counties. In North Carolina, the reservoir lies within parts of Warren, Vance, and Granville Counties. The Reservoir extends approximately 39 miles upstream of the dam on the Roanoke River and approximately 19 miles upstream on the Dan River above the junction with the Roanoke River. At normal pool

the reservoir contains 48,900 acres of water and approximately 800 miles of shoreline. (See Figure 1)

1.3 Shoreline Allocation

Land use allocations provide the basic framework for the development, management, and operation of all John H. Kerr resources and facilities.

A. Limited Development Shoreline. Limited Development Shoreline refers to areas where private floating and certain land-based facilities and activities are permitted provided all conditions outlined in the Shoreline Management Plan are met. All shorelines not designated as public recreation shorelines, prohibited access areas, or protected lakeshore areas are included in the Limited Development Allocation. (Limited Development Areas are shown in green on Map Figures within Appendix A).

B. Public Recreation Shoreline. Public Recreation Shoreline consists of lands set aside for recreational use. These lands include existing parks (federal, state and municipal), quasi-public lease areas (land leased to non-governmental organizations or public service organizations), recreational trails, wildlife management areas and other areas reserved for future recreational development. All legally authorized, existing private facilities currently within this shoreline allocation will continue to be "grandfathered" and permitted on an annual basis provided all conditions outlined in the SMP are met. (Public Recreation Areas are shown in red on Map Figures within Appendix A).

C. Protected Shoreline. Protected Shorelines are designated for the purpose of maintaining or restoring aesthetic quality, protecting and conserving natural and cultural resources, providing fish and wildlife habitat, and reducing conflicts between private and public activities. (Protected Development Areas are shown in yellow on Map Figures within Appendix A).

D. Prohibited Access Shoreline. Prohibited Access Shoreline is designated to ensure the safety of Reservoir visitors. These shoreline areas are located adjacent to lands utilized for industrial and reservoir operations and contain dangerous structures or maintenance facilities. Shoreline Use Permits/Licenses are not permitted within these areas. Additional areas may be allocated to this shoreline category as new structures and hazards are identified. (Prohibited Access Shoreline Areas are shown in black on Map Figures within Appendix A).

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The John H. Kerr Shoreline Management Plan was last updated in January 1995. Over the past 19 years, many changes have occurred that warrant an update to the SMP. 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-

406, the objective of the Draft SMP is to maintain a balance between permitted private uses, long-term natural resource protection, and public recreation opportunities; thus meeting the requirements of the Corps of Engineers, as stewards of this public resource, and the needs of the general public. Specifically, ER 1130-2-406 states the intended purpose of the SMP to provide protection of desirable environmental characteristics of Civil Works lake projects and restoration of shorelines where degradation has occurred through private exclusive use. The ER states that preparation of the plan must provide for protection of public lands and private investments and honor any past commitment; public participation is also encouraged to the fullest extent.

The proposed SMP update meets the following goals:

- Updates policies and regulations pertaining to the shoreline of John H. Kerr Reservoir.
- Maintains aesthetic and environmental characteristics of the Reservoir for the full benefit of the general public.
- Addresses shoreline allocations (zoning), rules, regulations, and other information relative to the Shoreline Management Program.
- Ensures that program management actions are based on current information and regulations through collaboration with the public, stakeholders, and subject matter experts.

3.0 ALTERNATIVES

Alternatives that meet the objectives and goals described above were considered during development of this SMP. These alternatives are described below.

3.1 Proposed Shoreline Management Plan (Preferred Alternative)

The Proposed SMP was developed in accordance with the criteria outlined within the Corps of Engineers' shoreline management regulation (ER 1130-2-406). The preferred alternative will meet John H. Kerr's shoreline management goals and responsibilities while protecting the natural environment. Some of the 1995 SMP will remain unchanged with the proposed SMP; Appendix A includes a complete list of the proposed changes. The most significant proposed changes to the SMP are listed in Table 1 below.

Impacts of the Proposed Plan to Existing Permits:

- For permits that were issued through Deed of Easement (a deed of easement is a legal document granting one person the use a portion of land that is owned by someone else to obtain legal access for issuance of a shoreline use permit) (476 permits impacted), the proposed plan will allow the current permittee to maintain the permit but will not allow the permit to be transferred to a new owner.
- Existing permits will only allow the addition of land-based facilities if those facilities do not create a crossover situation (overlapping) with another permittee (unknown number permits impacted).

Table 1: Comparison of 1995 SMP and Proposed SMP

SMP Section	1995 Plan	Proposed Plan
Access for Floating Facility - 14(a)	Pin width along common boundary with government property or deed of easement.	Must own adjacent property, at least 50 feet of common boundary with government property. No deed of easement or subdivision access allowed for private floating facilities.
Multiple Permits - 15(e) and 17	Each lot/property having a dwelling.	Each lot with at least 50 feet of common government boundary qualifies for a Shoreline Use Permit, with the exception of Vegetation Modification .
Land Based Facilities - 12(b)3 and 14(b)	Qualified if you met access requirement of property width along boundary or deed of easement.	Each lot with at least 20 feet of common boundary qualifies for land based facilities. Existing permits issued through deed of easement or subdivision access do not qualify for the addition of new facilities.
Permit Location - 14(d)	Closest point to water within 500 ft L or R along shoreline, offsets and crossovers allowed.	Based on lot line projection, no crossovers or offsets allowed. (See Appendix A: Exhibit E, E-1)
Facility Placement - 15(h)12	6 months for completion of construction	12 months for completion of construction
Dock Plans - 15(h)(1)a	Plan must be approved by Corps	Plan must be certified and stamped by a professional engineer
Dock Size - 15(h)3	320 sq. ft. minimum, 750 sq. ft. max	320 sq. ft. minimum, 960 sq. ft. max
Walkway Width - 15(h)6	3 to 6 feet in width	4 to 6 feet in width. 3 feet in width will be allowed for non-floating walkways.
Dock Storage - 15(h)8	1 Box - Max 72 cubic feet	1 box - Max 96 cubic feet, Max 48" H
Power on Docks - 19(d)1-10	No Power - except hard wired boat lifts.	Power – must be electrician certified.
Water Lines (on public land and docks) - 19(f)	Raw water and potable water.	Potable water only, no raw water withdrawal except at dock for boat/dock rinsing.
Vegetation Modification - 17	Trees - 15 ft on center. maximum of 100' wide for clearing.	Trees - 25 ft on center. Width of common government boundary or 100', whichever is less. (See Appendix A: Exhibit F)
Dock/Roof color restrictions - 15(c)5	No Restrictions	Earth tone colors required from Corp approved selection
Utilities - 19(f)	Power, potable water, raw water	Power, potable water, raw water and electric pumps for rinsing off dock and watercraft, no raw water for irrigation
Lighting - 19(d)1-10	Lighting fixtures must be attached to utility poles, Electrical Utility Certification Statement required	Allowed on docks-Dark Sky Friendly lighting, solar lighting, Electrical Utility Certification Statement required (Exhibit H in SMP)
Gangwalk Anchor Pads - 15(j)1	Not addressed	Anchor pad allowed in conjunction with gangwalk hinge
Encroachments - 11(j)	Handled with Title 36 and real estate regulations.	Handled with Title 36 – Implementation of moratoriums on permits.
Vessel Size at Private Individual Floating Facilities - 15	No restriction	Max length 36 ft and no vessel shall have a Marine Sanitation Device (MSD)
Permit Waiting List	Waiting list for available shoreline/ land use allocation request changes	Available shoreline is first come-first served/land use allocation request only accepted as part of update SMP process
Re-Issuance of permits - 11(f) and 12(b)2	Previous owner relinquishment statement - Activities transferred to new owners.	Previous owner relinquishment statement - Deed of Easement permits to current permittee only.
Community Dock Spacing - 16(g)	10 Slip - 150 ft of shoreline/ 20 Slip - 300 ft of shoreline on each side of dock.	2-5 Slips – 200 ft of shoreline / 6-10 Slips - 300 ft / 11-15 Slips – 400ft / 16-20 Slips - 500 ft on each side of dock.
Deed of Easement Permits - 12(b)2	Transferable to new owner	Non-transferable to new owner

Shorelines adjacent to the reservoir have been broken into shoreline allocations in compliance with the Corps of Engineers’ shoreline management regulation (ER 1130-2-406). Revisions to these allocations in the updated plan are shown below in Table 2.

Table 2: Summary of Shoreline Re-allocated

<u>1995 SMP</u>	<u>Updated SMP</u>	<u>Miles Affected</u>	<u>% Total Shoreline</u>
Limited Development	Recreation	0.09	0.01%
Limited Development	Protected	8.04	1.01%
Recreation	Protected	3.1	0.39%
Recreation	Limited Development	2.57	0.32%
Protected	Recreation	0.82	0.10%
Protected	Limited Development	2.18	0.27%

3.2 No Action

The No Action alternative involves the continued use of the 1995 John H. Kerr Reservoir Shoreline Management Plan. This would not allow for the Reservoir to meet its goals to operate under an up-to-date Shoreline Management Plan.

4.0 AFFECTED ENVIRONMENT AND IMPACTS

The following sections describe the environment of John H. Kerr Reservoir and will contrast and compare the impacts of the Proposed Plan to the No Action alternative.

4.1 Physical Environment

4.1.1 Geology, Topography and Soils

John H. Kerr Reservoir is located within the Piedmont region of Virginia and North Carolina. The Piedmont Physiographic Province is characterized by a variety of igneous and metamorphic rocks which have been heavily weathered due to relatively long exposure at the earth’s surface. Due to continued chemical and physical weathering, the rocks in the Piedmont Province are now generally covered with a layer of soil that has layered in place from the parent bedrock.

Exposed geologic resources, or outcrops, exist on high slopes and along the shoreline of the Reservoir. Outcrops along high slopes have been a management concern since the development of the reservoir (USACE 1980). Outcrops can make it difficult to develop recreational facilities, as they make the ground impenetrable. In some cases, exposed outcrops provide a unique opportunity for visitors to safely view geologic resources.

Project lands are characteristic of the Piedmont, consisting of rolling hills and relatively level valleys. The slopes extending to the south bank of the reservoir are generally less steep

than those on the north bank (USACE 1980). Erosion and changes in topography are most severe where natural vegetation has been disturbed or where the banks are exposed to frequent wave action. The rate of erosion in a reservoir can be greater than in a natural lake, as the flood control operation requires more regular fluctuations in the water level. The changing water level can increase the rate of erosion along the shoreline.

The 2012 John H. Kerr Master Plan update listed all of the 50 soils occurring within the project boundary. Of the 50 soil types occurring within the project lands, less than half are suitable for some type of development. Soils along the project that may not support development may still be suitable for recreational development.

The Proposed Plan could potentially involve some land disturbance in the form of tree and vegetation clearing for walkways and dock access. Any land disturbance would be carried out within the constraints of vegetation modification as described in the updated SMP (width of common boundary or 100', whichever is less).

The No Action alternative would continue to allow vegetation clearing for walkways and dock access up to 100' wide.

No significant adverse environmental effects are expected on the Reservoir's geology, topography or soils with the Proposed Plan or No Action alternative. The updated SMP may have less impact on soil resources (i.e. decreased erosion) with the slightly stricter vegetation modification rule.

4.1.4 Floodplains

The Federal Emergency Management Agency (FEMA) mapped the footprint of Kerr Reservoir as Zone A (no base flood elevation determined). The flood pool within the Reservoir is controlled between 300 and 320 ft msl. At 300 ft msl the water surface area is approximately 48,900 acres. At 320 ft msl the water surface area is approximately 83,200 acres. The maximum surcharge pool elevation is 326 ft msl creating a surface area of approximately 95,500 acres.

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 to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The elevation of the top of the flood control pool at John H. Kerr Reservoir is 320 ft msl.

While all actions would take place within the floodplain, both the Proposed Plan and the No Action alternative would result in no adverse impacts to the floodplain or the management of the floodplain.

4.1.5 Surface Hydrology

The Reservoir project area is located within the Roanoke River Basin which begins in the foothills of the Blue Ridge Mountains in Virginia and ends in the Albemarle Sound in North Carolina. The drainage area of the Roanoke River above the Kerr dam is approximately 7,800 square miles. At 300 ft msl, the Reservoir creates approximately 800 miles of shoreline and 48,900 acres of water surface area. The Reservoir extends 39 miles up the Roanoke River and 19 miles above the Dan River, upstream of its confluence with the Roanoke River.

Named tributaries that feed into the Reservoir include: the Dan River, Roanoke River, Anderson Swamp Creek, Nutbush Creek, Flat Creek, Beaver Pond Creek, Grassy Creek, Little Buffalo Creek, North Fork Aarons Creek, Indian Creek, Keats Branch, Hyco River, Grassy River, Butchers Creek, Sandy Creek, Little Bluestone Creek, and Difficult Creek.

The Proposed plan and the No Action alternative should have no impacts to surface hydrology as all applicable sedimentation and erosion control requirements would be met during construction, operation and maintenance of footpaths, docks, and marinas.

4.1.6 Water Quality

Water quality in John H. Kerr Reservoir is measured by Virginia and North Carolina state agencies and published in each state's 305(d)/303(d) Impaired Waters Assessment. The most recent 303(d) report available for Virginia was completed in 2014. The report identifies all of Kerr Reservoir as not meeting water quality standards established for safe fish consumption (VDEQ 2014). This finding is supported by North Carolina's 2014 303(d) report which reports Nutbush Creek (located on the North Carolina portion of the Reservoir) also as being impaired. The impairment is due to low dissolved oxygen (DO) levels and; PCB's and mercury contamination in fish tissues (NCDWR 2014). The Virginia Department of Health has recommended that fish consumption from the Reservoir be restricted due to the mercury and PCB contamination in the fish (VDH 2013).

Impacts to water quality would be negligible for either the Proposed Plan or the No Action alternative as all construction, operation and maintenance would follow applicable sedimentation and erosion control guidelines. However, the proposed updated plan would result in more protected shoreline, thus, lessening the number of docks and footpaths along the shore that would be allowed under the No Action alternative, thereby resulting in fewer potential impacts to water quality.

4.1.7 Air Quality

John H. Kerr Reservoir extends into several counties in Virginia and North Carolina. In Virginia, these counties are Charlotte, Halifax, and Mecklenburg. In North Carolina, these counties are Granville, Vance, and Warren. All of these counties are 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). 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 regulated by the Clean Air Act Section 176 (c) and implemented by the EPA, NCDENR and VA DEQ. Air quality standards are defined in the National Ambient Air Quality Standards. Actions which result in increased emissions may require a permit issued by VA DEQ or NCDENR.

The Proposed Plan and the No Action alternative would result in no adverse impacts to air quality within the project area.

4.1.8 Noise

Noise levels vary around John H. Kerr Reservoir and are usually limited to heavily trafficked roads or in close proximity to agricultural or industrial activities. Most of the areas around the Reservoir are rural areas with few prominent noise sources. Specifically within the area around the Reservoir the primary noise sources are vehicles traveling on local or project roads and boat engines from various boat ramps, marinas or on the water. Occasionally public events occur that may include use of loud speakers or music. Sensitive noise receptors adjacent to and within the proposed project area include camping areas, park visitors, and the wildlife communities throughout the project. Some private residences are located just beyond the project boundary, as well. Noise ordinances and regulations have been developed and are enforced by individual municipalities. These ordinances restrict the level of noise that can exist in certain areas and/or the time of day that they can exist.

The Proposed Plan and the No Action alternative would have no adverse impacts to noise within the Reservoir.

4.1.9 Cultural Resources

The proposed changes to the SMP are not the types of activities that would have inherent impacts to cultural resources. Therefore, the proposed changes need not be considered an undertaking per provisions of Section 106 of the National Historic Preservation Act (NHPA). Future dock permits or other approvals may be required or requested; those actions would be subject to review under NHPA. Based upon limited archaeological inspections of recreation areas and areas proposed for erosion abatement measures, cultural resources are

possible (although not probable) in stable uplands or along the limited, well-drained margins of major streams.

4.1.10 Hazardous and Toxic Wastes Sites

Hazardous materials are regulated by the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act, Oil Pollution Act (CERCLA), Toxic Substances Control Act, and related USACE guidelines. Any change in the storage or use of hazardous materials must comply with these regulations. The EPA, NCDENR and VA DEQ are responsible for ensuring compliance with these regulations in areas around the Reservoir.

Review of the U.S. EPA Enviromapper for Envirofacts website indicates two facilities located on the Reservoir: Burlington Industries (operating status listed as temporarily closed) and the Mecklenburg Power Station (listed for fossil fuel electric power generation) both located along the western portion of the Reservoir in Clarksville, VA.

The Proposed Plan and the No Action alternative would have no impacts to hazardous wastes within the project area.

4.1.11 Aesthetics

Aesthetic values at the Reservoir includes lake views of open water throughout the main channel of the lower reservoir near the dam and throughout the lower Nutbush Creek arm of the reservoir. The scenic landscape of the upper reservoir takes on a more riverine character, influenced by the confluence of the Roanoke and Dan Rivers with more narrow channels and coves. The reservoir contains many forested areas making landscape views of the reservoir limited to elevated locations, such as those found in the Bluestone Wildlife Management Area. For boaters, or visitors utilizing the lake shoreline, abundant vegetation and steep topography generally limit views to the water and the forested hills beyond.

The Proposed Plan and the No Action alternative would not result in permanent adverse impacts to aesthetics or any view of the watershed. One of the changes proposed with the SMP that was intended to increase the aesthetic quality of the view shed is the requirement of earth tone colored roofs on the docks, where the 1995 plan did not have a color restriction.

4.2 Natural Resources

4.2.1 Vegetation

John H. Kerr Reservoir is situated in the Piedmont Region of North Carolina and Virginia. According to *A Natural Heritage Inventory of John H. Kerr Reservoir, Virginia and North Carolina* published in 1999, the reservoir contains vegetation typical of the southern Piedmont region with some areas of coastal plain vegetation present. Vegetation around of the reservoir

consists of canopy tree species such as: white oak (*Quercus alba*), willow oak (*Quercus phellos*), southern red oak (*Quercus falcata*), black oak (*Quercus velutina*), eastern red cedar (*Juniperus virginiana*), sweetgum (*Liquidambar styracifua*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), tulip poplar (*Liriodendron tulipifera*), Virginia pine (*Pinus virginiana*) and hickory (*Carya* spp.). The subcanopy and shrub layer consists of: American holly (*Ilex opaca*), flowering dogwood (*Cornus florida*), ironwood (*Carpinus caroliniana*), azalea (*Rhododendron periclymenoides*), as well as, saplings of the various canopy tree species. Examples of common herbaceous understory species include: narrow-leaved bluestem (*Andropogon perangustatus*), needle-leaf panic grass (*Dichanthelium aciculare*), small cane (*Arundinaria gigantea* var. *tecta*) and slender aster (*Aster gracilis*). Invasive plants such as Chinese privet (*Ligustrum sinense*), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), grass eulalia (*Microstegium vimineum*) and autumn olive (*Elaeagnus umbellata* var. *parvifolia*) are also present throughout the reservoir, especially in disturbed areas such as fields, powerline corridors and road shoulders (Van Alstine, Fleming, & LeGrand Jr., 1999).

The Proposed SMP and the No Action alternative would not result in permanent adverse impacts to vegetation surrounding the reservoir. Implementation of the Proposed SMP would require that native trees, seedlings, or saplings be maintained at a spacing of no less than 25 feet on center regardless of tree diameter. This 25 foot spacing is less stringent than the current plan (No Action) that requires maintenance 15 feet off center of native trees, seedlings and saplings. This change from the previous 15 feet off center to the less stringent 25 feet off center spacing follows current forestry best management practices for tree spacing and survivability.

4.2.2 Fish and Wildlife

The Reservoir is populated by a variety of native species of freshwater fish, crustaceans and fresh water mussels, many endemic to the Roanoke River system. Popular game fish within the reservoir are largemouth bass (*Micropterus salmoides*), striped bass (*Morone saxatilis*), black crappie (*Pomoxis nigromaculatus*), blue catfish (*Ictalurus furcatus*), and flathead catfish (*Pylodictis olivaris*) (DGIF 2014). Some of the game fish are stocked within the reservoir in order to support recreational fishing; others naturally enter the system from the reservoir's tributaries.

Wildlife species known to occur at John H. Kerr Reservoir includes 18 mammal species, 41 species of amphibians/reptiles, and 143 species of birds. Mammals most commonly seen around the project include: Eastern grey squirrel (*Sciurus carolinensis*), white-tailed deer (*Odocoileus virginianus*), North American river otter (*Lontra canadensis*) and North American beaver (*Castor canadensis*). Bird species that frequent the reservoir include: American goldfinch (*Carduelis tristis*), Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), wild turkey (*Meleagris gallopavo*), osprey (*Pandion haliaetus*) cardinal (*Cardinalis cardinalis*) and many other songbirds common to the eastern US. A few examples of amphibians and reptiles common to the project are: Green frog (*Rana clamatans*), American toad (*Bufo americanus*), Copperhead (*Agkistrodon contortrix*), Black Racer (*Coluber*

constrictor), Eastern box turtle (*Terrapene carolina*) and yellow-bellied slider (*Trachemys scripta scripta*) (Van Alstine, Fleming, & LeGrand Jr., 1999).

The Reservoir maintains Forest and Wildlife Management Plans which prescribe active management for maintenance of diverse habitats for game and non-game wildlife species. There are twenty-six designated wildlife management areas located around the reservoir, totally over 10,000 acres.

Docks and footpaths would continue to be constructed under both the Proposed Alternative and No Action alternative resulting in temporary noise increases which may disturb wildlife in the immediate vicinity of the construction area. During construction of docks and footpaths, construction-related noise would be temporary and negligible. Existing sound conditions would resume following construction activities. New docks and footpaths would increase the frequency of use by adjacent landowners in some areas. The presence of humans can influence the number and variety of wildlife in these areas, however, given existing levels of land use along the footpath, it is expected that overall impacts on wildlife would be localized and minor.

The Proposed SMP would allow for power to be added on the docks which the No Action (current SMP) did not allow; and, increased maximum dock size from 750 sq. ft. to 960 sq. ft. There are no foreseeable negative impacts associated with the changes addressed in the Proposed SMP to the fishery resource or local area wildlife.

The No Action alternative would not create any changes to the current SMP; therefore there would be not impact to fish and wildlife resources.

4.2.3 Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS) Information, Planning and Conservation System (<http://ecos.fws.gov/ipac/>) website provided a current inventory of federally listed species within the John H. Kerr Reservoir area. The USFWS information along with the Virginia Natural Heritage Program website and the NC Wildlife Resources Commission document *Protected Wildlife Species of North Carolina* February 2014 were used to create Table 3 identifying state and federally listed species. The list also includes the bald eagle (*Haliaeetus leucocephalus*) which is protected under the federal Bald and Gold Eagle Protection Act.

Table 3: Federal and State Listed Species

*E-Endangered, T-Threatened, SC- Federal Species of Concern or State Special Concern, BGPA-Bald and Gold Eagle Protection Act

Common Name	Scientific Name	Federal Status	State Status	
			NC	VA
Vascular Plant Species				
Carolina birdfood-trefoil	<i>Acmispon helleri</i>	SC	--	--
Prairie blue wild indigo	<i>Baptisia australis var. aberrans</i>	--	E	--
Wild Hyacinth	<i>Camassia scilloides</i>	--	T	--
Tall larkspur	<i>Delphinium exaltatum</i>	SC	E	--
Smooth coneflower	<i>Echinacea laevigata</i>	E	E	T
Pine Thoroughwort	<i>Fleischmannia incarnata</i>	--	T	--
Piedmont Quillwort	<i>Isoetes piedmontana</i>	--	E	--
Virginia quillwort	<i>Isoetes virginica</i>	SC	--	E
Oak Barrens Barbara's-buttons	<i>Marshallia legrandii</i>	SC	--	--
Nestronia	<i>Nestronia umbellula</i>	--	--	E
Wiry Panic Grass	<i>Panicum flexile</i>	--	T	--
Buttercup phacelia	<i>Phacelia covillei</i>	SC	--	--
Small's portulaca	<i>Portulaca smallii</i>	--	T	--
harperella	<i>Ptilimnium nodosum</i>	E	E	E
Low wild-petunia	<i>Ruellia humilis</i>	--	E	--
Shale-barren Skullcap	<i>Scutellaria leonardii</i>	--	E	--
Prairie goldenrod	<i>Solidago ptarmicoides</i>	--	E	--
Yadkin hedge-nettle	<i>Stachys matthewsii</i>	SC	--	--
Terrestrial Vertebrate Animal Species				
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGPA	T	T

Bachman's Sparrow	<i>Peucaea aestivalis</i>	SC	SC	--
Aquatic Vertebrate Animal Species				
Roanoke Bass	<i>Ambloplites cavifrons</i>	SC	--	--
Mole salamander	<i>Ambystoma talpoideum</i>	--	SC	--
Carolina Darter	<i>Etheostoma collis</i>	SC	SC	T
Least Brook Lamprey	<i>Lampetra aepyptera</i>	--	T	--
Pinewoods shiner	<i>Lythrurus matutinus</i>	SC	--	--
Neuse River Waterdog	<i>Necturus lewisi</i>	SC	SC	--
Carolina Madtom	<i>Noturus furiosus</i>	SC	T	--
Roanoke logperch	<i>Percina rex</i>	E	E	E
Aquatic Invertebrate Animal Species				
Dwarf wedge mussel	<i>Alasmidonta heterodon</i>	E	E	E
Brook floater	<i>Alasmidonta varicose</i>	SC	E	--
Triangle Floater	<i>Alasmidonta undulate</i>	--	T	--
Yellow Lance	<i>Elliptio lanceolata</i>	SC	E	--
Roanoke Slabshell	<i>Elliptio roanokensis</i>	--	T	--
Tar River spiny mussel	<i>Elliptio steinstansana</i>	E	E	--
Atlantic pigtoe	<i>Fusconaia masoni</i>	SC	E	T
Yellow lampmussel	<i>Lampsilis cariosa</i>	SC	E	--
Eastern Lampmussel	<i>Lampsilis radiata</i>	--	T	--
Green floater	<i>Lasmigona subviridis</i>	--	E	T
Chowanoke crayfish	<i>Orconectes virginienis</i>	--	SC	--
Creepers	<i>Strophitus undulatus</i>	--	T	--
Notched Rainbow	<i>Villosa constricta</i>	--	SC	--

Vascular Plant Species

Harperella – Federally Listed Endangered

This is an annual herb that grows to 6 to 36 inches (0.15 to 1.0 meter) in height. The plant produces small, white flowers that occur in heads or umbels. Flowering can begin from May through July and continue until the first frost. Harperella prefers a habitat of rocky or gravel shoals, fast-flowing stream buffers and pine-dominated ponds of the coastal plain.

Smooth coneflower – Federally Listed Endangered

Smooth coneflower is a perennial herb that generally grows up to five feet (1.5 meters) in height. The flowers are light pink to purplish, usually drooping, and two to three inches (five to eight centimeters) long. The plant flowers from May through July. The habitat of smooth coneflower is open woods, cedar barrens, roadsides, clear-cuts, dry limestone bluffs, and power line right-of-way, usually on magnesium- and calcium-rich soils. The preferred sites are characterized by abundant sunlight and little competition in the herbaceous layer.

Terrestrial Vertebrate Animal Species

Bald eagle – Bald and Golden Eagle Protection Act

The bald eagle is a large raptor with a wingspan of approximately seven feet (2 meters). Adult individuals of this species have a mainly dark brown plumage with a solid white head and tail. Primary habitat for the bald eagle is undisturbed riparian zones including coastal, river, and lakeshore areas. Bald eagle nest sites within the southeast are usually located in living pine or cypress trees. Nest sites are often located in the largest living trees within the area commanding an open view of the surrounding terrain. Nest sites are generally located within one-half mile of open water with a clear flight path leading to the water. There are known nesting locations of the bald eagle within John H. Kerr Reservoir.

Northern Long-Eared Bat – Proposed for Listing under the Endangered Species Act

The USFWS listed the Northern Long-Eared Bat on May 4, 2015 with a rule under Section 4(d) of the ESA. This federally listed threatened bat does not appear on USFWS species list but does appear on the Virginia Department of Game and Inland Fisheries (VDGIF) and Virginia Fish and Wildlife Information Service (VaFWIS) database list for the project vicinity. The project occurs within range of the bat and within the White-nose Syndrome Buffer Zone as identified by the USFWS. The VDGIF and VaFWIS identifies the bat as likely to occur in Halifax and Mecklenburg Counties, however there are no reported occurrences of the bat in the County. While suitable habitat may be present in project footprint, the species is absent. The SMP is not likely to adversely affect the species.

Aquatic Vertebrate Animal Species

Roanoke logperch – Federally Listed Endangered

The Roanoke logperch is one of the largest species of darters, growing up to six inches (0.15 meters) in length with a dark olive to yellow-olive body with wavy dark blotches and 10 to 12 short black bars on the sides which do not join on the other side. There is a prominent dark bar beneath the eyes and a red-orange band present near the edge of the first dorsal fin. The snout is pointed and slightly upturned or pig-like. The preferred habitat of the Roanoke logperch is rocky runs and riffles of medium to large warm-water streams with relatively unsilted substrate. Its current distribution is primarily in the Roanoke and Chowan drainages in Virginia, though populations have recently been discovered in the Dan River system in North Carolina.

Aquatic Invertebrate Animal Species

Dwarf wedgemussel – Federally Listed Endangered

The dwarf wedgemussel is a small, freshwater mussel rarely exceeding 45 millimeters in length. Young shells are usually greenish-brown. As the animal ages, the shell color becomes obscured by mineral deposits and appears black or brown. The lateral teeth are the most distinctive shell characteristic of the dwarf wedgemussel. The species has a white foot.

Dwarf wedgemussels are found in large rivers and small streams. They are often burrowed into clay banks among the root systems of trees. Landscape in areas occupied by the mussel is largely wooded, with trees near the stream being relatively mature and tending to form a shaded area over smaller streams, creeks, and headwater river habitats. Water quality must be good to excellent.

Tar River spiny mussel – Federally Listed Endangered

The Tar River spiny mussel has a small, semi rhomboid shell which grows to a maximum length of 60 millimeters. The shell is generally smooth in texture with as many as 12 spines that project perpendicularly from the surface and curve slightly ventrally, though adult specimens often to lose their spines as they mature.

Currently this species occurs in North Carolina in relatively short stretches of the Tar River and three creeks (Shocco, Sandy/Swift and Fishing/Little Fishing) in the Tar River basin and one creek (Little River) in the Neuse River basin. The preferred habitat of the Tar River spiny mussel is relatively fast flowing, well oxygenated, circumneutral pH water in sites prone to significant swings in water velocity, with a substrate comprised of relatively silt-free loose gravel and/or coarse sand.

The Natural Heritage Inventory of John H. Kerr Reservoir, North Carolina and Virginia June 1999 *Summary of Plant and Animal Element Occurrences* notes three state listed species; the

shale-barren skullcap, bald eagle, and green floater found within the project. There are no known occurrences of currently listed federal threatened or endangered species.

The Proposed Plan and the No Action alternative would have no adverse impacts to threatened and endangered species within the project area.

4.2.4 Wetlands

Wetlands are defined by the USACE (33 CFR 328.3) and USEPA (40 CFR 230.3) as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Although the majority of the Reservoir is classified as upland, wetlands do occur; often along narrow tributaries and in protected coves (Van Alstine, Fleming, & LeGrand Jr., 1999).

Executive Order 11990 requires federal agencies to “minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands”.

The Proposed Plan and the No Action alternative would have no adverse impacts to wetland features around the Reservoir. Any proposed pathway or dock constructed would avoid any impacts to wetland resources.

4.3 Socioeconomic Resources

4.3.1 Land Use

Approximately 66,263 acres of project land surrounding John H. Kerr Reservoir is above the normal full pool of 300 feet amsl and is classified for the following land uses based on the current project Master Plan updated in November 2012:

- Project Operations – 264 acres
- Recreation Facilities – 16,885 acres
- Natural Areas – 5 acres
- Wildlife Management/Forest Reserve – 38,600 acres
- Flowage Easements – 10,509 acres

Within the vicinity of the Reservoir, land use is primarily forest and agriculture. Industrial land uses are present within the town of Clarksville and the city of South Boston. Within areas adjacent to project land, residential development is primarily low density and scattered. Concentrated, higher density residential subdivisions are located along Nutbush Creek and between Clarksville and Grassy Creek along the southern shore and Cuscowilla Peninsula along the northern shore.

The Proposed Plan and the No Action alternative would have no adverse impacts to land use around the reservoir.

4.3.2 Recreation

John H. Kerr Reservoir offers many opportunities for recreation, including fishing, boating, camping, hiking, and hunting, to more than two million visitors every year. Currently, the Reservoir provides 30 recreation areas with 1,322 campsites, 228 picnic sites, 38 boat ramps, three marinas and 15 quasi-public recreation areas that are currently leased universities, churches, civic groups, and scout organizations (USACE 2012).

The No Action alternative and the Proposed SMP allow for 38 percent of the shoreline to be allotted for public recreation resulting in no impacts to current recreation opportunities available at the Reservoir.

4.3.3 Water Supply

As described in the 2012 Master Plan for John H. Kerr Reservoir one of the purposes for the creation of the Project was water supply storage. The Reservoir provides the main water supply for the Town of Clarksville, Virginia; the Kerr Lake Regional Water System, which serves communities in Vance, Granville, Warren, and Franklin Counties in North Carolina; and the Dominion-Mecklenburg Power Station. Impacts to the water supply pool would be minimized under the No Action and Proposed SMP, through use of sustainable construction methods and maintenance, which would reduce or eliminate sedimentation and erosion.

Neither the No Action alternative or the Proposed Plan is expected to adversely affect water supply.

4.3.4 Safety

The objective of the safety program is to provide a safe environment for project personnel and the visiting public and to prevent damage from accidents or fires. It is the policy of the Corps of Engineers, as stated in ER 1130-2-406, to protect and manage shorelines of all civil works water of all civil works water resource development projects under the Corps jurisdiction in a manner which would promote the safe and healthful use of these shorelines by the public while maintaining environmental safeguards to ensure a quality resource for use by the public. The objectives of all management actions would be to achieve a balance between permitted private uses and resource protection for general public use.

Proposed updates to the SMP would require additional safety checks for electrical power supplied to the docks (proof of installation and inspection by a licensed electrician) and require all plans for new docks and modifications to existing docks to be approved by a state licensed structural engineer. These additional checks will increase safety for permit holders around the reservoir by insuring structurally sound docks are built and electrical lines are not potential fire hazards.

The No Action alternative would fail to address current safety concerns associated with the placement of electrical systems on docks and structural integrity of the docks, increasing potential safety risks for the public and John H. Kerr Reservoir staff.

4.4 Environmental Impact Comparison of Alternatives

The table below provides a brief summary and comparison of impacts to the physical and natural environment for the alternatives considered.

Table 4: Environmental Impact Comparison of Alternatives

Resource	Alternatives	
	<i>Proposed New SMP</i>	<i>No Action</i>
Geology/Topography/Soil	No Impact	No Impact
Floodplains	No Impact	No Impact
Surface Hydrology	No Impact	No Impact
Water Quality	No Impact	No Impact
Air Quality	No Impact	No Impact
Noise	No Impact	No Impact
Cultural Resources	No Impact	No Impact
Hazardous & Toxic Waste	No Impact	No Impact
Aesthetics	No Impact	No Impact
Vegetation	Less stringent 25 foot on center spacing for vegetation clearing	Status Quo - 15 foot on center spacing for vegetation clearing
Fish & Wildlife	No Impact	No Impact
Threatened & Endangered Species	No Impact	No Impact
Wetlands	No Impact	No Impact
Land Use	No Impact	No Impact
Recreation	No Impact	No Impact
Water Supply	No Impact	No Impact
Safety	Increased safety measures with dock plans engineer certified and power on docks installed and inspected by licensed electrician	No Impact

4.5 Unavoidable Adverse Impacts of the Proposed Action

Construction of docks and their associated footpaths in areas of Limited Development would result in unavoidable minor direct and secondary adverse impacts to vegetation immediately within and adjacent to the footpaths. Wildlife in the vicinity of the footpaths would experience an increase in frequency and level of human disturbance. Soils would be continually disturbed and/or compacted within the foot print of the paths. These impacts are considered minor and localized and would not have significant long term adverse impacts to soil, topography, water or air quality, cultural resources, nor vegetation and wildlife populations.

5.0 CUMULATIVE EFFECTS

The Council on Environmental Quality (CEQ) regulations that implement NEPA (40 CFR 1508.7) require assessment of cumulative impacts in the decision-making process for federal

projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around the Reservoir. 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 SMP help to ensure a balance between public uses and stewardship of the natural environment. The proposed updates to the SMP will contain less stringent vegetation clearing regulations (25’ from tree center vs. 15’ from tree center in 1995 SMP) and require earth tone colors to be used on roofs which will increase the natural aesthetics of the shoreline.

6.0 PUBLIC INVOLVEMENT

6.1 Public Information Sessions

Early in 2014, the Corps hosted three public informational sessions located at different towns around the Reservoir. The first meeting was February 4, 2014 in South Hill, VA, next was on February 6, 2014 in Clarksville, VA, and the final informational meeting was February 11, 2014 in Henderson, NC. During these public information sessions the public was invited to peruse storyboards detailing the current John H. Kerr shoreline management allocations (i.e., Public Recreation, Protected Shoreline, Limited Development) and provide written comments about changes they would like to see in the new updated Shoreline Management Plan.

Additionally, three more public information sessions were held by the Corps inviting the public to review the draft John H. Kerr Reservoir SMP and provide written comments. These meeting dates and locations were: November 13, 2014 in South Hill, VA; November 18, 2014 in Henderson, NC; and November 20, 2014 in Clarksville, VA.

All of the above mentioned public involvement was utilized for the development of the Draft John H. Kerr SMP.

6.2 Recipients of the Environmental Assessment

This EA is being circulated for a 30-day review and comment period to the following concerned agencies and individuals.

Federal Agencies

- Advisory Council on Historic Preservation

- Federal Highway Administration
- National Center for Environmental Health
- National Marine Fisheries Service - Southeast Regional Office
- US Department of Agriculture (USDA)
- USDA, Natural Resources Conservation Service
- US Department of Energy
- US Department of the Interior - Office of Environmental Policy & Compliance
- US Department of Housing & Urban Development
- US Environmental Protection Agency (EPA)
- US Fish and Wildlife Service
- US Forest Service - Southern Region

State Agencies

North Carolina

- NC Commission of Indian Affairs
- NC Department of Administration/State Clearinghouse
- NC Department of Cultural Resources - Division of Archives & History
- NC Department of Transportation
- NC Division of Environment and Natural Resources - Division of Water Resources
- NC Division of Parks and Recreation
- NC Natural Heritage Program

Virginia

- VA Council on Indians
- VA Department of Environmental Quality - Department of Water Quality
- VA Department of Environmental Quality – Environmental Impact Review
- VA Department of Historic Resources
- VA Division of Game and Inland Fisheries (DGIF)

Local Agencies

- Clarksville Chamber of Commerce
- Director of Economic Development – Mecklenburg County
- Director of Public Works – South Boston, VA
- Mecklenburg County Administrators Office – Boydton, VA
- Southside Planning District Commission – South Hill, VA

Elected Officials

- All North Carolina & Virginia US Senators and Local District Congressmen
- All Local State Senators and Representatives
- County Manager – Halifax County, NC
- County Manager – Vance County, NC
- Mayor - Town of Boydton, VA
- Mayor - Town of Clarksville, VA

- Mayor - Town of South Hill, VA
- Town Manager - South Boston, VA

Conservation Groups

- Conservation Trust for North Carolina
- Environmental Defense Fund of NC
- Izaak Walton League of America, Roanoke Valley Chapter
- National Wildlife Federation
- North Carolina Coastal Federation
- Roanoke River Basin Association
- Sierra Club, NC & VA Chapters
- The National Audubon Society
- The Nature Conservancy
- The Wilderness Society
- Trust for Public Land
- Virginia Conservation Network
- Virginia Foundation for Humanities – Virginia Indians Programs

7.0 POINT OF CONTACT

Written comments regarding this Environmental Assessment should be addressed to:

Ms. Teresa R. Bullard
U.S. Army Engineer District, Wilmington
Environmental Resources Section
69 Darlington Avenue
Wilmington, NC 28403-1343

8.0 DRAFT FINDING OF NO SIGNIFICANT IMPACT

The Proposed Plan is not expected to significantly adversely affect the quality of the human environment; therefore, an Environmental Impact Statement would probably not be required. If the opinion is upheld following circulation of this EA, a Finding of No Significant Impact (FONSI) will be signed and circulated.

9.0 REFERENCES

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