

**U.S. Army Corps of Engineers  
Wilmington District**

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# **John H. Kerr Dam and Reservoir Master Plan**

**Roanoke River Basin**



November 2012



# **Executive Summary**

## **John H. Kerr Dam and Reservoir Master Plan**

The John H. Kerr Dam and Reservoir (Kerr Reservoir or the project) is operated by the U.S. Army Corps of Engineers (USACE). It includes approximately 50,000 acres of open water at the normal summer pool and 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 dam is located on the Staunton River/Roanoke River (Roanoke River) approximately 20 river miles upstream from the state line, in Mecklenburg County, Virginia, or approximately 80 miles southwest of Richmond, Virginia. In Virginia, the reservoir and surrounding lands are located within Mecklenburg, Charlotte, and Halifax Counties. In North Carolina, the site is located in portions of Warren, Vance, and Granville Counties. These areas are easily accessible via the principal highways in the region, including Interstate 85, U.S. Route 58, and Virginia Highway 4. Secondary and county highways provide access to much of the surrounding lands.

Kerr Reservoir was authorized by the Flood Control Act of 1944 as the initial unit of the comprehensive plan for the development of the water resources in the Roanoke River Basin in Virginia and North Carolina. The project, originally named “Buggs Island Reservoir,” was changed to its current name by Public Law 203, 82nd Congress, approved October 24, 1951 to pay tribute to John H. Kerr (1873-1958); such an honor was common USACE practice at the time. The former Congressman from North Carolina was instrumental in the development of the project.

Along portions of the reservoir, USACE manages considerable amounts of the surrounding land. In other locations, federal lands are confined to a ribbon of land surrounding the water. USACE, with the support of the Commonwealth of Virginia, the State of North Carolina, and other leasees, maintains recreational and wildlife areas in these locations.

## **Purpose of Master Plan**

The Master Plan provides a programmatic approach to the management of all of the lands included within the Kerr Reservoir boundary. The Master Plan is the basic document guiding USACE responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. The Master Plan 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 Master Plan into operational terms. Master Plans are required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural and manmade resources.

The primary goals of the Master Plan are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which: (1) Provide the best possible combination of responses to regional needs, resource capabilities and suitability, and expressed public interests and desires consistent with

authorized project purposes; (2) Contribute towards providing a high degree of recreation diversity within the region; (3) Emphasize the particular qualities, characteristics, and potentials of the project; (4) Exhibit consistency and compatibility with national objectives and other state and regional goals and programs.

### **Master Plan Revision**

The Master Plan, approved in 1980, provides USACE with a series of detailed construction projects for the different sites located within the project boundary. Over the last 30 years, design plans laid out in the 1980 Master Plan have been implemented at select management areas, while others await development. The construction based Master Plan does not provide USACE with means of refining these plans or taking proactive action to anticipate and respond to needs that are not included in the plans.

USACE has updated its policies directing the development and implementation of Master Plans. Specifically, Master Plan requirements are contained in Engineer Pamphlet (EP) 1130-2-550 Project Operations – Recreation Operations and Maintenance Guidance and Procedures which was last updated on August 30, 2008.

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

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

### **Public Involvement**

Coordination with other agencies and the public is an integral part of the master planning process. In October 2009, USACE began an extensive data collection effort that included coordination with federal, state, and local agencies, as well as institutions and groups with knowledge of the project resources. In November 2009, USACE published notices and hosted three open houses to solicit public input on the planning process. The comments received during the open house, and the subsequent 30-day public comment period, were used to inform the master planning process.

On November 1, 2011, the Master Plan and associated Programmatic Environmental Assessment (PEA) and Draft Finding of No Significant Impact (FONSI) were made available for a 30-day review and comment period. Notification of this comment period was mailed to local media, regulatory agencies, and individuals and provided on the Kerr

Reservoir web site. Copies were placed in the local libraries, as well. All comments received were considered in the preparation of the Master Plan as well as the PEA and subsequent FONSI. Appendix D of the Master Plan includes responses from USACE to all comments received during the master planning process.

### **Land Classifications**

During the master planning process, options were developed for classifying project lands and identifying Resource Objectives and Development Needs for these lands. These decisions are captured within Resource Plans for various sites at Kerr Reservoir along with detailed mapping of these sites.

Comments received during public meetings and the subsequent comment periods provided USACE with insight into public desires for the future use of project lands, as well as regulatory and resource concerns of other agencies. This information was used in identifying the appropriate Land Classifications for different management areas within the project, as well as the Resource Objectives that should govern these classifications. Resource Objectives are written statements that specify the attainable options for resource development and/or management. Resource Objectives were consistent with authorized project purposes, federal laws and directives, regional needs, resource capabilities, and expressed public desires. Land Classifications are distributions of project lands by management categories which, based upon resources available and public needs, provide for full utilization while protecting project resources.

General review of some of the project-wide goals and USACE plans to achieve them at Kerr Reservoir were conducted. Two of USACE's top priorities for Kerr Reservoir were identifying future recreational opportunities within the project and making connections to regional trails and blueways. The Master Plan provides a Resource Plan with site sheets for each of the management areas located within the project. Each site sheet identifies the Land Classification and Recommended Future Use and provides a rationale for how these designations were reached, describes the location and existing condition within each area, and lists site-specific Resource Objectives and Development Needs for the given management area.

The decision process for whether Resource Objectives were appropriate at the broader Land Classification level or a focused site specific level included evaluation of the sensitivity of certain resources, their degree of current protection, and the potential for disturbance from existing or future use of the sites. Specific future Development Needs were identified for each site, if required to maintain public use of the site, or required to achieve the recommended future use. The Master Plan focused on the most cost effective actions needed to achieve the Resource Objectives.

### **Comparison of the 1980 and 2012 Master Plan Classifications**

The different Land Classifications used in the two Master Plans make a direct comparison difficult; however, some similarities do exist. Table E-1 shows how the 1980 Master Plan Land Classifications have translated into the 2012 Master Plan.

The primary change in the Land Classifications presented in the 1980 Master Plan and the 2012 Master Plan is the way low-density/undeveloped lands are addressed. In the 1980 Master Plan, the “Recreation” Land Classification included four subsets: Existing Intensive Use, Future Intensive Use, Existing Low-Density Use, and Future Low-Density Use. The definitions included in the 2012 Master Plan, which are listed below, limit “Recreation” to actively/intensely used areas. Low density sites, as well as sites set aside for future recreational development, are included in the “Multiple Resource Management” definition.

- **Project Operations:** This classification category should include those lands required for the structure, operations center, office, maintenance compound, and other areas that are used solely for project operations.
- **Recreation:** Land developed for intensive recreational activities by the visiting public, including developed recreation areas and areas for concession, resort, and quasi-public development. At new projects, recreation areas planned for initial development will be included in this classification. Future areas will be classified as Multiple Resource Management until initiation of the development.
- **Multiple Resource Management:** Lands managed for one or more, but not limited to, these activities to the extent that they are compatible with the primary allocation(s). The activities include: Recreation Low-Density, Wildlife Management General, Vegetation Management, Inactive and/or Future Recreation Areas, Easement Lands.

**Table ES-1: Conversion of Land Classifications between 1980 and 2012  
Master Plan**

<b>1980 Master Plan</b>	<b>2012 Master Plan</b>
Flowage Easement	Flowage Easement
Low Density Use	Multiple Resource Management
Intensive Use	Recreation or Multiple Resource Management
Operations	Operations

The inconsistency in total acreage listed in Table ES-2 is based on the technology used for each plan. In either case, acreages presented in a Master Plan are for planning purposes only (official acreages are maintained by USACE Real Estate Division). The different Land Classifications used in the two Master Plans make a direct comparison difficult; however, some similarities do exist. Table ES-2 shows how the 1980 Master Plan Land Classifications have translated into the 2012 Master Plan.

<b>Table ES-2: Land Classification Acreages</b>		
<b>Land Classification</b>	<b>1980 Master Plan (Acres)</b>	<b>2012 Master Plan (Acres)</b>
Easement Lands	10,509*	10,509*
Multiple Resource Management	N/A	47,516
Natural Areas	5	N/A
Project Operations	264	374
Recreation	N/A	7,864
Existing Intensive Use	7,864	N/A
Future Intensive Use	6,022	N/A
Existing Low Density	217	N/A
Future Low Density	2,782	N/A
Wildlife Management/Forest Reserve	38,600	N/A

\* Flowage Easement acreages are based on specific Real Estate documents. For the purposes of this Master Plan, Flowage Easement acreage is based on previously reported acreage from Real Estate documents. N/A means not applicable. This classification not used for the indicated Master Plan

### **Using the Master Plan**

The Master Plan serves two primary purposes that are equal in importance. First, it is the primary management document for the project and provides direction for many of the other plans that guide the management of Kerr Reservoir. This Master Plan sets the stage for the update of many of the project’s resource management plans, such as the Wildlife Management Plan. For example, the Resource Objectives approved in this plan can serve as a basis for developing plans to manage wildlife at the project. Regular updates to the Master Plan will allow the project to maintain active resource management plans, as well.

Second, it is a land use management tool. As a land use tool, this Master Plan 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. An example of how this illustration may be beneficial is through the identification of project lands that are suitable for the development of a new recreation facility by USACE, a current/future lease holder or developer. Maintaining an up-to-date Master Plan will allow USACE to respond effectively to development plans made internally or by outside parties.

### **Updating the Master Plan**

This policy-based Master Plan, along with the accompanying PEA and GIS database, provides USACE with a “living” management document. This living document sets goals and objectives but does not establish concrete development plans. This allows USACE flexibility in the management and development of Kerr Reservoir, within a clear policy framework.

## **NEPA - Programmatic Environmental Assessment**

The 2012 Master Plan provides a programmatic approach to the management of all of the lands included within the Kerr Reservoir boundary. A PEA was prepared to cover all environmental features that could be affected by adoption of the Master Plan. The project area for the PEA included all areas of lands and waters within the reservoir boundary.

The PEA evaluated the implementation of the 2012 Kerr Reservoir Master Plan and a No Action Alternative (continued use of the 1980 Master Plan). The PEA analyzed the potential impact that implementing the 2012 Master Plan would have on the natural, cultural, and human environment. This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and USACE regulations, including Engineer Regulation 200-2-2: Procedures for Implementing NEPA.

The typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range plans. However, application of NEPA to earlier and more strategic decisions not only meets the CEQ implementing regulations (40 CFR 1500-1508) and USACE regulations for implementing NEPA (ER 200-2-2), but allows USACE to begin considering the environmental consequences of its actions long before any physical activity is planned.

As the intention of the Master Plan is to develop a guide to the sustainable use of resources within the Kerr Reservoir, it was not possible to define the exact nature of potential impacts prior to receiving specific project proposals. Therefore, environmental consequences may be less than or may exceed what is described in the PEA. To ensure future environmental consequences are captured and coordinated as accurately as possible, additional review and NEPA coordination may be required for specific projects.

Based on the circulation of the Draft Master Plan and the PEA, and comments received, the finding was that the 2012 Master Plan would not significantly impact the quality of the human environment; therefore, an Environmental Impact Statement was not prepared.



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## **Acronyms and Abbreviations**

ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
BSA	Boy Scouts of America
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSA	Combined Statistical Area
DM	Design Memorandum
EA	Environmental Assessment
EIS	Environmental Impact Statement
EM	Engineer Manual
EOP	Environmental Operating Principle
ER	Engineer Regulation
EP	Engineer Pamphlet
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
GSA	Girl Scouts of America
Kerr Reservoir	John H. Kerr Dam and Reservoir
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
mph	miles per hour
msl	mean sea level
National Register	National Register of Historic Places
NCDJJ	North Carolina Division of Juvenile Justice
NCDPR	North Carolina Department of Environment and Natural Resources' Division of Parks and Recreation
NCNHP	North Carolina Natural Heritage Program
NCWRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act of 1969, as amended
NHPA	National Historic Preservation Act
OMP	Operational Management Plan
PCB	polychlorinated biphenyl
PEA	Programmatic Environmental Assessment
the project	John H. Kerr Dam and Reservoir and associated USACE-owned lands and easements

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REAS Roanoke River	Recreation Economic Assessment System the Roanoke River, including the portion of the river referred to as Staunton River
SCORP SHPO	Statewide Comprehensive Outdoor Recreation Plan State Historic Preservation Officer
Tanner Environmental Education Center	Joseph S. J. Tanner Environmental Education Center
USACE USFWS USGS	U.S. Army Corps of Engineers U.S. Fish and Wildlife Service U.S. Geological Survey
VDCR VDGIF VDH VOP	Virginia Department of Conservation and Recreation Virginia Department of Game and Inland Fisheries Virginia Department of Health Virginia Outdoors Plan
WMA	Wildlife Management Area



# **1.0 Introduction**

## **1.1 Project Description**

The John H. Kerr Dam and Reservoir (Kerr Reservoir or the project) is operated by the U.S. Army Corps of Engineers (USACE). It includes approximately 50,000 acres of open water at the normal summer pool and 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 dam is located on the Staunton River/Roanoke River<sup>1</sup> (Roanoke River) approximately 20 river miles upstream from the state line, in Mecklenburg County, Virginia, or approximately 80 miles southwest of Richmond, Virginia. In Virginia, the reservoir and surrounding lands are located within Mecklenburg, Charlotte, and Halifax Counties. In North Carolina, the site is located in portions of Warren, Vance, and Granville Counties (Appendix H, Figure 1). These areas are easily accessible via the principal highways in the region, including Interstate 85, U.S. Route 58, and Virginia Highway 4. Secondary and county highways provide access to much of the surrounding lands.

Kerr Reservoir is located in the Roanoke River Basin. The Roanoke River is approximately 410 miles long, flowing in a southeasterly direction from the Appalachian Mountains in southwestern Virginia to the Albemarle Sound, in North Carolina. The river has an estimated drainage area of 9,580 square miles. The Kerr Reservoir drains approximately 7,800 square miles within the larger drainage basin. Kerr Reservoir's pertinent data is included in Appendix A of this document.

## **1.2 Project Authorization**

Kerr Reservoir (Appendix H, Figure 2) was authorized by the Flood Control Act of 1944 as the initial unit of the comprehensive plan for the development of the water resources in the Roanoke River Basin in Virginia and North Carolina. The project, originally named "Buggs Island Reservoir," was changed to its current name by Public Law 203, 82nd Congress, approved October 24, 1951 to pay tribute to John H. Kerr (1873-1958); such an honor was common USACE practice at the time. The former Congressman from North Carolina was instrumental in the development of the project.

Additional purposes of the reservoir, discussed below, were authorized by the Rivers and Harbors Act of 1958, the Flood Control Act of 1958, the Water Supply Act of 1958, and the Fish and Wildlife Coordination Act of 1958.

## **1.3 Project Purposes**

Kerr Reservoir was originally designed and constructed for the primary purpose of flood control within the Roanoke River Basin. The reservoir's initial authorizing legislation

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<sup>1</sup> Actually an 81-mile segment of the Roanoke River, the Staunton River begins at Leesville Dam and continues to the confluence with John H. Kerr Reservoir (VDGIF 2011). For the purposes of this Master Plan, the river is generally referred to as the Roanoke River

also provided for hydroelectric production to support the surrounding region. This initial authorization included provisions for public recreation. These original provisions were supplemented by additional legislation passed during the development and operation of the reservoir. The mandated project purposes are described below and listed in Table 1. Additional purposes, such as environmental stewardship, are a mission of all USACE projects.

### **1.3.1 Flood Control**

Flood control was authorized in the Flood Control Act of 1944 (Public Law 534, 78th Congress). In Fiscal Year 2011, the project prevented \$1,232,366 in flood damage, resulting in an estimated \$440,950,921 in cumulative damage prevention over the life of the project. This objective is achieved by capturing floodwaters and then releasing them downstream at a controlled, less-damaging rate.

### **1.3.2 Hydroelectric Power**

Hydroelectric power was authorized in the Flood Control Act of 1944. A multi-year major rehabilitation of the main hydropower units was completed in 2011, including a turbine aeration system to increase downstream dissolved oxygen. Currently, the six main power production units are rated at 42,000 kilowatts and one additional unit is rated at 15,000 kilowatts for a total routine plant capacity of 267,000 kilowatts. Average annual power production from Kerr Dam is approximately 420,000 megawatt-hours. This production is achieved by generating minimum (firm) energy when Kerr Reservoir is below guide curve and generating excess (secondary) energy during flood releases up to plant capacity.

### **1.3.3 Recreation**

Provisions for allowing public recreation on project lands were included in the Flood Control Act of 1944. In addition to the reservoir's authorizing legislation, the development of public recreational facilities at power, flood control, and navigation projects is authorized by Section 4 of the Flood Control Act of 1944, Section 209 of the Flood Control Act of 1958, Section 207 of the Flood Control Act of 1962, and by the Land and Water Conservation Fund Act of 1965, as amended. Today, project lands include campgrounds, day-use areas, Wildlife Management Areas (WMAs), boat ramps, marinas, an environmental education center, multiple visitor information centers, and miles of interpretive and hiking trails. USACE is assisted in maintaining and operating these facilities by the North Carolina Wildlife Resources Commission (NCWRC), the North Carolina Department of Environment and Natural Resources' Division of Parks and Recreation (NCDPR), the Virginia Department of Game and Inland Fisheries (VDGIF), the Virginia Department of Conservation and Recreation (VDCR), and numerous local governments.

### **1.3.4 Low Flow Augmentation**

In addition to flood control, Kerr Reservoir was authorized to augment low flow conditions along the Roanoke River in the Flood Control Act of 1944. However, with the construction of the Gaston and Roanoke Rapids hydropower projects below Kerr Dam, downstream minimum flow and water quality requirements are met with releases from

Roanoke Rapids Dam in accordance with its Federal Energy Regulatory Commission license. Minimum energy generation releases from Kerr Dam are generally adequate to meet the downstream flow requirements from Roanoke Rapids Dam.

### **1.3.5 Water Supply**

Water supply was authorized as a purpose of Kerr Reservoir in the Water Supply Act of 1958 (Public Law 500, 85th Congress). As of July 2011, there are three municipal and industrial water systems that withdraw water from Kerr Reservoir: the Town of Clarksville, Virginia; the Kerr Lake Regional Water System, serving communities in Vance, Granville, Warren, and Franklin Counties in North Carolina; and the Dominion-Mecklenburg Power Station. The Kerr Lake Regional Water System and the Dominion-Mecklenburg Power Station both have federal water supply storage contracts to utilize storage in Kerr Reservoir; however, Clarksville's withdrawal is grandfathered since its water supply intake was in operation before Kerr Dam was built. Prior to its closing, the Burlington Industries plant near Clarksville also had a grandfathered withdrawal. Two other entities also have water supply storage contracts for storage in Kerr Reservoir - the City of Virginia Beach and the Virginia Department of Corrections. Virginia Beach's storage is for downstream flow mitigation for its withdrawals from Lake Gaston (pursuant to its USACE permit and Federal Energy Regulatory Commission license), by allowing the USACE to utilize this storage during the spawning flow period or other low flow periods, whenever minimum river flow targets would not be met during a severe drought. Virginia Department of Corrections' storage has not been utilized, and water for its Mecklenburg Correctional Facility is instead being supplied by the Roanoke River Service Authority. Table E-5 summarizes current Kerr Reservoir water supply storage agreements and actual 2010 daily average water withdrawals in million gallons per day.

### **1.3.6 Fish and Wildlife**

USACE was authorized to promote and conserve fish and wildlife resources and habitat through the Fish and Wildlife Coordination Act of 1958 (Public Law 624, 85th Congress). This authorization led to the development of the 26 WMAs that exist on project lands and the efforts taken to provide appropriate habitat on these lands. The authorization also influences the type and level of development that occurs on project lands. During the spring water is stored in the Kerr Reservoir flood pool up to elevation 302 feet relative to mean sea level (msl). This storage provides for striped bass spawning releases from Roanoke Rapids Dam between April 1 and June 15.

## **1.4 Purpose and Scope of the Master Plan**

The Master Plan is the basic document guiding USACE responsibilities pursuant to Federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. Master plans are required for civil works projects and other fee-owned lands for which USACE has administrative responsibility for management of natural and manmade resources.

**Table 1: Kerr Reservoir Authorized Purposes**

Authorized Purpose	Authorizing Law	Date	Statute	Common Name
Flood Control	PL 78-534	22 Dec 1944	58 Stat 887	Flood Control Act of 1944
Hydroelectric Power	PL 78-534	22 Dec 1944	58 Stat 887	Flood Control Act of 1944
Recreation	PL 78-534	22 Dec 1944	58 Stat 887	Flood Control Act of 1944
Low Flow Augmentation	PL 78-534	22 Dec 1944	58 Stat 887	Flood Control Act of 1944
Water Supply	PL 85-500	3 July 1958	72 Stat 297	Water Supply Act of 1958
Fish and Wildlife	PL 85-624	12 Aug 1958	72 Stat 563	Fish and Wildlife Coordination Act

This Master Plan provides direction for project development and use. It is a vital tool for the responsible stewardship of project resources for the benefit of present and future generations. This Master Plan is programmatic and identifies conceptual types and levels of activities, not designs, project sites, or estimated costs. All actions by USACE and the agencies and groups granted leases to project lands must be consistent with the Master Plan. Therefore, the Master Plan must be kept current in order to provide effective guidance in USACE decision-making. The original Kerr Reservoir Master Plan was approved in 1946 and first updated in 1952. The most recent update was completed in 1980. The 1980 Master Plan and other pertinent studies are listed in Table 2.

This Master Plan is based on responses to regional and local needs, resource capabilities and suitabilities, and expressed public interests consistent with authorized project purposes and pertinent legislation and regulations. This Master Plan provides a District-level policy consistent with national objectives and other state and regional goals and programs. The plan is distinct from the project-level implementation emphasis of the Operational Management Plan (OMP). Policies in this Master Plan are guidelines implemented through provisions of the OMP, specific Design Memoranda (DMs), and the Annual Management Plans.

The broad intent of this Master Plan is to:

- Determine appropriate uses and levels of development of resources within project lands;
- Provide a framework within which the OMP and Annual Management Plans can be developed and implemented; and
- Establish a basis on which out-grants and recreational development proposals for project lands can be evaluated.

### **1.4.1 Master Plan Scope**

This Master Plan includes guidance for appropriate uses, development, enhancement, protection, and conservation of the natural, cultural, and man-made resources at Kerr Reservoir. The Master Plan includes:

- A discussion of factors influencing resource management and development (Chapter 2);
- An identification of special problems faced by project managers, including preservation and enhancement of natural and cultural resources, conflicts in user needs, and adjacent land uses (Chapter 3);
- A synopsis of public involvement and input (Chapter 4);
- Land Classifications (Chapter 5);
- Resource Objectives and identification of existing uses and needed development (Chapter 6);
- Review and adherence to USACE Environmental Operating Principles (EOPs) (Chapter 7);
- Conclusions and Recommendations (Chapters 8 and 9); and
- A listing of pertinent DMs, data, the associated Programmatic Environmental Assessment (PEA), and other data (Appendices).

The Land Classifications, recreation development, and management practices in this Master Plan apply to USACE project lands at Kerr Reservoir. This includes an inventory and analysis of lands that are leased to the State of North Carolina and Virginia or to public groups. Although USACE has left day-to-day management of leased lands in the hands of the leasee, this Master Plan provides policy for management of all project lands at Kerr Reservoir that is consistent with USACE natural resource management mission and stewardship responsibilities.

USACE has the mission of managing, conserving, and improving environmental and cultural resources at USACE reservoir projects while providing quality public recreational experiences to serve the needs of present and future generations. To ensure consideration of natural and cultural resources throughout the Master Plan, a PEA is integrated into this document and is included in Appendix C.

### **1.4.2 Master Planning Process**

Preparation of this Master Plan was a cooperative effort involving USACE; federal, state, and local governmental agencies; non-governmental organizations; and members of the general public. Scoping comments from government officials and the general public were

important for identifying issues that needed to be addressed in the Master Plan. Details regarding the public involvement efforts for the Master Plan are provided in Chapter 4.

One of the primary contributions these groups and agencies made to the master planning process was through their geographic information systems (GIS) data. The different layers of GIS data provided by these groups were combined with USACE data to create a GIS database for the master planning process. The database helped inform the resource analysis, Land Classifications, and Resource Objectives of the Master Plan. The GIS database also was used to create many of the figures included in this document. These figures are designed to display the level of data available to USACE for future management of project lands. Figures that illustrate the reservoir and surrounding water bodies were created using a number of different data layers. These layers provide USACE with a picture of all of the data available for making decisions related to the location of these water bodies. As a result of the combination of layers, however, extra lines may be visible along the edges of water areas. These lines represent varying elevations at which the reservoir and surrounding streams were measured for GIS data. Future use of this data will allow USACE and its contributing agencies and groups to communicate and plan with the same data.

The USACE six-step planning process, provided in Appendix B, was used in developing the Master Plan. Public input was important in identifying significant resources; problems and opportunities; planning objectives and constraints; important features of the project; and public needs, desires, and concerns. These factors were taken into account in forming the Resource Objectives and Development Needs for the Master Plan and the alternatives evaluated in the PEA. The alternatives were assessed in the PEA in regard to:

- Meeting project purposes and expressed public needs and desires;
- Minimizing adverse environmental impacts; and,
- Consistency with relevant laws and regulations and regional needs and plans.

<b>Table 2: Pertinent Prior Reports</b>		
<b>Reference</b>	<b>Title</b>	<b>Submitted</b>
-	“308” Report, Roanoke River, Virginia and North Carolina	1934
-	Interim Report – Buggs Island Reservoir, Roanoke River Basin, Virginia and North Carolina	30 Dec 1941
-	Review Report, Roanoke River, Virginia and North Carolina	30 Jan 1943
-	Roanoke River and Its Tributaries	22 May 1944
-	Definite Project Report, Buggs Island Reservoir, Roanoke River, Virginia and North Carolina	1 Feb 1946
-	Analysis of Design for Concrete Dam, Earth Dikes, Powerhouse, and Switchyard – Buggs Island Dam, Roanoke River Basin, Virginia and North Carolina	22 Mar 1948
Supplement No. 1 (to above)	Analysis of Design for Concrete Dam, Earth Dike, Powerhouse, and Switchyard, Buggs Island Project	1 May 1950
-	Analysis of Design – Reservoir Clearing – Buggs Island Project	10 Jun 1949
-	Reservoir Regulation Manual, John H. Kerr Reservoir	1 Sep 1952 31 Dec 1953
-	Master Plan for Reservoir Development, John H. Kerr Dam and Reservoir, Roanoke River Basin, Virginia – North Carolina	24 Nov 1952
-	Operation and Maintenance Manual, John H. Kerr Project	1957
DM No. 1B (C1)	John H. Kerr Reservoir, Roanoke River, Virginia – North Carolina, Public Use and Access Facilities (PWAA – FY 63)	3 Dec 1962
DM 1B (C2)	John H. Kerr Reservoir, Roanoke River, Virginia – North Carolina, Public Use and Access Facilities	7 Oct 1963
Supplement 1B to DM 1B	John H. Kerr Forest Management Plan	1965
DM 1B	Master Plan for John H. Kerr Dam and Reservoir, Roanoke River Basin, Virginia – North Carolina	15 Feb 1965
DM 1B Supplement No. 1	Forest Fire Control Plan, Part of the Master Plan for John H. Kerr Dam and Reservoir, Roanoke River Basin, Virginia and North Carolina	24 Sep 1965
-	Roanoke River Basin Reservoir Regulation Manual	Oct 1965
-	Real Estate Land Use Plan, Supplement to Master Plan, John H. Kerr Reservoir, Virginia and North Carolina	26 Jan 1966
DM 1B (C3)	John H. Kerr Reservoir, Roanoke River, Virginia – North Carolina Public Use and Access Facilities Part 1 (Old Areas)	11 May 1966
DM 2	John H. Kerr Dam and Reservoir Roanoke River, Virginia – North Carolina, Necessity and Plan for Relocation of Virginia Secondary Roads 678 and 835 at North Bend Park Public Use Area	20 Apr 1966
DM 3	John H. Kerr Dam and Reservoir Roanoke River, Virginia – North Carolina, Resource Manager’s Office and Visitor Center	1975
Appendix D	Fish and Wildlife Management Plan	Sep 1976
Appendix E	Project Resource Management Plan	1976
Appendix F	Interim Lakeshore Management Plan	Mar 1977

<b>Table 2: Pertinent Prior Reports</b>		
<b>Reference</b>	<b>Title</b>	<b>Submitted</b>
-	John H. Kerr Reservoir Limnological Study	May 1978
DM 4	Recreation Facilities John H. Kerr Reservoir	1979
DM 5	Master Plan Update	1980
Appendix G	Environmental Inventory and Analysis	1980
Appendix H	Archaeological and Historical Survey	1980
Appendix F	Lakeshore Management Plan	Aug 1980
	Shoreline Management Plan for John H. Kerr Reservoir	1995



The PEA recommends a Proposed Action (Appendix C) that provides the most appropriate level of stewardship, management activities, and types and levels of recreation development and use for Kerr Reservoir project lands. For any conceptual development or management activity included in the Master Plan, the PEA identifies potential impacts on the human or natural environment and indicates how these impacts can be avoided or minimized. This Master Plan and associated PEA were prepared in accordance with the following guidance:

- Engineer Manual (EM) 1110-1-400, *Engineering and Design – Recreation Planning and Design Criteria*, 01 Nov 2004;
- Engineer Pamphlet (EP) 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 November 1996, 01 Oct 1999 (change 1), 01 Mar 2002 (change 2), 15 Aug 2002 (change 3), 30 Aug 2008 (change 4);
- Engineer Regulation (ER) 200-1-5, *Environmental Quality – Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles (EOP) and Doctrine*, 30 Oct 2003;
- ER 200-2-2, *Environmental Quality – Procedures for Implementing the National Environmental Policy Act (NEPA)*, 4 March 1988;
- ER 1105-2-100, *Planning Guidance*, 22 April 2000, 30 Jun 2004, 31 Jan 2007, 30 Jun 2004, 20 Nov 2007; and
- ER 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 Nov 1996, 1 Oct 1999, 1 March 2002, 15 Aug 2002, 30 Aug 2008, 30 Mar 2009.

### **1.4.3 Project-wide Resource Objectives**

The Kerr Reservoir Master Plan is a basic guiding document for the stewardship of both natural and man-made project resources. Sound stewardship requires the development and management of project resources for the public benefit, consistent with resource capabilities. An important component of this approach is the establishment of viable Resource Objectives.

Resource Objectives are realistically attainable goals for the use, development, and management of natural and man-made resources. They are guidelines for attaining maximum public benefit within USACE safety guidelines and security levels, while minimizing the potential for impacts and protecting and enhancing environmental quality. The objectives are developed with full consideration of authorized project purposes, applicable federal laws and directives, resource capabilities, regional needs, plans and goals of regional and local governmental units, and expressed public desires.

The project-wide Resource Objectives for Kerr Reservoir, not in priority order, are as follows:

- To develop and manage land in full cooperation and coordination with other public management agencies and appropriate private sectors;
- To develop and manage project lands to support various types and levels of recreation activities consistent with carrying capacities and aesthetics, cultural, and ecological values;
- To provide public education about the history of the area, project resources, and USACE's role in developing and managing these resources;
- To develop and manage the project lands to support a diversity of wildlife species;
- To preserve and enhance threatened and endangered species and unique and important ecological and aesthetic resources;
- To maintain and manage project lands to support regional management programs, such as regional water quality initiatives;
- To manage and enhance forest resources;
- To preserve, monitor, and protect significant cultural resource sites;
- To maintain a high level of water quality for water supply, recreation, fish and wildlife use; and
- To manage resources in response to changing conditions in a developing region.

Specific Resource Objectives for each of the Land Classifications identified for Kerr Reservoir are found in Chapter 5. Site-specific resources objectives are listed for the individual management units in Chapter 6.

## **2.0 Factors Influencing Resource Management and Development**

This chapter includes an inventory and analysis of the natural resources within the boundary of Kerr Reservoir. For most resources, the analysis is focused on the project lands, in keeping with the scope of the Master Plan. In some cases, such as demographics and economic characteristics, the description of resources extends beyond the boundaries of the reservoir to provide an accurate description of the existing conditions. Resource conditions covered in this chapter include: hydrology and ground water; sedimentation; surface water quality; accessibility; climate; topography, geology, and soils; land use; borrow areas and utilities; vegetation resources; fish and wildlife resources; rare and endangered species and communities; visual quality; mineral and timber resources; paleontology; cultural resources; interpretation; demographics; economic characteristics; real estate; recreation facilities; recreation activities and needs; visitation profile; and related recreational, historical, and cultural areas. This chapter also documents pertinent public laws and management plans, as well as the implications these resource conditions have on the master planning process.

### **2.1 Description of the Reservoir**

The John H. Kerr Dam is located in Mecklenburg County, Virginia, on the Roanoke River, approximately 180 miles above the mouth of the river. The dam is located approximately 20 river miles upstream from the Virginia-North Carolina state line; 20 miles downstream from Clarksville, Virginia; and about 80 miles southwest of Richmond, Virginia. The reservoir extends into portions of Mecklenburg, Charlotte, and Halifax Counties in Virginia; and Warren, Vance, and Granville Counties in North Carolina (Appendix H, Figure 1).

The John H. Kerr Dam is a concrete gravity dam with a gated spillway that is flanked by earthen dikes and a powerhouse switchyard. The top elevation of the dam is 332 feet msl and is 2,785 feet long. USACE owns or holds easements over the surrounding lands to a minimum elevation of 320 feet msl east of the Route 58 Bridge and 325 feet msl west of the bridge. Additional lands were purchased above these minimum elevations to carry out authorized project purposes, in select areas of the project. The record high pool at Kerr Reservoir, 319.64 feet msl, was recorded on 26 April 1987. The record low pool, 280.23 feet msl, was recorded on 3 February 1956.

Kerr Reservoir includes approximately 50,000 acres of open water at the normal summer pool and an additional 55,000 acres of surrounding project lands (Appendix H, Figure 2). USACE actively manages the majority of these project lands. Those areas not managed by USACE are leased to Virginia, North Carolina, or other public groups. Virginia's leased land includes Occoneechee State Park and portions of Staunton River State Park. North Carolina's leased lands are confined to the Nutbush Creek arm of Kerr Reservoir, where the state maintains several recreation areas along the water. NCWRC and VDGIF assist USACE at Kerr Reservoir by maintaining a select number of boat ramps. NCWRC, VDGIF, and several other groups also assist USACE in maintaining some of the 26

WMAs within the project boundary. Additional leased lands are located on other parcels around the lake. These “quasi-public” leases are granted to groups like the Boy Scouts of America (BSA), Girl Scouts of America (GSA), church groups, and educational institutions. These areas are discussed in greater detail under Section 2.21: Real Estate and Section 2.22: Recreation Facilities. USACE continues to hold review and approval authority over future development on these leased lands.

## **2.2 Lake Operation**

Operation of Kerr Reservoir is influenced by regional and site specific conditions, including annual and seasonal precipitation patterns and water needs above and below the dam. These conditions dictate current and future management of Kerr Reservoir, as USACE must determine how the reservoir should be managed to meet its authorized purposes and operating objectives, which are listed below in no particular order.

- Flood control
- Hydroelectric power
- Water supply
- Conservation of fish and wildlife
- Low flow augmentation
- Recreation

USACE divides its reservoirs into different pools that meet the purposes of the given reservoir. The primary pool designation in reservoirs with the purpose of flood control is the conservation pool. Water stored within the conservation pool elevation may be used for any of the project’s non-flood purposes. Storage space above the conservation pool is used to capture and contain flood waters. Similarly, the water supply pool is the portion of the conservation pool reserved for water supply and the power pool is the portion reserved to support hydroelectric power production. The capacity and elevation of these pools are unique to each reservoir and data for those at Kerr Reservoir are included in Appendix A.

Flood control is accomplished through the storage and controlled release of over 1,200,000 acre-feet of water between elevations 300 and 320 feet msl within the reservoir. This storage is supplemented by a winter drawdown to the 295.5 foot msl elevation, which provides additional flood control capacity (USACE 1995a).

Kerr Reservoir is operated as a “peaking plant” for hydroelectric power production. This operation focuses on producing energy at varying rates during some portion of “on-peak” hours. On-peak hours are those that receive the most demand by customers and generally average 84 hours per week. The consistency of power production at the dam is dependent on water flow into the reservoir and needs for water releases downstream. By properly managing its water storage, USACE can ensure more regular, cost-effective power production for the end user. Power output is delivered to the Federal Power Preference Customers by Dominion Virginia Power Company on its 115-kilovolt lines that connect to the Kerr station switchyard (USACE 1995a).

Meeting the Kerr Reservoir water supply objective usually does not require special operations. Several interests, with active contracts for water supply, have storage rights in

Kerr Reservoir. This storage space is provided within the conservation pool, between the 268 and 300 feet msl levels of the reservoir (USACE 1995a).

Achieving fish and wildlife objectives is accomplished by providing the proper quantity and quality of water in the lower Roanoke River Basin to maintain healthy river conditions. For example, additional flows required during the striped bass spawning season are created by releasing more water from Kerr Reservoir. These additional flows are provided by storing water in the flood pool during the spring months, before and during the striped bass season. These water level management techniques also augment low flow conditions downstream of Kerr Reservoir (USACE 1995a).

Finally, Kerr Reservoir is operated to support recreation. Recreation opportunities are provided to the maximum extent possible without serious interference with the purposes of flood control and hydropower generation. This operation provides a full pool during the main recreation season in all but extremely dry years. Additional details on lake operations are provided in the *Water Control Plan for John H. Kerr Dam and Reservoir* (USACE 1995a).

## **2.3 Hydrology and Ground Water**

The movement of water into, through, and out of the project lands is influenced by regional and site specific conditions, including annual and seasonal precipitation patterns and the geology and landforms that make up the project. The volume of surface water and ground water present on site and its ability to move through the project lands dictates current and future management of Kerr Reservoir.

### **2.3.1 Surface Water**

The normal pool elevation at Kerr Reservoir is dictated by a USACE-designed guide curve. The guide curve targets elevations ranging from 295.5 feet msl to 302.0 feet msl. Lake levels rise and fall almost continually in response to rainfall and operational releases. These fluctuations have notable implications for recreation, wildlife, vegetation, shoreline erosion, and aesthetics on the project.

The project design and operation provide for a full controlled flood pool at 320 feet msl and a full power pool at 300 feet msl. At normal pool elevation, the reservoir is 39 miles long with an estimated 800 miles of shoreline. This equates to nearly 50,000 acres of open water surface area. The pool extends nearly 40 miles up the Roanoke River and almost 20 miles up the Dan River, above its confluence with the Roanoke River.

### **2.3.2 Ground Water**

In addition to surface waters, ground water resources also exist within the project boundary. Neither the USGS nor the North Carolina Division of Water Resources maintains active ground water monitoring stations in close proximity to Kerr Reservoir (USGS 2009, NCDWR 2009a). Despite this lack of data, some information on the area's ground water resources can be inferred from its location.

Located in the Piedmont geologic province, the rocks beneath Kerr Reservoir were formed under high temperature and pressure conditions, and subsequently have been altered through cycles of compression and partial melting. With the exception of some volcanic rocks, there is little or no primary porosity or permeability. Therefore, ground water presence and movement is limited to fractures formed either through rock deformation or through release of compression. Fractures in the Piedmont region rarely extend to a depth of more than 150 feet, and almost never deeper than 300 feet. Fractures are not extensive in the Kerr Reservoir area (USACE 1980).

Ground water is present under water table conditions in these fractures and in the overlying saprolite mantle in quantities normally sufficient for domestic or low density recreation use. No large quantity, significant recharge areas, or aquifers exist under the project lands. Similarly, almost any location within the project boundary acts to recharge that portion of the water-table aquifer adjacent to it, but each area is of strictly local significance (USACE 1980).

Since the publication of the 1980 Master Plan, USACE has continued to rely on ground water supplies for drinking water at all of its campgrounds. The quality and condition of public water supply systems is tracked by the states' regulatory agencies (NCDENR 2010, USEPA 2010a, VDEQ 2008, VDH 2009).

## **2.4 Sedimentation**

The rate of sedimentation within the reservoir is influenced by regional and site specific conditions, including annual and seasonal precipitation patterns and associated stormwater runoff, as well as shoreline erosion. Sedimentation is unavoidable for reservoirs like Kerr Reservoir due to steep banks and wind and wave action. Accounting for sedimentation was included in the design and management of the reservoir.

During the construction of Kerr Reservoir, a system of 114 sedimentation ranges was established to allow for measurement of sediment accumulation. At the time the 1980 Master Plan was published, the rate of sedimentation was much less than predicted and the usable sediment storage area was not expected to be significantly depleted for hundreds of years (USACE 1980).

In 1997, USACE conducted a survey of sedimentation levels in Kerr Reservoir. The survey noted there are some increased levels of sediment accumulation, especially near the confluence of the Dan River and the main body of the reservoir. Overall, sedimentation does not pose a threat to the current or future operation of Kerr Reservoir (USACE 1997).

## **2.5 Surface Water Quality**

The quality of surface water within the reservoir is influenced by conditions throughout its watershed (Appendix H, Figure 3), including land use patterns and the presence of pollution sources. The quality of surface water dictates current and future management of Kerr Reservoir's water releases and recreational opportunities.

The Roanoke River Basin, which contains Kerr Reservoir, begins in the foothills of the Blue Ridge Mountains in Virginia. The river basin expands to encompass nearly 9,580 square miles along the river's 410 mile route to the Albemarle Sound in North Carolina. The basin is home to a number of growing municipalities as well as eight dams. Kerr Reservoir is the largest of these dams.

Water quality within the basin is impacted by the same issues faced in other developing regions: suspended sediments, toxics, excessive nutrient loadings, and fecal coliform bacteria. Over 53 percent of the waters in the Roanoke River Basin are impaired, that is they do not meet the national water quality criteria established in the Clean Water Act. Nonpoint sources, accounting for about 85 percent of the pollutant input in the river basin, are by far the greatest threat to water quality.

Despite the regional growth that has impacted surface water quality at Kerr Reservoir, there have been some local changes that have improved conditions. Since the development of the 1980 Master Plan, the Burlington Industries factory has closed. The factory had a permitted intake and discharge into Kerr Reservoir. USACE also has taken numerous actions to address eroding shoreline conditions around the reservoir. This has reduced the level of sediment and other pollutants that had been entering the water.

Water quality in Kerr Reservoir is measured by Virginia and North Carolina state agencies and published in each state's 303(d) Impaired Waters Assessment. The most recent 303(d) report available for Virginia was completed in 2012 (draft). The report identifies all of Kerr Reservoir as not meeting water quality standards established for safe fish consumption (VDEQ 2012). This finding is supported by North Carolina's 2012 Draft 303(d) report which reports Nutbush Creek as being impaired. The impairment is due to the ecological/biological integrity of the water column (NCDWQ 2012).

Water conditions within the reservoir also have resulted in the Virginia Department of Health (VDH) issuing a fish consumption advisory for the reservoir. The contaminants responsible for this advisory were mercury and polychlorinated biphenyls (PCBs). Given the level of contaminants found in select fish, the VDH recommends no more than two meals per month of fish caught in the reservoir (VDH 2012). The North Carolina Department of Health and Human Services issued similar guidance on fish consumption, though the state has not issued any fish consumption advisories for the reservoir (NCDHHS 2009).

In addition to its 303(d) lists and fish consumption advisories, North Carolina also classifies water bodies by their ability to support different uses. In North Carolina, the reservoir and its tributaries are categorized as supporting primary (swimming) and secondary recreation (boating). The reservoir and its tributaries also are designated water supply sources, with select areas receiving additional water supply protection through a "critical area" designation (NCDWQ 2009).

## **2.6 Accessibility**

Kerr Reservoir is served by a well-developed network of interstate, federal, state, and county highways. The major transportation routes to the area are Interstate 85, U.S. Highway 58, and U.S. Highway 15. Interstate 85 provides general access from cities to the north and south of the project, including the Raleigh-Durham area to the south and the Richmond-Petersburg area to the north. U.S. Highway 15 crosses the reservoir at Clarksville, providing access to the central portion of the project. U.S. Highway 58 also crosses the reservoir at Clarksville, providing east-west access to the reservoir and linking the South Boston and Clarksville areas. These major project-wide routes are shown in Appendix H, Figure 1.

Access to Kerr Reservoir also is permitted via seaplane at three designated locations<sup>2</sup>. Take-offs and landings of seaplanes outside of these areas are prohibited. While on project waters, seaplanes are to be operated in accordance to the marine rules for power boats. Title 36, Section 327.4 presents the regulations governing the operation of seaplanes at USACE projects. In addition, these aircraft must adhere to prescribed federal, state, and local statutes.

Despite access routes, there are numerous tracts of federal land surrounding the reservoir with no access for USACE management or public use. This circumstance has existed since project inception, hampering both USACE management efforts and public use and enjoyment of these lands. The 1980 Master Plan (USACE 1980) states “the entire project area must be made accessible to firefighting equipment via roads, trails, and well access roads.” The Master Plan also mentions “76 parcels which suffer from access problems; seven of these are within proposed recreation areas.” The Master Plan stipulates that “access to all areas is needed: (1) to assure public use of project lands, (2) to maintain the boundary of the project, (3) for forest management, and (4) for forest fire control.” A complete listing of the individual parcels is available in the John H. Kerr Operations Plan (USACE 1992). Since the publication of the 1980 Master Plan the vast majority of access issues to these parcels remain unresolved.

## **2.7 Climate**

The regional climate has influenced the development and management of Kerr Reservoir, including the need for a dam, the water levels that are received and maintained in the reservoir, and the project’s ability to provide high-level recreational opportunities. Microscale climatic conditions, such as the amount of sunlight or exposure to wind, influence resources and recreational opportunities at individual locations around the reservoir. The regional climate and specific microscale climatic conditions dictate current and future management of Kerr Reservoir’s water management and recreational opportunities.

The climate in the region surrounding Kerr Reservoir is temperate, characterized by warm summers and cold, but generally not severe, winters. Table 3 provides a summary

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<sup>2</sup> Contact the USACE at the Kerr Reservoir Visitor Assistance Center for additional information.



of information on regional climate data. Over a 30 year period, the average annual wind speed through the region was over 7 miles per hour (mph) with peak wind speeds averaging over 57 mph. Prevailing wind directions throughout this period were from the south or southwest. When winds shift to the northeast, the region tends to experience higher wind speeds (Allen and Wu 2009). Tropical hurricanes impact the coast of Virginia and North Carolina approximately one to two times per year, most often in the late summer and early fall. Since Kerr Reservoir is located well inland, the main impact of hurricanes felt at the reservoir is increased precipitation.

<b>Table 3: Historical Climate Report</b>	
<b>Climate Phenomenon</b>	<b>Annual</b>
Average Summer Temperature (degrees Fahrenheit)	78
Average Winter Temperature (degrees Fahrenheit)	38
Average Total Precipitation (Inches)	40
Average Total Snowfall (Inches)	6

(Virginia Economic Development Partnership 2009)

## **2.8 Geology, Topography, and Soils**

The local geology (Appendix H, Figure 4), topography (Appendix H, Figure 5), and soils have been an important influence in the development and management of Kerr Reservoir. The relationship between these three resources dictates the type of vegetation that can succeed in a given area, the availability of ground water, susceptibility to flooding, and appropriate recreational uses. Since the publication of the 1980 Master Plan, there have been limited changes to the topography, geology, or soils on project lands. Any measurable changes that have occurred have been a result of the construction of new facilities or shoreline erosion. The development of new facilities has required grading alterations to existing topography, construction of impervious surfaces over undeveloped soils, and some subsurface disturbance to access utilities or ground water supplies. Shoreline erosion also results in changes in topography within a confined area; however, the cumulative effects of shoreline erosion can result in more notable impacts to soils and geologic resources. As the shoreline erodes, the subsurface rocks and minerals are exposed to similar erosive conditions. Future management and development should consider the protection of these exposed resources and avoid actions that could increase the exposure or impact to these resources.

### **2.8.1 Geology**

Geology within the project boundary is consistent with the Piedmont region of Virginia and North Carolina. This old, structurally complex region contains a wide variety of igneous and metamorphic rocks which have been heavily weathered due to relatively long exposure at the earth's surface. The evolution of changes in these rocks has influenced the quantity and availability of ground water resources (see Section 2.3.2: Groundwater).

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. Safe access to these areas has been and continues to be a concern in some locations within the project boundary.

### **2.8.2 Topography**

Although the Roanoke River Basin spans four physiographic regions, the majority of the river basin, including Kerr Reservoir, lies within the Piedmont physiographic province. 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.

Previous project planning has divided topography on project lands into three categories: 0-8 percent slopes, 8 to 16 percent slopes, and slopes greater than 16 percent. These categories are still relevant to current and future planning at the reservoir. Those lands that exist at 0-8 percent slopes are confined to broad ridgetops and floodplains surrounding Kerr Reservoir and its tributaries. Many of these areas were historically used for agricultural purposes and have yet to develop mature forests. Given the topography and lack of mature vegetation, many of these lands have been converted to the primary recreation areas around the reservoir (USACE 1980). Future recreational development should seek to take advantage of these areas, as well.

Lands with slopes ranging from 8 to 16 percent are common throughout Kerr Reservoir. In some locations, these slopes are naturally occurring while in other areas they are a result of the development of the reservoir (USACE 1980). The amount of mature vegetation on these lands is dependent on its history in the development of the reservoir; however, these topographic conditions have not been a hindrance to the development of recreational facilities across the project lands. Existing and future recreational development on these lands has and should continue to include careful site planning to ensure that roads, parking lots, and stormwater management facilities are properly designed for minimal disturbance to native topography, proper drainage and stability, and adequate control of erosion and sedimentation.

Finally, lands that have a slope greater than 16 percent exist primarily above Bluestone Creek and on the Oconeechee State Park peninsula. These lands are not ideal for recreational development and have been avoided during the development of recreational facilities at the reservoir (USACE 1980).

### **2.8.3 Soils**

Since the publication of the 1980 Master Plan, changes have occurred in the names, definitions, and categories of soils that exist on project lands. The properties of these resources, however, remain unchanged (NRCS 1997, 2007, 2009). Therefore, the previous classifications of soils within projects lands are still relevant for determining their suitability for development of recreational facilities. Classifications are based on conditions that could hinder the development or operation of new or existing recreational facilities. These conditions include the likelihood for seasonal flooding or ponding, the ability for soils to absorb rain or floodwaters, as well as the depth of the water table or bedrock.

The soil classifications presented in the 1980 Master Plan suggest that less than half of the 50 soil types that exist on project lands support some level of development. The remaining soils have more extensive development limitations. This does not mean that the areas that contain these soils cannot be used to support recreational development, but that the development should take into account the conditions that exist and plan accordingly. A complete listing of the soil types found within the project boundaries is included in Appendix E, Table E-1.

## **2.9 Land Use**

Kerr Reservoir contains over 55,000 acres above the normal pool elevation of 300 feet msl. Most of the land bordering Kerr reservoir is forested and used to support public recreational use or USACE project operations. Designated land uses within the project boundary include project operations, recreation, natural areas, wildlife management/forest reserve, and flowage easement lands. Table 4 lists the acreages included under each current classification. These areas, the remaining project lands, and adjacent private lands are discussed in the subsections below.

### **2.9.1 Project Operations**

Project Operations are those lands required for the structure, operations center, office, maintenance compound, and other areas that are used solely for project operations. At Kerr Reservoir, these lands are confined to the lands around the dam, spillway, tailrace, Visitor Assistance Center, and Island Creek Dam. While these lands also support recreational opportunities, they are maintained to meet USACE operation needs at the project.

### **2.9.2 Recreation Lands**

Recreation lands within the project include developed recreation sites (e.g., campgrounds, swim beaches, playgrounds, etc.) and WMAs. Developed recreation sites are managed by USACE, VDCR, NCDPR, and other public institutions that lease lands from USACE. WMAs in the project are managed by USACE, VDCR, VDGIF, and NCWRC. WMAs are managed for the continuous improvement of wildlife habitat, forest stand improvement, and dispersed-use recreation, such as hunting, hiking and bird watching.

### **2.9.3 Ribbon Lands**

Ribbon lands are comprised of the USACE managed lands that extend along the shoreline of the reservoir. These lands are primarily wooded areas. These lands are held by USACE to maintain its flood control mission at Kerr Reservoir. Given the limited width of these lands, USACE has not developed any recreational facilities on them. USACE, however, does permit local landowners to construct approved docks and other structures on these lands that connect private properties to the reservoir under the terms of the *Shoreline Management Plan for John H. Kerr Reservoir* (USACE 1995b).

### **2.9.4 Adjacent Lands**

The Southside Planning District Commission, which serves more than 88,000 citizens in Brunswick, Halifax, and Mecklenburg counties in Virginia, identifies the land use of the majority of non-project lands adjacent to the project as Vacant Land and Woodland. Agriculture also is prominent throughout the region and row crops such as tobacco and soybeans are popular (SPDC 2010). Appendix H, Figure 6 shows the generic land cover classes for the region and highlights the dominance of forest cover.

The Southside Planning District Commission recognizes concentrated areas of single family residential development around the reservoir with notable developments scattered throughout coves. There is considerably more residential development along the south shore of the lake within Virginia and throughout the southern end of the Nutbush Creek arm. Concentrations of commercial activities occur in Virginia at Clarksville, South Boston, South Hill, and to a lesser extent in Boydton, as well as Henderson, North Carolina. Population growth in these areas is modest compared to areas with more distant urban centers (e.g., Raleigh and Richmond) as described in greater detail in Section 2.19: Demographics. Demand for residential water-oriented property adjacent to the project lands has grown considerably since the publication of the 1980 Master Plan with numerous large scale conversions of agricultural lands to residential uses.

The primary land uses within the project boundary are wildlife management/forest reserve and recreation. Project lands also include a ribbon of forested land surrounding the reservoir which is managed to meet the authorized purposes of USACE at Kerr Reservoir. Table 4 shows the estimated existing land use classifications at the project. The shoreline around the reservoir has been further classified into shoreline allocations as described in Kerr Reservoir's Shoreline Management Plan (USACE 1995b).

**Table 4: Land Use Classifications Applied by the 1980 Master Plan**

<b>Land Use Classification</b>	<b>Acreage</b>
Project Operations	264
Recreation	
Existing Intensive Use	7,864
Future Intensive Use	6,022
Existing Low Density	217
Future Low Density	2,782
Natural Areas	5
Wildlife Management/Forest Reserve	38,600
Easement Lands	10,509

Source: USACE 1980

## 2.10 Borrow Areas and Utilities

During the development of the reservoir, several old borrow areas were utilized within the Kerr Reservoir boundary. Currently, there are no areas where materials are being actively extracted. Historically, filling the reservoir included the realignment of railroad and roads throughout the area which required material for fill to ensure the proper elevations for their new locations. The Liberty Hill WMA was used as a significant source of material for construction around the reservoir, including many of the dikes. The site is now managed as a WMA. The borrow areas within Liberty Hill and in other locations around the reservoir are now overgrown with mature vegetation and difficult to identify.

Electric service to Kerr Reservoir areas is supplied by four firms: Dominion Power, Progress Energy, the Mecklenburg Electric Cooperative, and the Piedmont Electric Cooperative. Electric service is available to virtually all portion of the project through existing distribution lines within the project boundary or on adjacent lands. High voltage transmission lines are present along the southern-most waters of the Nutbush Creek arm of the reservoir. Another section of high voltage line originates at the dam powerhouse, traverses the northern shore near North Bend Park before bending south and crossing the reservoir towards Ivy Hill Park; the line turns west along the southern edge of the reservoir crossing a number of coves as it works its way into Clarksville. From Clarksville, the high voltage line heads north parallel with the Southern Railway Bridge over the main channel of the reservoir heading northwest towards Chase City.

Water service to communities adjacent to the reservoir in Virginia is available at Clarksville and South Boston. The Roanoke River Service Authority supplies drinking water to Virginia communities north of the dam, including the towns of Boydton, South Hill, La Crosse, Brodnax, Chase City, and Bracey; however, the Authority's intake

structures are downstream of the project in Lake Gaston. In North Carolina, the Henderson Water Authority operates a water intake and treatment plant on the Nutbush Creek arm of the reservoir near the Flemington Road Landing. The Kerr Lake Regional Water System is operated by the City of Henderson serving portions of Vance, Granville, Warren and Franklin Counties in North Carolina. The system serves three bulk customers: the City of Henderson, City of Oxford, and Warren County, which also supply water to Franklin County and the towns of Kittrell, Norlina, Warrenton, Stovall, and Middleburg. Industrial withdrawals include Virginia Department of Corrections and the Dominion-Mecklenburg Power Station. Many of these service authorities also provide sewer service. Most of the region surrounding Kerr Reservoir, however, is served by individual septic systems. Other utilities, such as telecommunications and natural gas, are provided by private suppliers in the region.

## **2.11 Vegetation Resources**

Vegetation resources within project lands are influenced by regional and site specific conditions, including climate, water supply and quality, soils, and topography. The condition of vegetative communities dictates current and future management of Kerr Reservoir, as USACE and its partners must determine how communities should be managed to meet the different missions at the reservoir. Given these different missions, management of vegetative resources has and should continue to focus on community types rather than specific species. Therefore, the discussion below will focus on community types.

The most recent vegetation survey on project lands, completed by VDCR in 2001, indicates that there has been minimal change in vegetative communities surrounding the reservoir since the publication of the 1980 Master Plan (USACE 1980, Van Alstine 1999, 2001). Changes have been the result of management actions to meet the varying missions of USACE at Kerr Reservoir. This includes clearing and prescribed burns to promote forest health and protect vegetative communities. Changes to the Kerr Reservoir vegetative communities also have been the result of pine beetle (*Dendroctonus frontalis*) infestations that occurred between 2005 and 2008. Management activities, like the response to the pine beetle infestation, are managed by USACE with assistance from its state agency partners at the reservoir.

Along with management actions described above, changes to the previously documented vegetative communities also may be influenced by development outside the project boundaries. This development has fragmented forests that were once viable ecological communities and has changed the forest management priorities at Kerr Reservoir. In some cases, this has changed the focus of management efforts to different forest communities within the project. Natural changes also have altered forest communities at Kerr Reservoir. Plant diseases and insect pests are becoming more common throughout the region and have already had an impact on forest stands within the Kerr Reservoir boundary. Additional changes are anticipated as regional vegetation adapts to changing climatic conditions (Dukes and Mooney 1999).

Although the 2001 survey only focused on the portion of the project lands in Virginia, previous studies suggest that there is little variation between the vegetative communities on the Virginia and North Carolina sides of the reservoir. In previous studies, the only community that was found to exist in North Carolina and not Virginia was the Piedmont Monadnock Forest (Van Alstine 1999, 2001). Therefore, it can be assumed that the communities described below exist throughout the project lands, with the exception of the one forest type found only on the North Carolina side of the reservoir. Surveys of the vegetative communities within the project boundary have been focused on the natural communities they comprise. These communities are generally described on Table 5.

## 2.12 Fish and Wildlife Resources

Promoting and conserving fish and wildlife resources within project lands is one of the missions of USACE at Kerr Reservoir. These resources are influenced by regional and site specific conditions, including climate, water supply and quality, as well as appropriate habitat for breeding, nesting, and feeding. The condition of fish and wildlife resources is a determining factor in current and future management of Kerr Reservoir. Management of wildlife resources is focused on the conservation of native species and enhancement of game and non-game species to support recreational hunting and non-consumptive uses, respectively. VDGIF and NCWRC support these activities by managing the fisheries and wildlife within the project boundary.

The wildlife species found in and around Kerr Reservoir are common to this region and have existed there prior to the reservoir. Special status species are discussed below in Section 2.13. Game species found on project lands include white-tail deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), gray squirrel (*Sciurus carolinensis*), cottontail rabbit (*Lepus sylvaticus*), fox (*Canidae* spp.), and raccoon (*Prycon lotor*). Resident waterfowl species include wood duck (*Aix sponsa*), black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), and Canada geese (*Branta canadensis*). The reservoir also provides habitat for many game fish species. Kerr Reservoir is widely known for large-mouth bass (*Micropterus salmoides*), striped bass (*Morone saxatilis*), crappie (*Pomoxis annularis*), and catfish fishing (USACE 2009a). While many of these species inhabited the region prior to the construction of the reservoir, the introduction of these protected, federal lands greatly enhanced these populations.

Since the publication of the 1980 Master Plan, species like the white-tailed deer and the wild turkey have seen notable increases in their populations. Part of the success of these species on project lands has been the result of regional development. The loss of other habitats has made the lands available at Kerr Reservoir even more valuable to these species. Development also has created conditions that allow these species to outcompete other species. As regional development continues, the role of Kerr Reservoir in the regional wildlife habitat will continue to grow.

While the population increases of some species can be attributed to changing regional conditions and the role the undeveloped lands around the reservoir play in these species' life cycle, their success also is due to the work of USACE and its partners to enhance and

maintain conditions within the WMAs that contribute to healthy population dynamics. Many disciplines are involved in achieving this objective including land management, forestry, and wildlife biology. Some of the techniques involved include establishment of permanent forest openings, planting of wildlife food plots, restoration of native grasses, periodic mowing or burning of old fields, thinning of pines and hardwood stands, erection of artificial nesting structures, and placement of artificial fishing reefs in the reservoir (USACE 2009a). The improved wildlife habitat and populations provide for significant wildlife watching and hunting opportunities at Kerr Reservoir. Most of these opportunities are provided at the project's WMAs but can occur throughout the project lands.



<b>Table 5: Kerr Reservoir Natural Communities</b>		
<b>Forest Type</b>	<b>Location</b>	<b>Common Species</b>
Aquatic Habitats	Floating or submerged plants in small flowing streams, ponded water, or within the reservoir	curly pondweed ( <i>Potamogeton crispus</i> ) winter quillwort ( <i>Isoetes hyemalis</i> )
Basic Mesic Forest	Select rock formations	southern sugar maple ( <i>Acer barbatum</i> ) American beech ( <i>Fagus grandifolia</i> ) northern red oak ( <i>Quercus rubra</i> ) eastern green violet ( <i>Hybanthus concolor</i> ) Dutchman's breeches ( <i>Dicentra cucullaria</i> )
Basic Oak-Hickory Forest	Soils with high levels of magnesium and iron	southern sugar maple ( <i>Acer barbatum</i> ) eastern hop-hornbeam ( <i>Ostrya virginiana</i> ) redbud ( <i>Cercis canadensis</i> ) northern red oak ( <i>Quercus rubra</i> )
Coastal Plain/Piedmont Acidic Seepage Swamp	Soils saturated by continuous groundwater seepage	skunk cabbage ( <i>Symplocarpus foetidus</i> ) possumhaw ( <i>Viburnum nudum</i> ) cinnamon fern ( <i>Osmunda cinnamomea</i> ) southern red oak ( <i>Quercus falcata</i> ) northern white oak ( <i>Quercus alba</i> ) American beech ( <i>Fagus grandifolia</i> )
Fields	Within WMAs and scattered throughout project lands	baked panic grass ( <i>Panicum anceps</i> ) tall redtop ( <i>Tridens flavus</i> ) tall rye grass ( <i>Lolium arundinaceum</i> )

**Table 5: Kerr Reservoir Natural Communities**

Forest Type	Location	Common Species
Mixed Oak/Heath Forest	Dry slopes and ridges	red maple ( <i>Acer rubrum</i> ) striped prince's-pine ( <i>Chimaphila maculata</i> ) black tupelo ( <i>Nyssa sylvatica</i> ) northern white oak ( <i>Quercus alba</i> ) southern red oak ( <i>Quercus jalcata</i> ) chestnut oak ( <i>Quercus prinus</i> ) black oak ( <i>Quercus velutina</i> ) early lowbush blueberry ( <i>Vaccinium pallidum</i> ) deerberry ( <i>Vaccinium stamineum</i> ) muscadine ( <i>Vitis rotundifolia</i> )
Other Disturbed, Open Habitats	Roadsides, railroad track embankments, park areas, lawns, and power line right-of-ways throughout the project	Japanese stilt grass ( <i>Microstegium vimineum</i> ) Carolina thistle ( <i>Cirsium carolinanum</i> ) tick-trefoils ( <i>Desmodium</i> spp.)
Mesic Mixed Hardwood Forest	Ravines and steep lower to middle slopes with acidic soils	red maple ( <i>Acer rubrum</i> ) slender woodland sedge ( <i>Carex digitalis</i> ) mockernut hickory ( <i>Carya alba</i> ) American beech ( <i>Fagus grandifolia</i> ) American holly ( <i>Ilex opaca</i> var. <i>opaca</i> ) crested iris ( <i>Iris cristata</i> ) tuliptree ( <i>Liriodendron tulipifera</i> ) sourwood ( <i>Oxydendrum arboreum</i> ) Christmas fern ( <i>Polystichum acrostichoides</i> ) northern white oak ( <i>Quercus alba</i> ) northern red oak ( <i>Quercus rubra</i> ) muscadine ( <i>Vitis rotundifolia</i> )

<b>Table 5: Kerr Reservoir Natural Communities</b>		
<b>Forest Type</b>	<b>Location</b>	<b>Common Species</b>
Piedmont/Coastal Plain Oak-Beech/Heath Forest	Steep, rocky slopes and bluffs with extremely acidic soils	red maple ( <i>Acer rubrum</i> ) shaved sedge ( <i>Carex tonsa</i> ) trailing-arbutus ( <i>Epigaea repens</i> ) American beech ( <i>Fagus grandifolia</i> ) mountain-laurel ( <i>Kalmia latifolia</i> ) black tupelo ( <i>Nyssa sylvatica</i> ) northern white oak ( <i>Quercus alba</i> ) chestnut oak ( <i>Quercus prinus</i> ) black oak ( <i>Quercus velutina</i> )
Piedmont Hardpan Forest	Rocks and clay rich soils with some examples of communities in wetland transitional areas (Gibson Creek)	post oak ( <i>Quercus falcata</i> ) hickories ( <i>Carya</i> spp.) black-seed spear grass ( <i>Piptochaetium avenaceum</i> ) eastern red cedar ( <i>Juniperus virginiana</i> )
Piedmont Monadnock Forest	Monadnocks, high ridges, or other rocky surfaces	chestnut oak ( <i>Quercus prinus</i> ) sourwood ( <i>Oxydendrum arboretum</i> ) black tupelo ( <i>Nyssa sylvatica</i> )
Piedmont/Mountain Bottomland Forest	Relatively well-drained, temporarily flooded levees and bottomland terraces	boxelder ( <i>Acer negundo</i> ) sweetgum ( <i>Liquidambar</i> spp.) common hackberry ( <i>Celtis occidentalis</i> ) American elm ( <i>Ulmus Americana</i> ) willow oak ( <i>Quercus phellos</i> )

<b>Table 5: Kerr Reservoir Natural Communities</b>		
<b>Forest Type</b>	<b>Location</b>	<b>Common Species</b>
Piedmont/Mountain Semipermanent Impoundment	Altered wetlands, ponds, and swamp forests	broad-leaf cat-tail ( <i>Typha latifolia</i> ) crimson-eyed rose mallow ( <i>Hibiscus mosheutos</i> ) green arrow-arum ( <i>Peltandra virginica</i> )
Piedmont Mountain Swamp Forest	Seasonally flooded back swamps and old oxbows channels, in clay-rich alluvial soils.	small beggarticks ( <i>Bidens discoidea</i> ) small-spike false nettle ( <i>Boehmeria cylindrica</i> ) blunt broom sedge ( <i>Carex tribuloides</i> ) cat-tail sedge ( <i>Carex typhina</i> ) green ash ( <i>Fraxinus pennsylvanica</i> ) ditch-stonecrop ( <i>Penthorum sedoides</i> ) Canadian clearweed ( <i>Pilea pumila</i> ) overcup oak ( <i>Quercus lyrata</i> ) pin oak ( <i>Quercus palustris</i> ) willow oak ( <i>Quercus phellos</i> ) lizard's-tail ( <i>Saururus cernuus</i> )
Pine Monocultures	Pine plantations in floodplain and upland sites, early successional stands	loblolly pine ( <i>Pinus taeda</i> ) sweetgum ( <i>Liquidambar styraciflua</i> ) tuliptree ( <i>Liriodendron tulipifera</i> ) black tupelo ( <i>Nyssa sylvatica</i> )
Rock Outcrops	Outcrops of different rocks scattered throughout the project	autumn goldenrod ( <i>Solidago sphacelata</i> ) red columbine ( <i>Aquilegia canadensis</i> ) smooth forked nailwort ( <i>Paronychia canadensis</i> )
Sand/Gravel/Mud Bar and Shore	Natural river banks and bars, as well as altered habitats around the reservoir	white-edge flat sedge ( <i>Cyperus flavicomus</i> ) red-root flat sedge ( <i>Cyperus erythrorhizos</i> ) teal love grass ( <i>Eragrostis hypnoides</i> )

**Table 5: Kerr Reservoir Natural Communities**

<b>Forest Type</b>	<b>Location</b>	<b>Common Species</b>
Upland Depression Swamp	Shallow, seasonally flooded depressions in flat upland terrain	green-wpited sedge ( <i>Carex albolutescens</i> ) sweet-gum ( <i>Liquidambar styraciflua</i> ) overcup oak ( <i>Quercus lyrata</i> ) willow oak ( <i>Quercus phellos</i> ), horsebrier ( <i>Smilax rotundifolia</i> ).

Source: Van Alstine 2001

## 2.13 Rare and Endangered Species and Communities

A special component of USACE's fish and wildlife mission at Kerr Reservoir is the protection of rare and endangered species and communities. In some locations, the quality and quantity of these species has led Virginia and/or North Carolina to designate specific sites as conservation sites. These areas require more active management than other portions of the project lands to sustain the species and conditions that make them so unique. These techniques are prescribed in the *Fish and Wildlife Management Plan* (USACE 1974) and more recent reports (Van Alstine 1999). Table 6 lists the federally-listed species known to occur in or around the project lands.

In June 1999, VDCR and the North Carolina Natural Heritage Program (NCNHP) prepared a comprehensive biological inventory of the rare, threatened, and endangered species and significant natural communities on the project lands. The inventory was conducted to enable USACE to meet the requirements of the Endangered Species Act, practice sound natural resource management, and plan for future development while protecting valuable resources on project lands. A total of 51 occurrences of 18 community types considered to be significant were documented by VDCR and NCNHP at Kerr Reservoir during the inventory. A total of 43 plant element and 14 animal element occurrences were documented during the inventory. At the time of the survey, only one federally-listed species was identified (bald eagle) at one site on project lands. Since that time, the bald eagle has been delisted from the Endangered Species Act but is still afforded federal protection under the Bald Eagle Act and is listed as a state-threatened species in North Carolina and Virginia. Currently, there are 11 active bald eagle nests within the project boundary (William and Mary 2011). Three North Carolina plant species, each found at one site, have state legal status and include shale-barren skullcap (*Scutellaria leonardii*), small rabbit tobacco (*Gnaphalium helleri* var. *micradenium*), and ginseng (*Panax quinquefolius*). Finally, the survey identified a total of 29 sites determined to be conservation-worthy natural areas.

A number of these natural areas are influenced or enhanced by their location within the floodplain. The 100-year floodplain elevation within the project boundary is at 321 feet msl (USACE 2006b). It should be noted that this elevation is the result of the project and water control, not a natural condition. Areas beneath this elevation contain soils and vegetation that thrive on the wet conditions that exist in the floodplain.

Wetlands also occur in many of the Kerr Reservoir natural areas and provide unique habitats for many species. Wetlands are lands that are wet at least part of the year due to either saturated soils or standing water. Wetlands include a variety of natural systems, such as marshes, swamps, bottomland hardwoods, and wet flats. While each wetland type looks and functions differently, all wetlands share certain properties, including characteristic wetland vegetation, hydric soils and hydrologic features. Wetlands usually are covered by plants, ranging from marsh grasses to trees. All wetland plants must tolerate living in saturated soil without oxygen during parts of the growing season (NCDENR 2010).

**Table 6: Federally-listed Species Known to Occur in the Kerr Reservoir Region**

Common Name	Scientific Name	Description	Habitat Requirements
Smooth coneflower	<i>Echinacea laevigata</i>	A perennial herb with smooth stems, few leaves, and pink to purplish flowers	Occurs primarily in openings in woods, such as cedar barrens and clear cuts, along roadsides and utility line rights-of-way, and on dry limestone bluffs. It usually is found in areas with magnesium- and calcium-rich soils and requires full or partial sun exposure.
Roanoke logperch	<i>Percina rex</i>	A small freshwater fish between 80 and 115 mm in size	Inhabits low and moderate-gradient streams and rivers in warm, clear water in mostly unsilted gravel and rubble in runs, pools, and riffles.
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	A small freshwater bivalve mollusk	Inhabits creek and river areas with a slow to moderate current and a sand, gravel, or muddy bottom.
Harperella	<i>Ptilimnium nodosum</i>	An annual plant with hollow, quill-like leaves and white flowers.	Occurs primarily on rocky or gravelly shoals of clear, swift-flowing streams. In the coastal plain, it grows at edges of pineland ponds, damp meadows, and soggy ground around springs. It can tolerate heavy shade.
Tar River spinymussel	<i>Elliptio steinstansana</i>	A medium-sized freshwater bivalve mollusk	Inhabits relatively silt-free uncompacted gravel and/or coarse sand in fast-flowing, well oxygenated stream reaches.

Source: NCNHP 2010, USFWS 2012, VDGIF 2010, VDCR 2012b.

Wetlands provide essential habitat for a diverse range of species (fish, wildlife and plants). For example, in North Carolina, approximately 70 percent of the species listed as endangered, threatened, or of special concern utilize wetlands for survival. Many common species of waterfowl, fish, birds, mammals, and amphibians also live in wetlands during certain stages of their lives. Bottomland hardwood wetlands provide abundant food, nesting sites, resting areas and escape cover for many wildlife species. Many fish species use spring-flooded bottomlands as spawning and feeding locations. Large wetlands are a refuge for wilderness animals, such as black bear and bobcat (NCDENR 2010).

## **2.14 Visual Quality**

Kerr Reservoir is located within the Roanoke River Basin in the southern part of Virginia and in the northern part of North Carolina. Topography of this region is characteristic of the northern Piedmont region, with gently rolling hills occasionally dissected by deep drainages and ridges. The reservoir extends 39 miles up the Roanoke River, along 800 miles of forested, cove-studded shoreline. The great size of the reservoir provides a number of different visual settings; however, in general the most common views consist of open expanses of water and the surrounding forested shorelines. Shoreline lands are covered in various mixed canopies comprised of upland hardwood (e.g., oak and hickory) and mixed and sometimes managed timber-pine forest tracts.

Views of the open water dominate from areas 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 is of a more riverine character influenced by the confluence of the Roanoke and Dan Rivers and generally narrow channels and coves. Due to the forested nature of the entire area, sweeping views of the reservoir are limited to elevated locations, such as those found in the Bluestone WMA. For boaters, or visitors utilizing the lake shoreline, lush vegetation and steep topography generally limit the views to the water and the forested hills beyond.

Forested areas within the project are managed for forest health, wildlife, and recreation and provide opportunities to observe songbirds, deer, raccoons, foxes, and waterfowl. The miles of forested shoreline offer a perfect setting for various kinds of outdoor recreation activities, as well. Human development and the intrusions imposed on the visual resources are tempered by the heavily forested shoreline; however, private development and structures are visible throughout the project area. The majority of human built structures in the visual environment are recreation related, including facilities and amenities at the state parks, public and private boating facilities, campgrounds, beaches, picnic areas and semi-public camps. The vegetation between the reservoir's edge and the federal boundary provides a buffer obstructing most views of private residences and upland road networks. There are some areas where the residential and human built environment is clearly visible. Apart from the towns, these are generally limited to areas where USACE has flowage easement rights and little shoreline vegetation has been maintained by private owners to obstruct the sightlines. Infrastructure visible from the waters and lands include the dam, bridges, roadways, and transmission lines; however these represent a small fraction of the overall scenery from project lands. Since the publication of the 1980 Master Plan, the level of development around the reservoir has increased dramatically, altering some of the natural views and creating more developed vistas across the landscape.

## **2.15 Mineral and Timber Resources**

North Carolina and Virginia are important sources of many minerals, such as feldspar, mica, and lithium, which are found in vein deposits scattered throughout the Piedmont region. Several rock types found in the region are quarried for building stone. Dimensional stone, concrete aggregate and road base are representative uses for these



materials. These veins, composed almost exclusively of quartz, are common in all of the rock types beneath Kerr Reservoir. Mineral extraction activities have not been allowed on project lands. The closest mining operation was at Tungsten, North Carolina, where vein deposits of tungsten-bearing minerals were extracted until the early 1970s. Quarry activities around the reservoir also were abandoned in the 1970s (USACE 1980). Future sand and gravel extraction could occur within the project.

Timber resources within project lands are discussed under Section 2.11. Timber harvest activities are only conducted when necessary to achieve management objectives, such as forest health, fire hazard reduction, wildlife disease management, or wildlife habitat enhancement. The management of timber resources will continue to be directed by the Kerr Reservoir OMP.

## **2.16 Paleontology**

Kerr Reservoir is located within the Piedmont Physiographic Province. According to the Geologic Map of Virginia (Bailey 1999) and the Geologic Map of the State of North Carolina (NCGS 1998), most of the reservoir is underlain by crystalline meta-sedimentary and meta-volcanic rocks that comprise a group of rocks known as the Carolina Slate Belt. The westernmost part of the reservoir is underlain principally by granitic gneiss of the Central Virginia Volcanic Plutonic Belt. There are no known paleontological resources in these two crystalline rock groups. Located along the north-south junction of these two bedrock belts are small discontinuous zones of the Triassic age Newark Group sedimentary rocks. Although paleontological resources, including thin coal seams, have been identified elsewhere in the Newark Group rocks, there are no known unique paleontological resources in the Newark Group rocks that occur beneath Kerr Reservoir.

## **2.17 Cultural Resources**

The Kerr Reservoir project lands are rich in cultural resources. Past surveys have recorded both historic and prehistoric sites which document the entire span of human occupation of the area. At the time of European contact, the Occaneechee Indians lived throughout the area. Prehistoric period cultural resources range from palisaded settlements to temporary base camps and include sites from the Paleoindian through Woodland periods. Historic period cultural resources include the Buffalo Springs National Historic Site, and Revolutionary War and Civil War connections. Additionally, the area is home to many Antebellum plantations, including Glennmary (DHR # 041-0104), Prestwold (DHR # 058-0045), Long Grass (DHR # 058-0185), and Wimmbush and LaGrange (31VN303) in North Carolina, which are listed in the National Register of Historic Places (National Register). Several historic districts, including Clarksville (DHR # 192-0121) and South Boston (DHR # 130-0006), are in the vicinity of the reservoir and are listed in the National Register.

As part of the master planning process, background research at the State Historic Preservation Offices (SHPO) of North Carolina and Virginia identified a total of 818 previously recorded archaeological sites (206 in North Carolina and 612 in Virginia)

within the Kerr Reservoir boundary. A total of 35 of these archaeological sites have been determined to be potentially eligible, eligible, or on the Virginia Landmarks Register. Three sites (44HA0022, 44MC0329, and 44MC0515) are listed in the National Register. The Reedy Creek Site (Site 44HA0022) contained a palisaded settlement with burials from the Late Archaic through Late Woodland periods. Another important site is the Buffalo Springs Historical Archaeological District (Site 44MC0329) from the nineteenth and early twentieth century. There also is an historic tobacco farmstead (Site 44MC0515) from the late nineteenth and early twentieth century.

For the 1980 Master Plan, a survey was conducted that included a visual inspection of approximately 6,000 acres of existing and proposed recreation lands and approximately 220 miles of shoreline. Six sites met the requirements and were nominated to the National Register. The survey report states that the majority of the archaeological sites have been destroyed by one or more of the following activities:

- Soil erosion from the initial logging and farming activities in the early historic period;
- Erosion of the shoreline of the reservoir;
- Construction and use of the recreation areas; and,
- The constant artifact collection of amateur collectors.

The 1980 Master Plan included a site probability model based on the field survey results. The major criteria utilized in the model were slope, aspect, proximity of pre-dam water and stream confluences, historic road networks, and other sites in the respective area. The maps from this model illustrate areas of high, medium, and low site probability density and archeologically sensitive areas within recreation areas and are only valid on 12 percent (6,000 acres) of the project lands. With information from recent research, this model is still valid for evaluating the cultural significance of project lands. This model is the best tool for managing USACE managed lands, as Kerr Reservoir does not have a finalized Historic Properties Management Plan.

## **2.18 Interpretation**

At Kerr Reservoir, USACE and its partners have developed a number of interpretive facilities and programs. The facilities offer varying opportunities in both static and hands-on displays for public education: natural resources in and around the reservoir, historic places and events, personal safety, and environmental education. The Kerr Reservoir interpretive programs also provide land based recreation opportunities. Interpretive services, developed for all visitors, including campers and day-users, provide a unique learning experience about all aspects of the Kerr Reservoir.

Dedicated facilities and programs include:

Visitor Assistance Center – The center contains a number of exhibits designed for self-guided tours and visual aids for oral interpreter presentations. The complete project story is told through the use of models, video, posters, and natural displays.

Powerhouse – The John H. Kerr Powerhouse is a large hydroelectric power plant with seven turbines. Power production is one of the authorized purposes of the project.

Amphitheater – The Eric W. Rodgers outdoor amphitheater is located in North Bend Park and can accommodate 800 people. The theater has a rear screen projection system and concrete slab stage. This facility is used for music concerts, church services, and is available to the public on a rental basis for events such as weddings and group outings.

Liberty Hill Nature Trail – The Liberty Hill Nature Trail is a ¾-mile long self-guided nature trail with 13 stops. Each stop has a sign which interprets a particular feature within view of the visitor. Many of the stops relate to the historical significance of the river and the importance of the dam.

Robert Munford Trail - The 7-mile trail is named for an important resident of early Mecklenburg County and the trail passes his gravesite. Evidence of pre-dam era life including a cemetery, foundations, ice storage structures, rock and rubble walls are visible along the route.

Public Health and Safety Programs – Public health and safety programs at Kerr Reservoir include a long list of materials such as brochures, posters and other messaging outlets designed to increase the public’s awareness of their personal health and safety while using the project. Topic areas include water safety and general outdoor safety.

Joseph S. J. Tanner Environmental Education Center (Tanner Environmental Education Center) – The Tanner Environmental Education Center is the hub for natural resource interpretation programs throughout the project. Objectives for interpreting natural resources at Kerr Reservoir focus around the significance and value of these resources and the personal benefits gained by managing and protecting natural resources. Special emphasis is placed on species identification, habitat, and the rareness of special resources.

Historical and Cultural Resources Interpretation Programs – Many historical and pre-historical sites exist on or near the project and offer excellent interpretive themes. Artifacts related to these sites can be viewed in the Visitor Assistance Center exhibits.

Management Objectives Interpretation Programs – Interpretation at Kerr Reservoir is designed to educate the public in a manner that enhances the USACE missions as well as management of the project. The Corps’ “Environmental Operating Principles” are demonstrated in environmental education programs that focus on developing and enhancing stewardship values in visitors, in order to achieve present and future conservation of public lands.

## **2.19 Demographics**

The regions of demographic and socioeconomic significance, considered here as the general market area in which the reservoir is situated, are divided into two geographic tiers: the six counties directly adjacent to the shoreline of Kerr Reservoir (Primary Area) and the 42 counties (and independent Virginia cities) within a 75 mile radius of the reservoir (Secondary Area). Together this area is considered the Market Area and is shown in Appendix H, Figure 7. The jurisdictions that are included in these areas are listed below.

- a. The Primary Area consists of 3 counties in Virginia: Mecklenburg, Charlotte and Halifax, and 3 counties in North Carolina: Warren, Vance, and Granville.
- b. The Secondary Area consists of 17 counties in Virginia including Amelia, Appomattox, Brunswick, Buckingham, Campbell, Chesterfield, Cumberland, Dinwiddie, Greenville, Lunenburg, Nottoway, Pittsylvania, Powhatan, Prince Edward, Prince George, Southampton, Sussex and five independent cities including Colonial Heights, Danville, Emporia, Lynchburg, and Petersburg. The 16 North Carolina counties included in the secondary area are: Alamance, Caswell, Chatham, Durham, Edgecombe, Franklin, Guilford, Halifax, Johnston, Nash, Northampton, Orange, Person, Rockingham, Wake, and Wilson.

Overall, population growth within the combined Primary/Secondary market area is projected to experience a faster rate of growth than either North Carolina or Virginia. This, however, is not true of the Primary Area, where growth rates in each county are projected to be zero, negative, or below two percent from 2010 to 2030, except for Granville County, North Carolina. With these low and negative growth rates, populations in the rural counties abutting the reservoir are projected to remain low; however, populations in counties in North Carolina near and within the Raleigh-Durham-Cary Combined Statistical Area (CSA)<sup>3</sup> are projected to increase dramatically, particularly between 2010 and 2030. Similarly, populations of Virginia secondary market area

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<sup>3</sup> The Raleigh-Durham-Cary CSA includes Chatham, Durham, Franklin, Harnett, Johnston, Orange, Person, and Wake counties

counties near the Richmond metropolitan area; such as Chesterfield and Powhatan Counties, also are projected to experience rapid growth into 2020. Table 7 summarizes recent historical and projected populations for Primary Area Counties and the states in general.

Appendix H, Figure 8 shows the projected changes in growth rates for the areas of interest. Because the project is located between two major metropolitan areas, it can be expected that visitors to the project would travel from these areas; however, including them in the discussion on demographics skews the overall characteristics of the majority of people more directly influenced by the project (e.g., business owners, services and more frequent visitors). Between 2010 and 2030, the Secondary Area is projected to increase by almost 40 percent while, by contrast the Primary Area population growth is projected to grow only 6 percent. This discrepancy between Primary Area, Secondary Area, and states' projected growth rates is primarily due to very high population growth rates in counties near and within the Raleigh-Durham-Cary CSA in North Carolina, and the Richmond, Virginia metropolitan area.

The six counties within the Primary Area are predominantly rural, with rural population percentages of 72.1 percent. This percentage is well above the Virginia and North Carolina rural population percentage of 27.0 percent and 39.8 percent, respectively. Both Charlotte County in Virginia and Warren County in North Carolina are considered to be entirely rural. As seen in Table 8, the percentage of residents living in urban areas both within the market area and in the states of North Carolina and Virginia has increased from 1990 to 2000. Despite this increase in the percentage of urban residents, the overall percentage of urban population within the rural counties of the primary market area will likely continue to be much smaller than the percent rural population, due to the lack of large urban developments in the primary area.

In contrast to the rural nature of much of the Primary Area, Wake and Durham counties in North Carolina are densely populated and home to the cities of Raleigh, Durham, and Cary, which are respectively the second, fifth and seventh largest cities in the state. From 1990 to 1998, the Raleigh-Durham-Cary CSA population increased 43.4 percent, while North Carolina's population increased 28.1 percent. This metropolitan area encompasses one of the fastest growing populations in the United States. Satellite cities and suburbs associated with the Raleigh-Durham-Cary CSA include Chapel Hill, Garner, Wake Forest, Apex, Holly Springs, Fuquay-Varina, and Knightdale. This area is the most populated area within the market area and less than a 2 hour drive to southern access points on Kerr Reservoir.

**Table 7: Historic and Projected Populations for North Carolina, Virginia, and Primary Area Counties**

Location	1990	2000	2010	2020	2030	Change from 2010 to 2030 (%)
Granville, NC	38,345	48,837	57,259	63,644	69,392	21.2
Vance, NC	38,892	43,199	43,573	43,919	44,232	1.5
Warren, NC	17,265	19,992	19,881	19,765	19,715	-0.8
Charlotte, VA	11,688	12,472	12,233	12,170	12,170	-0.5
Halifax, VA	29,033	37,355	34,906	33,836	33,821	-3.1
Mecklenburg, VA	29,241	32,380	32,369	32,511	32,755	1.2
Primary Area	164,464	194,155	200,221	205,845	212,085	5.9
Secondary Area	4,743,917	5,838,993	7,058,131	8,516,365	9,852,425	39.6
North Carolina	6,632,448	8,046,813	9,571,403	11,263,964	12,753,597	33.2
Virginia	6,187,358	7,078,515	8,010,239	8,917,396	9,825,019	22.7

Source: Virginia Department of Labor and Industry 2010, North Carolina Office of State Budget and Management 2010, Census 2010

**Table 8: Proportion of Urban and Rural Populations in 1990 and 2000 in the Kerr Reservoir Market Area, North Carolina, and Virginia (%)**

	1990		2000	
	Urban	Rural	Urban	Rural
Primary Area	19.7	80.3	27.9	72.1
Secondary Area	58.7	41.3	66.4	33.6
North Carolina	50.4	49.6	60.2	39.8
Virginia	69.4	30.6	73.0	27.0

Source: Census 2010

In addition to the communities of the Richmond-Petersburg metropolitan area, other cities within the Virginia portion of the Secondary Area include Lynchburg, Danville, Colonial Heights, and Emporia; all much smaller by comparison. As seen in Table 9, many cities within the Primary Market Area experienced negative or minimal growth from 2000 to 2008, while cities near or within the Raleigh-Durham-Cary CSA experienced rapid growth, of up to 124.4 percent, like Holly Springs.

The populations of North Carolina and Virginia are primarily white, representing 70 percent of the population in North Carolina and 72.4 percent of the population in Virginia (Census 2010). The largest minority racial group is black, comprising 25.3 percent of the population in North Carolina and 20.5 percent of the population in Virginia. Hispanics were the third largest minority group, comprising 6.5 percent of the population in both states. American Indians made up 1.2 percent of North Carolina's population and 0.8 percent of Virginia's population.

The population of the Primary Area is primarily white. Of the approximately 200,000 people living in the Primary Area, about 57.2 percent were white and 40.5 percent were black. The Primary Area contains a higher percentage of minorities than the state averages. Other races made up the remaining 2 percent. The Secondary Area had a slightly lower percentage of minorities, consisting of approximately 64 percent white, 32 percent black, and 5 percent Hispanic, with a small percentage of other races including Asian and American Indian.

The median age of residents in the Primary Area is about 37.0 years, which is slightly higher than state and national averages of about 35.5. Median age has increased in the Market Area since 1990, compared to state averages. Median age in the Raleigh-Durham-Cary CSA is lower than in the rest of the market area, which is likely due to high numbers of college age students residing and attending the dozen or so universities and colleges in the area. Table 10 shows the median age within the market area and states.

Education levels in the Primary Area are generally lower than those of both the Secondary Area and state averages. The Primary Area had a high school graduation rate of only 64.4 percent, well below the state and national averages of about 80 percent. The percentage of college graduates in the Primary Area, at 11.3 percent, was nearly half that of the state and national averages of about 24 percent. Education levels in the Secondary Area were at, or slightly above, state and national levels (Table 11).

**Table 9: Population Growth in Cities in the Kerr Reservoir Market Area from 2000 to 2008**

Municipality	Year		Growth	
	2000	2008	Amount	%
Apex	20,212	31,250	11,038	54.6
Butner	5,672	6,344	672	11.8
Cary	94,536	141,167	46,631	49.3
Clarksville	1,329	1,258	-71	-5.3
Colonial Heights	16,897	17,768	871	4.9
Danville	48,411	44,660	-3,751	-8.4
Durham	187,035	228,480	41,445	22.2
Emporia City	5,665	5,643	-22	-0.4
Fuquay-Varina	7,898	16,054	8,156	103.3
Garner	17,787	26,109	8,322	46.8
Henderson *	16,095	16,273	178	1.1
Holly Springs	9,192	20,631	11,439	124.4
Knightdale	5,958	10,967	5,009	84.1
Lynchburg	65,279	72,596	10,017	15.3
Nashville	4,417	4,841	424	9.6
Norlina *	1,107	1,082	-25	-2.3
Oxford	8,338	8,641	303	3.3
Raleigh	276,094	377,353	101,259	36.7
Rocky Mount	55,977	59,228	3,251	5.8
South Boston	8,491	7,884	-607	-7.1
South Hill	4,403	4,556	153	3.4
Wake Forest	12,588	27,496	14,908	118.4
Wendell	4,247	5,796	1,549	36.5

\*= cities within the primary area of influence

Source: Census 2010



**Table 10: Median Age for the Primary and Secondary Areas, North Carolina, Virginia, and the United States**

<b>Area</b>	<b>Median Age (2000)</b>
Primary Area	37.0
Secondary Counties	37.1
North Carolina	35.3
Virginia	35.7
United States	35.5

Source: Census 2010

**Table 11: Educational Attainment of Persons at Least 25 Years Old in the Primary and Secondary Areas, North Carolina, Virginia, and the United States**

<b>Area</b>	<b>High School Graduates (%)</b>	<b>Bachelor's Degree (%)</b>
Primary Area	64.4	11.3
Secondary Area	79.8	27.8
North Carolina	78.1	22.5
Virginia	81.5	29.5
United States	80.4	24.4

Source: Census 2010

## 2.20 Economic Characteristics

Table 12 shows the percentage of workers employed by industry in the Primary and Secondary Areas, and for comparison in North Carolina, Virginia, and the United States. Within the zone, the industries that employed the most people were manufacturing, educational, health and social services, and construction. Manufacturing employed the most people in the Primary Area, employing 25.5 percent of the workforce, compared to 14 percent nationwide. Likewise, natural resource-based industries (agriculture, forestry, fishing and hunting, and mining) employ more people within the Primary Area than the greater zone of influence, states and national averages.

**Table 12: Percent Employment by Industry**

Industry	Primary Area	Secondary Area	North Carolina	Virginia	United States
Agriculture, forestry, hunting, mining	3.0	1.3	1.6	1.3	1.9
Construction	8.1	7.7	8.2	7.3	6.8
Manufacturing	25.5	18.6	19.7	11.3	14.1
Wholesale trade	2.7	3.3	3.4	2.7	3.6
Retail trade	11.9	11.3	11.5	11.4	11.7
Transportation and utilities	4.3	4.5	4.6	4.6	5.2
Information	1.7	2.4	2.3	3.8	3.1
Finance, insurance and real estate	3.5	6.1	6.0	6.6	6.9
Professional, scientific, management, administrative, and waste management	4.6	7.8	7.7	11.6	9.3
Educational, health and social services	20.0	21.0	19.2	18.3	19.9
Arts, entertainment, recreation, accommodation and food services	4.7	6.5	6.9	7.2	7.9
Other services	4.3	4.6	4.6	5.4	4.9
Public administration	5.7	4.9	4.1	8.3	4.8

Source: Virginia Department of Labor and Industry 2010, North Carolina Office of State Budget and Management 2010, Census 2010.

In January 2010, the national unemployment rate was 9.7 percent, (6.9 percent in Virginia and 11.1 percent in North Carolina). The average unemployment rate in 2010 in the Primary Area was 11.4 percent, higher than both state and national averages. This is partly due to the loss of manufacturing jobs in the area. For example, in Danville, Virginia, the closure of a major textile manufacturing plant played a significant role in increasing the unemployment rate to 14.9 percent. As seen in Table 12 above, the manufacturing sector employed the greatest percentage of people within the market area in 2000. Table 13 shows how the current employment conditions compare with 10 years ago.

**Table 13: 2010 Unemployment Rates in the Primary and Secondary Areas, North Carolina, Virginia, and the United States**

Area	Unemployment Rate (2000) (%)	Unemployment Rate January 2010 (%)
Primary	3.8	11.4
Secondary	3.0	10.3
North Carolina	3.4	11.1
Virginia	2.7	6.9
United States	3.7	9.7

Source: Census 2010

The median household income in the Primary Area was just 77 percent of the national average, and 69 percent of Virginia average, in 2000 (Table 14). The lower income levels may be partly due to a high percentage of low wage jobs and the low percentage of high school and college graduates in the area. The Secondary Area's median household income was also below state and national averages. Unemployment has also increased dramatically from 3.8 percent in 2000 to over 10.3 percent in 2010, in the Primary Area and from 3.0 percent to 10.3 percent in the Secondary Area, further contributing to reduced incomes. The recent rise in unemployment may lead to a temporary reduction in discretionary spending, including money spent on recreational activities.

**Table 14: Income data for the Primary and Secondary Areas, North Carolina, Virginia, and the United States**

<b>Area</b>	<b>Median Household Income 2000</b>	<b>Per Capita Income 2009</b>	<b>Median Household Income 2010</b>
Primary	\$32,517	\$19,042	\$35,860
Secondary	\$36,721	\$21,992	\$42,825
North Carolina	\$39,184	\$24,547	\$43,754
Virginia	\$46,677	\$31,606	\$59,372
United States	\$41,994	\$27,041	\$50,221

Source: Census 2010

USACE provides water-based recreation opportunities throughout the country which in turn provide economic benefits to the local and regional communities. To estimate the economic impact from the recreation related spending at these projects, USACE, in collaboration with researchers at Michigan State, developed the Recreation Economic Assessment System (REAS). The REAS is an economic input-output model that was developed for all USACE projects based on recreation visits in 2006 and a set of economic ratios and multipliers for a region. Using available survey data, the REAS estimates that visitor spending at Kerr Reservoir to be an estimated \$42.3 million. Of this spending, 52 percent was captured by the local economy yielding \$22 million in direct sales to tourism related firms. These sales generated \$7.4 million in direct personal income and supported 428 direct jobs. With multiplier effects visitor spending resulted in \$30 million total sales, \$10 million in total personal income and supported 535 jobs (MSU and USACE 2010).

## 2.21 Real Estate

USACE strives to operate the normal (conservation) pool near 300 feet msl during the recreation season. Changes in the pool elevation could affect the developed recreation areas (e.g., usability of boat ramps due to water levels). Nearly 8,000 acres of project land is developed for intense recreation use, with an additional 6,000 acres designated for future intensive use and development. Another 3,000 acres are set aside for low-density use. Table 15 lists the distribution of project lands within the surrounding counties.

**Table 15: Distribution of Project Lands Within Surrounding Counties**

	<b>Fee Land</b>	<b>Easement</b>	<b>Total</b>
<b>Virginia</b>	<b>78,290</b>	<b>9,310</b>	<b>87,600</b>
Charlotte	3,450	3,100	6,550
Halifax	16,670	4,750	21,420
Mecklenburg	58,170	1,460	59,630
<b>North Carolina</b>	<b>27,100</b>	<b>1,280</b>	<b>28,380</b>
Granville	3,270	330	3,600
Vance	22,020	950	22,970
Warren	1,810	N/A	1,810
<b>Project Total</b>	<b>105,390</b>	<b>10,590</b>	<b>115,980</b>

- Notes: 1) Table includes flooded lands  
 2) Acreages are estimates based on GIS data. Acreages presented in this table are not meant to conflict with real estate assessment. Acreages are for planning purposes only and are not meant to be used for real estate purposes.

### 2.21.1 Land Acquisition

A total of 106,944 acres was purchased in fee and 10,529 acres were acquired in flowage easements to develop Kerr Reservoir. The land and easements acquired by USACE are encompassed within an approximate 1,200 mile long boundary line, and forms an 800 mile long lakeshore at the 300 foot msl elevation. Generally, land was acquired at or just above the 320 feet msl elevation east of the Clarksville Bridge and 325 feet msl elevation west of the bridge (USACE 1980). The acquisition of fee lands, however, was accomplished in a number of ways. Fee lands were purchased at a contour elevation in some locations and on a straight line (tangent) in other locations. In addition, five different elevations were used to determine fee acquisition lines. In 1962, 121 properties that had been acquired for the project were deemed to be excess property and were sold. The sale resulted in portions of the project boundary that had been defined by tangent property leases being defined by contour lines (USACE 1992).

### 2.21.2 Flowage Easements

Flowage easements are lands where real estate interest is limited to easement title only. On these lands, USACE management action will be appropriate within the limits of the estate acquired. The flowage easements were acquired subject to “existing easements for public roads and highways, public utilities, railroads, and pipe lines.” Historically, it has been USACE policy to prohibit structures for human habitation on flowage easements. Construction and/or maintenance of non-habitable structures within the flowage easement are subject to prohibition or regulation by USACE Wilmington District Engineer.

### 2.21.3 Encroachments

Residential and agricultural land uses surrounding the project boundary result in the majority of encroachment issues on project lands. Adjacent landowners sometime expand their residential living spaces (e.g., lawns, septic systems, storage buildings, etc.) onto USACE-managed land without appropriate authorization. Similarly, adjacent agricultural fields may encroach due to mechanical plowing and the lack of understanding of the

project boundary. Any activities, other than public recreational activities or pedestrian access, which is not covered by a Shoreline Use Permit/License, may be considered an encroachment or degradation of public property. These unauthorized activities are considered violations of the Rules and Regulations contained in Title 36, Chapter III, Part 327, Code of Federal Regulations. Violations of this nature will result in removal, restitution, and/or issuance of a citation requiring the payment of a fine and/or the appearance before a Federal Magistrate.

The policy of USACE South Atlantic Division, which includes Kerr Reservoir, for resolving encroachments on Civil Works Projects, is to require removal of encroachments, restoration of the premises, and collection of appropriate administrative costs incurred by the government resulting from USACE resolution efforts. The John H. Kerr Reservoir Operational Management Plan details the policy for resolution of encroachments on civil works projects (USACE 1992).

## **2.22 Recreation Facilities**

Recreation resources providing similar opportunities at a similar scale within the Kerr Reservoir region include several state parks: Eno River State Park, William B. Umstead State Park, Medoc Mountain State Park, Smith Mountain Lake State Park, Staunton River State Park, Twin Lakes State Park, and Holiday Lake State Park. Occoneechee State Park (VA), Kerr Reservoir State Recreation Area (NC) and portions of Staunton River State Park (VA) are included in the Kerr Reservoir project boundary and contribute to the recreational facilities and opportunities provided at the project. Several Virginia state forests also are located near the project. In addition, two USACE operated lakes, B. Everett Jordan and Falls Lake, are located near the Raleigh-Durham area of North Carolina and provide additional recreational opportunities to the region. Several other large lakes are located in the region, including Smith Mountain Lake, Hyco Lake, Lake Gaston, and Roanoke Rapids Lake. Other recreational resources within the region include local parks, and state and national historical sites. Appendix H, Figure 9 shows similar recreation locations within the region.

Recreation facilities are located throughout Kerr Reservoir. NCDPR maintains a number of recreation sites along the Nutbush Creek arm of the reservoir and VDCR operates two state parks within the Virginia portion of the reservoir boundary. USACE and several quasi-public lease holders operate additional recreational facilities throughout the project. The specific location and concentration of these facilities is due in part to the soils, topography, and other natural conditions that promote recreational development and use. Accessibility also plays a role in the success of recreational facilities at Kerr Reservoir. A complete listing of the recreational sites and facilities available at Kerr Reservoir is included in Appendix E, Table E-3 with a more thorough review of each site in Chapter 6.

The conditions that are less ideal for recreation areas have proven to be beneficial to the project's WMAs. These sites are less accessible and have a greater variation in slopes, soils, and surface water. These conditions provide the undeveloped experience that visitors to these sites appreciate and include a wider variety of habitat types. The Kerr

Reservoir WMAs are distributed relatively evenly throughout the project, using lands that have not been developed for active recreation. A more thorough review of each WMA is in Chapter 6.

The 1980 Master Plan included a number of designations for lands that were to be developed for future recreational use. Since the publication of the 1980 Master Plan, the majority of these lands have remained undeveloped and serve as WMAs or other natural areas within the project.

## **2.23 Recreation Activities and Needs**

Kerr Reservoir is one of the largest lakes in the southeast United States and provides a wide range of water-oriented recreation opportunities. The lake includes almost 50,000 acres of flat water boating, fishing, water skiing, sailing, kayaking, wind surfing, and other water-based recreation opportunities. Additionally, the lake is host to numerous state and national fishing tournaments. Visitors also come to the lake to enjoy the almost 55,000 acres of public lands surrounding the lake. Land based recreation opportunities include camping, picnicking, fishing, hiking, trail use, hunting, swimming and beach uses. Table 16 summarizes USACE activity mix data for 2009. It should be noted that estimates on participation in these activities presented below are based on a survey completed in the mid-1990s and may not reflect current trends.

### **Fishing**

Fishing is one of the most popular activities at Kerr Reservoir, with an estimated 29 percent of the visits attributed to this activity (USACE 2010). The reservoir contains several Americans with Disabilities Act (ADA) accessible fishing docks to provide universal access to this resource. Recreational fishing at the project has gained enough popularity and notoriety to attract national fishing tournaments. Annually, the lake hosts hundreds of fishing tournaments with anywhere from 12 to 250 boats eligible to compete. Popular sport fish include striped bass, large-mouth bass, small mouth bass, crappie, catfish, and bream. The lake is the only certified lake in Virginia to have a naturally reproducing population of striped bass.

### **Boating/Sailing/Skiing**

Boating is the most popular activity at the project with an estimated 40 percent of the visits attributed to this pursuit (USACE 2010). Boaters not focused on fishing are another popular user group at the lake. Recreational boating either in motorboats, sail boats or canoes and kayaks are frequently observed on the water throughout the year. The wide open expanses of water in front of the dam and throughout the northern Nutbush Creek arm are popular with the sailing community. Steady southwest winds typically blow directly up the Nutbush Creek arm providing a constant breeze to power sailboats. Pleasure motor boating and water skiing are also popular throughout the reservoir where there is open water along with safe conditions to tow users.

To document its most popular visitor activity, USACE participated in *A Study of Boating Recreation on the Nutbush Arm of Kerr Lake* (Vogel and Titre 2000) which characterized boater and user perceptions with 170 interviews, nearly 500 surveys, and four water-

based observations of boat traffic. The study found that the area of Nutbush Creek and Satterwhite Point was a favorite among boat ramp users; while boater's primary concerns were related to the increased boat traffic, crowding, unsafe boat operation, conflicts with boaters, and personal watercraft use. Recreational boaters expressed a preference to relax and swim from a stationary boat away from high traffic areas, heavy wakes, and high winds, thus making coves along the Kerr Reservoir shoreline popular recreational locations. The traffic observations and boat counts determined the peak use period around the Nutbush Arm to be weekend afternoons. The conclusions made in the study suggested that, given these desires, this portion of the reservoir had reached its capacity and no additional boat access points should be developed on Nutbush Creek.

### **Hunting**

Of the 55,000 acres of federal land surrounding the reservoir, hunting is allowed on over 47,620 acres. USACE maintains 26 WMAs around the project and these areas contain a variety of cover types including large and fragmented forest, open fields of varying sizes, and beaver swamps. Popular game includes whitetail deer, wild turkey, bobwhite quail, mourning dove, gray squirrel, cottontail rabbit, fox, and raccoon. Resident waterfowl species include wood duck, black duck, mallard, and Canada geese. Hunting is allowed throughout the area, except in developed recreation areas, restricted areas, or near buildings and operational areas. USACE estimates the number of visits by hunters to project lands is less than 1 percent of the total overall visitation for the project (USACE 2010).

### **Camping**

Camping is a popular land-based activity at Kerr Reservoir for developed site users. Campers can choose from hundreds of camp sites in developed campgrounds managed by USACE, NCDPR, or VDCR. Several of the quasi-public leased sites also include camp sites for their specific user groups. Campgrounds offer a range of facilities with electric and water hook-ups for recreational vehicles, tent camp sites, walk-in campsites, and cabins. Developed campgrounds also provide additional amenities such as playgrounds, swim beaches and bank fishing opportunities. Occoneechee State Park also provides a specialized equestrian campground with paddock, training rings, and trails for this specialized user group.

### **Swimming**

Swimming is one of the more popular land based activities, comprising about 15 percent of the estimated activity mix (USACE 2010). Swim beaches are provided at a number of developed recreation areas.

### **Trails**

Trails exist at five recreation sites around the project. Trails are located at: Eagle Point Landing, North Bend Park, Occoneechee State Park, Tailrace Park, the Tanner Environmental Education Center, and Liberty Hill. USACE does not estimate trail use as part of the overall activity mix; however, sightseeing is one of the types of recreation activities estimated. Sightseeing comprises about 23 percent of the total visitation and may suggest that trail use is a popular activity where trails are provided.



### Picnicking

Day-users make up the overwhelming majority of visitors to Kerr Reservoir. USACE estimates over 94 percent of the visitors are day-users. Day-use facilities at all developed recreation sites often include amenities for picnicking. People partaking in picnicking comprise about nine percent of the estimated activity mix (USACE 2010).

**Table 16: 2009 Activity Counts at Kerr Reservoir**

<b>Activity</b>	<b>Distribution of Visits</b>
Boating	695,695
Fishing	510,926
Sightseeing	392,934
Swimming	271,636
Picnicking	150,945
Skiing	111,943
Camping	97,825
Hunting	8,621
Other	677,698

Source: USACE 2009b

## 2.24 Visitation Profile

Annual visitation to Kerr Reservoir is listed in Appendix E, Table E-2, as recorded by USACE from 2000 through 2009. This visitation data is based on raw vehicle counts with an activity based multiplier at a number of locations within the project.

The demand for outdoor recreation facilities within Kerr Reservoir was examined through the use of the 2007 Virginia Outdoors Plan (VOP) (VDCR 2007) and the North Carolina Statewide Comprehensive Outdoor Recreation Plan (SCORP) (NCDENR 2009b). Because recreation demand and facility and activity needs of the two states are not in a format that is directly comparable, the states were looked at separately.

According to both the VOP and the SCORP, walking for pleasure is the number one activity among the residents of both states. In North Carolina, other favorite activities include attending outdoor family gatherings, gardening or landscaping, driving for pleasure, viewing or photographing scenery, visiting a nature center, sightseeing, picnicking, attending a sporting event, and going to the beach. Nature based land recreation in North Carolina, such as visiting primitive areas, hiking, visiting a farm, driving off road, camping, and mountain biking also are popular activities. Water-based

recreation accounts for popular activities such as swimming, boating, and fishing. North Carolina residents also found many other recreational activities popular. Table 17 presents the ten most popular recreation activities for North Carolina residents.

<b>Table 17: Percentage of Activity Participation in North Carolina</b>	
<b>Activity</b>	<b>Percent Participation</b>
Walking for pleasure	82
Family gathering	75
Gardening or landscaping	65
Driving for pleasure	58
View/Photograph natural scenery	57
Visit nature centers	53
Sightseeing	53
Picnicking	50
Attend a sports event	59
Visit a beach	44

Source: NCDENR 2009b

The 2007 VOP indicates that in addition to walking for pleasure, Virginia residents enjoy visiting historic sites, driving for pleasure, swimming, visiting natural areas or parks, sunbathing, picnicking, use of a playground, boating, and many other activities. Additionally, the VOP showed that the two highest needs for outdoor recreation in the next five years are access to recreational waters of the state and trails close to home.

According the 2007 VOP, the top ten recreational activities in the state have remained similar over the years; however, new activities also have been accounted for that were not included in previous years. Participation rates also have fluctuated over the years, as shown in Table 18.

In the last several years, the population in both North Carolina and Virginia has increased dramatically and the increase is expected to continue into the future. This growth is expected to translate into an increased demand for and participation in outdoor recreation. As discussed above in Section 2.19, the population of the Primary Area is not expected to grow as fast as the more densely populated metropolitan areas; however, outdoor recreation demand is still predicted to increase.

<b>Table 18: Percentage of Activity Participation in Virginia</b>			
<b>Activity</b>	<b>1996 (%)</b>	<b>2002 (%)</b>	<b>2006 (%)</b>
Walking for pleasure	65	67	72
Visiting historic sites	35	40	56
Driving for pleasure	60	62	55
Swimming	53	52	44
Visiting natural area, parks	24	27	44
Sunbathing on beach	42	39	36
Fishing	29	42	26
Picnicking	31	29	26
Using a playground	24	24	25
Boating	31	34	24

Source: VDCR 2007

The changes in the demographics also are expected to influence certain recreational resources. For example, the aging population may be the leading reason that the demand for active sports is shifting to individual and passive recreation, such as walking. The VOP and SCORP conclude that, participation in outdoor recreation appears to be increasing, which is fueling a growing demand for additional recreational lands and facilities in both states (NCDENR 2009b, VDCR 2007).

## **2.25 Related Recreational, Historical, and Cultural Areas**

Kerr Reservoir is only 45 miles from the Raleigh-Durham area and 110 miles from the greater Richmond area. This area of the Piedmont Region provides numerous opportunities for outdoor recreation and exploration of historical and cultural sites. Many of these areas have been conserved and made available for public use through state parks, wildlife management areas, historic monuments, or other public recreation lands.

Recreation resources providing similar opportunities at a similar scale within this region include local parks, and state and national historical sites, as discussed in Section 2.22. Appendix H, Figure 9 shows similar recreation locations within the region.

In addition to these larger recreation areas, local governments provide hundreds more locally important recreation opportunities, such as neighborhood parks, trails, swimming pools, ball fields, and other similar type facilities. Table 19 lists the federal and state lands within a 60 mile radius of the project, as well as the local (e.g., county or city) parks of more than 100 acres that provide similar recreation opportunities as those at Kerr Reservoir.

**Table 19: Regional Recreation Areas**

Recreation Area	Acreage	Management Level
Apex Community Park	160	Local
Appomattox-Buckingham State Forest	20,973	State
Appomattox Court House National Historical Park	1,299	Federal
Barber Park	134	Local
Blue Jay Point County Park	237	Local
Booker T Washington National Monument	205	Federal
Bryan Park	390	Local
Bur Mil Park	160	Local
Carl Alwin Schenck Memorial Forest Park	166	Local
Cedarock Park	205	Local
Clover Hill Athletic Complex	102	Local
Duke Forest	1,978	Local
Eno River State Park	2,426	State
Falls Lake State Recreation Area	4,992	State
Fort Lee Recreation Area	102	Local
Fred G Bond Metro Park	243	Local
Guilford Courthouse National Military Park	375	Federal
Guilford Mackintosh Park	288	Local
Hagan Stone Park	384	Local
Harris Lake County Park	614	Local
Hemlock Bluffs State Natural	90	State
Holliday Lake State Park	288	State
Horseshoe Farms Park	147	Local
Iron Bridge Park	243	Local
Jefferson National Forest	1,733,526	Federal
Keeley Park	154	Local
Lake Crabtree County Park	243	Local
Lake Johnson Park	480	Local
Lake Michael Park	134	Local
Lake Wheeler Park	102	Local
Lee Park	282	Local
Lindley Park	134	Local
Medoc Mountain State Park	2,387	State
North Carolina Zoological Park	1,555	Local
Old Farm Park	320	Local
Petersburg National Battlefield	3,458	Federal
Pocahontas State Park and Forest	7,507	State

**Table 19: Regional Recreation Areas**

Recreation Area	Acreage	Management Level
Regency Park	109	Local
Richmond National Battlefield Park	115	Federal
Rockwood Park	205	Local
Roosevelt Ingham Park	934	Local
Sayers Creek Battlefield State Park	1,549	State
Shelley Sertoma Park	115	Local
Southwest Park	346	Local
Spring Valley Plaza Natural Area	6	Federal
Twin Lakes State Park	518	State
Uwharrie National Forest	218,296	Federal
Walnut Creek Park North	109	Local
William B. Umstead State Park	5,075	State

## 2.26 Pertinent Public Laws

**Civil Authority.** Unless otherwise provided by federal law or regulation, state and local laws and ordinances apply on Kerr Reservoir project lands and waters. Activities to which these apply include, but are not limited to, the following:

- Operation and use of motor vehicles, vessels, and aircraft;
- Hunting, fishing, and trapping;
- Display or use of firearms or other weapons;
- Possession and consumption of alcohol;
- Civil disobedience and criminal acts;
- Littering, sanitation, and pollution.

Enforcement of state and local laws and ordinances is handled by the appropriate enforcement agencies with the support of USACE.

**USACE Authority.** Rules and regulations governing public use of water resources development projects administered by USACE are contained in Title 36, Part 327 of the Code of Federal Regulations. Persons designated by the District Engineer have the authority to issue citations for violations of rules and regulations governing public use of USACE water resource projects. When a citation is issued, the person charged with the violation may be required to appear before a U.S. Magistrate.

**Federal Authority.** More than 50 federal public laws and Executive Orders pertain to authorization of the project, present and future development, and operation of project lands. Listings of federal laws that guide the management of Kerr Reservoir are included in Appendix G.

## **2.27 Management Plans**

In accordance with ER 1130-2-550 and EP 1130-2-550, a Master Plan should establish broad management guidelines and policies which will form the basis for preparing a number of detailed management plans (USACE 1996, USACE 2002). Currently, Kerr Reservoir is operating under the plans included in the *John H. Kerr Operational Management Plan* (USACE 1992). The OMP generally describes natural resource and park management conditions and objectives, as well as specific plans for achieving these objectives. These plans prescribe techniques that represent the best technology available to USACE at the time of their publication. Adherence to these plans has led to the development of current resource conditions at Kerr Reservoir. These plans are listed on Table 20, with a general description of their content and year of most recent revision.

**Table 20: Kerr Reservoir Management Plans**

<b>Management Plan</b>	<b>Description</b>	<b>Last Update</b>
Fisheries	Documents existing and desired water quality and aquatic habitat conditions.	1992
Forest Protection	Documents existing and potential threats to forest resources.	1992
Forest Management	Documents existing and desired forest conditions.	1992
Wildlife	Documents known and probable wildlife species.	1992
Mosquito	Documents previous mosquito monitoring and management techniques.	1992
Aquatic Weeds	Documents potential species and conditions that could result in infestations.	1992
Shoreline	Creates zones along the reservoir shoreline for development and resource protection.	1995
Safety	Identifies safety concerns, responsibilities, and management techniques.	1992
Security	Identifies security actions, security concerns, and responsibilities throughout the project.	1992
Visitor Assistance	Identifies activities and responsibilities for managing visitor activities.	1992
Private Exclusive Use	Provides guidance for issuing and managing permits for private use facilities.	1992
Outgrants	Identifies responsibilities for providing and managing special events and permits.	1992
Maintenance	Identifies responsibilities, standards, and procedures for maintaining facilities.	1992
Interpretation	Identifies interpretive resources and provides direction on their best use.	1992
Cultural Resources	Identifies cultural resources on project lands and provides direction for management.	1992
Recreation Area Closure and Consolidation	Identifies recreation areas that have been closed and documents the resources available at each site.	1992
Recreation Area Renovation	Identifies previous and planned renovations to recreational areas.	1992
Special Programs	Identifies special programs and provides guidance for administering them.	1992

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## 2.28 Summary

The preceding discussion of the physical, natural, historic, and socioeconomic resources identified the following important implications for the use, management, and development of resources at Kerr Reservoir. The table below summarizes these discussions and identifies issues to be addressed in this Master Plan.

**Table 21: Summary of Factors Influencing Resource Management and Development at Kerr Reservoir**

Resource	Summary
Reservoir	USACE actively manages the majority of the 55,000 acres of project lands that surround the reservoir. It is one of the larger USACE reservoirs in the region.
Lake Operation	USACE follows a standard guide curve to account for seasonal changes in precipitation. Water management strategies are geared to provide flood control and other project purposes.
Hydrology and Ground Water	Like many reservoirs, the movement of water into, through, and out of the project lands is influenced by regional and site specific conditions, including annual and seasonal precipitation patterns and the geology and landforms.
Sedimentation	Kerr Reservoir was designed to absorb certain levels of sedimentation. Although sedimentation is becoming a problem in portions of the reservoir, formal surveys indicate that sedimentation storage is adequate.
Surface Water Quality	The quality of surface water within the reservoir is influenced by conditions throughout its watershed, including land use patterns and the presence of pollution sources. Despite water quality concerns throughout the watershed, water quality in the reservoir remains high enough to allow all forms of recreational use to continue.
Climate	The regional climate has influenced the development and management of John H. Kerr Reservoir, including the need for a dam for flood damage reduction, monitoring of precipitation and inflows, management of water levels in the reservoir, and maintenance and enhancement of the project's ability to provide high-level recreational opportunities.
Topography, Geology, and Soils	Since the publication of the 1980 Master Plan, physical development and changing natural conditions have altered previously documented soils and topographic conditions. In some cases, these changes have not affected the current or future use of project lands.
Land Use	Adjacent to the project lands, forest and agriculture are the predominant land uses, with pockets of single family residential development along the north and south shores of the reservoir.
Borrow Areas and Utilities	During the construction process for Kerr Reservoir, borrow areas were developed to complete the earthen dikes. Currently, there are no active borrow areas within the project lands. Utilities; such as water and sewer lines, power lines, and communication lines; run through various parts of the project, providing service to individual sites and the surrounding region.
Vegetation Resources	Vegetation resources within project lands are influenced by regional and site specific conditions, including climate, water supply and quality, soils, and topography. Increasing levels of invasive species and infestations across the region is a developing management problem at Kerr Reservoir.
Fish and Wildlife Resources	Conserving and protecting fish and wildlife resources within project lands is one of the purposes of USACE at Kerr Reservoir. Since the 1980 Master Plan, USACE has continued its efforts to enhance aquatic and terrestrial habitat at the project.
Rare and Endangered Species and Communities	Within the project boundary, five federally-listed species are known to exist. These species, along with the state-listed species that exist within the project, are strongly influenced by the presence of floodplains, wetlands, and surrounding development pressures.

**Table 21: Summary of Factors Influencing Resource Management and Development at Kerr Reservoir**

Resource	Summary
Visual Quality	The scenic landscape of the upper reservoir is of a riverine character influenced by the confluence of the Roanoke and Dan Rivers and generally narrow channels and coves. Due to the forested nature of the entire area, sweeping views of the reservoir are limited from elevated locations, such as those found in the Bluestone WMA. Residential development and demand for shoreline access (including boat docks, piers, etc.) and shoreline stabilization efforts have resulted in increased human presence adjacent to project lands.
Mineral and Timber Resources	Currently there are no mineral harvesting activities within the project boundaries. Timber management is guided by the OMP. In the future, these activities could be expanded.
Paleontology	There are no known paleontological resources beneath project lands at Kerr Reservoir.
Cultural Resources	Many of the existing cultural resources within the project boundary were damaged or lost before federal regulations were enacted to protect them. Existing resources play an important role in the history and interpretation of project lands.
Interpretation	USACE has a dedicated Visitor Assistance Center located at the dam that provides natural history displays, environmental education materials, as well as a library of local and natural history, cultural events, and other local topics important to the history of settlement throughout the region. The center includes an environmental education center to enhance existing and future interpretive programs at the project.
Demographics	Overall, population growth within the Kerr Reservoir region is projected to experience faster rates of growth than either North Carolina or Virginia. Although this growth may not occur uniformly throughout the region surrounding Kerr Reservoir, it will result in greater demands being placed on the project resources.
Economic Characteristics	Economic characteristics within the Kerr Reservoir region reflect the national economic conditions, with some regions experiencing above average growth.
Real Estate	Construction of the reservoir by USACE required the acquisition of lands and easements necessary for carrying out authorized purposes, particularly flood damage reduction. Monitoring these lands and permitting the use of these lands requires a great investment of time and resources by USACE.
Recreation Facilities	Recreation opportunities at the project include biking, boating, camping, fishing, hiking, hunting, picnicking, and swimming. Maintaining the availability of high quality recreational experiences is one of the primary purposes of USACE at Kerr Reservoir.
Visitation Profile	Visitation to Kerr Reservoir and other regional points of interest is fueled primarily by recreational activities. USACE strives to meet this demand at Kerr Reservoir while remaining consistent with its other purposes.
Related Recreational, Historical, and Cultural Areas	Kerr Reservoir is one of many facilities in the region that provides a wealth of both land- and water-based recreation opportunities. Its close proximity to major population centers in Virginia and North Carolina provides a draw to natural, cultural, and recreational sites from those areas.

## **3.0 Special Problems**

This chapter provides an overview of the key administrative, social, and environmental factors that influence and constrain present and future options of use, management, and development at Kerr Reservoir. This information supplements the discussion of the factors that influence resource development presented in Chapter 2. Considered together with Resource Objectives and Development Needs presented in Chapter 6, these factors determine the most appropriate uses of project resources.

### **3.1 Adapting to Regional Growth**

The region surrounding Kerr Reservoir has and continues to experience measurable population growth. With this growth comes increasing levels of residential and commercial development around the project boundary and throughout the surrounding communities. This development places increasing demands on USACE and their partners to meet a broader range of recreational needs and address increases in recreational demand. The Land Classifications presented in this Master Plan, along with the Resource Plan and general management recommendations, provide USACE with a tool for planning balanced recreational development on project lands. The specific details for new development projects; however, are beyond the scope of this Master Plan and will be addressed in future plans.

Regional growth also increases the role that Kerr Reservoir plays in providing habitat for wildlife. As agriculture and development eliminates habitat across the region, the relatively undeveloped lands surrounding the reservoir become more important to a variety of species and wildlife-based recreation opportunities. The Land Classifications and resource plans presented in this Master Plan identify areas within the project that should receive special consideration, due to their high quality habitat. The Kerr Reservoir forest management and wildlife management plans provide more specific guidance on how USACE manages lands to support wildlife resources. Future updates to these plans will allow USACE to continue to adapt to changing regional conditions.

### **3.2 Changing Environmental Conditions**

Along with regional growth, as described above, Kerr Reservoir continues to experience changing environmental conditions. These changes include the effects of global climate change which have altered the composition of forest and wildlife populations in and around project lands and could continue to do so (USEPA 2010b). Many of the activities and facilities that exist within the project boundary were designed to account for the surrounding natural conditions. Future planning and development at Kerr Reservoir should recognize that some of these conditions have changed and future changes should be expected. The Land Classifications made in this Master Plan seek to protect sensitive environmental areas that are most susceptible to change, by directing future development into other areas and providing recommendations for the management of specific areas. Future updates to the Kerr Reservoir forest management plan will further address these areas and changing forest conditions.

Another changing environmental condition is the increasing rate of infestations and spread of invasive species across project lands. These increases are the result of regional development, global climate change, changing atmospheric conditions, and more regular movement of people and materials through different regions (Dukes and Mooney 1999). The recent non-native pine beetle (*Dendroctonus frontalis*) and emerald ash borer (*Agrilus planipennis*) infestations are examples of this phenomenon. Such an event can result in temporary or permanent closure of select project lands, reduction or loss of vegetation and habitat within the project, and changes in the vistas within the project. Recommendations made in this Master Plan note potential conditions that could lead to additional infestations. Future updates to Kerr Reservoir's natural resource management plans and OMP will allow USACE to continue to adapt and respond to these conditions.

Changing conditions also can result in hazardous conditions. Hazardous conditions include natural or man-made toxins in the water and soil, pollutant accumulation in the air and water, as well as eroding slopes and other unsafe conditions. The 1980 Master Plan identified natural conditions that were not ideal for development. This Master Plan has provided an updated "snapshot" of potentially hazardous resource conditions in Chapter 2. In some cases, unsafe conditions are known and can be avoided through Land Classifications presented in this Master Plan. This Master Plan also makes recommendations for appropriate, future due diligence to be conducted on existing and future developments that may be exposed to hazardous conditions. Future monitoring of these conditions will provide USACE with up-to-date information on hazardous conditions on project lands at Kerr Reservoir. The OMP will provide guidance on how these conditions may be addressed.

### **3.3 Balancing User Needs**

As part of its numerous missions, USACE provides a large amount of recreation opportunities which are used by a wide variety of recreational user groups. The diversity in activities these groups use the project for includes hiking, biking, boating, fishing, wildlife viewing, hunting, and using the day-use facilities that exist around the lake. Over time, the number and types of activities has increased, resulting in a wider variety of user groups visiting the project. To keep up with these changes, USACE and its partners have increased their efforts to provide balanced opportunities. This includes identifying means of avoiding conflicts between user groups. This Master Plan provides additional direction through Land Classifications that designate project lands for specific uses. The Resource Plan portion of the document also provides guidance on future management for potentially-conflicting user groups. The implementation of this guidance, however, will come through future development plans and direction prescribed in the OMP.

### **3.4 Managing for High Pool and Low Pool Elevations**

Management of any reservoir requires the consideration of high and low pool conditions. This is especially true at a location like Kerr Reservoir where numerous recreational facilities exist near or on the waterline. Pool elevations affect when and how certain areas within the project are accessible or when boat ramps and docks may be safely used for water access. The Resource Plan identifies locations where future water-based recreational facilities could be developed. The design of these facilities should take into account the pool fluctuations that occur in Kerr Reservoir. The management of pool fluctuations is beyond the scope of this Master Plan.

### **3.5 Addressing Unauthorized and Inappropriate Use**

Unauthorized and inappropriate use occurs whenever visitors conduct activities outside of designated areas or that are in conflict with USACE regulations, or violate the law. Some of these inappropriate uses are addressed in this Master Plan, by updating land use classifications to provide more appropriate use of project lands and recommendations to address growing trends. It is outside the scope of the Master Plan to address activities that conflict with USACE regulations, such as all-terrain vehicle use. The plan also cannot address illegal activities. These inappropriate uses are best managed through local law enforcement.

### **3.6 Facilitating Transfer of Leases**

Since the publication of the 1980 Master Plan, several of the leased parcels at Kerr Reservoir have changed hands. This Master Plan provides a snapshot of the current leased lands. The exchange of these lands and leasing issues are handled by the USACE Real Estate Division, based in the Savannah District. The Master Plan, however, presents new Land Classifications which may influence future leases. The Master Plan also includes a Resource Plan which identifies goals and issues related to current and future activities at all developed project lands, including leased lands. Recommendations made in the Resource Plan do not represent a requirement for existing or future lease holders, but address USACE's goals for Kerr Reservoir as a whole.

### **3.7 Accounting for Historic Land Users**

There are individuals, families, and groups of people whose history in the region extends beyond that of Kerr Reservoir. This Master Plan notes some of the important historic resources that exist on project lands. The master planning process also included opportunities for state agencies, Native American tribes, and local residents to comment on how the planning process should address these resources. This consultation is described in greater detail in Chapter 4. Recommendations made in this Master Plan include direction on future coordination with these groups and management of historic resources.

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## **4.0 Public Involvement and Coordination**

In 2009, USACE initiated the planning process to update the 1980 Kerr Reservoir Master Plan. The planning process involved federal, state, and local agencies; national and local groups; local businesses; and private citizens.

### **4.1 Public Scoping Meetings and Comments**

During the master planning process, USACE held six public open houses in the local communities surrounding Kerr Reservoir: Clarksville, Virginia; South Hill, Virginia; and Henderson, North Carolina. Prior to the open houses, mailings were sent to individuals, organizations, and agencies on the Kerr Reservoir mailing list. Announcements also were made on local television and radio stations and posted in local newspapers and on the USACE web site. The open house format allowed guests to come and go in a timeframe that suited their schedules. This format also allowed members of the planning team to interact with their guests, to answer questions about the planning process, and to solicit input that would help guide the process.

The first three meetings took place on December 15, 16, and 17, 2009. These meetings were held to introduce the public to the master planning process and solicit input on the planning process. A public comment period was held from the date of the meeting announcement (November 25, 2009) until 30 days following the third open house.

The second set of three meetings was held on November 9, 10, and 15, 2011. These meetings provided USACE an opportunity to present the Master Plan, which had been released for public review on November 1, 2011, and solicit comments that could be incorporated into this final document. These meetings were part of a comment period that was held following the release of the public review document.

Comments made by members of the public or representatives of government offices and agencies were submitted in writing, via email, and on the USACE web site. All written comments received during the comment periods, along with responses from USACE are included in Appendix D of this Final Master Plan. While not all of the subjects raised during the comment period could be addressed within the scope of the master planning process, the comments obtained during the comment periods helped guide the master planning process.

Topics addressed in comments related to the master planning process included:

- Issues related to public hunting on project lands;
- Boating and water access;
- Conflicts between use of project lands and adjacent privately owned lands;
- Existing and future trails; and,
- Overall project management.

## **4.2 Agency Scoping Meetings**

Following the open house sessions, USACE held two meetings with local government and state and federal agency representatives. The first meeting was held on January 22, 2010 in Richmond, Virginia. Meeting attendees included local, state, and federal agencies with jurisdiction or interest in the resources at Kerr Reservoir or the master planning process. A second meeting was held in Raleigh, North Carolina, on January 23, 2010 to provide the same opportunity for North Carolina agencies. During the agency meetings, the planning team presented an overview of the master planning process, discussed existing plans and resources concerns, and initiated coordination for a data exchange with those agencies that had additional data on resources on and around project lands.

## **4.3 Public Review and Comment on the Master Plan/PEA**

The Master Plan/PEA was made available for public review on November 1, 2011 at the following locations. It also was distributed to the agencies and individuals listed in the PEA.

Boydton Library  
310 Washington Street  
Boydton, VA 23917

H. Leslie Perry Memorial Library  
205 Breckenridge Street  
Henderson, NC 27536

John H. Kerr Dam and Reservoir Visitor Assistance Center  
1930 Mays Chapel Road  
Boydton, VA 23917



## **5.0 Land Allocation, Land Classifications, and Resource Objectives**

This chapter presents the land use plan for Kerr Reservoir. In the plan, specific parcels of land are assigned Land Classifications based on resource capability. Combined with the project-wide and site-specific Resource Objectives presented in this chapter and Chapter 6, respectively, the land use plan provides a programmatic approach for the use, management, and development of all project lands. Together, these elements form the core of this Master Plan. The Resource Objectives are presented with their respective Land Classification below and summarized on Table 22.

### **5.1 Land Allocation**

Land allocations identify the authorized purposes for which project lands were acquired. The entire Kerr Reservoir project has a land allocation of Project Operations. Project Operations lands are those lands acquired to provide safe, efficient operation of the project for its authorized purposes. These authorized purposes include flood control, hydroelectric power, recreation, low flow augmentation, water supply, and fish and wildlife conservation. Lands were not acquired for individual purposes of recreation, fish and wildlife conservation, or mitigation.

### **5.2 Land Classifications**

All lands acquired for project purposes are classified to provide for development and resource management consistent with authorized project purposes and other federal regulations. The classification process refines the land allocations to fully define the management and use of project lands and considers public preferences and needs, legislative authority, regional and project-specific resource requirements, and suitability. Management and use of the lands assigned to each Land Classification are discussed in connection with the appropriate Resource Objectives in the following section. The Land Classifications are described below, and their locations are shown in Appendix H, Figures 10, 11, and 12.

In some cases, the existing Land Classifications do not accurately describe USACE's plans for a given site. In some cases, the site meets the definition of Multiple Resource Management, but is solely managed for Wildlife Management. In other cases, the site has become an official or unofficial WMA; however, USACE has retained plans for future recreational development at the location. Therefore, each site is given a Land Classification and a Recommended Future Use (Appendix H, Figures 13, 14, and 15). These different land classifications are included on the individual site descriptions in Chapter 6. The individual site description includes the Resource Objectives related to its existing Land Classification. If and when USACE moves forward with adopting the Recommended Future Land Use, the site's Resource Objectives would be updated to reflect its new designation. The processes by which these changes may occur are discussed in Chapter 9.

## **5.3 Resource Objectives for Specific Land Classifications**

Resource Objectives are attainable goals for resource development and/or management which are consistent with authorized project purposes, federal laws and directives, regional needs, resource capabilities, and expressed public preferences and needs. These objectives provide a consolidation of the information presented in the previous chapters of this Master Plan. The Resource Objectives will be met, either wholly or partially, through the implementation of the Site-Specific Resource Objectives established for each management area described in Chapter 6. The Resource Objectives that were developed for each Land Classification at Kerr Reservoir and the rationale used to develop the objectives are provided below.

### **5.3.1 Project Operation Lands**

This classification includes lands required for the dam and associated structures, powerhouse, Visitor Assistance Center, administrative offices, maintenance compounds, and other areas that are used to operate and maintain Kerr Reservoir. When compatible with operational requirements, these lands may be used for Recreation and Multiple Resource Management as well. Approximately 374 acres of land at Kerr Reservoir are classified as Project Operations.

#### **Resource Objectives for Project Operations Lands**

Resource Objectives for Project Operations lands include the following:

- Maintain and operate project structures in a manner that allows them to effectively fulfill project purposes;
- Renovate and improve existing recreational facilities where such use is feasible and does not interfere with other project purposes;
- Enhance ADA-compliant access to appropriate locations;
- Maintain and improve trail and water access in a manner that improves visitor opportunities without interfering with other project purposes;
- Reserve adequate areas for operations activities that are required to meet overall project purposes;
- Provide for public use and access within USACE safety guidelines and security levels, where such use is feasible and does not interfere with other project purposes;
- Manage forest resources and other vegetation for balanced uses of recreation and fisheries and wildlife conservation and enhancement;
- Monitor forest conditions to document health and to identify pests;

- Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams); and,
- Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife.

### **Rationale**

Most of the Project Operations lands at Kerr Reservoir are located within the Kerr Reservoir Management area at the northeastern corner of the reservoir. Additional lands are located at Island Creek Dam and near the Town of Clarksville, Virginia. The operation and maintenance of the project is the primary purpose of these lands. Although the operation of the reservoir is addressed by other project plans, designation of the portion of the project lands that are dedicated to supporting operations is an important part of the Master Plan. Uses that interfere with operational activities, compromise the structural integrity of the project or its facilities, or create a safety hazard for visitors or project personnel cannot be allowed. Within these constraints, Project Operations lands provide important opportunities for varying levels of recreation.

### **5.3.2 Recreation Lands**

Recreation lands are designated for intensive levels of recreational use to accommodate and support the preferences and needs of project visitors. They include lands on which existing or planned recreational facilities are located and allow for developed public recreation facilities, concession development, and high-density or high-impact recreational use. Low-density recreation and wildlife management activities compatible with intensive recreation use are acceptable. Permits, licenses, and easements are not issued for non-compatible man-made intrusions such as pipelines, overhead transmission lines, and non-project roads, except where warranted by the public interest.

At Kerr Reservoir, Recreation lands are managed by USACE, VDCR, NCDPR, and other public groups. The other public groups, or quasi-public leased lands, are scattered around the reservoir and are available to groups like the BSA. Approximately 7,864 acres of land at Kerr Reservoir are classified as Recreation for the 2012 Master Plan.

### **Resource Objectives for Recreation Lands**

Resource Objectives for Recreation lands include the following:

- Provide for camping and day-use opportunities;
- Allow for several activities in the same general vicinity;
- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide opportunities for the elderly and handicapped to access and use recreation lands and resources;

- Maintain a diverse natural community to enhance hiking and sightseeing opportunities, and to control shoreline and soil erosion;
- Manage forest resources and other vegetation for balanced uses of recreation, wildlife, and fisheries;
- Monitor forest conditions to document health and to identify pests;
- Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams);
- Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife; and,
- Interpret cultural resources to benefit visitors' understanding, while preserving and monitoring the resources' integrity.

### **Rationale**

Recreation lands at Kerr Reservoir are located throughout the project. The location and design of recreation areas and facilities take into account the desired recreation experience. Criteria such as spacing, buffer zones, vegetative screening, and other considerations are used in the design of recreation facilities to ensure that visitors have adequate access to the lake and quality recreational experiences. This classification does not restrict visitor use only to areas classified as Recreation. Other classifications can also incorporate visitor use for recreation at a less-intensive level, while simultaneously maintaining their primary purposes.

### **5.3.3 Environmentally Sensitive Lands**

This classification consists of areas where certain physical, ecological, cultural, or aesthetic features have been identified as especially sensitive to adverse environmental impacts. Development of public use on lands within this classification is normally limited or prohibited to ensure that the sensitive areas are not impacted. None of the lands within the Kerr Reservoir boundary are currently classified as Environmentally Sensitive.

### **5.3.4 Multiple Resource Management Lands**

This 2012 Master Plan classifies 47,516 acres of project lands as Multiple Resource Management. This classification includes lands managed for one or more of the following activities.

*Recreation-Low Density:* These lands are designated for dispersed and/or low-impact recreation use. Development of facilities on these lands is limited. Emphasis is on providing opportunities for non-motorized activities such as hiking, biking, fishing, hunting, sight-seeing, or nature study. Site-specific, low-impact activities such as primitive camping and picnicking may be allowed. Some limited facilities are permitted, including boat ramps, trails, parking areas and vehicle controls, as well as camping and picnic facilities.

Man-made intrusions, including utility lines, may be allowed under conditions that minimize effects on the natural environment. Vegetation management is allowed for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Where not in conflict with the safety of visitors and project personnel, hunting and fishing are allowed pursuant to state fish and wildlife management regulations.

*Wildlife Management:* These lands are designated specifically for wildlife management, although all project lands are managed for fish and wildlife habitat in conjunction with other land uses. Wildlife management lands contain valuable wildlife habitat components that are maintained to yield habitat suitable for diverse game and non-game species.

At Kerr Reservoir, these lands are jointly administered with VDGIF and NCWRC. Licenses, permits, and easements usually are not allowed for such man-made intrusions as pumping plants, pipelines, cables, transmission lines, or non-project roads. Exceptions to this policy are allowable where necessary for the public interest. Wildlife lands are available for sightseeing, wildlife viewing, nature study, hiking, and biking. Consumptive uses of wildlife, including hunting, fishing, and trapping, are allowed when compatible with the wildlife objectives for a given area and with federal and state fish and wildlife management regulations.

*Vegetation Management:* Management activities in these areas focus on the protection and enhancement of forest resources and vegetative cover. Kerr Reservoir conducts regular vegetation management activities to maintain natural screening around various recreational sites and maintain its wildlife habitat mission. Other activities are conducted as directed by the project's forest management and wildlife management plans.

*Inactive and/or Future Recreation Areas:* This sub-classification consists of lands for which recreation areas are planned for the future or lands that contain existing recreation areas that have been temporarily closed.

### **Resource Objectives for Multiple Resource Management Lands**

Resource Objectives for Multiple Resource Management lands include the following:

- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Accommodate and support non-consumptive resource uses, such as hiking, bird watching, photography, nature study, wildlife observation, and the pursuit of peace and solitude;
- Employ good stewardship practices, such as the use of soil conservation measures;
- Enhance natural propagation of diverse game and non-game fish and wildlife species;

- Manage forest resources and other vegetation for appropriate uses of recreation, wildlife, and fisheries;
- Monitor forest conditions to document health and to identify and respond to pests;
- Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams);
- Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife; and,
- Interpret cultural resources to benefit visitors' understanding, while preserving and monitoring the resources' integrity.

### **Rationale**

In addition to the intensively developed recreation areas, the project provides many opportunities for a variety of dispersed recreation activities. Boating, fishing, hunting, hiking, and other such uses support and complement this objective. Given the existing and growing demand for these activities on a national, regional, and local scale, the use of these lands is expected to increase. Kerr Reservoir is an ideal location for these activities given its high-quality habitat and natural resources, as well as the growing number of local and regional trail systems.

### **5.3.5 Mitigation Lands**

This classification includes those lands specifically designated to offset or mitigate for habitat losses associated with the development of a USACE project. No lands are currently classified as mitigation lands at Kerr Reservoir.

### **5.3.6 Easement Lands**

This classification consists of lands for which USACE did not acquire fee title but did acquire (1) the right to enter onto the property in connection with the operation of Kerr Reservoir and (2) the right to flood the property to meet the purposes of the project, in accordance with the estate acquired. Management of easement lands is performed in strict accordance with the terms and conditions of the easement acquired for the project. Previous reporting by USACE states that there are approximately 10,509 acres under easement.

Easement lands were acquired for a specific purpose and do not convey the same rights or ownership to USACE as other lands. While these lands are outlined and discussed in this Master Plan, their specific locations and boundaries are defined by documents under auspices of the USACE Real Estate Division, which would handle any changes to easement lands.

### **Resource Objectives for Easement Lands**

Resource Objectives for Easement Lands include the following:

- Ensure that the USACE rights to enter and flood the property according to terms and conditions of the legal easement remain unimpeded; and,
- Promote an understanding of USACE's boundary and mission by the public and owners of Easement Lands.

### **Rationale**

Easement lands were acquired to allow USACE to achieve its purposes at Kerr Reservoir. These lands were specifically selected to ensure adequate flood water storage. While these lands are not actively managed to meet other USACE missions at the project, maintaining the conditions established in the easement is vital to the success of the project.

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<b>Table 22: Land Classification Resource Objectives</b>	
<b>Land Classification</b>	<b>Resource Objectives</b>
<b>Project Operations</b>	<ul style="list-style-type: none"> <li>• Maintain and operate project structures in a manner that allows them to effectively fulfill project purposes;</li> <li>• Renovate and improve existing recreational facilities where such use is feasible and does not interfere with other project purposes;</li> <li>• Enhance Americans with Disabilities Act (ADA)-compliant access to appropriate locations;</li> <li>• Maintain and improve trail and water access in a manner that improves visitor opportunities without interfering with other project purposes;</li> <li>• Reserve adequate areas for operations activities that are required to meet overall project purposes;</li> <li>• Provide for public use and access within USACE safety guidelines and security levels, where such use is feasible and does not interfere with other project purposes;</li> <li>• Manage forest resources and other vegetation for balanced uses of recreation and fisheries and wildlife conservation and enhancement;</li> <li>• Monitor forest conditions to document health and to identify pests;</li> <li>• Control noxious weeds and other pests in a manner that avoids damage to existing desirable vegetation and sensitive areas (wetlands and streams); and,</li> <li>• Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife.</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>• Provide for camping and day-use opportunities;</li> <li>• Allow for several activities in the same general vicinity;</li> <li>• Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;</li> <li>• Provide opportunities for the elderly and handicapped to access and use recreation lands and resources;</li> <li>• Maintain a diverse natural community to provide hiking and sightseeing opportunities, and to control shoreline and soil erosion;</li> <li>• Manage forest resources and other vegetation for balanced uses of recreation, wildlife, and fisheries;</li> <li>• Monitor forest conditions to document health and to identify pests;</li> <li>• Control noxious weeds and other pests in a manner that avoids damage to existing vegetation and sensitive areas (wetlands and streams);</li> <li>• Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife; and,</li> <li>• Interpret cultural resources to benefit visitors' understanding, while preserving and monitoring the resources' integrity.</li> </ul>

<b>Table 22: Land Classification Resource Objectives</b>	
<b>Land Classification</b>	<b>Resource Objectives</b>
<b>Multiple Resource Management</b>	<ul style="list-style-type: none"> <li>• Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;</li> <li>• Accommodate and support non-consumptive resource uses, such as hiking, bird watching, photography, nature study, wildlife observation, and/or the pursuit of peace and solitude;</li> <li>• Employ good stewardship practices, such as the use of soil conservation measures;</li> <li>• Enhance natural propagation of diverse game and non-game fish and wildlife species;</li> <li>• Manage forest resources and other vegetation for appropriate uses of recreation, wildlife, and fisheries;</li> <li>• Monitor forest conditions to document health and to identify and respond to pests;</li> <li>• Control noxious weeds and other pests in a manner that avoids damage to existing vegetation and sensitive areas (wetlands and streams);</li> <li>• Preserve and protect existing wetlands and other sensitive or unique habitats that support threatened and endangered species, along with other wildlife; and,</li> <li>• Interpret cultural resources to benefit visitors' understanding, while preserving and monitoring the resources' integrity.</li> </ul>
<b>Easement</b>	<ul style="list-style-type: none"> <li>• Ensure that the USACE rights to enter and flood the property according to terms and conditions of the legal easement remain unimpeded; and,</li> <li>• Promote an understanding of USACE's boundary and mission.</li> </ul>

## **6.0 Resource Plan**

A wide variety of factors must be considered when developing Kerr Reservoir project lands and resources. These factors include physical characteristics; land and lake access; compatibility with adjacent land uses; existing and projected visitation levels and visitor-use patterns; visitor safety and project security; the economics of operation and maintenance; and federal, state, and local initiatives. It is important that any future recreational development not destroy the very features of Kerr Reservoir that visitors come to enjoy. The overall objective of the Resource Plan is to maximize the recreational benefits while preserving and enhancing the area's natural resources and scenic qualities.

The purpose of this Master Plan is to provide a long-range view of project development. As such, it is important to (1) examine the condition and use of existing facilities and structures and (2) examine each management area and determine how each area can be developed to fit with the overall goals of Kerr Reservoir.

Within the Kerr Reservoir boundary, there are 75 management areas identified in this Master Plan. These areas range from fully developed recreational sites to undeveloped wildlife management areas. The existing recreation areas are listed in Table 23. Unless otherwise indicated, all the management areas are actively managed by USACE or leased to quasi-public groups. Other agencies involved in the active management of sites at Kerr Reservoir are listed below.

Virginia Department of Game and Inland Fisheries (VDGIF) – Regulates hunting and fishing activities on project lands. VDGIF also is licensed to manage the Clover and Hyco boat ramps.

Virginia Department of Conservation and Recreation (VDCR) – Manages Occoneechee State Park and Occoneechee WMA.

North Carolina Department of Parks and Recreation (NCDPR) – Manages Kerr Lake State Recreation Area. The recreation area consists of the eight individual parks listed below in Table 23 and described later in this chapter.

North Carolina Wildlife Resources Commission (NCWRC) – The agency regulates hunting and fishing activities within the project boundary. They also manage several of the boat ramps and two WMAs on the North Carolina side of the reservoir.

The sites are shown in Appendix H, Figures 10, 11, and 12 and described later in this section of the document. Acreages presented throughout this chapter are based on GIS data and not official USACE real estate information.

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**Table 23: Kerr Reservoir Land Classifications**

Site (Management Agency) (Site #)	Project Operations	Recreation	Multiple Resource Management
<b>B</b>			
<b>Banister River WMA – North Unit</b> (USACE) (6.52)			X
<b>Banister River WMA – South Unit</b> (USACE) (6.53)			X
<b>Beaver Pond WMA</b> (USACE) (6.40)			X
<b>Beaver Woods</b> (USACE) (6.32)			X
<b>Bluestone Park</b> (USACE) (6.59)		X	
<b>Bluestone WMA</b> (USACE) (6.58)			X
<b>Buffalo Park</b> (USACE) (6.44)		X	
<b>Buffalo Springs Wayside</b> (USACE) (6.45)		X	
<b>Buffalo WMA</b> (USACE) (6.46)			X
<b>Buggs Island</b> (USACE) (6.2)			X
<b>C</b>			
<b>Camp Boyer</b> (USACE/Tuscarora Council of BSA) (6.23)		X	
<b>Camp Campbell</b> (USACE/Occoneechee Council of BSA) (6.21)		X	
<b>Camp Concord</b> (USACE/Stateline Baptist Assembly) (6.35)		X	
<b>Camp Eagle Point</b> (USACE/Heart of Virginia Council of BSA) (6.69)		X	
<b>Camp Graham</b> (USACE/Pines of Carolina Council of GSA) (6.12)		X	
<b>Camp Jean Short</b> (USACE/Five County Mental Health Association) (6.25)		X	
<b>Camp Kerr Lake</b> (USACE/Shiloh Family Ministries) (6.11)		X	
<b>Camp Key Haven</b> (USACE/North Carolina State University) (6.16)		X	

**Table 23: Kerr Reservoir Land Classifications**

Site (Management Agency) (Site #)	Project Operations	Recreation	Multiple Resource Management
Camp Tanner (USACE) (6.36)			X
Cedar Grove WMA (USACE) (6.30)			X
Clarksville Marina (USACE/Town of Clarksville/Clarksville Marina Inc.) (6.43)		X	
Clover Landing (USACE/VDGIF) (6.55)		X	
Clover WMA (USACE) (6.54)			X
Crooked Run WMA (USACE/NCDPR/NCWRC) (6.14)			X
<b>D</b>			
Dan River WMA (USACE) (6.50)			X
Duck Island (USACE) (6.31)			X
<b>E</b>			
Eagle Point Landing (USACE) (6.70)		X	
Eagle Point WMA (USACE) (6.71)			X
Eastland Creek Landing (USACE) (6.73)		X	
<b>F</b>			
Flemingtown Road Landing (USACE/NCDPR/NCWRC) (6.10)		X	
<b>G</b>			
Garretts Woods (USACE) (6.37)			X
Grassy Creek Park (USACE) (6.38)		X	
Greenwood WMA (USACE) (6.68)			X

**Table 23: Kerr Reservoir Land Classifications**

Site (Management Agency) (Site #)	Project Operations	Recreation	Multiple Resource Management
<b>H</b>			
<b>H. Clay Hemeric Scout Reservation</b> (USACE/Old North State Council of BSA) (6.34)		X	
<b>Hogan Creek WMA</b> (USACE) (6.56)			X
<b>Hyc0 Landing</b> (USACE/VDGIF) (6.47)		X	
<b>I</b>			
<b>Inglewood</b> (USACE) (6.74)			X
<b>Island Creek WMA</b> (USACE) (6.29)			X
<b>Island Creek Park</b> (USACE) (6.28)	X	X	
<b>Ivy Hill Park</b> (USACE) (6.26)		X	
<b>Ivy Hill WMA</b> (USACE) (6.27)			X
<b>K</b>			
<b>Keats Peninsula</b> (USACE) (6.7)			X
<b>Kerr Reservoir Management Area</b> (USACE) (6.1)	X	X	X
<b>Kerr Lake State Recreation Area</b> (USACE/NCDPR) (6.8)		X	
<b>L</b>			
<b>Lawsons Creek WMA</b> (USACE) (6.49)			X
<b>Liberty Hill Trail</b> (USACE) (6.3)		X	
<b>Liberty Hill WMA</b> (USACE) (6.4)			X
<b>Long Grass Point</b> (USACE) (6.20)			X
<b>Longwood Park</b> (USACE) (6.41)		X	

**Table 23: Kerr Reservoir Land Classifications**

Site (Management Agency) (Site #)	Project Operations	Recreation	Multiple Resource Management
<b>Lower Butcher Creek WMA (USACE) (6.63)</b>			X
<b>M</b>			
<b>Merifield WMA (USACE) (6.42)</b>			X
<b>Mooreville Woods (USACE) (6.60)</b>			X
<b>N</b>			
<b>Newman Point (USACE) (6.72)</b>			X
<b>North Bend Park (USACE) (6.75)</b>		X	
<b>Nutbush Woods (USACE) (6.16)</b>			X
<b>Nutbush WMA (USACE/NCWRC) (6.17)</b>			X
<b>O</b>			
<b>Oakleaf WMA (USACE) (6.62)</b>			X
<b>Occoneechee State Park (USACE/VDCR) (6.61)</b>		X	
<b>Old Soudan WMA (USACE) (6.33)</b>			X
<b>P</b>			
<b>Palmer Point Park (USACE) (6.6)</b>		X	
<b>Perrins Creek WMA (USACE) (6.48)</b>			X
<b>Presbyterian Point (USACE/Henderson, North Carolina YMCA) (6.19)</b>		X	
<b>R</b>			
<b>Rudds Creek (USACE) (6.66)</b>		X	
<b>Rudds Creek WMA (USACE) (6.64)</b>			X



**Table 23: Kerr Reservoir Land Classifications**

Site (Management Agency) (Site #)	Project Operations	Recreation	Multiple Resource Management
<b>S</b>			
<b>South Dike Park (USACE) (6.5)</b>			X
<b>Staunton View Park (USACE) (6.57)</b>		X	
<b>U</b>			
<b>UNC at Chapel Hill (USACE/University of North Carolina) (6.18)</b>		X	
<b>W</b>			
<b>Walnut Hill (USACE) (6.24)</b>			X
<b>Wall Branch WMA (USACE) (6.65)</b>			X
<b>WestCare (USACE/NCDJJ/WestCare Foundation) (6.9)</b>		X	
<b>Williamsboro Wayside (USACE/NCDPR/NCWRC) (6.15)</b>		X	
<b>Willow Grove Marina (USACE/Mecklenburg County) (6.67)</b>		X	
<b>Wolf Trap WMA (USACE) (6.51)</b>			X

In addition to these recreation areas and easements, the project includes approximately 21,899 acres of “ribbon land”. These lands are held by USACE to accomplish project purposes and maintain its flood control mission at Kerr Reservoir. Given the limited width of these lands, USACE has not developed any recreational facilities on them. USACE, however, does permit local landowners to construct approved docks and other structures on these lands, under conditions specified in the Shoreline Management Plan. Given these uses, all ribbon lands at Kerr Reservoir are classified as Multiple Resource Management. A specific discussion of these lands is not included in the following sections of this chapter, but they are managed in accordance with the Multiple Resource Management Resource Objectives.

Easement lands are illustrated in Appendix H, Figures 10, 11, and 12. These lands are not included within the boundaries of individual recreation sites but occur along ribbon lands, described below, and along the tributaries to the reservoir. These lands cover a reported 10,509 acres.

This chapter provides a detailed description of each recreation area, WMA, and quasi-public leased land at Kerr Reservoir. The descriptions are organized into nine sections, and include:

- 1) Management Agency – the agency currently responsible for day-to-day operation of the management area.
- 2) Land Classification – the designated land use classification category for each management area. The classification categories are described in detail in Chapter 5.
- 3) Recommended Future Use – the Recommended Future Use of the given management area. This may include the existing Land Classification, a change to a different classification, or a specific activity allowed within the Land Classification.
- 4) Rationale – a discussion of the needs and intent of the identified Resource Objectives and recommended Development Needs.
- 5) Location – a brief description of the location of the site, including visitor access points.
- 6) Description – a brief description of the site focusing on the natural, cultural, or recreational resources at the site.
- 7) Land Classification Resource Objectives – a reference to the Land Classification Resource Objectives presented in Chapter 5.

- 8) Site Specific Resource Objectives – the Resource Objectives presented here are specific to each recreation area and build on the project-wide Resource Objectives identified in Chapter 1 and the Land Classification Resource Objectives presented in Chapter 5. Resource Objectives are defined as attainable goals for development, conservation, and management of natural, cultural, and man-made resources at Kerr Reservoir. The objectives establish guidelines for attaining maximum public benefit, while minimizing the potential for adverse impacts to the local environment. Each recreation area has more than one Resource Objective, but the Resource Objectives are not prioritized. In some of the areas, the Resource Objectives may not be implemented for some time.
  
- 9) Development Needs – summary descriptions of the actions that could or should be undertaken to implement the Resource Objectives for each recreation area. The Development Needs include a range of potential construction projects and management strategies that could be used to implement the Resource Objectives. They are based on needs identified for each recreation area with input from the public, as well as state and federal agencies. The Development Needs will be further refined and detailed in subsequent planning and design documents, including the OMP and future DMs. Final decisions regarding the actions to be implemented will be made following coordination between USACE, federal, state, and local agencies, and the private sector, where appropriate and as opportunities arise. Prior to site-specific development, additional environmental review would be conducted, if required.

As noted in Chapter 2, visitation at Kerr Reservoir is made up of local residents and visitors from more developed areas in the region that are attracted to the natural resources in and around the reservoir. During the primary visitation season (Memorial Day – Labor Day), the number of sites and resources at Kerr Reservoir are more than capable of meeting the visitor demand. On summer holidays and other popular weekends, these sites and resources may meet or exceed capacity. Following the summer season, visitation levels out at a rate that is easily met by the existing resources at Kerr Reservoir. Given the recreational demands and population projections presented in Chapter 2, it is reasonable to assume that this yearly cycle could continue for some time into the future. Therefore, this Resource Plan focuses on means of improving the existing sites and resources at the project to meet the current and future visitor demands. It also identifies future uses of these sites. In some cases, the future and current uses are the same. This allows USACE and its partners to continue to expand the existing programs offered at the project. In some cases, however, the Recommended Future Use is different than the existing use. In some cases, this difference highlights a specific role for the given site. For example, a site that is currently classified as Multiple Resource Management may have a Recommended Future Use of Wildlife Management. This designation allows USACE to focus future planning at the site towards meeting Resource Objectives associated with Wildlife Management. In other cases, the Recommended Future Use may be Future Recreation. Sites with this designation have been identified by USACE as sites where future recreation facilities may be appropriate. The timeline for when these

facilities may be developed, who should develop them, and what they might contain will be determined on a project-by-project basis.

As this Master Plan was being developed, USACE was finalizing plans to open Willow Grove Marina. The marina was being constructed by a private developer through a lease between USACE and Mecklenburg County, Virginia. During the master planning process, USACE also was in discussions with some local governments in North Carolina to develop new recreation sites. These types of partnerships represent the future of Kerr Reservoir. In order to develop any of the Future Recreation sites, or implement any of the Resource Objectives and Development Needs outlined in this chapter, USACE will need the support of local governments, nonprofit groups, or private developers. These partnerships would be formed on a project-by-project basis. The future recreation sites identified in this chapter highlight some of the areas USACE would seek to develop with partners.

In addition to enhancing recreation sites, USACE also is focused on its existing WMAs. The WMAs are dispersed around the reservoir, with the heaviest concentrations occurring around the main body of the reservoir and along the Dan and Staunton Rivers. The WMAs provide unique habitat for wildlife and recreational opportunities for visitors to Kerr Reservoir. In recent years, a great deal of effort has gone into mapping these WMAs and developing a unified management strategy. This strategy allows USACE to manage all of the WMAs as one unit rather than individual sites. This improves the quality of habitat provided in the WMAs and the opportunities available to wildlife and project visitors. USACE is assisted in its management of the WMAs by VDGIF, VDCR, NCWRC, USFWS, National Wild Turkey Federation, Quail Unlimited, Ducks Unlimited, and private individuals and groups. A consistent set of Resource Objectives have been applied to the WMAs identified in this chapter to further enhance USACE and its partners' management efforts.

WMAs and other areas within the project provide opportunity for trail use. As noted in Section 2.23, trails are located at Eagle Point Landing, North Bend Park, Occoneechee State Park, Tailrace Park, the Tanner Environmental Education Center, and Liberty Hill. Two of the longest trail systems in the project are the Robert Munford Trail (seven miles) and the Occoneechee WMA trail system (16 miles). USACE does not estimate trail use as part of the overall activity mix; however, sightseeing is one of the types of recreation activities estimated. Sightseeing comprises about 23 percent of the total visitation and may suggest that trail use is a popular activity where trails are provided.

Trails also are increasing in size and usage in the region surrounding the project. There are nearly 20 miles of trails in the vicinity of the project. These include the Tobacco Heritage Trail, Wilson Run (Patrick Henry Trail), and the Staunton River Battlefield Trail (Rails to Trails Conservancy 2012).

Blueways also are growing in popularity in the region. There are approximately 95 miles of flat water paddling and canoeing trails in eastern North Carolina (Trails.com 2012). Within close proximity to the project, the Roanoke River Trail begins at the Roanoke

Rapids and extends to the Pamlico Sound, for a distance of over 128 miles (NCSU 2012). In Virginia, there are over 40 blueways being planned across the state. This includes an extension of the Roanoke River Blueway (VDCR 2012a). As noted in the Resource Objectives presented in the following sections, many of these trail systems have the potential to connect with existing or future trails on project lands.

It is beyond the scope of this Master Plan to design or identify the specific location of these trails. The Master Plan and accompanying PEA, however, provide a programmatic approach, through the Land Classifications and Resource Objectives, to allow these plans to move forward. The PEA addressing the impacts of the implementation of the Master Plan has been included as Appendix C.

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## 6.1 Kerr Reservoir Management Area

**Management Agency:** USACE

**Land Classification:** Project Operations, Recreation, Multiple Resource Management

**Recommended Future Use:** Project Operations, Recreation, Wildlife Management,  
Recreation-Low density

**Rationale:** The Kerr Reservoir Management Area is the starting point for many visits to Kerr Reservoir. Along with providing visitor information and educational opportunities, the site also is the base of operations for USACE at the reservoir. During the master planning process, these different uses were considered. Classifying the entire site as Recreation or Multiple Resource Management would allow many of the existing activities to continue. This method, however, would not provide USACE with the necessary control over the site to maintain Project Operations. The Project Operations classification would allow current activities to continue at the site, however, it would not accurately reflect the use of much of the management area. Therefore, the site has been divided into three areas that focused on Project Operations, Recreation, and Multiple Resource Management. This allows the distinct activities that occur at the management area to continue into the future. The Land Classification and Resource Objectives allow USACE to continue to maintain or expand project operations, while considering appropriate means of improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** The Kerr Reservoir Management Area is located southeast of Boydton, where the lake flows through the dam into Lake Gaston. The area straddles the dam, including lands on both sides of the structure.

**Description:** The Kerr Reservoir Management Area includes USACE management center, the Joseph S. J. Tanner II Environmental Education Center, the maintenance area, USACE dock, government quarters, the sewage treatment center, the dam, the powerhouse, and approximately 52 acres of land on the west side of the dam. The management building houses USACE offices, as well as an information desk for visitors.

Many first-time visitors begin their visit at the management area, to see the dam, obtain information on different opportunities within the project boundary, or participate in educational programs. Returning visitors also visit the site to participate in these programs or use the picnic and fishing areas that exist within the area. Areas east of the dam provide unique views of the reservoir and dam infrastructure, while providing opportunities for picnicking.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

Project Operations

- Maintain project operations and security as the priority objective for the area;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Provide appropriate facilities for day-use activities; and,
- Promote appropriate interpretive and educational resources

Multiple Resource Management

- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

Recreation

- Provide for separate and interrelated camping and day-use opportunities;
- Allow for several activities in the same general vicinity;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Identify means of incorporating regional trail systems into the activities provided at the site; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time



## 6.2 Buggs Island

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Vegetation Management,  
Recreation – Low Density

**Rationale:** Buggs Island provides a unique undisturbed environment in close proximity to some of the larger man-made disturbances at the project. The site provides habitat for a number of unique vegetation and wildlife species in the region. During the master planning process, USACE recognized the value of this undisturbed island and sought to provide it with the appropriate level of protection. The Multiple Resource Management classification recognizes the island's current condition while the Recommended Future Uses of Wildlife Management, Vegetation Management, and Recreation – Low Density provide the unique resources on the island with protection from development. The Land Classification and Resource Objectives allow VDGIF and USACE to continue to protect surrounding natural resources.

**Location:** Buggs Island is located southeast of Boydton on the north side of the dam. It is officially located in the headwaters of Lake Gaston but is owned by USACE.

**Description:** Buggs Island is a 164-acre island located on the north side of the John H. Kerr Dam. The island is undeveloped and hunting is prohibited in accordance with state game laws. The island is maintained as a waterfowl/wildlife sanctuary providing habitat for a variety of unique species.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Protect and preserve cultural resources;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.3 Liberty Hill Trail

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Liberty Hill Trail is a recreation area located in close proximity to the dam. During the master planning process, the Land Classifications of Recreation and Multiple Resource Management were considered. Trail activities are generally low density and would meet the definition of Multiple Resource Management. The site, however, is more developed than other trails and is not meant to provide an experience through an undisturbed environment compared to other USACE trails. Therefore, the Recreation classification was applied to the trail. The Land Classification and Resource Objectives allow USACE to continue to offer recreational opportunities, while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Liberty Hill Trail is located southeast of Boydton. The site is bordered by the Liberty Hill WMA to the south. Access to the site is provided by Route 4 and other local roads.

**Description:** Liberty Hill Trail is 1.5 miles long. Its location near the John H. Kerr Dam provides a unique mix of natural environments, historic resources, and modern technology along its route. There are over a dozen markers along the route that provide information on these different resources.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Allow for several activities in the same general vicinity;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Identify means of incorporating Virginia Rails to Trails system into the activities provided at the site; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Restore/repair historic brick wall surrounding cemetery.

## 6.4 Liberty Hill WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Liberty Hill WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Liberty Hill WMA is located southeast of Boynton, adjacent to the dam. Access to the site is provided by Route 4 and 818.

**Description:** Liberty Hill WMA is a 258-acre site that is heavily forested. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. These forested areas are broken up by several fields located in the center of the site. Access to the site is provided in several gated locations. An unpaved road connects these access points and provides access across much of the site. The western access point, near the dam, includes a parking lot which serves the adjacent bank fishing area.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures;
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species; and,

**Development Needs:**

- Develop ADA-accessible hunting opportunities.

## 6.5 South Dike Park

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Currently South Dike Park has not been developed and supports a variety of wildlife habitat. During the master planning process, previous and current plans for the site were reviewed. These plans include developments that would support intensive recreational activity. Because these developments have yet to occur, the Multiple Resource Management Land Classification was the only appropriate classification. The Recommended Future Use of Recreation recognizes USACE's plans for the site. The Land Classifications and Resource Objectives selected for the site allow for the future development of the site, while continuing to protect natural and cultural resources within its borders.

**Location:** South Dike Park is located southeast of Boydton, along the wing dike of the dam. This location is just southeast of Boydton, Virginia, and accessible by Virginia State Highway 4.

**Description:** South Dike Park is a 122-acre site comprised of two land masses that are connected by the dam's wing dike. In the 1980 Master Plan, the site was identified for development of day-use recreational facilities. These facilities have yet to be developed.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Complete feasibility study to determine location of boat ramp;
- Develop swim beach;
- Construct picnic sites; and,
- Develop appropriate parking and restroom facilities.

## 6.6 Palmer Point Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Palmer Point Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Palmer Point Park is located just south of the state line. It is located off of Route 827.

**Description:** Palmer Point Park is a relatively highly developed 36-acre site. During the summer season, the park receives high levels of visitation focused around the swim beach. The park once supported a marina and camping but has been converted into a day-use park. Today the primary visitor uses at the site are the boat ramp, swim beach, and picnic facilities. The site is accessible via a paved driveway controlled by a gated entrance station and connects to a paved parking lot. To further facilitate visitor use, USACE provides vault toilets, grills, bulletin boards and informational signs, and security lighting.

The site is very popular for boating and beach use. The groundwater well that had served the park was closed recently due to repeated samples of contaminated water.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access, fishing, and sightseeing;
- Provide appropriate facilities for day-use activities; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Develop ADA-compliant beach access;
- Relocate boat ramp to future development at South Dike Park; and,
- Install well and construct water-borne day-use restroom facilities.



## 6.7 Keats Peninsula

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation, Recreation – Low Density

**Rationale:** Keats Peninsula was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the value of the undeveloped lands in supporting low density recreation was recognized in certain areas. The value of the site to support intensive recreation also was noted. The private in-holdings on the peninsula present some unique planning constraints, as well. To account for these constraints, while respecting the need for intensive and low density recreation, Recreation and Recreation – Low Density were recommended as future uses, so the site was classified as Multiple Resource Management. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Keats Peninsula is located on a narrow peninsula just south of the state line. The site is near Palmer Point and Kimball Point Park.

**Description:** Keats Peninsula is a 369-acre site that shares a narrow peninsula with several private in-holdings. The 1980 Master Plan had programmed all of USACE owned land on the peninsula for recreational development, including a marina and campground. Since 1980, much of the private land has been developed. This limits the types of opportunities that can be provided at the end of the peninsula, due to limited access and potentially incompatible adjacent land uses. Due to these limitations, USACE has left the site undeveloped. Current plans still include potential recreational development around one of the large coves on the southern peninsula. The remainder of the site would remain undeveloped or serve future low density recreation needs.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.8 Kerr Lake State Recreation Area

**Management Agency:** USACE/NCDPR

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Kerr Lake State Recreation Area includes all of the lands managed by NCDPR at Kerr Reservoir. The lands have been leased by North Carolina for the purpose of providing recreational activities at the reservoir. During the master planning process, consideration was given to dividing the lands into developed and undeveloped, with corresponding land classifications. Such a classification, however, would limit the use of these lands by NCDPR now and in the future. Because the lands are leased for the purpose of providing recreational opportunity, it was determined that the entire area should be classified as Recreation. The Land Classification and Resource Objectives allow NCDPR and USACE to continue to maintain the natural conditions at the site, while considering means of improving visitor opportunities.

**Location:** Kerr Lake State Recreation Area is located on the Nutbush Creek arm of Kerr Reservoir. It consists of eight individual sites that are all accessible from Route 15, Route 1, and Interstate 85 via local roads.

**Description:** Kerr Lake State Recreation Area consists of 2,629 acres spread out over eight sites:

- Kimball Point Park
- County Line Park
- Bullocksville Park
- Satterwhite Point Park and Marina
- Nutbush Creek Park
- Steele Creek Marina (Also/previously known as Townsville Landing and Marina)
- Hibernia Park
- Henderson Point Park

Kimball Point Park is a 89-acre peninsula dominated by pine stands and camp sites. Access to the site is provided via a gated entrance station at the end of Route 1204. The southern shore of the park is dominated by 40 electric camp sites. Restrooms, shower facilities, and a playground are located within this camp ground. The western end of the site consists of primitive and electric camp sites. Restrooms and shower facilities are included in this campground as well. The north side of the peninsula contains a boat ramp and a picnic shelter.

County Line Park is a 302-acre site that sits on a narrow strip of land along the shoreline of Kerr Reservoir. The site is heavily wooded, predominantly with mixed pine/hardwood forest. Entrance to the park is provided through a gated fee booth/gate house on the state road. There are two, somewhat isolated boat ramps located in the southern portion of the park. One ramp is maintained by NCDPR and one by NCWRC. A portion of the park is developed for camping, including primitive and electric camp sites, as well as support for recreational vehicle camping. Beach access also is provided near the electric camp sites. Restrooms, showers, picnic sites, parking, and playgrounds are included in the park as well.

Bullocksville Park is a 435-acre recreational facility. The park is heavily wooded, with clearings and structures along the shore. A large portion of the park remains undeveloped. SR 1366 provides access to the park, through a gated entrance station. Visitation is dispersed throughout the year, with highest levels coming during the popular spring and summer months. The park's electric and primitive campsites are located on the western end of the site. Recreational vehicles also are supported at the park's camp sites. Recreational fields, restrooms and showers, a hiking trail, and a boat ramp also are located at the western end of the park, with associated parking lots. The eastern and southern portions of the park are focused on day-use activities, including playgrounds, a baseball field, picnic shelters and sites, a fishing pier, and a community building. These day-use locations are supported by additional parking and restroom facilities.

Satterwhite Point Park and Marina is a 409-acre site with the highest concentration of recreational facilities on the reservoir. The park is divided into three areas: the J.C. Cooper Campground, the day-use area, and the marina. The J.C. Cooper Camp Area is located on the southern portion of the peninsula. It consists of primitive and electric camp sites arranged on the large and small peninsulas that comprises the site. Campers have access to a boat ramp located in the southwest corner of the larger peninsula. The camp sites are supported by restroom and shower facilities, a playground, and waste disposal facilities. The camp sites also support recreational vehicle camping. The park's Big Poplar Hiking Trail loops through much of the site. Parking is available at the respective camp sites. The day-use portion of the park contains several picnic facilities, restroom and shower buildings, playgrounds, and volleyball courts. There also is a swim beach and community building along the western shore of the peninsula. The end of the peninsula is leased to a commercial concessioner for the operation of a marina. The marina includes an office, boat ramp, fuel dock, store, rental cabins, and boat service yard. NCDPR also maintains offices, a maintenance yard, and a visitor center in the day-use portion of the park. The visitor center has information on the park and educational displays.

Nutbush Creek Park is a 221-acre piece of land that is covered with upland hardwood and mixed pine/hardwood forests. Route 1308 divides the park into two sections. Both sections of the park are accessed via paved park roads controlled by a gated entrance station. The northern side of the park includes electric camp sites on its north shore. Parking is provided at each camp site. These camp sites support recreational vehicle camping and include restroom and shower facilities. Picnic facilities and a boat ramp are located in close proximity to the camp sites, as well as a large tournament ramp. The south side of the park contains electric and primitive camp sites. Parking is provided at each camp site. Recreational vehicle camping is supported on the south side of the camp as well. Like the north side of the camp, the south side includes shower and restroom facilities along with a boat ramp.

Steele Creek Marina is a 425-acre site that is used primarily to support a marina that is subleased to a commercial concessioner. Access to the site is provided through an electronic security gate that is controlled by a keypad. The marina slips are equipped with water and electrical hook ups. The marina provides septic tank pump-out for all boats stored at the marina. It is the only pump-out facility on the North Carolina side of the reservoir. The marina also includes a small store that can be accessed from land or water. The store sells gasoline and other boat equipment, ice, drinks, and snacks. The site also includes a campground. The campground contains waterfront campsites with and without water and electricity. The campground is serviced by modern restrooms with showers, as well as the marina store. The campground includes a swim beach for campers' use.

Hibernia Park is a 459-acre peninsula that is relatively developed with recreational facilities. Access to the site is provided via a gated entrance station. East of the entrance station is a two-lane boat ramp, group camping area, and associated restrooms and parking. The western side of the peninsula is dominated by the majority of the park's camp sites. A second two-lane boat ramp is located between the primitive and electric campsites. The remaining primitive campsites are located along the northeastern corner of the park. Many of the camp sites also support recreational vehicle camping and provide showers and picnic facilities. Additional picnic facilities are located on the northern end of the peninsula.

Henderson Point is a 289-acre site that covers the southern and eastern edges of a heavily wooded peninsula. Access to the site is controlled by a gate house. The largely undeveloped site is divided into four distinct areas. At the easternmost point of the peninsula, there are two boat ramps, picnic shelters, a community building, and associated parking lots. Just south of this location is a fishing pier, with nearby restrooms, parking, a playground, picnic shelters, and a boat ramp. The central portion of the peninsula includes a group camping area, a boat ramp, and primitive camp sites. These sites also support recreational vehicle camping and are supported by a shower facility. The western end of the park includes electric campsites and another shower facility. The limited areas that are suitable for development allow much of the park and the peninsula to remain undeveloped and open for various wildlife species.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.9 WestCare

(Also/previously known as E-Ten-Etu)

**Management Agency:** USACE/North Carolina Division of Juvenile Justice (NCDJJ)/  
WestCare Foundation

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** WestCare is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** WestCare is located north of Middleburg and Bullocksville. It is located North of Bullocksville Park and South of County Line Park.

**Description:** The 231-acre site operated by Eckerd Youth Alternatives Inc. ceased operation in May of 2011. The State of North Carolina, as the prime lease holder, sub-leased the property to the WestCare Foundation (also known as WestCare North Carolina Inc.) in February 2012 for continued operation.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.10 Flemingtown Road Landing

**Management Agency:** USACE/NCDPR/NCWRC

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The landing site is a popular access point for visitors who come to Kerr Reservoir for fishing or recreational boating. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. In some cases, a boat launch area would be considered low density recreation, meeting the definition of Multiple Resource Management. Given the level of boating activity on Kerr Reservoir and the use of the surrounding boat ramps, it was determined that the landings support intensive recreational use. Therefore the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allow NCWRC and USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Flemingtown Landing is located north of Middleburg. The site is southeast of Bullocksville Park and east of Satterwhite Point. The site is located at the end of Flemingtown Road/Route 1371, west of Exit 220 on Interstate 85.

**Description:** Flemingtown Landing is an 82-acre site that was developed as part of the Flemingtown Marina. The site is leased by USACE to NCDPR and operated under a license by NCWRC. Visitation at the landing is focused solely on gaining access to Kerr Reservoir. The site consists of a large gravel parking lot and three boat ramps with adjacent courtesy docks. NCWRC maintains its standard bulletin board at the site, with information related to water conditions and other regional activities. There are several overhead lights around the ramps for safety and security.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time



## 6.11 Camp Kerr Lake

**Management Agency:** USACE/Shiloh Family Ministries

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Kerr Lake is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Kerr Lake is located just northwest of Middleburg, between Satterwhite Point and Flemingtown Landing.

**Description:** The 88-acre site is leased by the Shiloh Family Ministries

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.12 Camp Graham

(Also/previously known as North Carolina Coastal Pines Council; Brightleaf Council Camp; Pines of Carolina Camp)

**Management Agency:** USACE/Pines of Carolina Council of GSA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Graham is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Graham is located northwest of Middleburg, at the southern end of Nutbush Creek. The site is east of Satterwhite Point Park.

**Description:** The 139-acre site is leased by the Pines of Carolina Council of GSA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.13 Camp Key Haven

**Management Agency:** USACE/North Carolina State University

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Key Haven is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Key Haven is located along Nutbush Creek, west of Middleburg. The site is north of Nutbush Park.

**Description:** The 22-acre site is leased by North Carolina State University.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.14 Crooked Run WMA

**Management Agency:** USACE/NCDPR/NCWRC

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Crooked Run WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Crooked Run WMA is located in the southern end of Nutbush Creek southwest of Middleburg. The site sits along Route 39 as it passes over Crooked Run.

**Description:** Crooked Run WMA is a 686-acre forested site. NCWRC operates the site through a real estate license from USACE. Access and parking for the site is provided from Route 39. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A gated, unpaved road leads from the parking lot into the southern portion of the WMA. The road leads to a series of small fields that occupy the central and southern portions of the site. A narrow creek passes through some of these fields as it drains into the reservoir from the southern corner of the WMA. Crooked Run Creek runs through the northern portion of the WMA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.15 Williamsboro Wayside

**Management Agency:** USACE/NCDPR/NCWRC

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The wayside is a popular access point for visitors who come to Kerr Reservoir for fishing or paddle boats. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. Because the site is maintained solely for active recreation, the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allow NCWRC and USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Williamsboro Wayside is located along Flat Creek, at the southern end of Nutbush Creek. The site is southeast of Stovall and is located off of Route 39.

**Description:** Williamsboro Wayside is a 7-acre site that provides canoe/kayak access to the southern end of Kerr Reservoir. The site is leased by USACE to NCDPR and operated under a license by NCWRC. Williamsboro Wayside is accessed from NC 39, via a short dirt road. The road terminates at a small parking area that provides enough space for a few vehicles with trailers to park. A temporary restroom facility, some informational signs, and security lighting are provided to facilitate visitor use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## **6.16 Nutbush Woods**

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Nutbush Woods was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Use is Recreation. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Nutbush Woods is located northeast of Stovall along Nutbush Creek. The site is located on a narrow peninsula across the creek from Satterwhite Point Park.

**Description:** Nutbush Woods is a 33-acre narrow strip of land that is characterized by a number of small coves. In the 1980 Master Plan, the site was identified for development of day-use recreational facilities. These facilities have yet to be developed.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time



## 6.17 Nutbush WMA

**Management Agency:** USACE//NCWRC

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Nutbush WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Nutbush WMA occupies a narrow northeast of Stovall. The site is accessible via Thomas Road, Route 1329.

**Description:** Nutbush WMA is a 142-acre peninsula leased by USACE to NCDPR and operated under a license by NCWRC. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The entrance to the site consists of a gravel parking lot adjacent to the main road onto the peninsula. The gravel road bisects the large field at the southern end of the WMA. The remainder of the site is forested.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.18 UNC at Chapel Hill

**Management Agency:** USACE/ University of North Carolina

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** UNC at Chapel Hill is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** UNC at Chapel Hill is located northeast of Stovall, at the confluence between Nutbush Creek and the main body of the reservoir. The site is just south of Henderson Point.

**Description:** The 239-acre site is leased by the University of North Carolina.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.19 Presbyterian Point

**Management Agency:** USACE/Henderson, North Carolina YMCA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Presbyterian Point is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Presbyterian Point is located northeast of Stovall, at the confluence of Nutbush Creek and the main body of the reservoir. The site is north of Henderson Point.

**Description:** The 233-acre site is leased by the Henderson, North Carolina YMCA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## **6.20 Long Grass Point**

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Long Grass Point was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Use is Recreation. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Long Grass Point is located northeast of Stovall at the end of the peninsula t at the confluence of Nutbush Creek and the main body of the reservoir. The site is located south across the water from North Bend Park.

**Description:** Long Grass Point is a 47-acre site located at the end of a peninsula that is primarily forested. Clearings exist along the shoreline and near the adjacent residential properties. In the 1980 Master Plan, the site was identified for development of day-use recreational facilities. These facilities have yet to be developed.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.21 Camp Campbell

**Management Agency:** USACE/Occoneechee Council of BSA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Campbell is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Campbell is located northeast of Stovall, near the confluence of Nutbush Creek and the main body of the reservoir. The site is located across the water from North Bend Park.

**Description:** The 332-acre site is leased by the Occoneechee Council of BSA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## **6.22 Goose Neck Point**

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation, Recreation – Low Density

**Rationale:** Goose Neck Point is an undeveloped piece of land within Kerr Reservoir. Based on its undeveloped nature, the Multiple Resource Management classification was appropriate. Since the publication of the 1980 Master Plan, USACE has recognized this area as a unique location capable of meeting future recreational needs at the project. While no specific plans for the site have been developed, it is suitable for a variety of recreational opportunities. The Land Classification, Recommended Future Use, and Resource Objectives allow USACE to continue to maintain the undeveloped site, while considering means of improving visitor opportunities.

**Location:** Goose Neck Point is located just north of the state line. The site is immediately east of Camp Boyer and across the water from Eagle Point WMA.

**Description:** The 252-acre site is heavily forested. The eastern portion of the site is comprised of two narrow peninsulas that form a sizeable cove.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.23 Camp Boyer

**Management Agency:** USACE/Tuscarora Council of BSA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Boyer is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Boyer is located just north of the state line, south of Eastland Creek. The site is west of Camp Campbell.

**Description:** The 293-acre site is leased by the Tuscarora Council of BSA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.24 Walnut Hill

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Walnut Hill was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Use is Recreation. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Walnut Hill is located just south of the state line. The site is southeast of the Camp Jean Short site.

**Description:** Walnut Hill is a 131-acre site located along Mill Creek. The heavily wooded site is divided by several small coves and peninsulas. The 1980 Master Plan had programmed the site for camping or for quasi-public lease. Lack of adequate access has prevented these plans from being developed.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.25 Camp Jean Short

(Also/previously known as Five County Mental Health and/or Fort Bragg)

**Management Agency:** USACE/Five County Mental Health Association of Henderson, North Carolina

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Jean Short is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Jean Short is located just south of the state line. The site is located at the confluence of Mill Creek and the main body of the reservoir.

**Description:** The 111-acre site is leased by the Five County Mental Health Association of Henderson, North Carolina.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.26 Ivy Hill Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Ivy Hill Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Ivy Hill Park is located just north of the state line. It sits at the end of Route 825.

**Description:** Ivy Hill is a 373-acre site that straddles a large east-west peninsula. In 2007 Ivy Hill Park was converted to a day use area and its 25 campsites were closed. Visitation to the site is comprised of visitors seeking to use the day-use facilities, as well as those that seek access to the reservoir via the boat ramp. These groups are most active on weekends and holidays.

Access to the site is provided by a paved road controlled by a gated entrance station. Primary visitor sites within the park include a boat ramp and courtesy dock, swim beach, picnic shelter, and picnic sites. The park contains paved parking spaces to support visitation to these sites. The site also contains vault toilets, grills, security lights, trash cans, and bulletin boards and informational signs to facilitate visitor use. The primitive campground on the site was closed at the end of Fiscal Year 2007 in an effort to reduce operating costs. A dump station and ground water well remain on site but are not operational at this time.

The peninsula's position on Kerr Reservoir subjects the shoreline to heavy wind and wave action. The result has been increasing levels of shoreline erosion which USACE has addressed with riprap.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Provide appropriate facilities for day-use activities; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.27 Ivy Hill WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Ivy Hill WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Ivy Hill WMA is located just north of the state line, southeast of the Occoneechee panhandle. The peninsula is accessible via local roads that lead from Route 39.

**Description:** Ivy Hill WMA is a 742-acre peninsula. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The shoreline of the peninsula is carved by varying sizes of coves. The coves create some unique habitats on the otherwise forested site. A utility corridor runs in a northeasterly direction across the peninsula. An unpaved road parallels the corridor, branching to provide access to much of the peninsula. There are no gates within the WMA, allowing universal access along the roads. Features along the road include several small fields and a bank fishing site located at the end of the utility corridor. The lack of formal public access to the site has prevented development.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.28 Island Creek Park

**Management Agency:** USACE

**Land Classification:** Recreation, Project Operations

**Recommended Future Use:** Recreation, Project Operations

**Rationale:** Island Creek Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. A small portion of the park, however, supports the Island Creek dam. This structure is related to Project Operations and access to it is limited to vehicle passage over the dam. Therefore, a Land Classification of Project Operations was applied to the dam structure. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Island Creek Park is located north of Stovall. The site is located at the southern end of Island Creek, adjacent to Route 825.

**Description:** Island Creek Park is a 43-acre site that is heavily wooded with pine and upland hardwoods. Generally, visitation is highest on weekends and holidays and peaks during the beginning and end of the summer season. Parking is provided on a mix of gravel and paved spaces. The primary feature at the site is the boat ramp and courtesy dock. A picnic site also is provided. These sites are supported by vault toilets, security lighting, bulletin boards and informational signs, and trash cans. The adjacent Island Creek Dam, pumping station, and associated lands are operated by USACE to prevent flooding of the former tungsten mining site located south of the dam.

Development is underway to provide fully accessible courtesy dock and fishing pier, through a partnership with the Clarksville VFW and American Legion.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Maintain the Island Creek Dam
- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Construct appropriate facilities for a proposed ADA Veterans Park, including: picnic shelter, picnic sites, boat dock, fishing pier, and vault toilet.

## 6.29 Island Creek WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Island Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Island Creek WMA is located north of Stovall. The area is located just south of the Island Creek Dam and is accessible via Route 1501 and Route 1502.

**Description:** Island Creek WMA is a 117-acre site that is broken into several narrow parcels that line the streams approaching Island Creek Dam. The area surrounding these streams is forested. There are no roads or gates within the WMA; however, local roads provide access to fishing points and boat ramps just north of the site. The abandoned tungsten mine is located just south of the WMA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.30 Cedar Grove WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation, Wildlife Management, Recreation – Low Density Recreation

**Rationale:** Cedar Grove WMA was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Uses include Recreation, along with the Wildlife Management and Recreation – Low Density uses associated with WMAs. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Cedar Grove WMA is located just south of the state line. The site is accessed via Route 819.

**Description:** Cedar Grove WMA is a 293-acre site that is heavily forested with some moderately sized fields located on its eastern peninsula. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A utility corridor creates a clearing that runs northwest from the southern portion of the site. Route 819 terminates at the site and provides access to the ends of the three peninsulas that make up the site. The eastern road passes through several of the fields that are included in the WMA. The central road is controlled by a gate and provides access nearly to the end of the peninsula. The western road follows the utility corridor to the end of the peninsula.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.31 Duck Island

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Duck Island provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Duck Island is located just south of the state line. It is northwest of the Island Creek Dam.

**Description:** Duck Island is a 35-acre island that consists of varying densities of forest cover. The 1980 Master Plan did not program any development for the site, given the limited access options.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.32 Beaver Woods

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Beaver Woods provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Beaver Woods is located along Beaver Creek north of Stovall. The site is southeast of Old Soudan WMA.

**Description:** Beaver Woods is a 238-acre site that is comprised of moderately sloped forest land. Some of these forests have been impacted by Pine Bark Beetle infestation (USACE 1980). This infestation has since been timbered and reforested. The 1980 Master Plan did not program any development for the site, given the limited access options.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.33 Old Soudan WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Old Soudan WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Old Soudan WMA is located just north of the state line on a peninsula that divides Buckhorn and Beaver Pond Creeks as they flow into the main body of Kerr Reservoir. The peninsula is located south of Merifield WMA and is accessible from Route 15 via Old Soudan Road.

**Description:** Old Soudan WMA is a 251-acre peninsula. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The majority of the site is wooded, although several small fields exist throughout the central portion of the peninsula. An unpaved road provides access through the central portion of the site, terminating at a utility corridor that bisects the eastern end of the peninsula. Several gates along this road provide access to other roads that branch off to the northern and southern banks of the peninsula.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.34 H. Clay Hemeric Scout Reservation

(Also/previously known as Cherokee Council BSA; Old North State Council; Camp Donald E. Robinson)

**Management Agency:** USACE/Old North State Council of BSA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** H. Clay Hemeric Scout Reservation is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** H. Clay Hemeric Scout Reservation is located just south of the state line. The site is located along Grassy Creek, east of U.S. Highway 15.

**Description:** The 196-acre site is leased by Old North State Council of BSA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.35 Camp Concord

(Also/previously known as State Line Baptist)

**Management Agency:** USACE/Stateline Baptist Assembly

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Concord is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Concord is located along Grassy Creek, just south of the state line. The site is adjacent to the H. Clay Hemeric Scout Reservation site, west across U.S. Highway 15.

**Description:** The 163-acre site is leased by the Stateline Baptist Assembly.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.36 Camp Tanner

(Also/previously known as Camp Moniseep and/or Virginia Tidewater GSA)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Camp Tanner is an unoccupied lease area at Kerr Reservoir. Uses on leased lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Tanner is located just south of the state line, along Grassy Creek. The site is adjacent to Camp Concord.

**Description:** The 137-acre site had been leased for the exclusive use of the Virginia Tidewater Council of GSA. Since the publication of the 1980 Master Plan, the group gave up its lease to the site.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time



## 6.37 Garretts Woods

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Garretts Woods provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Garretts Woods is located along Grassy Creek, northwest of Stovall. There is currently no public access to the site.

**Description:** Garretts Woods is a 479-acre site that was identified in the 1980 Master Plan for day-use and camping facilities. The lack of formal public access to the site has prevented this development. In the meantime, the site has been managed as a WMA to support wildlife around the reservoir.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.38 Grassy Creek Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Grassy Creek Park is a local recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Grassy Creek Park is located on Grassy Creek northwest of Stovall. The site is accessible via VA Route 723 and NC Route 1443.

**Description:** Grassy Creek Park is a small 21-acre day-use site. In 1980 Grassy Creek Park was converted to a day use area and its 11 campsites were closed. Due to its isolated location, Grassy Creek Park primarily serves the residents of the surrounding area. Access to the site is provided via a gated entrance station. The site provides parking and access to a boat ramp and courtesy dock. The site includes a vault toilet, a picnic shelter, picnic sites and tables, grills, bulletin boards and other informational signs, trash cans, and security lights to facilitate visitors use. Much of the site's shoreline has been protected with riprap and a bulkhead.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.39 Turtle Head Peninsula

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Turtle Head Peninsula provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing low density activities in the future at the site is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). As management areas surrounding Turtle Head Peninsula continue to receive more visitors, the role of the site as a buffer between more heavily used lands will increase. Undeveloped project lands also provide a buffer between project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Uses indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Turtle Head Peninsula is located on Grassy Creek, near its confluence with the main body of the reservoir. The site is north of Stovall and immediately west of Camp Tanner.

**Description:** Turtle Head Peninsula is a 61-acre peninsula. The entire site is heavily forested. Smaller peninsulas and coves line the shoreline of the site.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.40 Beaver Pond WMA

(Also/previously known as Buchanans Woods)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Beaver Pond WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Beaver Pond WMA is located along Beaver Pond Creek, as it empties into Grassy Creek. The site is just north of the state line and west of the Route 15 bridge.

**Description:** Beaver Pond WMA is a 693-acre site with forests, fields, and open areas. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A series of unpaved roads provide access from the WMA gates through the site to many of the open fields. These roads pass over the narrow portion of Beaver Pond Creek but do not approach the main body of the reservoir.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.41 Longwood Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Longwood Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Longwood Park is located just north of the state line, west of US Highway 15, four miles south of Clarksville.

**Description:** Longwood Park is a 147-acre site located on a series of peninsulas that extend into Grassy Creek. Longwood receives regular visitors throughout the year. The site receives its highest rates of visitation on holidays and weekends. Fishing tournaments result in visitation spikes, as well. In 2010, Reserve America's Official Camping Club named the park one of its top 25 park beaches. In 2009, the group listed the park as one of its top 25 kid-friendly parks.

Access to the site is provided via a gated entrance station. Inside the park gate, there is a shower house, a sanitary dump station, and two campsites to support the attendants that work the entrance station. This central portion of the park, as well as the northern end of the park, contains the campsites and restroom facilities. The southern end of the park contains a picnic area, picnic shelter, playground, swim beach, a two-lane boat ramp, and additional restrooms.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing; and,
- Allow for several activities in the same general vicinity.

**Development Needs:**

- Connect wastewater to Town of Clarksville sewer system.



## 6.42 Merifield WMA

(Also/previously known as Soudan Landing)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation, Wildlife Management, Recreation – Low Density

**Rationale:** Merifield WMA was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Uses include Recreation, along with the Wildlife Management and Recreation – Low Density uses associated with WMAs. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Merifield WMA is located just north of the state line. It is due west of the Occoneechee panhandle and southeast of Clarksville, Virginia.

**Description:** Merifield WMA is a 612-acre forested site. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A large cove runs from the southern to central portion of the site. A utility corridor parallels the cove, running from the entrance of the WMA to its southern boundary along the water. Access to the site is provided through a gated entrance with an adjacent parking lot. An unpaved road provides access from the site entrance and follows the utility corridor to the southern end of the site to a bank fishing site. Several gates exist along the road, providing access to other roads that connect to several of the small fields within.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.43 Clarksville Marina

**Management Agency:** USACE/Town of Clarksville, Virginia/Clarksville Marina, Inc.

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The Clarksville Marina has been in operation for over 30 years. The purpose of the marina is to provide water access, boat rentals, and support services to local residents and visitors. All of the land within the marina boundary is used to serve these intensive recreation activities. Therefore, the master planning process identified the Recreation Land Classification as the only applicable classification for the site. The Land Classification and Resource Objectives allow the Town of Clarksville and USACE to continue to maintain the current conditions at the site while considering means of improving visitor opportunities.

**Location:** Clarksville Marina is located within the Town of Clarksville. It is due west of the Occoneechee State Park.

**Description:** Clarksville Marina is located on a small piece of cleared land in the Town of Clarksville, Virginia. The marina is subleased to a commercial concessioner (Clarksville Marina, Inc.). The site includes vehicle and trailer parking; boat rentals, sales, and repairs; a marina store; a boat ramp; and a number of slips.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Develop adequate restroom facilities to meet State/County standards; and,
- Construct pump-out facilities to support marina activity.

## 6.44 Buffalo Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Buffalo Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Buffalo Park is located at the confluence of Buffalo Creek and the main body of Kerr Reservoir, northwest of Clarksville. The site is approximately three miles north of Highway 58 on Route 722.

**Description:** Buffalo Park consists of approximately 31 acres of wooded and open space. Access is provided by Route 722, which terminates at the entrance station. The park road provides access to the site's parking lots, boat ramp, swim beach, and campsites. The park road, parking lots, and boat ramp are the only paved surfaces in the site.

Visitors access the site for the boat ramp, swim beaches, and campsites. These various activities result in use throughout much of the year, with peaks occurring during the popular spring and summer months.

The parking lots include space for vehicles that are sized to accommodate a vehicle with an attached boat trailer. The single boat ramp sits at the end of the park road, adjacent to larger parking areas. The boat ramp is supported by a courtesy dock for visitors. To the east of the boat ramp, the Buffalo Park swim beach provides ample space for visitors to use the beach and protected waters.

The remainder of the park consists of campsites (including an accessible campsite) and undeveloped, wooded areas. Campsites within the park include those that have electric and water services and primitive campsites. Water for campsites and other facilities is provided by a ground water well onsite. The site also is serviced by a sanitary dump station. Other visitor facilities include a picnic shelter, picnic tables, grills, vault toilets, and showers. The site also contains trash cans, a bulletin board and other signs with public information, and security lighting to facilitate visitor use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Promote water access for swimming, fishing, and boating; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.45 Buffalo Springs Wayside

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Buffalo Springs Wayside is a popular recreation site managed by USACE. During the master planning process, the Land Classifications of Recreation and Multiple Resource Management were considered. Picnic activities at the site are generally low density and would meet the definition of Multiple Resource Management. The site, however, is more developed than other picnic facilities and is not meant to provide an experience through an undisturbed environment compared to other Multiple Resource Management sites. Therefore, the Recreation classification was applied to the wayside. The Land Classification and Resource Objectives allow USACE to continue to offer recreational opportunities, while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Buffalo Springs is west of Clarksville, along Buffalo Creek. The site is just north of Highway 58 on Route 732 and south of Buffalo Park.

**Description:** Buffalo Springs is a seven acre roadside, day-use park. A gated paved driveway provides access to the site's parking lot. The parking lot is connected to the remainder of the site via paved and unpaved trails. The site contains one picnic shelter with a number of other picnic locations and tables. One vault toilet, grills, trash cans, informational signs, and security lights are provided to facilitate visitor use.

Visitation at the site is relatively low, when compared to other day-use sites at Kerr Reservoir. Given the day-use nature of the site, visitation occurs throughout the year during appropriate weather.

The site gets its name from a once popular spa that was said to have medicinal qualities in its spring water. The springs were known to Europeans as early as 1728 and operated as a commercial enterprise from about 1811 to the early 1940s. The springs included a hotel and health resort and a bottling plant that opened around the turn of the century, selling water from Spring No. 2. By the 1880s, Buffalo Lithia Springs shipped bottled water in twelve-bottle cases of half-gallon containers priced at five dollars per case. At its peak, Buffalo Springs' water was sold in an estimated 20,000 drug stores throughout Europe, Canada, and the United States. Although the hotel closed in the early 1940s, the owners of the property continued to sell bottled water until 1949. The spring is listed on the National Register and also is listed as a Virginia State Historic Site.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Protect and preserve archaeological and architectural resources;
- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Develop an interpretive trail through the Buffalo Springs Historical Site.

## 6.46 Buffalo WMA

(Also/previously known as Viking Hills)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Buffalo WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Buffalo WMA is located south of the confluence of the Dan and Staunton Rivers with the main body of Kerr Reservoir. The site is located east of South Boston, along Route 722.

**Description:** Buffalo WMA is a 594-acre forested site with three entrance roads. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. There are moderately size fields dispersed throughout the site. Narrow coves cut into the site's shoreline, creating forested creeks within the site. The easternmost road in the WMA includes a parking lot and provides access to a series of fields. The central access road only extends a short distance into the site, terminating in a small field. The western access road also includes a parking lot and branches off into different sections of the site. Each branch is controlled by a separate gate which provides access to fields and forested areas of the WMA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.47 Hyco Landing

**Management Agency:** USACE/VDGIF

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The landing site is a popular access point for visitors who come to Kerr Reservoir for fishing or recreational boating. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. In some cases, a boat launch area would be considered low density recreation, meeting the definition of Multiple Resource Management. Given the level of boating activity on Kerr Reservoir and the use of the surrounding boat ramps, it was determined that the landings support intensive recreational use. Therefore the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allow VDGIF and USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Hyco Landing is located at the Highway 58 crossing of the Hyco River, a tributary to the Dan River. The site's location is just east of South Boston.

**Description:** Hyco Landing is a small seven acre site operated VDGIF through a real estate license from USACE. Visitation to the site is limited to local boaters seeking access to the water. The site consists of a small parking lot and a boat ramp located at the base of the Highway 58 bridge over the Hyco River.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.48 Perrins Creek WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Perrins Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Perrins Creek WMA is located on the south bank of the Dan River, just east of South Boston. The site is across the river from the Dan River WMA and the William M. Tuck Airport.

**Description:** Perrins Creek WMA is a 584-acre site that runs along the southern bank of the Dan River. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access to the site is provided through a gated entrance off of Route 58. An unpaved road leads from the gate into the site, paralleling a utility corridor before extending north to the river. The road then forms a loop, extending to a field in the central portion of the WMA before returning to the gated entrance. The remainder of the site is forested.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.49 Lawsons Creek WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Lawsons Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Lawsons Creek WMA is located on the south bank of the Dan River, west of South Boston. It is accessible from Route 58 via Commerce Road.

**Description:** Lawsons Creek WMA is a narrow 381-acre site that runs along the southern bank of the Dan River. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A parking lot is located at the entrance of the site and there is a short, unpaved road providing access to the river. There are no gates within the WMA, allowing universal access along the road. Several ponds are located near the entrance to the site and a small creek runs along the eastern boundary of the WMA. This boundary also is marked by a power line that runs north to south. There are two large fields located in the center of the WMA and the remainder of the land is forested.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.50 Dan River WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Dan River WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** The Dan River WMA is located on the Dan River, just east of South Boston. The site is bordered to the north by the William M. Tuck Airport and to the south by U.S. Highway 50.

**Description:** The Dan River WMA is a 756-acre site that includes forest and field habitats. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access to the site is provided through an entrance on the northern border of the site. An unpaved road leads from the gate to several nearby fields and to a bank fishing site along the Dan River. The road extends through another entrance to provide access to the eastern edge of the site, including more fields.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time



## 6.51 Wolf Trap WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Wolf Trap WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Wolf Trap WMA is located at the far northern end of Kerr Reservoir, along the Banister River. It sits south of Scottsburg, adjacent to Route 360.

**Description:** Wolf Trap WMA is a 964-acre site that is dominated by swamps/wetlands and forest. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access to the site is provided by a gated entrance off of Route 360. A parking area is located adjacent to the gate. A utility corridor crosses through a narrow portion of the site, just north of the swamps/wetlands. An unpaved road extends from the gate along western boundary of the site before cutting east across a field that bisects the two largest swamps/wetlands in the site.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.52 Banister River WMA – North Unit

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Banister River WMA - North Unit provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Banister River WMA - North Unit is located at the far northern end of Kerr Reservoir, along the Banister River. It sits west of Scottsburg, adjacent to Route 360 and north of Wolf Trap WMA.

**Description:** Banister River WMA - North Unit is a 582-acre site that is dominated by forests, with several fields and wetlands. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A utility corridor runs east to west across the northern end of the site, bisecting the wetlands. Access to the site is provided by a gated entrance off of Route 613. A parking area is located outside of the gate. An unpaved road leads from the gate along the river to a large field located in the southern end of the site. The road passes over a narrow stream that connects the swamp to the river.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.53 Banister River WMA - South Unit

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Banister River WMA - South Unit provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Banister River WMA - South Unit is located at the far northern end of Kerr Reservoir, along the Banister River. It is adjacent to Route 713, southwest of Scottsburg.

**Description:** Banister River WMA - South Unit is an 872-acre forested site that straddles the Banister River. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. A railroad forms the northern boundary of the site. A small, gated road provides access from the northeast corner of the site to a parking located in the north central portion of the WMA. While the site is mainly forested, there are a few small fields and ponds located in the northern end of the site.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.54 Clover WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Clover WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Clover WMA is located in the northern ends of Kerr Reservoir, along the shores of the Staunton River. The site is northeast of Scottsburg and the Route 360 bridge passes through the northern end of the site.

**Description:** Clover WMA is a narrow 322-acre site that lines the southern shore of the Staunton River. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access to the site is provided by a road that leads to a parking lot and a boat ramp operated by VDGIF (Clover Landing). The ramp sits just south of the Route 360 bridge.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time



## 6.55 Clover Landing

**Management Agency:** USACE/VDGIF

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The landing site is a popular access point for visitors who come to Kerr Reservoir for fishing or recreational boating. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. In some cases, a boat launch area would be considered low density recreation, meeting the definition of Multiple Resource Management. Given the level of boating activity on Kerr Reservoir and the use of the surrounding boat ramps, it was determined that the landings support intensive recreational use. Therefore the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allow VDGIF and USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Clover Landing is located along the Roanoke River, in the northern portion of the project. It is located northeast of Scottsburg at the Highway 360 crossing of the river.

**Description:** Clover Landing receives regular use by visitors seeking boat access to Kerr Reservoir for fishing, hunting, or recreational boating. The small 20-acre site is a cleared piece of land consisting of a gravel driveway and parking area that provide access to a boat ramp maintained by VDGIF through a real estate license from USACE. The site sits within the Clover WMA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.56 Hogan Creek WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Hogan Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Hogan Creek WMA is located east of Scottsburg, across the Roanoke River from Staunton River State Park and next to Staunton View Park. Route 640 and Route 699 provide access to the site just west of Route 15.

**Description:** Hogan Creek WMA is a 518-acre site that is primarily wooded land. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Several large fields are spread across the site. There also are two creeks that pass through the site and drain into the cove at the center of the WMA. Access to the site is provided through a gated entrance off of Route 640. The unpaved road runs along several of the large fields in the western portion of the site before crossing Hogan Creek and extending to a parking lot located in the southeastern corner of the site. The road continues past the parking lot to the border of the WMA, which is marked by a utility corridor, and continues into Staunton View Park where additional parking, a bank fishing site, and a boat ramp are available.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.57 Staunton View Park

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Staunton View Park is a popular recreation site managed by USACE. Given its level of development, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Staunton View Park is located east of Scottsburg, at the confluence of the Staunton River and the main body of the reservoir. It is north of Staunton River State Park on the opposite river bank. Access to the site is provided by Route 699.

**Description:** Staunton View is a 34-acre day-use park. Visitation at Staunton View Park is relatively low compared to other recreation sites at Kerr Reservoir. One of the largest visitor attractions is the Catfish Showdown which draws 500-800 children each year. Access to the park is provided by a paved road that initiates at the entrance to the park. A paved parking lot supports visitors who access the site on a collection of paved and unpaved walkways. The primary attractions at the park are the boat ramp, with courtesy dock, and multiple picnic facilities. There also is a short, unpaved trail. To facilitate visitor use, USACE provides bulletin boards and informational signs, trash cans, and security lights.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide appropriate facilities for day-use activities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Promote appropriate interpretive and educational resources; and,
- Develop partnerships/leases with local municipalities for future development and use.

**Development Needs:**

- Construct picnic shelter with water and electricity connections.

## 6.58 Bluestone WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation, Recreation – Low Density

**Rationale:** Bluestone WMA was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Uses include Recreation, along with the Wildlife Management and Recreation – Low Density uses associated with WMAs. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Bluestone WMA is located north of Clarksville, at the confluence of Bluestone Creek and the main body of Kerr Reservoir. The site is situated along Route 15, west of Bluestone Landing.

**Description:** Bluestone WMA is a 620-acre site located on the north shore of Kerr Reservoir. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. It is heavily forested, with a few small fields. An unpaved road provides access from the WMA gate to several of these fields, as well as some of the more forested portions of the site. Several small coves line the shoreline of the site, creating some unique habitats.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.59 Bluestone Landing

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The landing site is a popular access point for visitors who come to Kerr Reservoir for fishing or recreational boating. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. In some cases, a boat launch area would be considered low density recreation, meeting the definition of Multiple Resource Management. Given the level of boating activity on Kerr Reservoir and the use of the surrounding boat ramps, it was determined that the landings support intensive recreational use. Therefore the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allows USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Bluestone Landing is located on the shore of Bluestone Creek, north of Clarksville. The landing site sits along US Highway 15 (Highway 15).

**Description:** Bluestone Landing consists of approximately 10 acres, the majority of which is paved surfaces supporting vehicle parking and the boat ramp. Access to the site is provided via a paved, gated driveway. The driveway leads from Highway 15 to a large parking lot. Most of the parking spaces are sized to accommodate a vehicle with an attached boat trailer.

Bluestone Creek is a popular fishing area and is especially known for its high quality crappie populations. Boat access for fishing and recreational boating is the primary use of the site. These uses account for nearly all of the use of the site, with some visitors accessing the landing for views of the lake.

From the driveway, the paved surface slopes down towards the waterline and the boat ramp. The boat ramp is a concrete structure with an attached courtesy dock. The site also contains a vault toilet, a picnic table, trash cans, a bulletin board and other signs with public information, and security lighting to facilitate visitor use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide boating access to the reservoir;
- Provide appropriate facilities for day-use activities; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.60 Mooresville Woods

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation, Wildlife Management, Recreation – Low Density

**Rationale:** provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Currently the site has not been developed and supports a variety of wildlife habitat. Despite limitations noted in the 1980 Master Plan, the site is readily accessible from major roads and provides high quality views of the reservoir that are conducive to certain recreational opportunities. Therefore, the Recommended Future Uses include Recreation, along with the Wildlife Management and Recreation – Low Density. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Mooresville Woods is located north of Clarksville and Occoneechee State Park. U.S. Highway 15 provides direct access to the site.

**Description:** Mooresville Woods is a heavily wooded 42-acre site. The 1980 Master Plan had not recommended development at the site, given the steep slopes and soil quality. Despite these limitations, the site is readily accessible from major roads and provides high quality views of the reservoir.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.61 Occoneechee State Park

**Management Agency:** USACE/VDCR

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Occoneechee State Park is one of the parks managed by VDCR at Kerr Reservoir. The lands have been leased by Virginia for the purpose of providing recreational activities at the reservoir. During the master planning process, consideration was given to dividing the lands into developed and undeveloped, with corresponding land classifications. Such a classification, however, would limit the use of these lands by VDCR now and in the future. Because the lands are leased for the purpose of providing recreational opportunity, it was determined that the entire area should be classified as Recreation. The Land Classification and Resource Objectives allow VDCR and USACE to continue to maintain the natural conditions at the site, while considering means of improving visitor opportunities.

**Location:** Occoneechee State Park is located north of Clarksville. The park is located alongside Route 58.

**Description:** Occoneechee State Park is the largest recreation area on the reservoir, with approximately 2,821 acres. The primary recreation sites within the park are isolated on the small peninsulas that comprise the park's southern border. The park contains multiple boat ramps, a marina, camp sites, rental cabins, and an amphitheater. These locations include restroom and shower facilities, playgrounds, picnic sites, and parking. The park also includes an equestrian camp ground for visitors who bring horses to ride the park's trails. The park office includes an information center, gift shop, and educational displays.

The panhandle portion of the site (Occoneechee WMA) experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The WMA extends from the northern bank of the main body of Kerr Reservoir. Two gated, unpaved roads provide access from the main body of the park into the WMA. The northern road extends through the mainland portion of the site. The southern road extends the length of the peninsula. The road is part of the state park trail system, and also is used by hikers and equestrians.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.62 Oakleaf WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation Wildlife Management, Recreation – Low Density

**Rationale:** Oakleaf WMA was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Uses include Recreation, along with the Wildlife Management and Recreation – Low Density uses associated with WMAs. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Oakleaf WMA is located northeast of Clarksville. The site is located east of the Occoneechee panhandle at the confluence of the main body of the reservoir and Butcher Creek.

**Description:** Oakleaf WMA is a 373-acre site comprised of varying sized peninsulas. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. An unpaved road provides access through the center of the forested site, passing through several fields. The road terminates at the southern tip of the peninsula at a bank fishing site that sits adjacent to a large field. There are some gates within the WMA, however, universal access is provided along a number of the WMA roads.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.63 Lower Butcher Creek WMA

(Also/previously known as Butcher Bay View)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Lower Butcher Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Lower Butcher Creek WMA is located southwest of Boydton on Butcher Creek. The site is accessible by Fields Church Road/Route 828.

**Description:** Lower Butcher Creek is a 256-acre site that is primarily forested. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The shoreline is lined with moderately sized coves that cut into the peninsula, created unique habitats. Access to the site is provided through a gated entrance with an adjacent parking lot. An unpaved road cuts through the center of the site providing access to the northern end of the peninsula. Along the road, several fields are maintained for wildlife habitat.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.64 Rudds Creek WMA

(Also/previously known as Holly Grove)

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Rudds Creek WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Rudds Creek WMA is located on Butcher Creek, west of Boydton and southwest of Rudds Creek recreation area. The site is accessible from Route 58 via Route 698.

**Description:** Rudds Creek WMA is a 212-acre peninsula. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The banks of the peninsula are defined by various sized coves. Much of the site is forested, though several large fields are located through the center of the site. Access to the site is provided through a gated entrance. A parking lot and bank fishing site are at this entrance. An unpaved road extends from the entrance through the center of the peninsula, providing access to the fields.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.65 Wall Branch WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Wall Branch WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Wall Branch WMA is located on Butcher Creek, west of Boydton. The site is north of the Rt. 58 Bridge, just west of Rudds Creek recreation area. The site is accessible via Route 694.

**Description:** Wall Branch WMA is a 205-acre peninsula. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. The peninsula is primarily forested, with several large fields in the northern and western portions of the site. The banks of the peninsula are incised with small coves. The site is accessed via a gated entrance at the northern end of the peninsula. Several unpaved roads branch out from this point, providing access to the various fields.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## 6.66 Rudds Creek

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Rudds Creek is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Rudds Creek is located west of Boydton, on Butcher Creek. The park is southwest of Boydton, Virginia. The new Willow Grove Marina sits adjacent to the site and is visible from some locations.

**Description:** Rudds Creek is divided into two areas by Route 58. The park's 78-acre campground is located south of the highway, with the 58-acre day-use area and boat ramps with courtesy dock located to the north. The site also contains an amphitheater. Visitation at the park is high throughout the summer season. Visitation peaks on weekends and holidays. The site also serves as a bass fishing staging area for much of the year. In 2010, Reserve America's Official Camping Club listed the campground in its top 25 park beaches and water recreation parks. In 2009, the group listed the campground as one of its top 25 kid-friendly parks.

Access through the park is provided by paved roads which initiate at the site's entrance station. The park includes campsites with water and electric hookups, primitive campsites, and a sanitary dump station. The park also contains multiple picnic facilities and playgrounds. These facilities are supported with paved parking spaces. There are restroom and shower buildings and vault toilets located throughout the park. There also are wells within the park that provide water to the site. A deteriorating well serving the day-use area was closed in accordance with State standards and a new well was put in to service in the spring of 2011. USACE maintains bulletin boards and informational signs, trash cans, and security lighting to facilitate visitor use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Allow for several activities in the same general vicinity;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Identify means of incorporating Virginia Rails to Trails system into the activities provided at the site; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Expand formal vehicle parking area in campground, and
- Connect to Town of Boydton sewer system.

## 6.67 Willow Grove Marina

(Also/previously known as Lynchburg YMCA; Indian Crossing; Rochichi)

**Management Agency:** USACE/Mecklenburg County, Virginia

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Willow Grove Marina is a unique location on Kerr Reservoir. The site is leased to Mecklenburg County, Virginia, who in turn, leases it to a concessioner. The lands are leased for recreational use focused around the marina. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Willow Grove Marina is located west of Boydton, along Butcher Creek. The site is located south of Rudds Creek campground.

**Description:** The 209-acre site is currently being developed by a private concessioner to support the Willow Grove Marina. The development plan includes dry and wet boat slips, a boat ramp, fueling station, and a building to support restrooms, a marina store, and administrative offices.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Allow for several activities in the same general vicinity;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Reference Development Plan in Real Estate file.



## 6.68 Greenwood WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Greenwood WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Greenwood WMA is located southwest of Boydton, on Butcher Creek. The site is located at the end of Route 823, south of Boydton, Virginia.

**Description:** Greenwood WMA is a 292-acre site comprised of a series of wooded peninsulas that extend from the mainland portion of the site. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access is provided through a gated entrance off of Route 823. Parking and a bank fishing site are located just outside the gate. An unpaved road extends from the parking lot to the eastern and southern ends of the site. The road passes by a number of the open fields that exist on the peninsulas. The WMA also contains the Munford Trail. The trail initiates in the western end of the site and meanders east across the site, connecting to Eagle Point WMA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Improve/Upgrade Robert Munford Trail to provide multipurpose use.

## 6.69 Camp Eagle Point

(Also/previously known as Heart of Virginia Council and/or Robert E. Lee Council)

**Management Agency:** USACE/Heart of Virginia Council of BSA

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Camp Eagle Point is one of the quasi-public leased lands USACE offers at Kerr Reservoir for recreational use by various groups. Uses on these lands are subject to USACE approval, but generally not limited in intensity. Therefore, in order to provide the most beneficial uses of the site, a Land Classification and Recommended Future Use of Recreation was applied. The Land Classification and Resource Objectives allow the leasee and USACE to continue to maintain the recreational uses at the site, while protecting the natural environment and considering means of improving visitor opportunities.

**Location:** Camp Eagle Point is located south of Boydton. The camp is southwest of Eastland Creek.

**Description:** The 204-acre site is leased by the Heart of Virginia Council of BSA.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.70 Eagle Point Landing

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** The landing site is a popular access point for visitors who come to Kerr Reservoir for fishing or recreational boating. The master planning process considered Land Classifications of Recreation and Multiple Resource Management. In some cases, a boat launch area would be considered low density recreation, meeting the definition of Multiple Resource Management. Given the level of boating activity on Kerr Reservoir and the use of the surrounding boat ramps, it was determined that the landings support intensive recreational use. Therefore the Land Classification and Recommended Future Use are Recreation. The Land Classification and Resource Objectives allow USACE to continue to provide a quality experience at the site while improving visitor opportunities and protecting surrounding natural and cultural resources.

**Location:** Eagle Point Landing is located south of Boydton, on a peninsula between Eastland and Butcher Creeks. Access to the site is provided by Route 705.

**Description:** Eagle Point Landing is a 113-acre site that is accessed by an unpaved road that terminates in a parking lot for the boat ramp. The ramp is a two-lane launch with adjacent unpaved parking spaces for cars and trailers. Visitors to Eagle Point Landing are primarily focused on boating and fishing. The remainder of the site is undeveloped.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Develop partnerships/leases with local municipalities for future development and use;
- Provide appropriate facilities for day-use activities;
- Provide boating access while enhancing waterfront access for hiking, fishing, and sightseeing;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Provide trail opportunities for multiple user groups;
- Identify means of incorporating Virginia Rails to Trails system into the activities provided at the site;
- Protect and preserve archaeological and architectural resources; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:**

- Improve/upgrade Robert Munford Trail to provide multipurpose use.

## 6.71 Eagle Point WMA

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Wildlife Management, Recreation – Low Density

**Rationale:** Eagle Point WMA provides a relatively undisturbed environment for visitors at Kerr Reservoir. The current low density use and limited development that exist at the site requires a Land Classification of Multiple Resource Management. Continuing these low density activities is consistent with USACE plans at Kerr Reservoir. Undeveloped lands provide a buffer between developed recreation sites and areas that provide for passive use (hiking or sightseeing). These lands also provide a buffer between developed project lands and neighboring properties. In addition, undeveloped lands meet USACE policy of maintaining natural resources and increasing opportunities for passive uses of project lands. The Land Classification and Recommended Future Use indicated above meet these objectives by providing for the continuation of low density recreation and wildlife management activities at the site.

**Location:** Eagle Point WMA is located south of Boynton, at the confluence of Eastland Creek and the main body of Kerr Reservoir. The site is in close proximity to Route 705.

**Description:** Eagle Point WMA is a 415-acre site comprised of three peninsulas. The site experiences consistent use throughout the year. Uses include hunting, hiking, wildlife viewing, birding, cycling, and sightseeing. Access to the site is provided by an unpaved road that leads to a cleared utility corridor and a gated access point before extending the length of the middle peninsula. The road provides access to several small fields that are located on the peninsula. Another gated road initiates at the utility corridor and provides access across the northern peninsula. The remainder of the site is heavily wooded.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:** None identified at this time

## **6.72 Newman Point**

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Newman Point was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Use is Recreation. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Newman Point is located southeast of Boydton, on Eastland Creek. The site is north of Eagle Point Landing.

**Description:** Newman Point is a 182-acre site that includes a series of small peninsulas and coves that are surrounded by private development. The 1980 Master Plan included plans for a day-use area that could include picnicking and swimming. Lack of a formalized access road has prevented this development.

**Land Classification Resource Objectives:** See Table 22 (Page 73)



**Site Specific Resource Objectives:**

- Provide appropriate facilities for day-use activities;
- In addition to hunting, provide for non-consumptive resource uses such as hiking, photography, and sightseeing;
- Protect and preserve cultural resources;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities while controlling shoreline and soil erosion;
- Ensure that no degradation or net loss of wetlands occurs;
- Conserve and/or enhance wildlife habitat;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Enhance successful natural propagation of diverse game and non-game fish and wildlife species.

**Development Needs:**

- Future recreational development plans should include a strategy for achieving public access to the site.

## 6.73 Eastland Creek Landing

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** Eastland Creek Landing is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** Eastland Creek Landing is located southeast of Boydton, at the confluence of Eastland Creek and the main body of Kerr Reservoir. The site is located at the end of Route 824, west of the dam site.

**Description:** Eastland Creek Landing is a 58-acre wooded site. In 1983, Eastland Creek Landing was converted to a boat launching area and its 28 campsites were closed. Visitation at the landing site is highest on weekends and holidays, when visitors have time to bring their boats to the site and spend some time on the reservoir. Use of the site is especially high during the prime fishing seasons that occur at the beginning and end of the summer months.

Access to the site is provided by a road that varies between gravel and paved depending on the location. As part of the 1980 Master Plan, a campsite was developed at the landing; however, it was later closed. Currently, the site is used for day-use activities and boat access to Kerr Reservoir. Boat access is provided by a boat ramp and adjacent courtesy dock. Parking spaces at the site are capable of supporting boat trailers adjacent to the ramp. Picnic tables, vault toilets, trash cans, security lighting, and informational signs are provided to facilitate visitor use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing;
- Provide appropriate facilities for day-use activities; and,
- Promote appropriate interpretive and educational resources.

**Development Needs:** None identified at this time

## 6.74 Inglewood

**Management Agency:** USACE

**Land Classification:** Multiple Resource Management

**Recommended Future Use:** Recreation

**Rationale:** Inglewood was identified in the 1980 Master Plan as a location that could support high-density recreation. Currently the site has not been developed and supports a variety of wildlife habitat. Therefore, the most applicable Land Classification was Multiple Resource Management. During the master planning process, the previously planned recreational opportunities were reviewed and considered to be viable. Therefore, the Recommended Future Use is Recreation. The Land Classification and Resource Objectives allow USACE to continue to maintain the natural conditions at the site while considering means of improving visitor opportunities.

**Location:** Inglewood is located on the southeast of Boydton, at the confluence of Eastland Creek and the main body of Kerr Reservoir. The site is located south of Eastland Creek Landing.

**Description:** Inglewood is a 480-acre site that was identified in the 1980 Master Plan for day-use and camping facilities. The lack of adequate access to the site has prevented this development. In the meantime, the site has been managed to support wildlife and low density recreation.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Maintain a diverse natural community to provide hiking and sightseeing opportunities, while controlling shoreline and soil erosion;
- Protect and preserve archaeological and architectural resources;
- Conserve and/or enhance wildlife habitat;
- Accommodate and support non-consumptive resources uses;
- Employ good stewardship practices, such as the use of soil conservation measures; and,
- Ensure successful natural propagation of diverse game and nongame fish and wildlife species.

**Development Needs:**

- Future recreational development should include a strategy for achieving public access to the site.

## 6.75 North Bend Park

(Also/previously known as Aurora Park)

**Management Agency:** USACE

**Land Classification:** Recreation

**Recommended Future Use:** Recreation

**Rationale:** North Bend Park is a popular recreation site managed by USACE. Given its level of development and intensity of use, the only appropriate Land Classification for this site would be Recreation. The Land Classifications and Resource Objectives selected for the park allow USACE to continue current operations, while identifying means of improving the visitor experience and continuing to protect natural and cultural resources within its borders.

**Location:** North Bend Park is located southeast of Boydton, just west of the dam site. The park runs along the shore of the reservoir parallel to Route 707.

**Description:** At nearly 367 acres, North Bend Park is one of the largest USACE-operated sites at Kerr Reservoir. Visitation at the park is high throughout the summer season. Visitation peaks on weekends and holidays. The site also serves as a fishing tournament staging area for much of the year. In 2010, Reserve America's Official Camping Club named the park one of its top 25 sites for picnicking. In 2009, the group listed the park in its top 25 biking trails list.

The site is accessed on Route 707 which leads to the site's entrance station. Visitor facilities within the park include an amphitheater; multiple boat ramps with courtesy docks; group campsites; campsites with water and electric hookups; primitive campsites; a sanitary dump station; an accessible fishing pier; playgrounds; picnic shelters and picnic tables with available grills; and a pedestrian trail. The site has paved parking spaces with paved roads and walkways providing access throughout the park. These facilities are supported by restroom buildings, shower buildings, toilets, and dump stations. The park also contains numerous informational signs and bulletin boards, as well as security lighting, to facilitate visitors use.

**Land Classification Resource Objectives:** See Table 22 (Page 73)

**Site Specific Resource Objectives:**

- Provide for separate and interrelated camping and day-use opportunities;
- Provide boating access to the reservoir while enhancing waterfront access for hiking, fishing, and sightseeing;
- Provide trail opportunities for multiple user groups in conjunction with other local and regional trail systems;
- Promote appropriate interpretive and educational resources;
- Promote non-consumptive uses of resources, such as hiking, photography, and sightseeing; and,
- Identify means of incorporating Virginia Rails to Trails system into the activities provided at the site.

**Development Needs:**

- Develop ADA-compliant beach access

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## **7.0 Environmental Operating Principles**

In 2003, USACE adopted seven EOPs. The purpose of the EOPs is to integrate natural resource laws, values, and sound environmental practices into USACE decision making. The following sections explain how this Master Plan fulfills all seven EOPs.

**#1: Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.**

USACE has and continues to work collaboratively with federal, state, and local agencies and groups to propose development plans that maintain a healthy, diverse and sustainable environment at Kerr Reservoir. USACE also has coordinated with these groups to develop, manage, and monitor resources at the reservoir. For example, USACE works with NCWRC and VDGIF to monitor and manage fisheries and game species population numbers and habitat conditions.

The policies and management strategies included in this Master Plan are intended to maintain a healthy, diverse, and sustainable environment at Kerr Reservoir. This will allow recreational needs to be met while continuing to protect the environment around Kerr Reservoir.

**#2: Recognize the interdependence of life and the physical environment, and consider environmental consequences of USACE programs and activities in all appropriate circumstances.**

In the Master Plan, USACE considers the relationships between human activities and the natural environment. The impact of these relationships is examined in Chapter 2 and considered in the development of Land Classifications and the Resource Plan presented earlier in this document. The PEA, included in Appendix C, considers the environmental consequences of the proposed recreational development and resource protection proposals in the Master Plan. Specific actions that are undertaken to implement the Master Plan will undergo separate environmental analysis.

**#3: Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.**

This Master Plan for Kerr Reservoir seeks balance and synergy between human development and natural systems by focusing development activities in limited areas around the lake. This strategy balances human uses and wildlife resources. The Land Classifications included in this Master Plan limit future high density development to select areas within the project. Any planned development within these areas would be accompanied by the appropriate NEPA and environmental reviews to ensure balance between the human and natural environment. Future high density development outside these areas would first require consideration and approval by USACE before conducting more extensive NEPA and environmental reviews.

**#4: Continue to accept corporate responsibility and accountability under the law for activities and decisions under USACE control that impact human health and welfare and the continued viability of natural systems.**

This Master Plan and associated PEA fulfills the requirements of NEPA, which establishes a policy to “...encourage productive and enjoyable harmony between man and his environment; promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enrich the understanding of ecological systems and natural resources important to the Nation ...”

The Master Plan and associated PEA fulfills NEPA by:

- Describing the existing environmental conditions (Chapter 2) and environmental consequences associated with the Preferred Alternative on (but not limited to) the following resources: water quality, vegetation, fish and wildlife, threatened and endangered species, cultural resources, and socioeconomic resources;
- Identifying and comparing the incremental and cumulative effects of the No Action Alternative and the Preferred Alternative; and,
- Examining a No Action Alternative.

The Master Plan also is in compliance with other applicable environmental and cultural resource laws and Executive Orders, as described in Chapter 2. These include the Clean Water Act, Endangered Species Act, and Archaeological Resources Protection Act among others.

USACE also accepts corporate responsibility and accountability for following federal laws in regard to future activities undertaken to implement the Master Plan. Future implementation of the Master Plan will require USACE staff to follow the steps outlined in Chapter 9. Project staff also will follow procedures in the OMP and relevant resource plans in order to comply with state and federal regulations. Land Classifications included in this Master Plan limit future high density development to select areas within the project. Any planned development within these areas would be accompanied by the appropriate NEPA and environmental reviews to ensure balance between the human and natural environment. Future high density development outside these areas would first require consideration and approval by USACE before conducting more extensive NEPA and environmental reviews.

**#5: Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.**

The cumulative impacts of this Master Plan are evaluated in Appendix C. This Master Plan is not expected to contribute to significant cumulative impacts. Furthermore, the PEA that is a part of this Master Plan, as well as the recommendations included in the plan, commit USACE to regular coordination with regulatory agencies and updates to the plan to allow any cumulative impacts to be mitigated with the best available science and technology.

**#6: Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.**

This Master Plan helps build an integrated, scientific, economic, and social knowledge base of Kerr Reservoir. Chapter 2 of this document includes new information on project resources and the economic and social conditions around the project. USACE also has worked with other agencies and organizations to develop a GIS database of data pertaining to project lands. This data was used to inform the Master Planning process and present graphic information in this document. Maintaining and updating this database in the future will allow USACE to manage the project effectively, educate the public, and share in the information exchange with other agencies and groups.

**#7: Respect the views of individuals and groups interested in USACE activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.**

USACE has been proactive in seeking the views of individuals and groups interested in the Kerr Reservoir Master Plan. As documented in Chapter 4, USACE has distributed mailings on the Master Planning process and held scoping meetings at key locations around the project. USACE recorded all comments presented at the scoping meetings and those submitted during the scoping period. Responses to the comments during the scoping period were developed by USACE staff and will be incorporated into Appendix D in the Final Master Plan. These comments were considered in developing the objectives, policies, and recommendations presented in this document.

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## **8.0 Conclusions**

Kerr Reservoir is operated by USACE. It includes approximately 50,000 acres of open water at the normal pool elevation of 300 feet msl (USACE 2010) 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 dam is located approximately 20 miles upstream on the Roanoke River from the state line, in Mecklenburg County, Virginia, or approximately 80 miles southwest of Richmond, Virginia.

Visitation to Kerr Reservoir and other regional points of interest is fueled primarily by recreational activities. Visitation numbers at the project show a general decreasing trend over the past 10 years; however, recently these numbers have displayed an upward trend. Land based recreation opportunities include camping, picnicking, fishing, hiking, trail use, hunting, swimming and beach uses. Additionally, the lake is host to numerous state and national fishing tournaments.

The location of natural, cultural, and physical resources, as well as the purposes USACE meets by operating the project, have influenced the distribution of developed recreation areas around the reservoir. These sites are concentrated primarily in the southern and eastern ends of the project. Private development is expanding around the reservoir, with the greatest pressure occurring around these developed portions of the project.

This Master Plan presents an overall plan for the management of the recreational, natural, and cultural resources at Kerr Reservoir. Preparation of this plan required (1) an appraisal of the natural and cultural resource conditions of the project and the surrounding region, and (2) an examination of environmental and administrative constraints and influences. The plan includes the classification of project lands and identifies Resource Objectives for each classification and specific management area.

Extensive federal, state, and local agency coordination and citizen involvement was incorporated in all aspects of the master planning process. Planning for the development, preservation, or enhancement of project resources will continue to be coordinated through other governmental agencies and special interest groups to ensure the efficient and timely implementation of the Resource Objectives.

Sound stewardship of public lands requires development and management of project resources for the public benefit consistent with resource capabilities. An important element of this approach is the establishment of viable Resource Objectives. This Master Plan sets forth a broad range of Resource Objectives and management and development concepts covering both the overall project, as well as specific areas within it. These recommendations are summarized in Table 22 for each Land Classification included in this Master Plan. An effective OMP is a critical element in implementing the policies and achieving the Resource Objectives specified in this Master Plan. The latest OMP for Kerr Reservoir was approved in 1992.

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## **9.0 Recommendations**

It is recommended that this Master Plan be followed in managing the resources at Kerr Reservoir. The policies and objectives within this Master Plan are consistent with authorized project purposes and resource capabilities and accommodate federal, state, and local needs. They represent sensible stewardship of resources and will result in increased opportunities for public enjoyment of outdoor recreation activities.

### **9.1 Using the Master Plan**

This Master Plan serves two primary purposes that are equal in importance. First, it is the primary management document for the project and provides direction for many of the other plans that guide the management of Kerr Reservoir. Second, it is a land use management tool. This Master Plan sets the stage for the update of many of the project's resource management plans, such as the Wildlife Management Plan. For example, the Resource Objectives approved in this plan can serve as a basis for developing plans to manage wildlife at the project. Regular updates to the Master Plan, discussed in the next section of this chapter, will allow the project to maintain active resource management plans, as well.

As a land use tool, this Master Plan provides USACE and the public the current classification and preferred future uses of project lands. The current classification of project lands (Appendix H, Figures 10, 11, and 12) allows USACE and the public to visually evaluate the distribution of uses of project lands. The Recommended Future Uses (Appendix H, Figures 13, 14, and 15) illustrates locations within the project that have been identified for future uses that are different from their current classification. An example of how this illustration may be beneficial is through 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 developer. Maintaining an up-to-date Master Plan will allow USACE to respond effectively to development plans made internally or by outside parties.

### **9.2 Updating the Master Plan**

This policy-based Master Plan, along with the accompanying PEA and GIS database, provides USACE with a "living" management document. This living document sets goals and objectives but does not establish concrete development plans. This allows USACE flexibility in the management and development of Kerr Reservoir within a clear policy framework.

Maintaining an up-to-date Master Plan is best accomplished through the following steps:

- Regular review of project needs and USACE priorities;
- Annual updates to the GIS database;
- Regular review of the updates to the reports used to inform this plan (see Section 10.3);
- Regular consultation and coordination with local, state, and federal agencies and groups with regulatory purview or interest in the management of Kerr Reservoir; and,
- Review annual visitation statistics included in Appendix E. Sites with spikes in visitation or regular high levels of use would likely hold high priority in actions taken to achieve important Resource Objectives and Development Needs.

In addition, a review of the Master Plan should be included in the project's annual schedule. The review should include the following:

- Identifying resource conditions that have changed and require documentation in Chapter 2;
- Reviewing the issues described in Chapter 3 and noting changes in the manner in which these issues are addressed or identifying other issues that have arisen over the last year;
- Updating public involvement efforts that included or were focused on the Master Plan;
- Reviewing the Resource Objectives and Development Needs to identify priorities or changes in management strategy; and,
- Reviewing annual visitation statistics included in Appendix E. Sites with spikes in visitation or regular high levels of use would likely hold high priority in actions taken to achieve important Resource Objectives and Development Needs.

These annual reviews will help prepare for a general revision of the Master Plan that should occur every five years. Each five-year update will be accompanied by the appropriate NEPA documentation. The five-year revision may be as simple as updating the Resource Objectives for a Land Classification or specific site; however, it may be as complex as changing Land Classifications presented in this Master Plan (2012). The process through which the plan is updated should follow standard USACE approval protocols. An example of how this approval process may work is illustrated by two theoretical changes to the Master Plan. As noted above, a change may only involve the addition/removal of Resource Objectives or Development Needs. Such a change could be



approved by the Project Manager. More complex changes, that involve district-wide personnel or resources, such as the change in a Land Classification, would require approval by the Project Manager and the Chief of Wilmington District's Lakes Branch.

In either case, the following steps would be taken to document the change.

- 1) A Master Plan Update Memorandum (Appendix F) should be completed and signed by the appropriate USACE managers;
- 2) A strikethrough version of the text change(s) should be attached to the memorandum;
- 3) The memorandum should be attached to Appendix F of this Master Plan to document the changes made through the life of the plan; and,
- 4) A revised version of the text should be inserted into the document and should include the date of the revision in the header.

The information obtained during regular revisions of this Master Plan also will serve to benefit other activities at the project. Data may be applied to updating a specific resource management plan, improving educational programs, or informing project staff about relevant issues.

### **9.3 Including Others in the Master Planning Process**

This Master Plan emphasizes the need for consultation and coordination with regulatory agencies prior to implementing elements included in the Resource Objectives and Development Needs outlined in Section 5.3 and Section 6.0. Coordination also may occur in updating the Master Plan and obtaining additional data sources to inform the plan.

In some cases, coordination with other government agencies is required by regulation. The regulatory requirements applicable to USACE in implementing any action are generally outlined in Section 2.26. In all cases, however, coordination with the appropriate groups and agencies prior to implementing an action will ensure a well-informed plan that avoids unnecessary impacts to project resources. Such an approach also streamlines the review and approval process with regulatory agencies. Table 24 lists the federal and state agencies that commonly would be included in the consultation process for a proposed project at Kerr Reservoir. The table also lists the resources included in each agency's purview. It should be noted that similar agencies and groups exist at the local level and also should be included in the planning process.

Further agency consultation and coordination is critical to the success of this policy-based, programmatic document and associated PEA.

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**Table 24: Federal and State Agencies Included in Regular Consultation Process**

	Federal							North Carolina							Virginia								
	Advisory Council on Historic Preservation	Federal Highway Administration	U.S. Army Corps of Engineers	U.S. Coast Guard	U.S. Dept. of Agriculture	U.S. Environmental Protection Agency	U.S. Fish and Wildlife Service	Dept. of Cultural Resources	Dept. of Transportation	Division of Coastal Management	Division of Land Management	Division of Waste Management	Division of Water Resources	Division of Water Quality	Natural Heritage Program	Dept. of Agriculture and Consumer Services	Dept. of Conservation and Recreation	Dept. of Environmental Quality	Dept. of Game and Inland Fisheries	Dept. of Health	Dept. of Historic Resources	Dept. of Transportation	Marine Resources Commission
Cultural Resources	X							X													X		
Erosion and Sediment Control			X							X						X							
Ground Water												X					X		X				
Hazardous Materials						X					X						X						
Navigable Waters			X	X																			
Rare, Threatened & Endangered Species							X							X	X	X		X					
Soils					X					X													
Transportation		X							X													X	
Water Quality/ Water Resources			X			X				X		X	X				X		X				
Wetlands			X				X			X			X				X						X

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## 10.2 Glossary

### A

**Acre-foot.** The volume of water, 43,560 cubic feet, which will cover an area of one acre to a depth of one foot.

**Aquifer.** A layer of underground sand, gravel, or permeable rock in which water collects. Aquifers may lie close to the surface or at great depths. Aquifers can be hundreds of miles long and wide or narrow, shallow veins running through rock. When the water source becomes of significant size, it is termed an aquifer, especially when drilling into the rock allows the tapping of the aquifer for use in crop irrigation and animals as well as human use.

### B

**Bedrock.** The solid rock layer beneath sand or silt.

**Biodiversity.** The number and variety of organisms found within a specified geographic region.

**Borrow pit/area.** An area from which earth is taken to be used in the construction of an embankment.

### C

**Conservation pool.** The area dedicated to water storage. Water stored below the conservation pool elevation may be used for any of the project's non-flood control purposes.

### D

**Dam.** A barrier built, usually across a watercourse, for impounding or diverting the flow of water.

**Day-use.** Day-use activities including picnicking, hiking, swimming, boating, photography. Generally, the term includes any activity that does not include overnight camping. Day-use sites are locations that provide specific facilities to support these activities.

**Drawdown.** Releasing water to lower the reservoir elevation. Drawdowns are used for energy production or to create additional space in the reservoir to hold back floodwaters; to reduce the cross-sectional area of the reservoir, increasing the current to aid downstream fish passage; and to expose normally submerged structures for maintenance.

### E

**Earth fill dam.** A dam built of gravel, earth, broken rock, sand, or silt, and usually containing an impervious clay core or facing.

**Endangered/threatened species.** Any species of plant or animal in danger of extinction through all or a significant part of its range [16 USC 1532 (6)].

## **F**

**Fee lands.** Land that the U.S. Government owns outright in fee simple title.

**Fish consumption advisory.** Caution about the amount/type of fish that you eat and how it is filleted/prepared. The North Carolina Department of Health and Human Services and Virginia Department of Health are responsible for issuing such advisories around the reservoir.

**Floodplain.** Land along a river that experiences occasional flooding when the river overflows its banks.

**100-year, 500-year flood zones.** Areas where the probability of being inundated is once in 100 years or 500 years.

## **G**

**Geographic Information Systems (GIS).** A computer program that integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

**Ground water.** Water contained within a defined subterranean structure (i.e., sand or gravel formations).

## **H**

**Habitat.** An area that provides some portion of the requirements for the life history of a given species.

**Hydroelectric power.** The process of generating electricity by harnessing the power of moving water.

**Hydrology.** The scientific study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes, and on or below the land surface.

## **I**

**Impaired water body.** A water body (i.e., stream reach, lake, waterbody segment) with chronic or recurring monitored violations of the applicable numeric and/or narrative water quality criteria.

**Impervious surface.** Constructed surfaces - rooftops, sidewalks, roads, and parking lots - covered by impenetrable materials such as asphalt, brick, and stone.

**Interpretation.** Activities or media designed to help people understand, appreciate, enjoy, and care for the natural and cultural environment.

**Invasive species.** Species that are not native to the area and whose presence may be harmful to native species.

## M

**Mean sea level (msl).** A point of reference to measure lake elevation. It refers to the elevation of the ocean halfway between high and low tide. Lake elevations are measured in feet above mean sea level.

**Mitigation.** Any action designed to avoid, minimize, reduce, rectify, compensate for, or eliminate adverse impacts of a Proposed Action.

**Municipal water system.** A water system that has at least five service connections or which regularly serves 25 individuals for 60 days; also called a public water system

## N

**National Register of Historic Places (National Register).** A comprehensive list of districts, sites, buildings, and structures of national, regional, state, and local significance in American history, architecture, archaeology, engineering, and culture. The list is maintained by the National Park Service under the authority of the National Historic Preservation Act of 1966.

**Normal pool.** See Conservation Pool.

## P

**Paleontology.** The study of life in past geologic time.

**Peninsula.** An elongated body of land nearly surrounded by water and connected to a larger body of land by a neck or isthmus.

**Physiographic province.** A region of which all parts are similar in geologic structure and climate and which has consequently had a unified geomorphic history; a region whose patterns of relief features or landforms differs significantly from that of adjacent regions.

**Primitive camp site.** Camp site without electricity, water, or sewage hook-ups. These sites usually provide a camping pad, picnic table, and grill/fire pit.

**Programmatic Environmental Assessment (PEA).** A NEPA document that evaluates typical actions that may occur as the result of the implementation of a general plan. Because the details of these specific actions are not known at the time the PEA is developed, the document provides general impact analysis and commits the federal agency to additional NEPA analysis and agency consultation.

## R

**Reservoir.** An impoundment for water storage either above or below the ground.

**River basin.** The portion of land drained by a river and its tributaries.



## S

**Scoping.** Early consultation with interested and affected members of the public, as well as with staff and other federal, state, and local agencies having regulatory or planning responsibilities to identify issues to be considered in a plan.

**Section 216 Study.** A Congressionally-authorized study designed to Identify whether there is a federal interest in modifying the structures or the operations at the John H. Kerr Dam and Reservoir to improve the quality of the environment for the overall public interest.

**Sedimentation.** The deposition or formation of soil and rock particles carried by moving water.

**Spillway.** Dams without floodgates are designed with an area called a spillway that allows water to flow freely over it during floods. A controlled spillway has floodgates.

**Surface water.** Water above the surface of the ground, such as a lake or river. The term is used to distinguish it from ground water.

## T

**Tailrace.** The canal or channel that carries water away from the dam.

**Threatened and endangered species.** Plants and animals that are listed by the U.S. Fish and Wildlife Service or state government as being offered protection under the Endangered Species Act or state law.

**Threatened Species.** Any species that is likely to become endangered in the foreseeable future [16 USC 1532 (20)].

## W

**Water supply pool.** The space within the reservoir reserved for water supply.

**Watershed.** A region or area over which water flows into a particular, lake, reservoir, stream, or river; a drainage basin.

**Wetland.** Areas saturated or inundated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328.3(b)].

## 10.3 References

- Allen, Craig and Jy Wu  
2009 *An Environmental Analysis of Energy and Material Fluxes for the Charlotte/Mecklenburg Region*. Available on the Internet at: <http://74.125.93.132/search?q=cache:i3UGzsyDLHoJ:webpages.uncc.edu/~bgjohnso/FinalReport.doc+%22mecklenburg+county%22+%22annual+wind%22&cd=1&hl=en&ct=clnk&gl=us>. Last accessed June 2, 2011.
- Bailey, C.M.  
1999 *Simplified Geologic Map of Virginia*. Available on the Internet at: [http://web.wm.edu/geology/virginia/provinces/geologic\\_map.html](http://web.wm.edu/geology/virginia/provinces/geologic_map.html). Last accessed June 2, 2011.
- College of William and Mary (William and Mary)  
2011 *Virginia Bald Eagle Nest and Productivity Survey: Year 2011 Report*. Available on the Internet at: [http://www.ccb-wm.org/virginiaeagles/pdf/CCBTR1111\\_2011Eagle\\_Survey.pdf](http://www.ccb-wm.org/virginiaeagles/pdf/CCBTR1111_2011Eagle_Survey.pdf). Last accessed October 25, 2011.
- Dukes, Jeffrey S. and Harold A. Mooney  
1999 “Does Global Change Increase the Success of Biological Invaders.” *Ecology & Evolution*. Available on the Internet at: <http://planet.botany.uwc.ac.za/NISL/Invasives/Assignment1/DukesandMooney.pdf>. Last accessed February 11, 2010.
- Michigan State University (MSU) and U.S. Army Corps of Engineers (USACE)  
2010 *Recreation Economic Assessment System (REAS)*. As applied by the Louis Berger Group 2010. Available on the Internet at: <http://corpslakes.usace.army.mil/employees/economic/reas.cfm>. Last accessed August 5, 2011.
- North Carolina Department of Environment and Natural Resources (NCDENR)  
2009a Albemarle-Pamlico National Estuary Project.  
  
2009b *North Carolina Statewide Comprehensive Outdoor Recreation Plan: North Carolina Outdoor Recreation Plan 2009-2013*. Available on the Internet at: [www.ncparks.gov/About/plans/scorp/main.php](http://www.ncparks.gov/About/plans/scorp/main.php). Last accessed June 2, 2011.  
  
2010 *Drinking Water Watch*. Available on the Internet at: [www.pwss.enr.state.nc.us/DWW/](http://www.pwss.enr.state.nc.us/DWW/). Last accessed February 22, 2010.

- North Carolina Department of Health and Human Services (NCDHHS)  
2009 *Fish Consumption Advisories*. Available on the Internet at:  
[www.rabies.ncdhhs.gov/epi/fish/](http://www.rabies.ncdhhs.gov/epi/fish/). Last accessed June 2, 2011.
- North Carolina Division of Water Quality (NCDWQ)  
2009 *Classification and Standards Unit*. Available on the Internet at:  
<http://h2o.enr.state.nc.us/csu/>. Last accessed December 28, 2009.
- 2012 *2012 North Carolina 303(d) List – Category 5*. Draft. Available on the Internet at:  
[http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=2dbffc77-1c7b-4979-9b60-4cd2a06094af&groupId=38364](http://portal.ncdenr.org/c/document_library/get_file?uuid=2dbffc77-1c7b-4979-9b60-4cd2a06094af&groupId=38364). Last accessed April 16, 2012.
- North Carolina Division of Water Resources (NCDWR)  
2009a *DWR Monitoring Database*. Available on the Internet at:  
[www.ncwater.org/Data\\_and\\_Modeling](http://www.ncwater.org/Data_and_Modeling). Last accessed December 23, 2009.
- 2009b *North Carolina Aquifers*. Available on the Internet at:  
[www.ncwater.org/Education\\_and\\_Technical\\_Assistance/Ground\\_Water/AquiferCharacteristics/](http://www.ncwater.org/Education_and_Technical_Assistance/Ground_Water/AquiferCharacteristics/). Last accessed December 28, 2009.
- North Carolina Geologic Survey (NCGS)  
1998 *North Carolina Geology*. Available on the Internet at:  
[www.geology.enr.state.nc.us/usgs/geomap.htm](http://www.geology.enr.state.nc.us/usgs/geomap.htm).  
Last accessed June 2, 2011.
- North Carolina Natural Heritage Program (NCNHP)  
2010 *Heritage Data*. Available on the Internet at:  
[www.ncnhp.org/Pages/heritagedata.html](http://www.ncnhp.org/Pages/heritagedata.html). Last accessed April 8, 2010.
- North Carolina Office of State Budget and Management  
2010 *Population Estimates and Projections*. Available on the Internet at:  
[www.osbm.state.nc.us/ncosbm/facts\\_and\\_figures/socioeconomic\\_data/population\\_estimates.shtm](http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates.shtm). Last accessed February 2, 2010.
- North Carolina State University (NCSU)  
2012 *North Carolina Coastal Plain Paddle Trails*. Available on the Internet at:  
<http://www.ncsu.edu/paddletrails/>. Last accessed July 20, 2012.
- Rails to Trails Conservancy  
2012 *TraLink*. Available on the Internet at:  
<http://www.trailink.com/home.aspx>. Last accessed July 20, 2012.

Southside Planning District Commission (SPDC)

- 2010 Southside Planning District Commission Land Use Maps for Mecklenburg and Halifax Counties.

Trails.com

- 2012 Trail Finder. Available on the Internet at:  
<http://www.trails.com/trailfinder/browsebymap/?statecode=VA#trailid=XPO001-034&lat=36.08383&lon=-79.01389&zoom=9&m=terrain&a=ALL>. Last accessed January 13, 2012.

U.S. Army Corps of Engineers (USACE)

- 1974 *John H. Kerr Dam and Reservoir Fish and Wildlife Management Plan.*
- 1980 *John H. Kerr Dam and Reservoir Master Plan.*
- 1987 Engineer Manual 1110-1-400: *Recreation Planning and Design Criteria*. Available on the Internet at:  
<http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.
- 1988 Engineer Regulation 200-2-2: *Procedures for Implementing the National Environmental Policy Act (NEPA)*. Available on the Internet at: <http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.
- 1992 *John H. Kerr Dam and Reservoir Operational Management Plan.*
- 1995a *Water Control Plan for John H. Kerr Dam and Reservoir.*
- 1995b *Shoreline Management Plan for John H. Kerr Reservoir.*
- 1996 Engineer Pamphlet 1130-2-550: *Recreation Operations and Maintenance Guidance and Procedures*. Available on the Internet at:  
<http://140.194.76.129/publications/index.html>.  
Last accessed June 2, 2011.
- 1997 *Report of Sedimentation Survey.*
- 1999 Engineer Pamphlet 1165-2-1. *Digest of Water Resources Policies and Authorities*. Available on the Internet at:  
<http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.

- 2002 Engineer Regulation 1130-2-550: *Recreation Operations and Maintenance Policies*. Available on the Internet at: <http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.
- 2003 Engineer Regulation 200-1-5: *Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles (EOP) and Doctrine*. Available on the Internet at: <http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.
- 2006a Engineer Regulation 1105-2-100: *Planning Guidance*. Available on the Internet at: <http://140.194.76.129/publications/index.html>. Last accessed June 2, 2011.
- 2006b *Reanalysis of Flood Elevations*.
- 2009 *John H. Kerr Dam and Reservoir*. Available on the Internet at: [www.saw.usace.army.mil/jhkerr/index.htm](http://www.saw.usace.army.mil/jhkerr/index.htm). Last accessed June 2, 2011.
- 2009b *Visitation Estimation and Reporting System (VERS) Data for John H. Kerr Project*. Last accessed September 30, 2009.
- 2010 John H. Kerr Project Pertinent Data. Available on the Internet at: <http://epec.saw.usace.army.mil/KERRPERT.TXT>. Last accessed June 2, 2011.
- U.S. Census Bureau (Census)
- 2010 *U.S. Census Bureau Quickfacts*. Available on the Internet at: <http://quickfacts.census.gov/qfd/index.html>. Last accessed February 2, 2010.
- U.S. Department of Agriculture Natural Resource Conservation Service (NRCS)
- 1997 *Soil Survey of Granville County, North Carolina*.
- 2007 *Soil Survey of Mecklenburg County, Virginia*.
- 2009 *Soil Survey of Halifax County and the City of South Boston, Virginia*.
- U.S. Environmental Protection Agency (USEPA)
- 2010a Safe Drinking Water Query Form for the State of Virginia. Available on the Internet at: [http://oaspub.epa.gov/enviro/sdw\\_form\\_v2.create\\_page?state\\_abbr=VA](http://oaspub.epa.gov/enviro/sdw_form_v2.create_page?state_abbr=VA). Last accessed February 22, 2010.

- 2010b *Climate Change - Health and Environmental Effects*. Available on the Internet at:  
<http://akamaitest.epa.gov/climatechange/effects/forests.html>.  
Last accessed February 10, 2010.

U.S. Fish and Wildlife Service (USFWS)

- 2012 *Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species*. Available on the Internet at:  
<http://www.fws.gov/nc-es/es/countyfr.html>. Last accessed April 16, 2012.

U.S. Geological Survey (USGS)

- 2008 *John H. Kerr Reservoir at Dam Near Boydton, VA*. Available on the Internet at:  
[http://waterdata.usgs.gov/nwis/nwisman/?site\\_no=02079490&](http://waterdata.usgs.gov/nwis/nwisman/?site_no=02079490&)  
Last accessed June 2, 2011.

- 2009 *Water Resources of North Carolina*. Available on the Internet at:  
<http://nc.water.usgs.gov/>. Last accessed June 2, 2011.

Van Alstine, Nancy E. and Gary P. Fleming

- 1999 *A Natural Heritage Inventory of John H. Kerr Reservoir, Virginia and North Carolina: Final Report*.

Van Alstine, N.E., G.P. Fleming, A. Belden Jr., and J. C. Ludwig

- 2001 *The Vascular Flora of John H. Kerr Reservoir, Virginia*. Natural Heritage Technical Report 01-21. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. 55 pp.

Virginia Department of Conservation and Recreation (VDCCR)

- 2007 *Virginia Outdoors Plan: Charting the Course for Virginia's Outdoors*. Available on the Internet at:  
[www.dcr.virginia.gov/recreational\\_planning/documents/vopall.pdf](http://www.dcr.virginia.gov/recreational_planning/documents/vopall.pdf).  
Last accessed June 2, 2011.

- 2012a *Proposed Blueways*. Available on the Internet at:  
[http://www.dcr.virginia.gov/recreational\\_planning/bwtpropbws.shtml](http://www.dcr.virginia.gov/recreational_planning/bwtpropbws.shtml).  
Last accessed January 13, 2012.

- 2012b DCR 11-0899, John Kerr Dam Reservoir Prelim Final EA.

Virginia Department of Environmental Quality (VDEQ)

- 2012 *Draft 2012 305(b)/303(d) Water Quality Assessment Integrated Report.* Available on the Internet at:  
<http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2012305b303dIntegratedReport.aspx>  
Last accessed September 26, 2012.

Virginia Department of Game and Inland Fisheries (VDGIF)

- 2010 Virginia Department of Game and Inland Fisheries Fish and Wildlife Information Service. Available on the Internet at:  
<http://vafwis.org/fwis/>. Last accessed April 10, 2010.

- 2011 *Staunton River.* Available on the Internet at:  
<http://www.dgif.virginia.gov/fishing/waterbodies/display.asp?id=175>.  
Last accessed July 7, 2011.

Virginia Department of Health (VDH)

- 2012 *Fish Consumption Advisories.* Available on the Internet at:  
[www.vdh.virginia.gov/epidemiology/dee/publichealthtoxicology/Advisories/](http://www.vdh.virginia.gov/epidemiology/dee/publichealthtoxicology/Advisories/). Last accessed July 19, 2012.

Virginia Department of Labor and Industry

- 2010 Virginia Department of Labor and Industry Web Site. Available on the Internet at: [www.doli.virginia.gov/](http://www.doli.virginia.gov/). Last accessed February 2, 2010.

Virginia Economic Development Partnership

- 2009 *Mecklenburg County Community Profile.* Available on the Internet at:  
<http://virginiascan.yesvirginia.org/Admin/CommunityProfiles/Profiles/CityCounty51117.pdf>. Last accessed June 2, 2011.

Vogel, James J. and John P. Titre

- 2000 *A Study of Boating Recreation on the Nutbush Arm of Kerr Lake, North Carolina.*

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**APPENDIX A  
PERTINENT DATA**



JOHN H. KERR PROJECT

PERTINENT DATA

NOTE: All elevations are in feet-NGVD29.

Location of dam

On Roanoke River, about 178.7 river miles above the mouth at latitude 36 35'56", longitude 78 18'06". It is in Mecklenburg County, Virginia; 20.3 miles downstream from Clarksville, Virginia; 18 miles upstream from the Virginia-North Carolina State line; 80 air miles from Richmond, Virginia.

Purpose

For reduction of flood damage in Lower Roanoke River, for generation of hydroelectric power, and for low water control for pollution abatement and conservation of fish and wildlife.

Drainage areas

Smith River at Philpott Dam. . . . . 212 sq. miles  
 Dan River at Clarksville, Virginia . . . . . 3,855 sq. miles  
 Roanoke River at Clarksville, Virginia . . . . . 7,320 sq. miles  
 Roanoke River at John H. Kerr Dam . . . . . 7,800 sq. miles  
 Roanoke River at Weldon, North Carolina . . . . . 8,445 sq. miles  
 Roanoke River at mouth . . . . . 9,580 sq. miles

Flows at dam site (for period 1930-2011 unless noted)

Average (cubic feet per second) . . . . . 7,500 cfs  
 Maximum Daily (17 Aug 1940) . . . . . (est.) 284,000 cfs  
 Minimum Daily prior to Dam (21 Sep 1932). . (est.) 534 cfs  
 Maximum Monthly (Aug 1940). . . . . (est.) 38,000 cfs  
 Minimum Monthly (Sep 1954) . . . . . 593 cfs

Elevations (feet-NGVD29)

Top of dam . . . . . 332  
 Flood plain (general elevation) . . . . . 212  
 Base of dam (approx.): Concrete portion lowest). . . . . 188  
                     Embankment (lowest) . . . . . 287  
 Maximum surcharge elevation (Spillway Design Flood). . . . . 326  
 Top of crest gates . . . . . 320  
 Spillway crest . . . . . 288  
 Top of power intakes . . . . . 265  
 Minimum elevation to which land has been purchased or  
 flowage easements acquired . . . . . 320

Reservoir clearing limits:

Upper . . . . .	302
Lower . . . . .	267
Maximum recorded pool level (26 Apr 1987) . . . . .	319.65
Minimum recorded pool level (3 Feb 1956) . . . . .	280.23

Tailwater elevation

Max. level for Spillway Design Flood (800,000 cfs) . . . .	265
Maximum design level for protection of powerhouse (460,000 cfs) . . . . .	246
Normal operating level . . . . .	199 to 209

Reservoir (excluding portion above Island Creek Dam)

Counties Affected:

State of Virginia. . . . . Mecklenburg, Charlotte, Halifax  
State of North Carolina. . . . . Granville, Vance, Warren

Length at elev. 320:

Roanoke River . . . . .	56 miles
Dan River, above junction . . . . .	34 miles
Length of shoreline at elev. 300 . . . . .	800 miles
Maximum width at elev. 300 . . . . .	2.0 miles

Storage:

	Acre-Feet	Inches
Total volume at elev. 326 . . . . .	3,364,500	8.09
Uncontrolled flood storage (elev. 326 to elev. 320) . . . . .	594,500	1.43
Controlled flood storage (elev. 320 to elev. 300) . . . . .	1,281,400	3.08
Power drawdown (elev. 300 to elev. 268). . . . .	1,027,000	2.47
Volume at design minimum power pool (elev. 268) . . . . .	461,600	1.11

Reservoir surface:

At maximum flood-control pool (elev. 320). . . .	83,200 acres
At maximum power pool (elev. 300). . . . .	48,900 acres
At minimum power pool (elev. 268). . . . .	19,700 acres
Original river area (below elev. 320). . . . .	4,280 acres

Dam

Type and material. . . . Concrete gravity non-overflow sections;  
concrete gravity spillway section, gate  
controlled; concrete gravity power in-  
take section; earth wing and saddle  
dikes on right and left banks.

Foundation . . . . . Granite gneiss

Length:

Right earth wing and saddle dike . . . . . 9,030 ft.

Non-overflow section on right bank . . . . . 629 ft.  
Spillway . . . . . 1,092 ft.  
Intake to powerhouse . . . . . 561 ft.  
Non-overflow section on left bank . . . . . 503 ft.  
Left earth wing and saddle dike . . . . . 10,220 ft.  
Total (rounded). . . . . 22,035 ft.  
Maximum height:  
Concrete section . . . . . 144 ft.  
Earth fill sections . . . . . 45 ft.  
Maximum width at base:  
Spillway section only. . . . . 109 ft.  
Including bucket . . . . . 146 ft.  
Crest gates:  
Type . . . . . Tainter  
Number . . . . . 22  
Size (length by height) . . . . . 42 by 32 ft.  
Hoists . . . . . Individual  
Net length of spillway . . . . . 924 ft.  
Capacity of spillway at elev. 326. . . . . 800,000 cfs  
Capacity of spillway at elev. 300. . . . . 127,000 cfs

Sluices:  
Number . . . . . Six 5-ft. 8-in. by 10-ft. inlets  
Sluice gates . . . Twelve (1 service and 1 emergency per outlet)  
slide gates hydraulically operated  
Capacity at elev. 300. . . . . 19,000 cfs

Spillway energy dissipator:  
Type . . . . . Roller bucket  
Angle of bucket lip. . . . . 20 degrees  
Radius of bucket . . . . . 40 ft.  
Elevation of bucket lip. . . . . 202  
Elevation of bucket invert . . . . . 195

Power plant

Power station  
Generating capacity:  
6 units at 42,000 kw each. . . . . 252,000 kw  
1 unit at 15,000 kw. . . . . 15,000 kw  
2 station service units at 1,000 kw each . . . . . 2,000 kw  
Principal dimensions:  
Powerhouse . . . 590 ft. long by 71 ft. wide by 142 ft. high  
Gates. . . . . 538 ft. long by 26 ft. wide by 29 ft. high  
Intakes:  
Number . . . . . 9

Gates . . . . .Caterpillar type with individual hoists

Penstocks:

Number . . . . . 9

Type . . . . . Welded steel plate

Dimensions:

Penstocks to 42,000-kw units . . . . . 24-foot diameter

Penstocks to 12,000-kw units . . . 15-foot, 6-inch diameter

Penstocks to 1,000-kw units . . . 5-foot, 6-inch diameter

Hydraulic turbines:

Number . . . . . 9

Type . . . . . Francis Vertical Shaft

Rated capacity of units:

6 units at 56,000 hp each at 91-ft. net head

1 unit at 17,000 hp each at 90-ft. net head

2 units at 1,600 hp each at 90-ft. net head

Discharge at rated turbine capacity (91 ft. head)

Discharge of 56,000 hp unit -

5,850 cfs 6 units . . . . . 35,100 cfs

Discharge of 17,000 hp unit -

1,800 cfs 1 unit . . . . . 1,800 cfs

Discharge of 1,600 hp unit - 175 cfs 2 units . 350 cfs

Total Discharge. . . . . 31,250 cfs

Normal speed:

42,000 kw units. . . . . 85.7 RPM

12,000 kw units. . . . . 138.5 RPM

1,000 kw units. . . . . 450.0 RPM

Spacing of turbines (center to center):

Main power units . . . . . 70 ft.

Station service units. . . . . 20 ft.

Draft tubes:

Type . . . . . Concrete elbow

Approximate throat diameter:

For 56,000-hp units. . . . . 17 feet 0 inches

For 17,000-hp units. . . . . 11 feet 6 inches

For 1,600-hp units. . . . . 3 feet 6 inches

Horizontal length (center line of turbine to  
downstream face) . . . . . 60 ft.

Net area at outlet opening (56,000-hp units) . . 846 sq. ft.

Transformers:

Type: 3 phase-60 cycle, OA/FA. 13.2/115 KV

Number and rating. . . . . 7-52,000 kva

Switchyard:

Size . . . . . 568 ft. long by 175 ft. wide by 90 ft. high

Outgoing lines . . . . . 6-110 KV-3 phase-60 cycle

**APPENDIX B  
USACE SIX-STEP PLANNING PROCESS**





## **The U.S. Army Corps of Engineers Planning Process**

The planning process is a structured approach to problem solving. Although ideally, the process starts with Step 1 (identifying problems and opportunities) and proceeds sequentially through the other steps, ending in Step 6 (selecting a plan), planning can begin with any step. Because the process can begin anywhere, it is an iterative process - as more information is acquired and developed, some of the previous steps may be reiterated. The six steps of the planning process are shown below and are described as follows:

### **Identifying Problems and Opportunities**

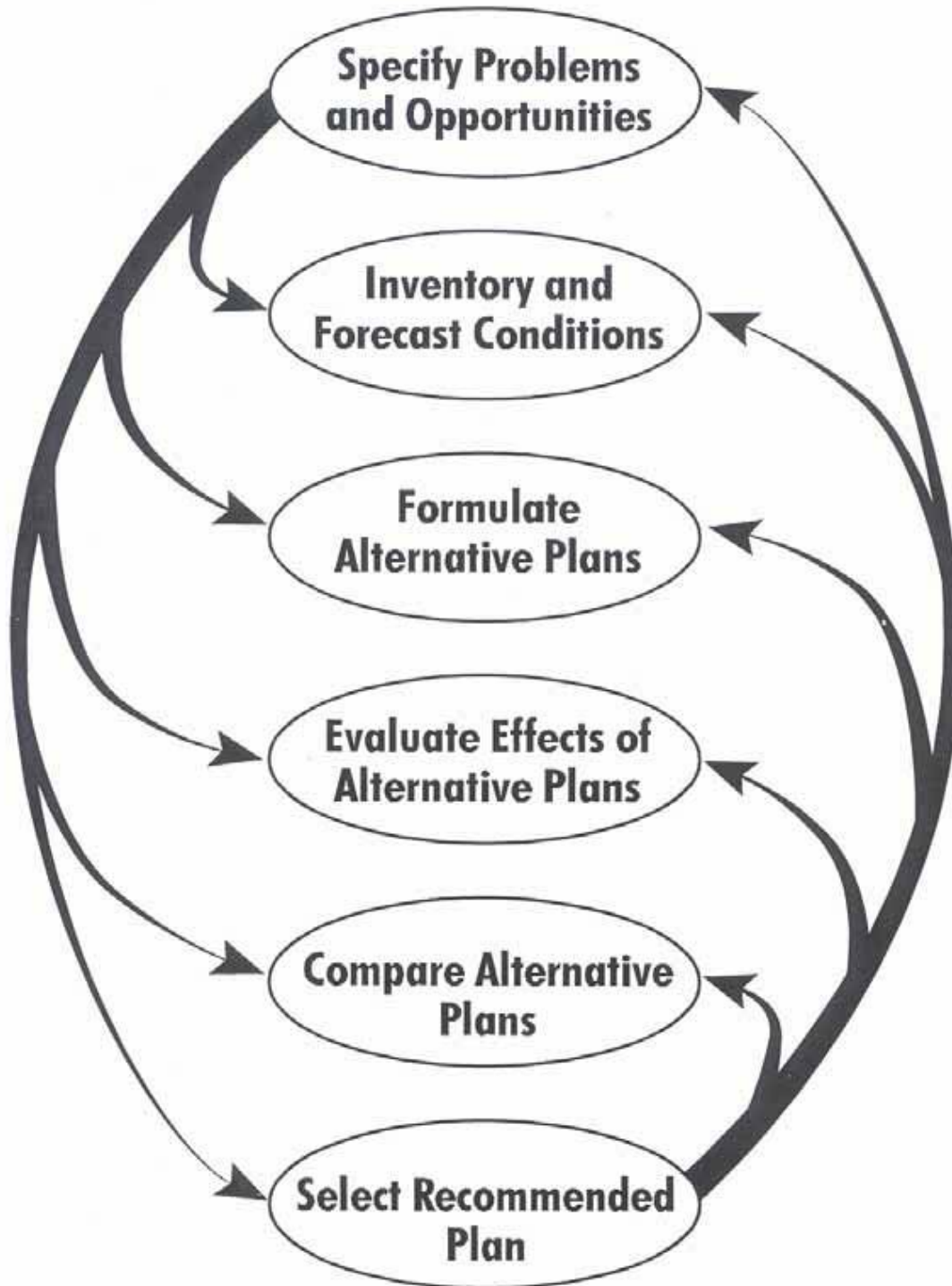
This is the most important step in the planning process. Once the problems and opportunities are described, the next task is to define the objectives and constraints that will guide efforts to solve those problems and achieve those opportunities. Problems are existing, negative conditions, whereas opportunities focus on desirable, future conditions. Objectives are statements that describe the results you want to get by solving the problems and taking care of the opportunities you identified. Constraints are statements about things you want to avoid doing, or things you cannot change, while meeting your objectives.

### **Inventorizing and Forecasting Conditions**

This is the information gathering step. Inventories and forecasts are generally concerned with the historic, existing, and future conditions of resources that will be affected by solutions to the problems. These resources may be natural, economic, or social. They will help to shape the plans to be considered, or they will be affected, intentionally or unintentionally, by one or more of the plans to be considered.

### **Formulating Alternative Plans**

Plan formulation is the process of identifying specific solutions to achieve planning objectives while avoiding constraints so as to solve the problems and realize the opportunities that got the investigation started. Solutions consist of alternative plans built from management measures. A management measure is a feature or an activity that can be implemented at a specific geographic site to address one or more planning objectives.



### **Evaluating Alternative Plans**

The evaluation step considers what difference each plan can make. The difference is quantified by comparing without project and with project conditions to identify the effects of alternative plans. The essential purpose of the evaluation step is to determine whether or not a formulated plan is worthy of further consideration.

### **Comparing Alternative Plans**

In this step, the plans that qualified for further consideration are compared to come up with the best plan. Whereas in the previous evaluation step the effects of each plan were assessed individually, in the comparison step the important effects across all plans are assessed. The purpose of plan comparison is to identify the most important effects, and to compare the plans against one another across those effects. Ideally, the comparison will conclude with a ranking of plans or some identification of advantages and disadvantages of each plan for use by decision makers.

### **Selecting a Plan**

This is the big decision making step. The first choice is always to do nothing. Planners have the burden of demonstrating that any plan that is recommended is better than doing nothing. The second choice is to select the plan that is required by law or policy, and the third choice is to do something else. Regardless of the choice, those who do the choosing must have good reasons for the final selection.

Source: U.S. Army Corps of Engineers. 1997. Planning Primer. Institute for Water Resources Report 97-R-15. <http://www.au.af.mil/au/awc/awcgate/army/97r15.pdf>.

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**APPENDIX C  
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT**





**U.S. Army Corps  
of Engineers  
WILMINGTON DISTRICT**

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**Finding of No Significant Impact  
for the  
John H. Kerr Dam and Reservoir  
Master Plan**

**November 2012**

**Finding of No Significant Impact  
for the John H. Kerr Dam and Reservoir  
Master Plan**

**November 2012**

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## **1.0 Introduction**

The National Environmental Policy Act of 1969, as amended, (NEPA), requires consideration of the environmental impacts for major federal actions. The Selected Action and the environmental impacts of the Selected Action were addressed in the Programmatic Environmental Assessment (PEA) for the Implementation of Master Plan for John H. Kerr Dam and Reservoir, dated October 2011.

During the agency and public review of the PEA and attached Master Plan, comments were submitted by several regulatory agencies, nonprofit groups, and members of the general public. These comments are included in Appendix D of the attached Master Plan. The purpose of this Finding of No Significant Impact (FONSI) is to ensure the environmental consequences associated with implementing the Master Plan are considered and that environmental and project information are available to the public.

This FONSI has been prepared pursuant to NEPA in accordance with the Council on Environmental Quality (CEQ) regulations as contained in 40 CFR 1500 to 1508, which directs federal agencies on how to implement the provisions of NEPA.

## **2.0 Background**

The John H. Kerr Dam and Reservoir (Kerr Reservoir or the project) is operated by the U.S. Army Corps of Engineers (USACE) and includes approximately 50,000 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. USACE is the federal agency responsible for maintaining and operating the dam, as well as the lands and water that comprise and surround the reservoir. To facilitate the management and use of these lands, USACE maintains a Master Plan for the project. The 1980 Master Plan, approved in 1981, provided USACE with a series of detailed construction projects for the different sites located within the project boundary. Over the last 30 years, these construction projects have either been completed or have been found to be not the best use of project resources. Over that time, USACE also has updated its policies directing the development and implementation of Master Plans. This includes updating the categories of Land Classifications used to define project lands, as well as shifting from a construction-based document to a policy-based document. In order to meet these new directives and comply with USACE policy that requires regular updates to a project's Master Plan, USACE will adopt a new Master Plan at Kerr Reservoir. The project area for the Master Plan includes all of the lands within the Kerr Reservoir boundary, as well as those USACE holds a real estate interest in.

## **3.0 Alternatives**

Development of the alternatives to update the Kerr Reservoir Master Plan began in 2009. USACE and its partners embarked upon an extensive data collection effort that included coordination with federal, state, and local agencies, as well as institutions and groups with knowledge of the project resources. In December 2009, USACE hosted an open

house to solicit public input on the planning process. The comments received during the open house, and the subsequent 30-day public comment period, were used to inform the master planning process and are included in Appendix D of the Master Plan.

Over the following year, USACE and its consultants worked to develop options for classifying project lands and identifying Resource Objectives and Development Needs for these lands. The data collection, public comments, and findings of the planning team revealed that there was only one action alternative that would meet the purpose, need, and objectives of the Preferred Alternative. Based on these needs, the PEA identified one action alternative, the adoption of the Master Plan, which is USACE's Selected Action. The PEA also analyzed a No Action Alternative.

### **3.1 Selected Action – Adoption of the Master Plan**

Adopting the policy-based Master Plan is USACE's Selected Action. This will allow the project to comply with USACE regulations on maintaining an up-to-date Master Plan that includes the most recent USACE Land Classifications and management policies. It also presents USACE with a programmatic management tool for the project's lands.

The primary elements of the Selected Action are the new Land Classifications that will be applied to project lands. A comparison between the Land Classification acreages contained in the 1980 Master Plan and the 2012 Master Plan are presented in Table FONSI 1.

The primary change in the Land Classifications presented in the 1980 Master Plan and the 2012 Master Plan is the way low-density/undeveloped lands are addressed. In the 1980 Master Plan, the "Recreation" Land Classification included four subsets: Existing Intensive Use, Future Intensive Use, Existing Low-Density Use, and Future Low-Density Use. The definitions included in the 2012 Master Plan, which are listed below, limit "Recreation" to actively/intensely used areas. Recreation – Low Density sites, as well as sites proposed for future use, are included in the "Multiple Resource Management" definition.

- **Project Operations:** This classification category should include those lands required for the structure, operations center, office, maintenance compound, and other areas that are used solely for project operations.
- **Recreation:** Land developed for intensive recreational activities by the visiting public, including developed recreation areas and areas for concession, resort, and quasi-public development. At new projects, recreation areas planned for initial development will be included in this classification. Future areas will be classified as Multiple Resource Management until initiation of the development.
- **Multiple Resource Management:** Lands managed for one or more, but not limited to, these activities to the extent that they are compatible with the primary allocation(s). The activities include: Recreation – Low Density, Wildlife Management General, Vegetation Management, Inactive and/or Future Recreation Areas, Easement Lands.

<b>Table FONSI 1: Land Classification Acreages</b>		
<b>Land Classification</b>	<b>1980 Master Plan (Acres)</b>	<b>2012 Master Plan (Acres)</b>
Easement Lands	10,509*	10,509*
Multiple Resource Management	N/A	47,516
Natural Areas	5	N/A
Project Operations	264	374
Recreation	-	7,864
Existing Intensive Use	7,864	N/A
Future Intensive Use	6,022	N/A
Existing Low Density	217	N/A
Future Low Density	2,782	N/A
Wildlife Management/Forest Reserve	38,600	N/A

The inconsistency in total acreage listed in Table FONSI 1 is based on the technology used for each plan. In either case, acreages presented in a Master Plan are for planning purposes only (official acreages are maintained by USACE Real Estate Division). The different Land Classifications used in the two Master Plans make a direct comparison difficult; however, some similarities do exist. Table FONSI 2 shows how the 1980 Master Plan Land Classifications have translated into the 2012 Master Plan.

<b>Table FONSI 2: Conversion of Land Classifications between 1980 and 2012 Master Plan</b>	
<b>1980 Master Plan</b>	<b>2012 Master Plan</b>
Existing Intensive Use	Recreation
Existing Low Density Use	Multiple Resource Management
Flowage Easement	Flowage Easement
Future Intensive Use	Multiple Resource Management
Future Low Density Use	Multiple Resource Management
Natural Areas	Environmentally Sensitive
Project Operations	Project Operations

The Land Classifications included in the 2012 Master Plan are accompanied by Resource Objectives. Resource Objectives are applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, Resource Objectives are sometimes accompanied by Development Needs. Development Needs identify specific actions to implement the Resource Objectives.

The policy-based nature of the Selected Action will allow USACE to update the Master Plan as Resource Objectives and Development Needs are implemented. Updates will document completed actions and refocus the management of the given site. These updates will be made by the Kerr Reservoir staff, as they are most involved in the day-to-

day management of the project. Updates also could include changes in Land Classifications. This level of update would involve coordination with USACE Wilmington District Office.

### **3.2 Alternatives Considered**

The PEA also considered a No Action Alternative. Under the No Action Alternative, an updated Master Plan would not be approved for Kerr Reservoir and the project would fail to comply with USACE regulations. The 1980 Master Plan would continue to provide the only source of comprehensive management guidance and philosophy. Information provided in the current plan is out of date and no longer adequately addresses the needs of USACE, its partners, or the visitors at Kerr Reservoir. Furthermore, the 1980 Master Plan does not include revised Land Classifications.

Under the direction of the 1980 Master Plan, USACE and its partners would continue to implement the outdated development plans it prescribed. Management of the project would lack the support of an up-to-date guidance document. The original development focused document would prevent USACE from taking a proactive approach to managing Kerr Reservoir. Future major developments or resource management policies would require approval on a case-by-case basis without the benefit of evaluation in the context of an overall plan.

## **4.0 Impacts of the Selected Alternative**

Table FONSI 3 provides a brief summary and comparison of impacts to the physical and natural environment for the Selected Action and the No Action Alternative.

**Table FONSI 3: Environmental Impact Comparison of Alternatives**

Resource Topic	Selected Action	No Action Alternative
Physical Environment	<ul style="list-style-type: none"> <li>• Confine future intensive development to previously disturbed lands (+)</li> <li>• Limit intensity of human activity within project boundary (+)</li> <li>• Buffer natural resources from actions on USACE-managed/neighboring lands (+)</li> <li>• Maintain compliance with regulations described in Section 4.1.1 through 4.1.8 (+)</li> </ul>	<ul style="list-style-type: none"> <li>• Allow future intensive development throughout the project (-)</li> <li>• Limit intensity of human activity within project boundary (+)</li> <li>• Maintain buffer only until future development is proposed (+/-)</li> <li>• Maintain compliance with regulations described in Section 4.1.1 through 4.1.8 (+)</li> </ul>
Natural Resources	<ul style="list-style-type: none"> <li>• Confine future intensive development to previously disturbed lands (+)</li> <li>• Limit intensity of human activity within project boundary (+)</li> <li>• Avoid impacts to wetlands and threatened and endangered species (+)</li> <li>• Allow USACE and its partners to provide more focused natural resource management actions to larger areas for a longer period of time (+)</li> <li>• Maintain compliance with regulations described in Section 4.2.1 through 4.2.4 (+)</li> </ul>	<ul style="list-style-type: none"> <li>• Allow future intensive development throughout the project (-)</li> <li>• Allow intense human activity through the project (-)</li> <li>• Avoid impacts to wetlands and threatened and endangered species (+)</li> <li>• Compromise current/future USACE work to improve wildlife habitat by failing to set aside lands for low-intensity activity (-)</li> <li>• Maintain compliance with regulations described in Section 4.2.1 through 4.2.4 (+)</li> </ul>
Socioeconomic Characteristics	<ul style="list-style-type: none"> <li>• Continue to serve the community and attract tourists to the region (+)</li> <li>• Maintain existing level of recreational activity with focus on future low-intensity activities (+)</li> <li>• Recognize the need for growth of local community services before the project can expand (+)</li> <li>• Maintain compliance with the regulations described in Section 4.3.1 through 4.3.4 (+)</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to serve the community and attract tourists to the region (+)</li> <li>• Continue to develop new intensive recreation sites throughout the project (+/-)</li> <li>• Require investments in roads and utilities to support future growth (+/-)</li> <li>• Maintain compliance with the regulations described in Section 4.3.1 through 4.3.4 (+)</li> </ul>

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## **5.0 Environmental Commitments**

The Master Plan and PEA commit to future NEPA analysis and agency consultation as specific projects are developed under the direction of the Master Plan. The public and agency scoping process did not result in any additional environmental commitments.

## **6.0 Public and Agency Coordination**

Agency and public involvement was initiated in November 2009 when USACE published notices announcing the potential project and the first public open house. This was followed by public comment periods, agency meetings, and additional public open houses. These public involvement activities are described in greater detail in Section 4.0 of the Master Plan.

On November 1, 2011 the Master Plan, attached PEA, and Draft FONSI were made available for a 30-day public comment period on the Kerr Reservoir web site, at the USACE project office, the Boydton Library in Boydton, Virginia, and the H. Leslie Perry Memorial Library in Henderson, North Carolina. Public notices also were published in the Henderson Dispatch, South Boston News and Record, Mecklenberg Sun, and Clarksville News Progress newspapers to announce the location and availability of the document. Copies of the document also were mailed to the regulatory agencies listed in Appendix A of the attached PEA. Correspondence was received from the following agencies and groups, as well as several private citizens:

### **Federal Agencies**

- U.S. Fish and Wildlife Service

### **State Agencies**

- North Carolina Department of Cultural Resources
- North Carolina Department of Environment and Natural Resources
- North Carolina Department of Transportation
- North Carolina Division of Water Quality
- North Carolina Natural Heritage Program
- North Carolina Wildlife Resources Commission
- Virginia Department of Conservation and Recreation
- Virginia Department of Forestry
- Virginia Department of Health
- Virginia Department of Historic Resources
- Virginia Department of Environmental Quality
- Virginia Department of Game and Inland Fisheries
- Virginia Marine Resources Commission

**Local Communities**

- Halifax County, Virginia

**Interested Groups and Individuals**

- Roanoke River Basin Association

Based on the comments received during the agency and public review, USACE elected to make several changes to the Draft Master Plan in response to public comments (see Appendix D of the Master Plan). Many of these changes were editorial in nature and did not affect the analysis included in the attached PEA. Some of the changes, however, resulted in modifications to the Land Classification acreages presented in the attached PEA. Table FONSI 4 compares the Land Classification acreages analyzed in the PEA and those included in the Final Master Plan.

**Table FONSI 4: Change in Land Classification Acreages between the PEA and Final Master Plan**

<b>Land Classification</b>	<b>Acreage Analyzed in the PEA</b>	<b>Acreage Included in the Final Master Plan</b>
Flowage Easements	10,509*	10,509*
Multiple Resource Management	33,429	47,516
Project Operations	402	374
Recreation	7,531	7,864

\* Flowage Easement acreages are based on specific Real Estate documents. For the purposes of this Master Plan, Flowage Easement acreage is based on previously reported acreage from Real Estate documents.

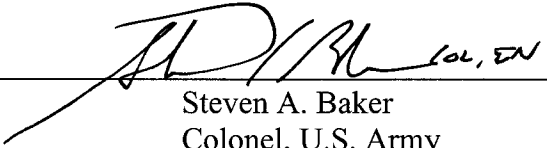
These changes are based on comments received during the public review of the Master Plan (Appendix D) and the subsequent refinement of the GIS data used to support the Master Plan. The limited changes will not require adjustments to the impact determinations presented in the PEA.



## **7.0 Finding of No Significant Impact**

I have reviewed the PEA for the Implementation of Master Plan for John H. Kerr Dam and Reservoir, the information provided by interested parties, and the information contained in this Finding of No Significant Impact, and I find that the adoption of the John H. Kerr Dam and Reservoir Master Plan will not significantly affect the quality of the human environment. Therefore, preparation of an Environmental Impact Statement, pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, is not required.

Date: 19 DEC 12

  
Steven A. Baker  
Colonel, U.S. Army  
District Commander

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**U.S. Army Corps  
of Engineers  
WILMINGTON DISTRICT**

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## **Programmatic Environmental Assessment**

Implementation of Master Plan  
for  
John H. Kerr Dam and Reservoir

October 2011

## **Executive Summary**

The John H. Kerr Dam and Reservoir (Kerr Reservoir or the project) is operated by the U.S. Army Corps of Engineers (USACE). It includes approximately 50,000 acres of water and an additional 50,000 acres of surrounding land, referred to as project lands, along the border of the Commonwealth of Virginia and the State of North Carolina. USACE is the federal agency responsible for maintaining and operating the dam, as well as the lands and water that comprise and surround the reservoir. To facilitate the management and use of these lands, USACE maintains a Master Plan for the project. The 1980 Master Plan, approved in 1980, provided USACE with a series of detailed construction projects for the different sites located within the project boundary. Over the last 30 years, these construction projects have either been completed or have been found to be not the best use of project resources. Over that time, USACE also has updated its policies directing the development and implementation of Master Plans. This includes updating the categories of Land Classifications used to define project lands, as well as shifting from a construction-based document to a policy-based document. In order to meet these new directives and comply with USACE policy that requires regular updates to a project's Master Plan, USACE proposes to update the Master Plan at Kerr Reservoir. The project area for the proposed Master Plan includes all of the lands within the USACE project border.

The proposed Master Plan is needed to provide USACE with an improved management tool at Kerr Reservoir. The 1980 Master Plan is a "construction document" that provides USACE with specific direction on developing select sites and structures. The construction document does not provide USACE with means of refining these plans or responding proactively to needs not included in the document. Furthermore, once the elements included in the 1980 Master Plan have been constructed, there is no guidance for further improvements to individual sites at Kerr Reservoir. The proposed Master Plan provides a policy approach to managing the project. This proactive approach would allow for refinement and adaptively managing the project resources. This approach also would allow USACE to use the updated document to manage the project into the future. The management tool includes a Geographic Information Systems (GIS) database. The database can be continually updated throughout the life of the plan to allow USACE to take proactive management actions and adapt existing strategies.

The primary elements of the Proposed Action are the new USACE Land Classifications that would be applied to project lands. The proposed Land Classifications would be accompanied by Resource Objectives. Resource Objectives would be applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives would provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, Resource Objectives could be accompanied by Development Needs. Development Needs would include specific actions to implement the Resource Objectives.

The policy-based nature of the Proposed Action would allow USACE to update the Master Plan as it implemented the Resource Objectives and Development Needs. Updates would document completed actions and refocus the management of the given site. These updates could be made by the Kerr Reservoir staff, as they are most involved in the day-to-day management of the project. Updates also could include changes in Land Classifications. This level of update would involve coordination with USACE Wilmington District Office.

This Programmatic Environmental Assessment (PEA) evaluated resources in the project area for potential effects by the proposed adoption of the Master Plan. The following resource and policy issues were considered during preparation of this PEA: geology, topography, and soils; floodplains; water resources; air quality; noise; cultural resources; hazardous materials; recreation and aesthetic resources; vegetation; fish and wildlife; threatened and endangered species; wetlands; socioeconomic characteristics; transportation; utilities and conservation potential; and safety, as well as applicable Executive Orders. This PEA determined that, while minor impacts would be imposed on several resource/policy areas, there would be no significant or adverse impacts from the Proposed Action, and that no mitigating actions would be required. No permits would be immediately required.

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**ACRONYMS AND ABBREVIATIONS**

<b>CEQ</b>	Council on Environmental Quality
<b>DCR</b>	Virginia Department of Conservation and Recreation
<b>DEQ</b>	Virginia Department of Environmental Quality
<b>DGIF</b>	Virginia Department of Game and Inland Fisheries
<b>EP</b>	Engineer Pamphlet
<b>EPA</b>	U.S. Environmental Protection Agency
<b>FEMA</b>	Federal Emergency Management Agency
<b>FIRM</b>	Flood Insurance Rate Maps
<b>FONSI</b>	Finding of No Significant Impact
<b>GIS</b>	Geographic Information Systems
<b>Kerr Reservoir</b>	John H. Kerr Dam and Reservoir
<b>msl</b>	relative to mean sea level
<b>National Register</b>	National Register of Historic Places
<b>NCNHP</b>	North Carolina Natural Heritage Program
<b>NEPA</b>	National Environmental Policy Act of 1969, as amended
<b>NHPA</b>	National Historic Preservation Act of 1966, as amended
<b>PEA</b>	Programmatic Environmental Assessment
<b>PCBs</b>	polychlorinated biphenyls
<b>the project</b>	John H. Kerr Dam and Reservoir
<b>SHPO</b>	State Historic Preservation Office
<b>USACE</b>	U.S. Army Corps of Engineers
<b>USFWS</b>	U.S. Fish and Wildlife Service
<b>VDH</b>	Virginia Department of Health
<b>VMRC</b>	Virginia Marine Resources Commission
<b>WRC</b>	North Carolina Wildlife Resources Commission



## **1.0 Introduction**

The John H. Kerr Dam and Reservoir (Kerr Reservoir or the project) is operated by the U.S. Army Corps of Engineers (USACE). It includes approximately 50,000 acres of water and an additional 50,000 acres of surrounding land, referred to as project lands, along the border of the Commonwealth of Virginia and the State of North Carolina. The dam is located approximately 20 miles upstream from the state line, in Mecklenburg County, Virginia, or approximately 80 miles southwest of Richmond, Virginia. In Virginia, the remainder of the reservoir and surrounding lands are located within Mecklenburg, Charlotte, and Halifax Counties. In North Carolina, the site is located in portions of Warren, Vance, and Granville Counties. These areas are easily accessible via the principal highways in the region, including Interstate 85 and Virginia Highway 4, which crosses the dam. Secondary and county highways provide access to much of the surrounding lands.

The Kerr Reservoir project was authorized by the Flood Control Act of 1944 as the initial unit of the comprehensive plan for the development of the water resources in the Roanoke River Basin in Virginia and North Carolina. The project, originally named “Buggs Island Reservoir”, was changed to its current name by Public Law 203, 82nd Congress, approved October 24, 1951. Additional purposes of the reservoir were authorized by the River and Harbor Act of 1958, the Flood Control Act of 1958, the Water Supply Act of 1958, and the Fish and Wildlife Coordination Act of 1958.

Along portions of the reservoir, USACE manages considerable amounts of the surrounding land. In other locations, federal lands are confined to a ribbon of land surrounding the water. The larger land holdings are located on the eastern, western, and northern sides of the reservoir. USACE maintains recreational and wildlife areas in these locations. USACE built and maintains most of the structures located in these recreational and wildlife areas, as well. The Master Plan provides a programmatic approach to the management of all of the lands included within the Kerr Reservoir boundary. Therefore, for the purposes of this Programmatic Environmental Assessment (PEA), the project area includes all of the area within the reservoir boundary, as well as those lands USACE holds a real estate interest in.

This PEA evaluates the implementation of the Kerr Reservoir Master Plan. The PEA further analyzes the potential impact that implementing the Master Plan would have on the natural, cultural, and human environment. This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9); and USACE regulations, including Engineer Regulation 200-2-2: Procedures for Implementing NEPA.

The typical focus of NEPA compliance consists of environmental impact assessments for individual projects, rather than for long-range plans. However, application of NEPA to earlier and more strategic decisions not only meets the CEQ implementing regulations (40 CFR 1500-1508) and USACE regulations for implementing NEPA (ER 200-2-2), but

allows USACE to begin considering the environmental consequences of its actions long before any physical activity is planned. Multiple benefits can be derived such early consideration. Effective and early NEPA integration with the master planning process can significantly increase the usefulness of the plan to the decision maker, if environmental information can be provided to the correct individuals, at the right time, and in the right form. If such utility can be realized, organizational outcomes, such as support for the project mission and NEPA compliance can be improved. Environmental documents prepared concurrently with the Master Plan can influence and modify strategic land use decisions, whereas environmental documents prepared after the Master Plan would have little influence on strategic decisions already made.

The intention of the Master Plan is to develop Land Classifications that will guide the sustainable development of resources within the Kerr Reservoir. It is not feasible to define the exact nature of potential impacts prior to receiving specific project proposals. Therefore, environmental consequences may be less than or may, in fact, exceed what is described in this PEA. To ensure future environmental consequences are captured and coordinated as accurately as possible, additional NEPA coordination will be conducted, as appropriate, for construction projects proposed.

## 2.0 Purpose and Need for the Master Plan

The Kerr Reservoir project was authorized by the Flood Control Act of 1958 as the initial unit of the comprehensive plan for the development of the water resources in the Roanoke River Basin in Virginia and North Carolina. The reservoir’s initial authorizing legislation also included providing for hydroelectric production to support the surrounding region. This initial authorization included provisions for public recreation. These provisions were supplemented by additional legislation passed during the development and operation of the reservoir and include low flow augmentation, water supply, fish and wildlife, and recreation (Table C-1). Adoption of the proposed Master Plan is consistent with the authorized purposes of Kerr Reservoir.

**Table C-1: Kerr Reservoir Authorized Purposes**

Authorized Purpose	Authorizing Law	Date	Statute	Common Name
Flood Control	PL 78-534	12/22/1944	58 Stat 887	Flood Control Act of 1944
Hydroelectric Power	PL 78-534	12/22/1944	58 Stat 887	Flood Control Act of 1944
Recreation	PL 78-534	12/22/1944	58 Stat 887	Flood Control Act of 1944
Low Flow Augmentation	PL 78-534	12/22/1944	58 Stat 887	Flood Control Act of 1944
Water Supply	PL 85-500	7/3/1958	72 Stat 297	Water Supply Act of 1958
Fish and Wildlife	PL 85-624	8/12/1958	72 Stat 563	Fish and Wildlife Coordination Act

An important purpose of the Master Plan is to allow Kerr Reservoir to meet updated USACE regulations. Specifically, the new Master Plan complies with Engineer Pamphlet (EP) 1130-2-550 Project Operations – Recreation Operations and Maintenance Guidance and Procedures which was last updated on August 30, 2008 (USACE 2009b). Included in the EP were new Land Classification categories. These categories are different than the ones used in the 1980 Master Plan and reflect USACE’s new direction in master planning.

The proposed Master Plan is needed to provide USACE with an improved management tool at Kerr Reservoir. The 1980 Master Plan is a “construction document” that provides USACE with specific direction on developing select sites and structures. The construction document does not provide USACE with means of refining these plans or taking proactive action to responding proactively to needs not included in the document. Furthermore, once the elements included in the 1980 Master Plan have been constructed, there is no opportunity for USACE to work to further improve individual sites at Kerr Reservoir. The proposed Master Plan provides a policy approach to managing the project. This approach allows for refinement and adaptively managing the project resources. This

approach also would allow USACE to use the updated document to manage the project into the future. The management tool includes a Geographic Information Systems (GIS) database. The database can be continually updated throughout the life of the plan to allow USACE to take proactive management actions and adapt existing strategies.

## **3.0 Alternatives**

This chapter describes alternatives for updating the Kerr Reservoir Master Plan. The proposed action was designed to update existing inventories and plans, while providing a policy-based document that would provide a programmatic approach to the future management of the reservoir. This PEA examines two alternatives: the proposed action of adopting the Master Plan and a no action alternative.

### **3.1 Development of Alternatives**

Development of the alternatives to update the Kerr Reservoir Master Plan began in 2009. USACE and its partners embarked upon an extensive data collection effort that included coordination with federal, state, and local agencies, as well as institutions and groups with knowledge of the project resources. In December 2009, USACE hosted a series of open houses to solicit public input on the planning process. The comments received during the open house, and the subsequent 30-day public comment period, were used to inform the master planning process and are included in Appendix D of the Master Plan.

Over the following year, USACE and its consultants worked to develop options for classifying project lands and identifying Resource Objectives and Development Needs for these lands. The data collection, public comments, and findings of the planning team revealed that there was only one action alternative that would meet the purpose, need, and objectives of the master planning process. This alternative is the Preferred Alternative and is discussed in detail Section 3.2 of this PEA.

The Preferred Alternative was selected as it would meet the need for sustainable management and conservation of natural resources within the reservoir while providing for current and future quality outdoor recreational needs of the public.

### **3.2 Preferred Alternative: Adoption of Proposed Master Plan**

The proposed policy-based Master Plan is USACE's Preferred Alternative. Under the Proposed Action, USACE would adopt the proposed Master Plan for Kerr Reservoir. This would allow the project to comply with USACE regulations on maintaining an up-to-date Master Plan that includes the most recent USACE Land Classifications and management policies. It also would present USACE with a programmatic tool for the management of the project's lands.

The primary elements of the Proposed Action are the new USACE Land Classifications that would be applied to project lands. The existing and proposed Land Classification acreages are presented in Table C-2.

The primary change in the Land Classifications presented in the 1980 Master Plan and the proposed Master Plan is the way low-intensity/undeveloped lands are addressed. In the 1980 Master Plan, the "Recreation" Land Classification included four subsets: Existing Intensive Use, Future Intensive Use, Existing Low Density Use, and Future Low

Density Use. The definitions included in the proposed Master Plan, which are listed below, limit “Recreation” to actively/intensely used areas. Low intensity sites, as well as sites proposed for future use, are included in the “Multiple Resource Management” definition.

- **Project Operations:** This classification category should include those lands required for the structure, operations center, office, maintenance compound, and other areas that are used solely for project operations.
- **Recreation:** Land developed for intensive recreational activities by the visiting public, including developed recreation areas and areas for concession, resort, and quasi-public development. At new projects, recreation areas planned for initial development will be included in this classification. Future areas will be classified as Multiple Resource Management until initiation of the development.
- **Multiple Resource Management:** Lands managed for one or more, but not limited to, these activities to the extent that they are compatible with the primary allocation(s). The activities include: Recreation-Low Density, Wildlife Management General, Vegetation Management, Inactive and/or Future Recreation Areas, Easement Lands.

**Table C-2: Current and Proposed Land Classifications**

<b>Land Classification</b>	<b>1980 Master Plan (Acres)</b>	<b>Preferred Alternative (Acres)</b>
Flowage Easements	10,509	10,509
Multiple Resource Management	N/A	33,429
Natural Areas	5	
Project Operations	264	402
Recreation	-	7,531
Existing Intensive Use	7,864	N/A
Future Intensive Use	6,022	N/A
Existing Low Density	217	N/A
Future Low Density	2,782	N/A
Wildlife Management/Forest Reserve	38,600	N/A

The inconsistency in total acreage listed in Table C-2 is a result of differences in the technology used for each plan. In either case, acreages presented in a Master Plan are for planning purposes only (official acreages are maintained by USACE Real Estate Division). The different Land Classifications used in the two Master Plans make a direct comparison difficult; however, some similarities do exist. Table C-3 shows how the 1980 Master Plan Land Classifications have translated into the proposed Master Plan.

**Table C-3: Conversion of Land Classifications between 1980 Master Plan and Proposed Master Plan**

<b>1980 Master Plan</b>	<b>Proposed Master Plan</b>
Existing Intensive Use	Recreation
Existing Low Density Use	Multiple Resource Management
Flowage Easement	Flowage Easement
Future Intensive Use	Multiple Resource Management
Future Low Density Use	Multiple Resource Management
Natural Areas	Environmentally Sensitive
Project Operations	Project Operations

The proposed Land Classifications would be accompanied by Resource Objectives. Resource Objectives would be applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives would provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, Resource Objectives could be accompanied by Development Needs. Development Needs would include specific actions to implement the Resource Objectives.

The policy-based nature of the Preferred Alternative would allow USACE to update the Master Plan as it implemented the Resource Objectives and Development Needs. Updates would document completed actions and refocus the management of the given site. These updates could be made by the Kerr Reservoir staff, as they are most involved in the day-to-day management of the project. Updates also could include changes in Land Classifications. This level of update would involve coordination with USACE Wilmington District Office.

### **3.3 No Action Alternative**

Inclusion of the No Action Alternative is prescribed by CEQ regulations and serves as the benchmark against which federal actions can be evaluated. Under the No Action Alternative, an updated Master Plan would not be approved for Kerr Reservoir and the project would fail to comply with current USACE regulations. The 1980 Master Plan would continue to provide the only source of comprehensive management guidance and philosophy. Information provided in the current plan is out of date and no longer adequately addresses the needs of USACE, its partners, or the visitors at Kerr Reservoir. Furthermore, the 1980 Master Plan does not include revised Land Classifications.

Under the direction of the 1980 Master Plan, USACE and its partners would continue to implement the outdated development plans it prescribed. Management of the project would lack the support of an up-to-date guidance document. The original development focused document would prevent USACE from taking a proactive approach to managing Kerr Reservoir. Future major developments or resource management policies would require approval on a case-by-case basis without the benefit of evaluation in the context of an overall plan.

### **3.4 Alternatives Considered but Eliminated**

During the master planning process, a variety of different Land Classifications, Resource Objectives, and Development Needs were considered for Kerr Reservoir. These different elements were refined or revised to best meet the missions, purposes, goals, and objectives of USACE and its partners at Kerr Reservoir. The result of these refinements and revisions is illustrated in USACE's Preferred Alternative.



## **4.0 Affected Environment and Environmental Consequences**

This section describes the physical, natural, and human environments in and around the project area. Resources are described below in context with Kerr Reservoir.

### **4.1 Physical Environment**

#### **4.1.1 Geology, Topography, and Soils**

Geology within the project boundary is consistent with the Piedmont region of Virginia and North Carolina. This old, structurally complex region contains a wide variety of igneous and metamorphic rocks which have been heavily weathered due to relatively long exposure at the earth's surface. The development of these rocks has influenced the quantity and availability of ground water resources. 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, due to safety concerns and challenges in developing the areas around these rock structures (USACE 1980).

Although the Roanoke River Basin spans four physiographic regions, the majority of the river basin, including Kerr Reservoir, lies within the Piedmont physiographic province. 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 reservoir operation requires more regular fluctuations in the water level. The changing water level can increase the rate of erosion by exposing unvegetated soils to wave action.

The soil classifications presented in the 1980 Master Plan suggest that of the 50 soil types that exist on project lands, only 8 present no limitations for recreational development, with another 15 soils supporting some level of development limitations. The remaining soils have more extensive limitations. This does not mean that the areas that contain these soils cannot be used to support recreational development, but that the development should take into account the conditions that exist and plan accordingly. Additional discussion of soils, topography, and geology is included on pages 18-20 of the Master Plan.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Soils and topography are regulated by standards and laws included in the Virginia Erosion and Sediment Control Handbook and the North Carolina Erosion and Sediment Control Planning and Design Manual. The manual provides guidance on designing, implementing and monitoring erosion and sediment controls and stormwater management measures. The Virginia Department of Conservation and Recreation (DCR),

North Carolina Division of Land Management, and USACE are responsible for approving these measures.

#### **4.1.2 Floodplains**

The 100-year floodplain, or flood pool elevation, within Kerr Reservoir has been documented at 321 feet relative to mean sea level (msl). This elevation is dictated by the different pool levels that are maintained by USACE to meet its flood damage reduction mission at the project. In order to meet its mission to provide recreational resources at Kerr Reservoir, many of the sites and facilities are located within the flood pool. These structures have been designed to withstand and not interfere with the conveyance of floodwaters. This is important, as periodically it becomes necessary for these lands to be flooded to achieve USACE's flood damage reduction mission.

Other structures in the flood pool include shoreline stabilization structures. These structures were installed, primarily, to protect the shoreline from erosion. Although these features alter the wave action along a select portion of the project shoreline, they are not of great enough magnitude to alter the conveyance of floodwaters through the project.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Floodplains are defined and regulated by the Federal Emergency Management Agency (FEMA) and mapped on Flood Insurance Rate Maps (FIRM). Local municipalities planning offices also may play a role in defining floodplains and regulating their use. In the case of Kerr Reservoir, USACE works directly with FEMA to define and protect floodplains within the project boundary. All actions occurring within floodplains must be consistent with Executive Order 11988: Floodplain Management, and related USACE policy.

#### **4.1.3 Water Resources**

The Roanoke River Basin, which contains Kerr Reservoir, begins in the foothills of the Blue Ridge Mountains in Virginia. The river basin expands to encompass nearly 9,600 square miles along the river's 400 mile route to the Albemarle Sound in North Carolina. The basin is home to a number of growing municipalities as well as eight dams, of which the Kerr Reservoir dam is the largest.

Kerr Reservoir is designed to maintain a normal pool elevation of approximately 300 feet msl. The project design and operation provide for a full flood control pool at 320 feet msl and a full power pool at 300 feet msl. At normal pool elevation, the reservoir is 39 miles long with an estimated 800 miles of shoreline. This equates to nearly 50,000 acres of open water surface area. The pool extends nearly 40 miles up the Roanoke River and almost 20 miles up the Dan River, above its confluence with the Roanoke River.

Water quality in Kerr Reservoir is measured by Virginia and North Carolina state agencies and published in each state's 303(d) Impaired Waters Assessment. The most recent 303(d) list available for Virginia was completed in 2008. The report identifies all of Kerr Reservoir as being impaired and unable to support fish consumption (DEQ 2008). This finding is supported by North Carolina's 2008 303(d) report which reports portions

of Little Island Creek and Nutbush Creek as being impaired. The impairment is due to the level of criteria used to measure the health of aquatic life (NCDWQ 2009).

Water conditions within the reservoir also have resulted in the Virginia Department of Health (VDH) issuing a fish consumption advisory for the reservoir. The contaminants responsible for this advisory were mercury and polychlorinated biphenyls (PCBs). Given the level of contaminants found in select fish, the VDH recommend no more than two meals per month of fish caught in the reservoir (VDH 2009). The North Carolina Department of Health and Human Services has not issued any fish consumption advisories for the reservoir (NCDHHS 2009). Additional information on hydrology and water quality is included in Section 2.5 of the Master Plan.

During the construction of Kerr Reservoir, a system of 114 sedimentation ranges was established to allow for the measurement of sediment accumulation. At the time of the 1980 Master Plan, the rate of sedimentation was much less than predicted and the usable sediment storage area was not expected to be significantly depleted for hundreds of years (USACE 1980).

Since the publication of the 1980 Master Plan, a formal survey of sedimentation levels in Kerr Reservoir was conducted. The survey noted there are some increased levels of sediment accumulation, especially near the confluence of the Dan River and the main body of the reservoir. Overall, sedimentation does not pose a threat to the current or future operation of Kerr Reservoir (USACE 1997).

Located in the Piedmont geologic province, the rocks beneath Kerr Reservoir were formed under high temperature and pressure conditions, and subsequently have been altered through cycles of compression and partial melting. With the exception of some volcanic rocks, there is little or no primary porosity or permeability. Therefore, ground water presence and movement is limited to fractures formed either through rock deformation or through release of compression. Fractures in the Piedmont region rarely extend to a depth of more than 150 feet, and almost never deeper than 300 feet. Fractures are not extensive in the Kerr Reservoir area (USACE 1980).

Since the publication of the 1980 Master Plan, USACE has continued to rely on ground water supplies for drinking water at all of its campgrounds. The quality and condition of public water supply systems is tracked by the states' regulatory agencies (NCDENR 2010, EPA 2010a, DEQ 2008, VDH 2009).

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Water quality is regulated by Sections 401 and 404 of the Clean Water Act. A Section 401 Water Quality Certification documents compliance with federal and state water quality standards. Section 404 regulates activities within Waters of the U.S., which includes Kerr Reservoir and its surrounding tributaries. In addition to maintaining compliance with Sections 401, 402, and 404 of the Clean Water Act, future development would follow direction provided by Executive Order 11990: Protection of Wetlands, and related USACE regulations. Along with USACE, these laws fall under the purview of the

Virginia Department of Environmental Quality (DEQ), the Virginia Department of Health, North Carolina Division of Water Resources, the North Carolina Division of Coastal Management, the North Carolina Division of Water Quality, the U.S. Coast Guard, and the U.S. Environmental Protection Agency (EPA). Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance provides further guidance on implementing these regulations.

#### **4.1.4 Air Quality**

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 2010). 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.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Air quality is regulated by Clean Air Act and implemented by the EPA and 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 DEQ. Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance provides further guidance on implementing these regulations.

#### **4.1.5 Noise**

The region that contains Kerr Reservoir is a relatively rural area. As such, obtrusive noise sources are generally confined to heavily trafficked road corridors or in close proximity to agricultural or industrial activities. Within the project boundary, there are few obtrusive sources of noise. Primary noise sources are vehicles traveling local or project roads and boat engines from the boat ramps surrounding the reservoir, the marina, or on the water. Occasional public events that may include amplified voices or music also occur. 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.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Noise ordinances and regulations are developed and 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.

#### **4.1.6 Cultural Resources**

The Kerr Reservoir project lands are rich in cultural resources. Past surveys have recorded both historic and prehistoric sites which document the entire span of human

occupation of the area. At the time of European contact, the Occoneechee Indians lived throughout the area. Prehistoric period cultural resources range from palisaded settlements to temporary base camps and include sites from the Paleoindian through Woodland periods. Historic period cultural resources include the Buffalo Springs National Historic Site, and Revolutionary War and Civil War connections. Additionally, the area is home to many Antebellum plantations, including Glennmary (DHR # 041-0104), Prestwould (DHR # 058-0045), Long Grass (DHR # 058-0185), and Wimmbush in North Carolina, which are listed in the National Register of Historic Places (National Register). Several historic districts, including Clarksville (DHR # 192-0121) and South Boston (DHR # 130-0006), are in the vicinity of the reservoir and are listed in the National Register.

As part of the master planning process, background research at the State Historic Preservation Offices (SHPO) of North Carolina and Virginia identified a total of 818 previously recorded archaeological sites (206 in North Carolina and 612 in Virginia) within the Kerr Reservoir boundary. A total of 35 of these archaeological sites have been determined potentially eligible, eligible, or on the Virginia Landmarks Register. Three sites (44HA0022, 44MC0329, and 44MC0515) are listed in the National Register. The Reedy Creek Site (Site 44HA0022) contained a palisaded settlement with burials from the Late Archaic through Late Woodland periods. Another important site is the Buffalo Springs Historical Archaeological District (Site 44MC0329) from the nineteenth and early twentieth century. There also is an historic tobacco farmstead (Site 44MC0515) from the late nineteenth and early twentieth century.

For the 1980 Master Plan, a survey was conducted that included a visual inspection of approximately 6,000 acres of existing and proposed recreation lands and approximately 220 miles of shoreline. Six sites met the requirements and were nominated to the National Register. The survey report states that the majority of the archaeological sites have been destroyed by one or more of the following activities:

- Soil erosion from the initial logging and farming activities in the early historic period;
- Erosion of the shoreline of the reservoir;
- Construction and use of the recreation areas; and,
- The constant artifact collection of amateur collectors.

The 1980 Master Plan included a site probability model based on the field survey results. The major criteria utilized in the model were slope, aspect, proximity of pre-dam water and stream confluences, historic road networks, and other sites in the respective area. The maps from this model illustrate areas of high, medium, and low site probability density and archeologically sensitive areas within recreation areas and are only valid on 12 percent (6,000 acres) of the project lands. With information from recent research, this model is still valid for evaluating the cultural significance of project lands. This model is the best tool for managing USACE managed lands, as Kerr Reservoir does not have a finalized Historic Properties Management Plan.

Specific agency consultation for cultural resources is discussed in Chapter 9 of the Master Plan. The National Historic Preservation Act (NHPA), the Antiquities Act and the Reservoir Salvage Act regulate how cultural resources must be documented and preserved. Section 106 of the NHPA provides specific direction to federal agencies on protecting these resources. The Virginia and North Carolina SHPOs are responsible for documenting and managing cultural resources within the state and determining compliance with Section 106. Executive Order 11593: Protection and Enhancement of the Cultural Environment provides additional direction.

#### **4.1.7 Hazardous Materials**

Given the size of Kerr Reservoir, it is difficult to accurately identify all of the potential hazardous materials that may exist within or adjacent to the project boundary. Federal law requires site-specific due diligence on a case-by-case basis before development can take place.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Hazardous materials are regulated by the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, Oil Pollution Act, 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 and DEQ are responsible for ensuring compliance with these regulations.

#### **4.1.8 Recreation and Aesthetic Resources**

Recreation facilities at Kerr Reservoir are heavily concentrated along the Nutbush Creek arm of the reservoir, with additional locations included in Virginia's state parks and smaller facilities located throughout the project. The location and concentration of these facilities is due in part to the soils, topography, and other natural conditions that promote recreational development and use. Accessibility also plays a role in the success of recreational facilities at Kerr Reservoir. A complete listing of the recreational sites and facilities available at Kerr Reservoir is included in Appendix E, Table E-3 with a more thorough review of each site in Chapter 6: Resource Plan.

At Kerr Reservoir, USACE and its partners have developed a number of interpretive facilities and programs. The facilities offer opportunities for the public to learn about historic events and places, the natural resources within the project boundary, personal safety, the consequences of inappropriate behavior (e.g., litter, vandalism), and environmental education. The Kerr Reservoir interpretive programs also provide land based recreation opportunities. Interpretive services, developed for all visitors, including campers and day-users, provide a unique learning experience about all aspects of the Kerr Reservoir. Additional information on interpretation and recreation is included in Sections 2.18 and 2.22 of the Master Plan, respectively.

Aesthetic values at the reservoir also attract visitors. Views of the open water are prevalent from areas 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 and generally narrow channels and coves. Due to the forested nature of the entire area, sweeping views of the reservoir are limited to elevated locations, such as those found in the Bluestone WMA. For boaters, or visitors utilizing the lake shoreline, lush vegetation and steep topography generally limit views to the water and the forested hills beyond. Additional discussion on aesthetics and visual resources is included in Section 2.14 of the Master Plan.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Recreational development on project lands is dictated by USACE policy including ER 1130-2-550: Project Operations – Recreation Operations and Maintenance Guidance and Procedures.

## 4.2 Natural Resources

### 4.2.1 Vegetation

The most recent vegetation survey at Kerr Reservoir, completed by DCR in 2001, indicates that there has been minimal change in vegetative communities surrounding the reservoir since the publication of the 1980 Master Plan (USACE 1980, Van Alstine 1999, DCR 2001). Changes have been the result of management actions to meet the varying missions of USACE at Kerr Reservoir. These include clearing and prescribed burns to protect vegetative communities from a non-native pine beetle (*Dendroctonus frontalis*) infestation that occurred between 2005 and 2008. Management activities, like the response to the pine beetle infestation, are carried out by USACE with assistance from its state agency partners at the reservoir.

Although the 2001 survey only focused on the portion of the project lands in Virginia, previous studies suggest that there is little variation between the vegetative communities on the Virginia and North Carolina sides of the reservoir. In previous studies, the only community that was found to exist in North Carolina and not Virginia was the Piedmont Monadnock Forest (Van Alstine 1999, DCR 2001). Therefore, it can be assumed that the communities described below exist throughout the project lands, with the exception of the one forest type found only on the North Carolina side of the reservoir. This forest type, and the other vegetative communities found around Kerr Reservoir are described in Table 5 and Section 2.11 of the Master Plan.

Specific agency consultation for natural resources is discussed in Chapter 9 of the Master Plan. The clearing of vegetation is regulated by many of the same laws and regulations that apply to soil and topography. These laws are included Virginia's and North Carolina's Erosion and Sediment Control Manual. The manual provides guidance on designing, implementing and monitoring erosion and sediment controls and stormwater management measures. DCR and USACE are responsible for approving these measures. Management of rare, threatened, and endangered species is discussed in Section 4.2.3.

#### 4.2.2 Fish and Wildlife

The wildlife species found in and around Kerr Reservoir, including raccoons (*Procyon lotor*), squirrels, and many bird species, are common to this region and have existed there prior to the reservoir. Game species found on project lands include white-tail deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), gray squirrel (*Sciurus carolinensis*), cottontail rabbit (*Lepus sylvaticus*), fox (*Canidae* spp.), and raccoon. Resident waterfowl species include wood duck (*Aix sponsa*), black duck (*Anas rubripes*), mallard (*Anas platyrhynchos*), and Canada geese (*Branta canadensis*). The reservoir also provides habitat for many game fish species. Kerr Reservoir is widely known for large-mouth bass (*Micropterus salmoides*), striped bass (*Morone saxatilis*), crappie (*Pomoxis annularis*), and catfish fishing (USACE 2009). Additional discussion of fish and wildlife resources is included in Section 2.12 of the Master Plan.

Specific agency consultation for natural resources is discussed in Chapter 9 of the Master Plan. The U.S. Fish and Wildlife Service (USFWS) is one agency responsible for fish and wildlife protection, and has management authority under the U.S. Fish and Wildlife Coordination Act and subsequent regulations. Hunting and fishing of game species at Kerr Reservoir are managed by the Virginia Department of Game and Inland Fisheries (DGIF), the North Carolina Wildlife Resources Commission (WRC), and USACE. Permits and/or licenses are issued to manage populations of different species. Management of rare, threatened, and endangered species is discussed in Section 4.2.3.

#### 4.2.3 Threatened and Endangered Species

In June 1999, DCR and the North Carolina Natural Heritage Program (NCNHP) prepared a comprehensive biological inventory of the rare, threatened, and endangered species and significant natural communities on the project lands. The inventory was conducted to enable USACE to meet the requirements of the Endangered Species Act, practice sound natural resource management, and plan for future development while protecting valuable resources on project lands. A total of 51 occurrences of 18 community types considered to be significant were documented by DCR and NCNHP at Kerr Reservoir during the inventory. A total of 43 plant and 14 animal occurrences were documented during the inventory. At the time of the survey, only one federally-listed species was identified (bald eagle), occurring at one site on project lands. Three North Carolina plant species, each found at one site, have state legal status and include the shale-barren skullcap (*Scutellaria leonardii*), the small rabbit tobacco (*Gnaphalium helleri* var. *micradenium*), and ginseng (*Panax quinquefolius*). Finally, the survey identified a total of 29 sites determined to be conservation-worthy natural areas (DCR 2001). Additional discussion of threatened and endangered species and habitat is included in Section 2.13 of the Master Plan.

Specific agency consultation for natural resources is discussed in Chapter 9 of the Master Plan. Rare, threatened, and endangered species are defined and protected under the federal and state Endangered Species Acts. Additional protection is provided by specific legislation, such as the Bald Eagle Protection Act. These laws set limits on the types of actions that can occur within habitat that supports these species. The laws and regulations also define the permitting or mitigation processes that must occur to offset impacts to



rare, threatened, or endangered species. DGIF, DCR, Virginia Department of Agriculture and Consumer Services, NCNHP, and USFWS are responsible for implementing these laws and ensuring appropriate compliance.

#### 4.2.4 Wetlands

Wetlands include a variety of natural systems, such as marshes, swamps, and bottomland hardwoods (DENR 2010). “Available mapping of wetlands is very generalized; therefore, proposed development requires wetland determination for potential permitting on a site-by-site basis.

Specific agency consultation for wetland resources is discussed in Chapter 9 of the Master Plan. Wetlands are regulated under Sections 401 and 404 of the Clean Water Act. A Section 401 Water Quality Certification ensures compliance with water quality standards. Section 404 regulates activities within Waters of the U.S., which includes Kerr Reservoir and its surrounding tributaries. Further direction is provided by Executive Order 11990: Protection of Wetlands and related USACE regulations. DEQ, the Virginia Marine Resources Commission, North Carolina Division of Coastal Management, the North Carolina Division of Water Quality and USACE are responsible for these regulations.

### 4.3 Socioeconomic Characteristics

#### 4.3.1 Population and Economy

Kerr Reservoir extends into several counties in Virginia and North Carolina. The Virginia counties are Charlotte, Halifax, and Mecklenburg and the North Carolina counties are Granville, Vance, and Warren. Table C-4 lists each county’s population, the percent of the population under five years of age, median household income, per capita income, and percent of the population below the poverty level. Additional discussion on demographics is included in Section 2.19 of the Master Plan.

**Table C-4: Population and Economic Data**

County	Population (2000)	Population Under 5 Years of Age (%)	Median Household Income (1999 \$)	Per Capita Income (1999 \$)	Population Below Poverty Level (%)
Charlotte (VA)	12,472	5.5	\$28,929	\$14,717	18.1
Granville (NC)	48,498	6.2	\$39,965	\$17,118	17.7
Halifax (VA)	37,355	5.9	\$37,845	\$16,353	15.7
Mecklenburg (VA)	32,380	5.4	\$31,380	\$17,171	15.5
Vance (NC)	42,654	7.0	\$31,301	\$15,897	20.5
Warren (NC)	19,972	5.4	\$28,351	\$14,716	19.4
National Average	N/A	6.8	\$41,994	\$21,587	12.4

Source: Census 2010

Within the general vicinity of Kerr Reservoir, land use patterns represent a mixture of agricultural and forest uses interspersed with residences and business activity. Within Kerr Reservoir, land allocations are distributed through the 1980 Master Plan. Allocations are focused on recreational facilities and wildlife management areas. Along the shoreline, land use is controlled by USACE's shoreline management plan. The plan establishes different zones along the shoreline where private development is allowed, which lands are to be used to support public recreation, and lands where no shoreline development is allowed.

Specific agency consultation for socioeconomic resources is discussed in Chapter 9 of the Master Plan. Laws and regulations that apply to these resources include Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks, Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, and related USACE regulations. The EPA and USACE are responsible for ensuring compliance with these regulations, respectively.

#### **4.3.2 Transportation**

Kerr Reservoir is served by a well developed network of interstate, federal, state, and county highways. The major transportation routes to the area are Interstate 85, U.S. Highway 58, and U.S. Highway 15. Interstate 85 provides general access from cities to the north and south of the project, including the Raleigh-Durham area to the south and the Richmond-Petersburg area to the north. U.S. Highway 15 crosses the reservoir at Clarksville, providing access to the central portion of the project. U.S. Highway 58 also crosses the reservoir at Clarksville, providing east-west access to the reservoir and linking the South Boston and Clarksville areas.

Within the individual locations included in the project boundary, a mix of paved and unpaved roads, parking lots, and trails provide access to the site. Transportation within the project also is facilitated by existing marinas, boat ramps, and seaplane landing areas.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. The transportation system is managed and regulated by the Virginia Department of Transportation. Improvements on project lands fall under the jurisdiction of USACE and the Federal Highway Administration. Further guidance is provided by Executive Order 13148: Greening the Government Through Leadership in Environmental Management, and related USACE regulations.

#### **4.3.3 Utilities and Conservation Potential**

Electric service to Kerr Reservoir areas is supplied by four firms: Dominion Power, Progress Energy, the Mecklenburg Electric Cooperative, and the Piedmont Electric Cooperative. Electric service is available to virtually all portion of the project through existing distribution lines within the project boundary or on adjacent lands. High voltage transmission lines are present along the southern-most waters of the Nutbush Creek arm of the reservoir. Another section of high voltage line originates at the dam powerhouse, traverses the northern shore near North Bend Park before bending south and crossing the reservoir towards Ivy Hill Park; the line turns west along the southern edge of the

reservoir crossing a number of coves as it works its way into Clarksville. From Clarksville, the high voltage line heads north parallel with the Southern Railway Bridge over the main channel of the reservoir heading northwest towards Chase City.

Water service to communities adjacent to the reservoir in Virginia is available at Clarksville and South Boston. The Roanoke River Service Authority supplies drinking water to communities north of the dam, such as Boydton and surrounding areas; however the Authority's intake structures are downstream of the project in Lake Gaston. In North Carolina, the Henderson Water Authority operates a water intake and treatment plant on the Nutbush Creek arm of the reservoir near the Flemington Road Landing. The Kerr Lake Regional Water System is operated by the City of Henderson serving portions of Vance, Granville, Warren and Franklin Counties in North Carolina. The system serves three bulk customers: the City of Henderson, City of Oxford, and Warren County, which also supply water to Franklin County and the towns of Kittrell, Norlina, Warrenton, Stovall, and Middleburg. Industrial withdrawals include those at a Virginia Department of Corrections facility and the Dominion-Mecklenburg Co-Generation Plant.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Utility developments within the region are the responsibility of local municipalities. USACE works with these municipalities to coordinate improvements on project lands. These actions are guided by federal directives, such as Executive Order 13148: Greening the Government Through Leadership in Environmental Management and related USACE regulations.

#### **4.3.4 Safety**

USACE staff works to ensure a safe and enjoyable experience for all visitors at Kerr Reservoir. Safety at the project is maintained through a variety of different mechanisms. The project's Safety Plan, included in the Operational Management Plan, identifies safety concerns, responsibilities, and management techniques for different environments at the project.

To promote general visitor safety, bulletin boards are posted throughout the different recreation sites with information on water safety, trail use, and hunting. Some of the project's educational programs also are focused on safety, including a strong focus on water safety. To ensure hunter safety and adherence to established rules and regulations, state Wildlife Enforcement Officers and USACE Park Rangers patrol all WMAs throughout the year.

Specific agency consultation for physical resources is discussed in Chapter 9 of the Master Plan. Safety within project lands is the responsibility of USACE, with the assistance of local emergency services. The Kerr Reservoir OMP provides direction in developing and implementing safety measures.

## **5.0 Environmental Consequences**

This section describes the environmental consequences associated with the alternatives presented in Section 3.0 of this PEA. NEPA requires consideration of context, intensity, and duration of adverse and beneficial impacts (direct, indirect, and cumulative) and measures to mitigate for impacts. These elements are considered in the following impact analysis.

Use of the proposed Master Plan would streamline the approval process for future actions affecting project lands, depending on whether the actions are 1) specifically included in the Master Plan, 2) not included in the Master Plan, but consistent with the Plan, or 3) not included and not consistent with the recommendations, objectives and policies stated in the Plan (see Figure C-1). For actions that are identified in the Master Plan, the approval process would still require adequate NEPA consideration prior to initiating construction.

It is important to note that this PEA assesses the impacts of adopting the Land Classifications included in the proposed Master Plan but not the Recommended Future Uses. The proposed Master Plan consists of the Land Classifications, Resource Objectives, Development Needs, or other specifically stated policies. The Recommended Future Uses identify opportunities for changes in Land Classification, should suitable development proposals be received. However, because of the wide variety of possible uses that could be proposed, an additional evaluation to determine consistency with the stated site objectives would be required. Therefore, changes of Land Classifications to accommodate the Recommended Future Use would require an additional NEPA analysis to evaluate the expected impacts of the specific proposed change in use.

For actions that are not included in this Master Plan, such as specific future development proposals, USACE must determine if they are consistent with the Master Plan's policies. The first step in determining consistency would be to evaluate if the land classification for the location of the Preferred Alternative is appropriate (Figure C-1). For example, a proposal to develop a new marina in lands classified as Multiple Resource Management would not be consistent with this Master Plan, but a proposal for new trail development on the same land would be consistent.

This decision-making process (Figure C-1) would be initiated by the submittal of an Applicant Information form, included in Appendix E of the Master Plan. The form would provide USACE with general information about the proposal, including whether it is a request for a recreation or non-recreation outgrant. Such proposals must be consistent with USACE Non-recreation Outgrant Policy (USACE 2009a) and ER 1130-2-550, Chapter 14, Recreation Outgrant Policy for Outgranted Corps Lands (USACE 2009b), respectively.

If the proposed actions are consistent with the Master Plan, then USACE review of the outgrant application would require appropriate NEPA review and other environmental compliance and consultation with appropriate agencies, but no additional administrative review and approval. Once a project is approved and compliance is complete, it would be

ready for implementation. Full assessment of proposed actions under NEPA, environmental review, and agency consultation would be conducted on a case-by-case basis.

If the Preferred Alternative is determined to be not consistent with the Master Plan, then USACE review of the outgrant application would require administrative consideration of the Preferred Alternative to determine if it is an appropriate use of Project lands and an appropriate use of the proposed site. If the action is determined to be an inappropriate use of Project lands or the proposed site, no further action on the proposal would be considered. If, however, the proposed land use were determined to be an appropriate use of both Project lands and the proposed project site, then subsequent NEPA review and other environmental compliance and consultation with appropriate agencies would be undertaken.

## **5.1 Impacts of the Preferred Alternative**

Under the Preferred Alternative, USACE would adopt the new Master Plan for Kerr Reservoir. Along with adopting the policies and direction included in the plan, USACE would approve the Land Classifications included in the plan. In general, the proposed Land Classifications reduce the amount of project land available to support intensive use. Instead, most of the project lands would be classified as Multiple Resource Management to support low-intensity recreation and permanent wildlife habitat.

There would be no change to the management of easement lands. The laws and policies that address USACE jurisdiction over these lands are referenced in the proposed Master Plan; however, the document does not propose any change to these procedures. Any change would require action by the USACE Real Estate office..

Under the Preferred Alternative, any sizable impacts to the physical environment (geology, topography, soils, floodplains, water resources, air quality, noise cultural resources, hazardous materials, and recreation and aesthetic resources) would be confined to previously disturbed areas. These areas would be classified as Recreation or Project Operations. The remainder and majority of projects lands would be classified as Multiple Resource Management (Appendix H, Figures 10, 11, and 12 in the Master Plan). This would limit the level of development and human activity that would occur within much of the project. Limited development throughout much of the project would result in the continued buffering of the developed areas. Maintaining these buffers would reduce the impact that USACE actions, and actions on neighboring lands, would have on the resources within and surrounding the project boundary. Any development would be consistent with the regulations described in Sections 4.1.1 through 4.1.8 of this PEA.

Like the physical environment, impacts to natural resources (vegetation, fish and wildlife, threatened and endangered species, and wetlands) would be limited through the application of the Multiple Resource Management Land Classification to much of the project. This classification would limit the amount of development and the amount of human activity throughout much of the project. It also would allow USACE and its

partners to provide more focused natural resource management actions to larger areas for a longer period of time. Future impacts to natural resources primarily would be confined to previously disturbed areas that would be classified as Recreation or Project Operations. Existing and future development would avoid impacts to wetlands and threatened and endangered species. Any development also would be consistent with the regulations described in Sections 4.2.1 through 4.2.4 of this PEA.

The Preferred Alternative would have no long-term adverse impacts to socioeconomic characteristics (population and economy, transportation, utilities and conservation potential, or safety). The project would still serve the community and attract tourists to the region. The proposed Land Classifications would maintain the existing level of recreational activity, but would result in future development that may attract visitors with an interest in the undeveloped lands around the reservoir. Short-term adverse impacts may occur during construction activities, but the proposed Master Plan recognizes the need for growth of local community services (roads and utilities) before the project can expand. Short-term adverse impacts may occur during construction activities, but they would occur only as local community services (roads and utilities) grow to support them, as recognized by the proposed Master Plan. This would serve to minimize any measurable permanent adverse impacts. Any development would be consistent with the regulations described in Sections 4.3.1 through 4.3.4 of this PEA.

## **5.2 No Action Alternative**

Under the No Action Alternative, USACE would not adopt a new Master Plan for Kerr Reservoir. This would result in the majority of the project being classified as Intensive Use, with limited tracts set aside for low-intensity recreation. This does not mean that all of the lands within the project boundary would be developed, but future development would be considered appropriate on a greater expanse of project lands. The No Action Alternative also would result in USACE failing to comply with its own current regulations and guidance related to Master Plans.

Like the Preferred Alternative, there would be no change to the management of easement lands. The laws and policies that address USACE jurisdiction over these lands would remain in effect. Any change would require action by the USACE Real Estate office.

Impacts to the physical environment (geology, topography, soils, floodplains, water resources, air quality, noise, cultural resources, hazardous materials, and recreation and aesthetic resources) would be initially confined to previously disturbed areas. Future proposals, however, could result in development throughout the majority of the project. This would result in the potential for impacts to the physical environment to be spread over a larger area. Dispersed development also would fragment the buffer that surrounds existing Recreation and Project Operations lands. Any future development would remain consistent with the regulations described in Section 4.1.1 through 4.1.8.

Impacts to natural resources (vegetation, fish and wildlife, threatened and endangered species, and wetlands) also initially would be confined to previously disturbed areas.

Future proposals, however, could result in development throughout the majority of the project. Not only would this increase the developed footprint within the project boundary, but also the intensity and presence of human activity. The potential for future development to occur across much of the project could compromise USACE's intent to maintain and improve wildlife habitat at Kerr Reservoir, as investments in such activity would need to be weighed against the potential for that land to be developed in the near future. Existing and future development would avoid impacts to wetlands and threatened and endangered species. Any development also would be consistent with the regulations described in Sections 4.2.1 through 4.2.4 of this PEA.

The No Action Alternative would have beneficial and adverse impacts to socioeconomic characteristics (population and economy, transportation, utilities and conservation potential, or safety). The project would still serve the community and attract tourists to the region. Future development could be spread across the project and may be attractive to new visitors. This development also could deter current visitors who value the undeveloped project lands. Future growth in undeveloped portions of the project would require a greater investment in roads and utilities, as well. These developments could alter the existing aesthetic resources at Kerr Reservoir. Any development would be consistent with the regulations described in Sections 4.3.1 through 4.3.4 of this PEA.

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### 5.3 Environmental Impact Comparison of Alternatives

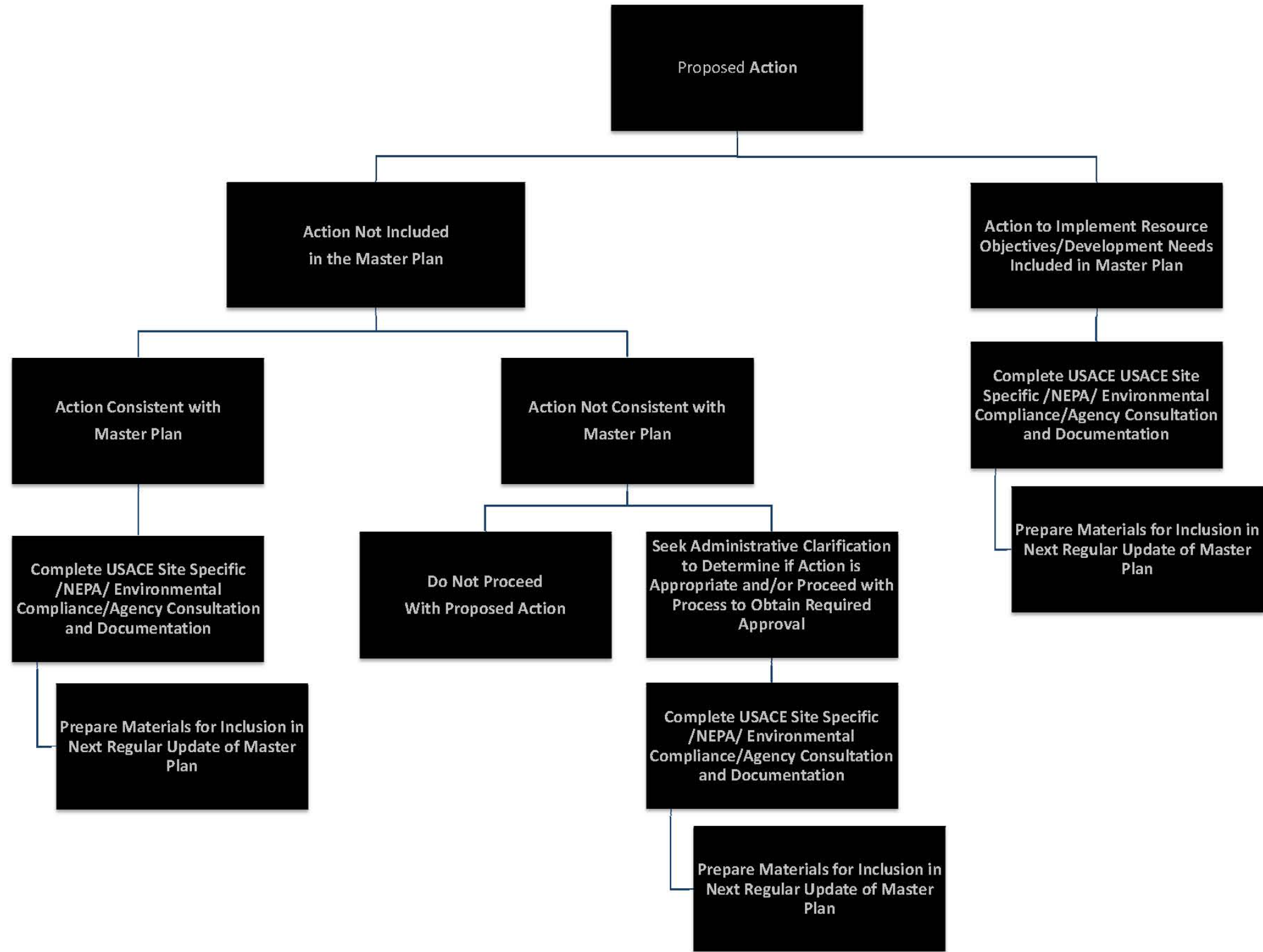
Table C-5 provides a brief summary and comparison of impacts to the physical and natural environment for the alternatives considered.

<b>Table C-5: Environmental Impact Comparison of Alternatives</b>		
<b>Resource Topic</b>	<b>Preferred Alternative</b>	<b>No Action Alternative</b>
<b>Geology, Topography, and Soils</b>	<b>Slight adverse impacts</b> related to grading, soil compaction and impervious surfaces from future development of trails and low-intensity recreation facilities, as well as the expansion of existing developed footprints.	<b>Minor to moderate adverse impacts</b> related to grading, soil compaction, and impervious surfaces from the development of intensive and low-intensity recreation sites throughout the project.
<b>Floodplains</b>	<b>No impact</b> as structures have been and would continue to be located primarily outside the 100-year floodplain. Structures located within the floodplain would not interfere with the flow of floodwaters.	<b>No impact</b> as structures have been and would continue to be located primarily outside the 100-year floodplain. Structures located within the floodplain would not interfere with the flow of floodwaters.
<b>Water Resources</b>	<b>No impact</b> as existing and future development sites must meet stormwater management regulations	<b>No impact</b> as existing and future development sites must meet stormwater management regulations.
<b>Air Quality</b>	<b>Slight adverse impact</b> as future development would be focused on low-intensity recreation that would not require automobile access within the project or other emissions sources.	<b>Slight adverse impact</b> as future development would be focused on low-intensity recreation that would not require automobile access within the project or other emissions sources.
<b>Noise</b>	<b>Slight adverse impact</b> as future development would be focused on low-intensity recreation that would not require automobile access within the project or other noise sources.	<b>Minor adverse impacts</b> as intensive future development could be spread throughout the project, increasing the presence of automobile traffic and other noise sources.
<b>Cultural Resources</b>	<b>Slight adverse impact</b> as future development of low-intensity recreation sites could avoid known resources of value.	<b>Slight adverse impact</b> as future development (intensive and low-density) would avoid impacts to resources of value. Mitigation actions may be necessary.
<b>Hazardous Materials</b>	<b>No impact</b> as current hazardous materials would be properly stored and used as regulated and future low-intensity development would not result in the introduction of any new materials to the project.	<b>No impact</b> as current and future hazardous materials would be stored and used as regulated.
<b>Recreation and Aesthetic Resources</b>	<b>Moderate beneficial impact</b> as future development would be consistent with USACE recreation policies and meet growing visitors' needs for low-density recreation.	<b>Minor beneficial impact</b> as future development would be consistent with USACE recreation policies but could result in higher levels of development, reducing the value of project lands to certain users.
<b>Vegetation</b>	<b>Slight adverse impacts</b> related to grading and clearing of relatively small areas to support trail development and other low-intensity recreation.	<b>Minor to moderate adverse impacts</b> related to grading and clearing of areas to support intensive and low-intensity recreation.
<b>Fish and Wildlife</b>	<b>Slight adverse impacts</b> related to grading, clearing, and human presence in relatively small areas for trail development/use and other low-intensity recreation.	<b>Minor to moderate adverse impacts</b> related to grading, clearing, and human presence throughout the project to support widespread development of intensive and low-intensity recreation.

**Table C-5: Environmental Impact Comparison of Alternatives**

Resource Topic	Preferred Alternative	No Action Alternative
<b>Threatened and Endangered Species</b>	<b>No impact</b> as all USACE actions at Kerr Reservoir would avoid impacts to threatened and endangered species.	<b>No impact</b> as all USACE actions at Kerr Reservoir would avoid impacts to threatened and endangered species.
<b>Wetlands</b>	<b>No impact</b> as all USACE actions at Kerr Reservoir avoid impacts to wetlands.	<b>No impact</b> as all USACE actions at Kerr Reservoir avoid impacts to wetlands.
<b>Population and Economy</b>	<b>Minor beneficial impact</b> as the project would maintain its current level of development, resulting in continued tourism and support of adjacent land values.	<b>Minor adverse impact</b> as future development of intensive recreation sites could attract different user groups, but result in the loss; however, also could result in the loss of existing groups and a reduction in the value of properties that are currently bordered by undeveloped USACE lands.
<b>Transportation</b>	<b>Minor beneficial impact</b> as trail networks would be expanded; existing road networks would continue to meet the needs of the project.	<b>Slight adverse impact</b> as existing road networks would have to be expanded to meet future intensive recreation development/activities in new locations within the project.
<b>Utilities and Conservation Potential</b>	<b>No impact</b> as existing utilities would continue to be sufficient and future low-intensity recreation would place limited demand on these systems.	<b>Minor adverse impact</b> as existing utilities are not in place to support intensive recreation development in many locations of the project and such development would place increasing demands on existing systems.
<b>Safety</b>	<b>No impact</b> as USACE actions at Kerr Reservoir are guided by mandatory safety plans and regulations.	<b>No impact</b> as USACE actions at Kerr Reservoir are guided by mandatory safety plans and regulations.
<b>Security</b>	<b>No impact</b> as public access to project areas would remain substantially as-is.	<b>No impact</b> as public access to project areas would remain substantially as-is.

Figure C-1: How the Master Plan would be Used



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## **5.4 Unavoidable Impacts of the Proposed Action**

Implementation of the Preferred Alternative should not result in unavoidable adverse impacts to any or all of the resources analyzed in this PEA. The Resource Objectives and direction on agency coordination would help the USACE avoid, offset, and mitigate any such impacts, and identify future mitigation techniques as the impacts become more apparent and science and technology provide new means of addressing them. Any anticipated impact is considered minor and localized and would not have significant long-term adverse impacts to project resources.

## **5.5 Cumulative Impacts**

The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as impacts which result when the impact of the Proposed Action is added to the impacts of other present and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). The cumulative impacts associated with the Proposed Action and the No Action Alternative are described below.

Past, present, and reasonably foreseeable future actions have and continue to contribute to the cumulative impacts of activities in and around Kerr 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. Many of these developments, however, have had beneficial impacts on the region's socioeconomic resources. In addition, many of the historic impacts have been offset throughout the years by USACE's and its partners' stewardship of resources within the project boundary.

The most notable past action is the development of Kerr Reservoir. The construction of the reservoir permanently changed natural conditions in the region. This changed natural conditions in the region, converting a riverine system to a deepwater lake environment with high-ground fill across the river in the dam area. Authorization of the reservoir construction was based on the purposes described in section 2.0 of this PEA, primarily flood control, hydroelectric production, recreation and low flow augmentation; with later supplements for water supply and fish and wildlife benefit. The resulting conditions have, through careful management by USACE and its partners, resulted in new and successful habitats and natural resource conditions within the lake environment. The USACE and its partners also have brought a wide variety of high-quality recreational opportunities to the reservoir. Management of the reservoir also has included shoreline zoning which has limited the type and number of private and public shoreline facilities along the reservoir. These facilities, including three existing marinas, have resulted in minor impacts to the man-made natural conditions around the reservoir. Shoreline zoning has limited these impacts and resulted in appropriate levels of mitigation to offset any loss of habitat or other natural conditions.

Existing and future actions also contribute to the cumulative impacts in and around the reservoir. Existing and future actions include the operation of project facilities, the construction and operation of future recreational sites, the development of other nearby recreation sites, as well as residential, commercial, and industrial development throughout the region. Continued project operations would result in the sustained maintenance and development of recreational facilities. These facilities would enhance the recreational offerings made by USACE and its partners, but also would result in varying levels of impacts to the surrounding natural resources. Similarly, surrounding residential, commercial, and industrial development could result in varying levels of impacts to many physical and natural resources. Within the project boundary, impacts would be offset through USACE resource stewardship efforts. The programmatic approach to project management, included in this Master Plan/PEA, would allow USACE to adapt its plans and mitigation responses to any actions. This would allow USACE to continue to reduce the contribution of its activities to regional cumulative impacts through proactive actions and adaptive resource management strategies.

The No Action Alternative would be expected to contribute moderate increments to the overall impacts past, present, and future actions have on the region. Without up-to-date land classification and guidance for current and future action, levels of intensive recreational use could increase throughout the project. This would raise the potential of adverse cumulative impacts into the future.

The Preferred Alternative would contribute imperceptible increments to the overall impacts past, present, and future actions have on the region, through the implementation of the Resource Objectives and Development Needs outlined in the proposed Master Plan. The Proposed Action also would contribute readily apparent beneficial increments to the overall impacts past, present, and future projects have on the region, by providing USACE with a proactive management tool.

## **6.0 Executive Orders**

**Executive Order 11988: Floodplain Management** – Both the Preferred Alternative and the No Action Alternative could involve placement of fill material in the floodplain and impact the movement of floodwaters. Neither alternative would affect the impact of floods on human safety, health and welfare.

**Executive Order 11990: Protection of Wetlands** – This order requires agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities. Neither the Preferred Alternative nor the No Action Alternative would allow for the placement of fill material in wetlands or Waters of the U.S. without appropriate permitting and mitigation.

**Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Communities and Low Income Populations** - The EPA defines environmental justice as the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people; including a racial, ethnic, or socioeconomic groups; should bear a disproportionate share of the negative environmental consequences of industrial, municipal, or commercial operations or the execution of federal, state, local, or tribal programs and policies. Neither the Preferred Alternative nor the No Action Alternative would have the potential for disproportionate health or environmental effects on minorities or low-income populations or communities.

**Executive Order 11593: Protection and Enhancement of the Cultural Environment**– All future activities would be coordinated with USACE Wilmington District Archaeologist prior to initiation of ground disturbing activities. Chapter 9 of the Master Plan (Pages 104-112) also commits Kerr Reservoir to future coordination with the SHPO and other relevant local agencies before initiating any project. This could result in additional Phase I or Phase II archaeological surveys or modifications to plans and designs.

**Executive Order 13045: Protection of Children from Environmental Health Risks** – This order mandates federal agencies identify and assess environmental health and safety risk that may disproportionately affect children as a result of the implementation of federal policies, programs, activities, and standards (63 Federal Register 19883 – 19888). Adoption of the proposed Master Plan would allow USACE to move forward with a programmatic approach to managing Kerr Reservoir that would result in improvements that would benefit all users. None of these improvements would result in short- or long-term actions that would disproportionately affect the safety or health of children. Chapter 9 of the Master Plan (Pages 217-222) commits USACE to evaluate any safety risk related to any proposed project at Kerr Reservoir.

**Executive Order 13186: Protection of Migratory Birds** – Adoption of the proposed Master Plan would not result in any significant or adverse impacts to migratory bird species or their habitat. Chapter 9 of the Master Plan (Pages 104-112) commits USACE at Kerr Reservoir to maintaining an inventory of birds identified within the project boundary and coordinate with other federal and state agencies that monitor these species, update the Master Plan and other project management documents to reflect changes in migratory bird populations in the region, and conduct appropriate agency coordination during planning of any proposed project.



## **7.0 Public Involvement**

Agency and public involvement was initiated in December 2009 when USACE published notices announcing the potential project and the first series of public open houses. This was followed by public comment periods, agency meetings, and additional public open houses. These public involvement activities are described in greater detail in Section 4.0 of the Master Plan. This information will be expanded in the Final Master Plan to document public scoping activities during the release of the document.

Agency and public review of the proposed project will continue during the 30-day public review period for this Master Plan/PEA. The distribution of the PEA for public review is described below in Section 8.0.

## **8.0 List of Recipients**

The PEA is being circulated for a 30-day review and comment period to numerous agencies and individuals, as listed in Appendix A of this PEA.

## **9.0 Point of Contact**

Any comments or questions regarding this PEA should be addressed to:

Mr. Joshua Davis  
U.S. Army Corps of Engineers  
John H. Kerr Dam and Reservoir  
1930 Mays Chapel Road  
Boydton, VA 23917  
(434) 738-6101 Ext. 141  
Joshua.P.Davis@usace.army.mil

## **10.0 Finding**

The Proposed Action would not significantly impact the quality of the human environment; therefore, an Environmental Impact Statement will not be required. If this opinion is upheld following circulation of this PEA, a Finding of No Significant Impact (FONSI) will be signed and circulated.

## 11.0 References

### Environmental Protection Agency (EPA)

- 2010 *The Green Book Nonattainment Areas for Criteria Pollutants*. Available on the Internet at: <http://epa.gov/airquality/greenbk/>. Last accessed September 17, 2010.

### North Carolina Department of the Environment and Natural Resources (DENR)

- 2010 *Wetlands: Their Functions and Values in Coastal North Carolina*. Available on the Internet at: <http://dcm2.enr.state.nc.us/Wetlands/brochure.htm>. Last accessed April 1, 2010.

### North Carolina Department of Health and Human Services (NCDHHS)

- 2009 *Fish Consumption Advisories*. Available on the Internet at: [www.rabies.ncdhhs.gov/epi/fish/](http://www.rabies.ncdhhs.gov/epi/fish/). Last accessed December 22, 2009.

### North Carolina Division of Water Quality (NCDWQ)

- 2009 *Draft 2008 303(d) List- Integrated Report Category 5*. Available on the Internet at: [http://h2o.enr.state.nc.us/tmdl/General\\_303d.htm](http://h2o.enr.state.nc.us/tmdl/General_303d.htm). Last accessed April 1, 2010.

### U.S. Army Corps of Engineers (USACE)

- 1980 John H. Kerr Dam and Reservoir Master Plan Update.
- 2009a Non-Recreational Outgrant Policy. Available on the Internet at: [www.saw.usace.army.mil/recreation/LandUse/FinalSignedNon-Recreational%20Outgrant%20Policy%2033009.pdf](http://www.saw.usace.army.mil/recreation/LandUse/FinalSignedNon-Recreational%20Outgrant%20Policy%2033009.pdf). Last accessed May 10, 2011.
- 2009b ER 1130-2-550: Title: Project Operations - Recreation Operations and Maintenance Policies. Available on the Internet at: <http://140.194.76.129/publications/eng-regs/er1130-2-550/toc.htm>. Last accessed May 10, 2011.

### U.S. Census Bureau (Census)

- 2010 American FactFinder. Last accessed September 17, 2010.

### Van Alstine, Nancy E. and Gary P. Fleming

- 1999 *A Natural Heritage Inventory of John H. Kerr Reservoir, Virginia and North Carolina: Final Report*.

### Virginia Department of Conservation and Recreation (DCR)

- 2001 *The Vascular Flora of John H. Kerr Reservoir, Virginia: Final Report*.

Virginia Department of Environmental Quality (DEQ)

2008 *Final 2008 305(b)/303(d) Water Quality Assessment Integrated Report.*  
Available on the Internet at: [www.deq.state.va.us/wqa/ir2008.html](http://www.deq.state.va.us/wqa/ir2008.html).

Virginia Department of Health (VDH)

2009 *Fish Consumption Advisories.* Available on the Internet at:  
[www.vdh.virginia.gov/epidemiology/dee/publichealthtoxicology/Advisories/](http://www.vdh.virginia.gov/epidemiology/dee/publichealthtoxicology/Advisories/). Last accessed December 17, 2009.

**PEA APPENDIX A  
LIST OF RECIPIENTS**

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This document is being made available 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 - Region 3  
National Audubon Society  
National Center for Environmental Health – Center for Disease Control  
National Wildlife Federation  
US Army Corps of Engineers, Norfolk  
U.S. Department of Agriculture – Natural Resources Conservation Service  
U.S. Department of Commerce – NOAA  
U.S. Department of Energy – Office of Environmental Compliance  
U.S. Department of Housing and Urban Development  
U.S. Department of Interior – Office of Environmental Policy and Compliance  
U.S. Environmental Protection Agency - Region 3, Region 4  
U.S. Fish and Wildlife Service -  
    Raleigh NC Field Office  
    Gloucester VA Field Office  
U.S. Forest Service, Southern Region

**State Agencies**

*North Carolina:*

Conservation Council of North Carolina  
North Carolina Commission of Indian Affairs  
North Carolina Council of Governments – Region K  
North Carolina Department of Administration/State Clearinghouse  
North Carolina Department of Agriculture  
North Carolina Department of Cultural Resources  
North Carolina Department of Environment and Natural Resources  
    Resource Library  
    Water Quality Section  
North Carolina Department of Transportation – Environmental Planning  
North Carolina Division of Archives and History  
North Carolina Division of Parks and Recreation  
North Carolina Ecosystem Enhancement Program  
North Carolina Geological Survey  
North Carolina Office of State Archaeology  
North Carolina Power Company  
North Carolina Office of Special Projects and Research  
North Carolina Wildlife Resources Commission  
State Library of North Carolina – Special Collections Management Branch

*Virginia:*

Governor of Virginia  
Virginia Department of Conservation and Recreation  
Virginia Department of Water Quality  
Virginia Department of Historic Resources  
Virginia Department of Environmental Quality  
Virginia Department of Game and Inland Fisheries  
Virginia Department of Highways and Transportation – Environmental Planning  
Virginia Council on Indians

**Elected Officials**

*North Carolina:*

North Carolina United States Senators and Local District Congressmen  
North Carolina State Senators and Representatives  
Board of Granville County Commissioners  
Board of Vance County Commissioners  
Board of Warren County Commissioners  
City of Henderson  
Vance County SWCD and County Manager

*Virginia:*

Board of Mecklenburg County Commissioners  
Charlotte County Administrator  
Clarksville Chamber of Commerce  
Halifax County Board of Supervisors and Planning Commission  
Southside Planning District Commission  
Town of Boydton  
Town of Chase City  
Town of Clarksville  
Town of South Boston and Public Library  
Town of South Hill  
Virginia Water Permits Program  
Virginia State Historic Preservation Officer  
Virginia State Senators and Representatives  
Virginia Tech, Department of Urban and Regional Planning  
Virginia United States Senators and Local District Congressmen  
Warren County Administrator

**Media**

*North Carolina:*

*The Daily Dispatch*, Henderson NC

*Virginia:*

*South Boston News & Record*

*Mecklenburg Sun*

*The News Progress*, Clarksville VA

**Conservation Groups**

*National:*

American Rivers  
Environmental Defense Fund  
National Audubon Society  
National Wildlife Federation  
The Trust for Public Land  
The Wilderness Society

*North Carolina:*

Carolina Canoe Club  
Conservation Council of North Carolina  
Conservation Trust for NC  
Ducks Unlimited  
Environmental Defense Fund of North Carolina  
North Carolina Natural Heritage Program  
North Carolina Wildlife Federation  
Sierra Club, North Carolina Chapter  
Southern Environmental Law Center  
The Nature Conservancy, NC Chapter  
The Trust for Public Land

*Virginia:*

Archeological Society of Virginia  
B.A.S.S. Federation of Virginia  
Citizens Environmental Council of the Roanoke Area  
Clean Water Fund  
Concerned Bass Anglers of Virginia  
Float Fishermen of Virginia, Roanoke Chapter  
Friends of the Rivers of Virginia  
Friends of the Roanoke  
Isaac Walton League  
Kerr Lake Protective Association  
Pathfinders for Greenways  
Preservation Alliance of Virginia  
Roanoke College Library  
Roanoke River Basin Association and Advisory Committee  
Sierra Club, Virginia Chapter  
The Nature Conservancy, VA Chapter  
The Trust for Public Land, Chesapeake Field Office  
Virginia Conservation Network  
Virginia Council on Indians  
Virginia Roanoke River Basin Advisory Committee

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**APPENDIX D  
USACE RESPONSE TO PUBLIC COMMENTS RECEIVED ON MASTER PLAN/PEA**

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During the public review of the Master Plan and associated PEA, comments were received from a number of agencies, groups, and private citizens. These comments are provided in the following sections

Comments Received from Agencies and Groups .....	D-4
D.1 North Carolina Department of Transportation.....	D-5
D.2 North Carolina Division of Historical Resources .....	D-5
D.3 North Carolina Division of Water Quality.....	D-5
D.4 North Carolina Natural Heritage Program.....	D-6
D.5 North Carolina Wildlife Resources Commission .....	D-7
D.6 Roanoke River Basin Association .....	D-8
D.7 U.S. Fish and Wildlife Service .....	D-11
D.8 Virginia Department of Environmental Quality .....	D-13
D.9 Virginia Department of Historic Resources.....	D-18
Comments Received from Private Citizens .....	D-19

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## Comments Received from Agencies and Groups

### D.1 North Carolina Department of Transportation

**Comment:** The Triangle Group of the NC Department of Transportation, Transportation Planning Branch has reviewed the document and would like to call to the attention of the Army Corps of Engineers that the Kerr-Tar Rural Planning Organization has been coordinating with NC Department of Transportation's Division of Bicycle and Pedestrian Transportation to develop a Lakes District Bike and Pedestrian Plan. This is an extensive and comprehensive plan that links bike and pedestrian routes together surrounding the Lakes Region in the affiliated counties including the Kerr Reservoir.

**Response:** Comment noted.

### D.2 North Carolina Division of Historical Resources

**Comment:** We look forward to working with you to implement the Kerr Dam and Reservoir Master Plan

**Response:** Comment noted.

### D.3 North Carolina Division of Water Quality

**Comment:** Please amend the document to reference North Carolina's 2010 Final 303(d) list.

**Response:** Comment noted. Text has been modified accordingly.

**Comment:** The North Carolina Division of Water Quality would like to see a greater consideration of maintaining a natural shoreline along the Lake rather than armoring of the shoreline for bank stabilization.

**Response:** Comment noted. The John H. Kerr Dam and Reservoir Shoreline Management Plan provides specific guidance and information to the public regarding the effective management of the shoreline at the reservoir. The Shoreline Management Plan, which is part of the John H. Kerr Dam and Reservoir Operational Management Plan, indicates that it is the policy of the U.S. Army Corps of Engineers to protect and manage shorelines in a manner which will 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.

Shoreline Management Plans and permits are subject to all applicable laws and regulations. A primary objective of a Shoreline Management Plan is the maintenance of the aesthetic and environmental characteristics of the reservoir for the full benefit of the

general public. All management actions will seek to achieve a balance between permitted private uses and protection of natural and cultural resources for use by the general public. The Shoreline Management Plan is reviewed and updated periodically and these comments, as well as additional comments, will be included in that review and update.

#### **D.4 North Carolina Natural Heritage Program**

**Comment:** The document does not identify by name, provide descriptions, or portray the natural areas and their boundaries, The figures in the document also neglect to show these natural areas. The document only provides lists of Federally listed species and those that are Federal Species of Concern, by county (pages E-11 through E-19); however, these lists are of species recorded anywhere within the counties, and not just found in the USACE project area. As such, these tables are of little value, The document does refer to "van Alstine and Fleming (1999)" in several places, and it uses some information on natural communities from that report in the EA document, Nonetheless, natural areas from that 1999 report are lacking in the EA.

**Response:** Natural Areas and Listed Species were considered in the development of the John H. Kerr Dam and Reservoir Master Plan and associated Programmatic Environmental Assessment. The referenced Sensitive Areas Figure (Figure 7) was removed from earlier Master Plan drafts for two reasons: first, while the information was useful to decision makers, U.S. Army Corps of Engineers did not want to broadcast the location of sensitive resource; secondly, the scale of the figure (the entire John H. Kerr Reservoir and surrounding project lands) did not convey useful information. The data referenced has been collected and incorporated into the project GIS database. U.S. Army Corps of Engineers disagrees that the county lists of protected species are of little value. These lists form a useful starting point and represent much collected field survey and expertise. The Master Plan and Programmatic Environmental Assessment narrow down the assessment and indicate that only one federally-listed species (the bald eagle) occurs within the John H. Kerr Dam and Reservoir project boundary. The Programmatic Environmental Assessment indicates that there will be no adverse effects on listed species. The U.S. Fish and Wildlife Service concurred with that assessment. As indicated in the Master Plan and Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

**Comment:** Our Program wishes to work with USACE staff at Kerr Reservoir to protect the more significant natural areas on the North Carolina portion of the project lands. Protection of these sites would be by addition to the Registry of Natural Heritage Areas that is maintained by our Program; these are non-binding agreements to manage and protect the significant features within the natural areas. The USACE has placed a number of natural areas at both Jordan Lake and Falls Lake on the Registry; however, no such action has yet taken place on the Kerr Reservoir lands. These agreements may well include additional partners such as the NC Wildlife Resources Commission and the NC Division of Parks and Recreation, both of which administer lands owned by the USACE at Kerr Reservoir.

**Response:** Comment noted. Such cooperative programs are believed to be outside of the scope of the Master Plan.

## **D.5 North Carolina Wildlife Resources Commission**

**Comment:** All comments are focused on future development.

**Response:** Comment noted. The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

## D.6 Roanoke River Basin Association

**Comment:** Having reviewed the draft we see no barriers to our program and support the findings of the planning team. We would however like to offer insight into our efforts that are currently underway that may affect the planning and management of several of the sites. Specifically we are working to establish partnerships with the USACE, Virginia Department of Conservation and Recreation, and others to develop and maintain ADA "accessible/adaptable" river access for paddlers along with interpretive trailhead interpretive signage serving all boaters at the following locations: 6.1 Kerr Reservoir Management Area (Tailrace), 6.47 Hycy Landing, 6.50 Dan River WMA, 6.51 Wolf Trap WMA, 6.52 Banister River WMA-North Unit or 6.53 Banister River - South Unit, 6.54 Clover Landing, 6.57 Staunton View Park, and 6.66 Rudds Creek.

The development of a regional blueways program and the promotion of eco-tourism is supported by the 2007 Virginia Department of Conservation and Recreation Outdoors Plan and has been gaining momentum through the efforts of multiple governmental agencies, municipalities and private citizens groups. While the proposed draft does not present barriers to our efforts, it is our charge to encourage support and promote opportunities for additional access to the Roanoke River.

**Response:** Comment noted. The discussion of trails has been expanded in the Master Plan (see Section 6.0). Blueways are growing in popularity in the region. Within close proximity to the John H. Kerr Dam and Reservoir boundary, there are 95 miles of flat water paddling and canoeing trails in North Carolina. Although there are not many organized blueways within close proximity to the project boundary in Virginia, there are over 40 such routes being planned across the state. This includes the Roanoke River Blueway. As noted in the Resource Objectives presented in Section 6.0 of the Master Plan, many of these trail systems have the potential to connect with existing or future trails on project lands.

U.S. Army Corps of Engineers does not estimate trail use as part of the overall activity mix; however, sightseeing is one of the types of recreation activities estimated. Sightseeing comprises about 23 percent of the total visitation at John H. Kerr Dam and Reservoir and may suggest that trail use is a popular activity where trails are provided. Trails also are increasing in size and usage in the region surrounding the reservoir.

It is beyond the scope of this Master Plan to design or identify the specific location of any trails. The Master Plan and accompanying Programmatic Environmental Assessment documents do provide a programmatic approach, through the Land Classifications and Resource Objectives, to allow future trail development to move forward.

**Comment:** 1.1 Project Description – Easement acreage included as part of the project should be provided in this narrative section.

**Response:** Section 1.1 Project Description presents general overview of John H. Kerr Dam and Reservoir. Section 2.21 includes a more complete description of easement acreages. U.S. Army Corps of Engineers does not believe a change is needed.

**Comment:** 1.3.5 Water Supply - It is my understanding that the water supply allocation obtained by the Dept. of Corrections has been relinquished to the Roanoke River Service Authority. This could be looked into or clarified.

**Response:** The referenced water supply contract has not been "relinquished" to the Roanoke River Service Authority. Official transfer of the contract requires approval by the Assistant Secretary of the Army, which has not been sought. No change to the Master Plan text was made.

**Comment:** 1.3.6 Fish and Wildlife - This section states that storage provides for striped bass spawning releases from Roanoke Rapids Dam. Section 1.3.5 alludes to the City of Virginia Beach using its supply storage to augment flows during the spring striped bass spawning period. Further in the plan its states that water is stored in Kerr Reservoir to accommodate increased flows for the spring spawning of striped bass. This section should be looked at because it is not believed that the Virginia Beach allocation was obtained for this purpose. As presented in the Draft, the Corps of Engineers and Virginia Beach have a duplicated or overlapping responsibility.

**Response:** Comment noted. Section 1.3.5 has been clarified.

**Comment:** 2.10 Borrow Areas and Utilities - The Roanoke River Service Authority supplies drinking water ..... This section needs to be updated to include Chase City, Bracey, South Hill, LaCrosse and the Dept. of Corrections. This sections needs to be updated to include the above municipalities and to provide a balance with the listing accorded to the Kerr Lake Regional System.

**Response:** Comment noted. Text has been revised.

**Comment:** 2.4 Sedimentation - The rate of sedimentation as currently experienced impacts recreational boating to the Roanoke River from Staunton View Recreation Area to upstream of the Staunton River State Park. This siltation may have a negative influence on upstream flood elevation experience and ecological and/or environmental concerns. When looking at the project as a whole siltation or sedimentation may be within expected parameters, but the siltation in this particular identified location has been causing problems for a number of years and needs to be studied.

**Response:** Comment noted. Sedimentation does impact the two rivers and limits recreational opportunities above their confluence. While there are localized recreational impacts, the 1997 *Report of Sedimentation Resurvey* (USACE 1997) concluded that sedimentation does not impose a significant impact to the operation of John H. Kerr Dam and Reservoir. As discussed in the Master Plan, sedimentation is unavoidable for reservoirs, due to steep banks and wind and wave action. Accounting for sedimentation was included in the design and management of the reservoir. Sedimentation studies are not within the scope of a Master Plan.

**Comment:** 6.0 Resource Plan - The operation of Clover Landing and Hyco Landing by the Virginia Dept. of Game and Inland Fisheries should be included in the narrative not just in the table. The joint operation of fishing piers etc. within developed Corps parks by groups such as veterans or citizens with disabilities should be addressed or mentioned.

**Response:** Narratives describing Hyco and Clover landings are presented in Sections 6.47 and 6.55, respectively. USACE does not have any joint operations at John H. Kerr Dam and Reservoir; however, some facilities have been donated and/or funded by others.

**Comment:** Page 10- states the objectives of Kerr are to maintain a high level of water quality for water supply, recreation, fish and wildlife use and to manage resources to changing conditions in a developing region. In keeping with these objectives, the Corps should review the issue of uranium mining in the Roanoke River Basin, study the various reports, and be prepared to weigh in at the proper time to insure the integrity of their facilities is maintained.

**Response:** The Master Plan considers a programmatic approach to management of the lands included within the John H. Kerr Dam and Reservoir project boundary. The uranium mine is outside the scope of this Master Plan.

**Comment:** Page 12 Section 2.2 - 3rd paragraph- Need to discuss the tens of thousands of acres of lands that are private property between elevation 320 and 326 (see Col. Pulliam letter dated February 16, 2006 and Kerr Water Control Plan Section C.6.a) and subject to flooding by Kerr operation. Should provide procedures for paying damage claims for flooding and property depreciation and flood insurance claims for being placed in a flood plain solely as a result of the Kerr Project.

**Response:** U.S. Army Corps of Engineers does not agree with these statements. As they are outside the scope of this Master Plan, they will not be specifically addressed.

**Comment:** Page 41 Section 2.21 last line- 326 should be changed to 320.

**Response:** Comment noted. The sentence with reference to 326 has been deleted.

**Comment:** Page 42 Section 2.21.2 Flowage Easements- Remove and replace with "Where real estate interest is limited to easement title only, management action will be appropriate within the limits of the estate acquired." This is in accord with the Shoreline Management Plan, Appendix VI January 1995.

**Response:** Comment noted. Section 2.21.2 will be clarified. A sentence has been added indicating "Where real estate interest is limited to easement title only, management action will be appropriate within the limits of the estate acquired."

## **D.7 U.S. Fish and Wildlife Service**

**Comment:** This letter is to inform you that a list of all federally-protected endangered and threatened species with known occurrences in North Carolina is now available on the U.S. Fish and Wildlife Service's (Service) web page at <http://www.fws.gov/raleigh>. Therefore, if you have projects that occur within the Raleigh Field Office's area of responsibility (see attached county list), you no longer need to contact the Raleigh Field Office for a list of federally-protected species.

**Response:** Comment noted. The web site was referenced during the drafting of the Master Plan to ensure species information was accurate. Prior to publishing the Final Master Plan, the web site was revisited to ensure the most up to date information was included.

**Comment:** Based on the information provided and other information available, it appears that the proposed action is not likely to adversely affect any federally-listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for listing under the Act at these sites. We believe that the requirements of section 7(a)(2) of the Act have been satisfied for your project. Please remember that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or, (3) a new species is listed or critical habitat determined that may be affected by the identified action.

**Response:** It is noted that the US Fish and Wildlife Service concurs that the implementation of the Master Plan is not likely to adversely affect any federally-listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for listing under the Act at these sites. The requirements of section 7(a)(2) of the Act have been satisfied for the John H. Kerr Dam and Reservoir Master Plan and associated Programmatic Environmental Assessment.

**Comment:** The Service is concerned about the potential impacts the proposed action might have on aquatic species. Aquatic resources are highly susceptible to sedimentation. Therefore, we recommend that all practicable measures be taken to avoid adverse impacts to aquatic species, including implementing directional boring methods and stringent sediment and erosion control measures. An erosion and sedimentation control plan should be submitted to and approved by the North Carolina Division of Land Resources, Land Quality Section prior to construction. Erosion and sedimentation controls should be installed and maintained between the construction site and any nearby down-gradient surface waters. In addition, we recommend maintaining natural, vegetated buffers on all streams and creeks adjacent to the project site.

The North Carolina Wildlife Resources Commission has developed a Guidance Memorandum (a copy can be found on our website at (<http://www.fws.gov/raleigh>) to address and mitigate secondary and cumulative impacts to aquatic and terrestrial wildlife resources and water quality. We recommend that you consider this document in the development of your projects and in completing an initiation package for consultation (if necessary).

**Response:** The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource



Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site-specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, additional review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

The project implementation measures mentioned in the U.S. Fish and Wildlife Service's comment, along with other applicable environmental management and protection measures, will be considered during the review and implementation of specific projects, as discussed above.

## **D.8 Virginia Department of Environmental Quality**

**Comment:** If and when site-specific developments or other actions are proposed for implementation subsequent to the master plan, if approved, appropriate detailed environmental and cultural compliance documentation should be prepared in accordance with NEPA and National Historic Preservation Act requirements. Virginia Department of Environmental Quality will coordinate future site-specific environmental documents when they become available.

**Response:** Comment noted. The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

**Comment:** The Virginia Department of Environmental Quality, Blue Ridge Regional Office (BRRO) states that as individual site-based development activities occur, Virginia Department of Environmental Quality would need to conduct a project review.

**Response:** Comment noted. The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

**Comment:** Virginia Marine Resources Commission has no comments on the Master Plan or Programmatic Environmental Assessment.

**Response:** Comment noted.

**Comment:** The Virginia Division of Land Protection and Revitalization conducted a cursory review of its database files, including a Virginia Environmental Geographic Information System (VEGIS) database search, of the area. A few waste facility sites were located within the same zip code of the proposed project under zip codes 23917, 27537, 23927, 27507, 23529, 24598, 24592, 24589, and 23964 and/or within 0.25 mile radius from the project sites. However, the proximities of the identified waste sites to the project site and potential impact should be further evaluated, if not already done.

**Response:** Comment noted. The Master Plan and associated Programmatic Environmental Assessment address property that the government owns in fee and private property over which U.S. Army Corps of Engineers (Government) has some easement rights. U.S. Army Corps of Engineers is not aware of any referenced waste facilities on these managed project properties in Virginia.

**Comment:** According to the information currently in Virginia Department of Conservation and Recreation, Natural Heritage Program files, several natural heritage resources have been documented within and adjacent to the John Kerr Dam Reservoir including surrounding lands (see attached table).

**Response:** Comment noted. These files were referenced during the drafting of the Final Master Plan to ensure species information is up to date.

**Comment:** Virginia Department of Conservation and Recreation continues to support maintaining hardwood forest buffers and managing them to produce mature forest wildlife habitat including control of invasives.

**Response:** Comment noted. The Resource Objectives for the various Land Classifications include objectives to manage forest resources and other vegetation for balanced recreation and fisheries and wildlife enhancement. Control of noxious plants, in a manner that avoids damage to existing desirable vegetation and sensitive areas, also is a Resource Objective common to the Land Classifications included in the Master Plan.

**Comment:** Virginia Department of Conservation and Recreation states that Aarons Creek, Beech Creek, Buffalo Creek, Butcher Creek and the Dan River have been designated as "Threatened and Endangered waters" by the Virginia Department of Game and Inland Fisheries. The species associated with Aarons Creek are the Atlantic pigtoe (*Fusconaia masoni*, G2/S2INULT), Whitemouth shiner (*Notropis alborus*, G4/S1/NULT) and Carolina darter (*Etheostoma collis*, G3/S2/NUL T). The species associated with Beech Creek is the Carolina darter and with Buffalo Creek and Butcher Creek is the Whitemouth shiner. The species associated with the Dan River is the Orangefin madtom (*Noturus gilberti*, G2/S2/NUL T).

**Response:** Comment noted. This information is included in the John H. Kerr Dam and Reservoir GIS database which accompanies the Master Plan. This information will be available for future site-specific decisions in these areas.

**Comment:** Virginia Department of Conservation and Recreation's files indicate that the Difficult Creek Natural Area is within the project vicinity. However due to the scope of the project and the distance to the natural heritage resources, Virginia Department of Conservation and Recreation does not anticipate any adverse impacts to the natural area and associated resources.

**Response:** Comment noted.

**Comment:** Virginia Department of Game and Inland Fisheries states that it did not identify anything in the Kerr Reservoir Master Plan that is of concern or that will result in significant adverse impacts upon resources under its jurisdiction. Due to limited staff and time to review the document, Virginia Department of Game and Inland Fisheries cannot provide specific comments regarding the plan at this time. Virginia Department of Game and Inland Fisheries states that it was given the opportunity to provide comments during scoping for development of the plan.

**Response:** Comment noted. The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

Accordingly, the Virginia Department of Game and Inland Fisheries will have additional opportunity to provide comments on site specific projects potentially affecting resources in their jurisdiction.

**Comment:** Virginia Department of Conservation and Recreation, Division of Planning and Recreational Resources states that it supports the preferred alternative for its added attention to recreational needs based in part on information garnered from the 2007 VOP.

**Response:** Comment noted.

**Comment:** Virginia Department of Health, Office of Drinking Water states that public groundwater wells are within a 1-mile radius of the project site. Two of these are owned by Longwood Trailer Park, one is owned by the Mecklenburg Power Station, and the remaining wells are federally owned Corps' wells supplying campgrounds. The Town of Clarksville's public supply surface water intake is located within the projects boundaries on Kerr Reservoir.

**Response:** Comment noted.

**Comment:** Virginia Office of Drinking Water does not have adequate information at this time to assess the potential impact of planned activities or land modifications to individual public water sources. Specifically, the multiple resource management land classification does not convey what watershed impacts might result from the land use.

**Response:** Comment noted. The Master Plan provides a policy approach to managing John H. Kerr Dam and Reservoir. This is a proactive approach which provides for adaptive management of the project resources. The primary elements of the Master Plan are the new Land Classifications that have been applied to project lands. The Land Classifications are accompanied by Resource Objectives. Resource Objectives have been applied on three levels: project-wide, Land Classifications, and individual sites. At each level, the Resource Objectives provide goals and objectives related to the management of natural, cultural, and recreational resources. On the individual site level, in some cases, Resource Objectives have been accompanied by Development Needs. Development Needs include specific actions to implement the Resource Objectives.

Accordingly, the Master Plan is not a “construction document” that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, further review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted.

**Comment:** Virginia Department of Forestry does not foresee any significant impact to the forest resources of the Commonwealth by following the master plan.

**Response:** Comment noted.

**Comment:** Halifax County states that it has no comments regarding the Programmatic Environmental Assessment and will rely upon the findings of Virginia Department of Environmental Quality, Department of Health, Marine Resources Commission, and Department of Conservation and Recreation.

**Response:** Comment noted.

## **D.9 Virginia Department of Historic Resources**

**Comment:** At present, we have no concerns regarding the effects the programs and policies set forth in this document will have on the cultural resources which comprise the rich environmental heritage of this area.

**Response:** Comment noted.

**Comment:** In the future, we would encourage the development of a formal Historic Resources Management Plan for your facility.

**Response:** A Historic Resources Management Plan has been prepared, outside the scope of this Master Plan, and is part of the John H. Kerr Operational Management Plan. An effort was recently completed to update the cultural resources data into the U.S. Army Corps of Engineers GIS database at the reservoir.

## Comments Received from Private Citizens

**Comment:** My lack of understanding of the process is hampering me from understanding why the specific shoreline management areas, which you now call "ribbons", do not merit more attention in this document. The ordinary citizen, while appreciative of the statistical data and overall comment and history of the Reservoir, wants only to know how the shoreline will be affected near his or her property. When can we expect specific proposals on the expired Shoreline Management Plan?

**Response:** The Master Plan is the basic document guiding U.S. Army Corps of Engineers responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. The Master Plan is a planning document, anticipating what could and should happen, and is flexible based upon changing conditions. The Master Plan deals in concepts, not in specifics or details of design or administration. Detailed management and administration functions are handled in the Operational Management Plan, which translates the concepts of the Master Plan into operational terms. The Shoreline Management Plan, referenced in the comment, is a component of the Operational Management Plan. Once the Master Plan is finalized the U.S. Army Corps of Engineers Wilmington District will begin to update the John H. Kerr Dam and Reservoir Operational Management Plan and Shoreline Management Plan, as funding and resources allow.

**Comment:** Newman Point should be reclassified as multiple resource management (wildlife & low density recreation) due to the lack of access. Private land would have to be purchased.

**Response:** While lack of access is a limiting factor at this site, it is one of the few areas that is designated for recreation on this portion of the reservoir. Access would be the responsibility of those seeking development opportunities. The 1980 Master Plan had classified the site for future intensive use. This designation was reviewed and deemed acceptable as part of the 2011 draft Master Plan. Therefore, the 2012 Master Plan continues to prescribe a Recommended Future Use of Recreation to the site.

**Comment:** I am concerned about possible conflicts with Rudds Creek Recreation Area with the land across from it being classified Multiple Resource Management (the possibilities of boat docks with an increase of boat traffic across from a swim beach and boat ramp)

**Response:** Comment noted. The Multiple Resource Management Land Classification is the appropriate classification for the parcel referenced in the comment. Private in-holdings prevent any significant recreational development at this site. U.S. Army Corps of Engineers shares the concerns of private docks in relation to the developed recreation area; however, the Master Plan is not the appropriate document to address shoreline

management. Shoreline zoning is established and defined within the Shoreline Management Plan.

**Comment:** You dropped the recreation designation from the north side of Staunton View. I think it should be recreation due to the site map in the old master plan.

**Response:** The recreation designation was adjusted on the north side of Staunton View to match current operations. Hogan Creek Wildlife Management Area occupies the north side of Staunton View Park, with no plans to expand recreation beyond the classification limits shown.

**Comment:** Buffalo Springs classification and site description should include the proposed trail on the east side of the road and should in the dam and pond.

**Response:** Concur. The classification and site description have been updated to reflect this change.

**Comment:** Ivy Hill WMA should be reclassified back to Multiple Resource Management because of lack of public access and the proximity of Ivy Hill Park which the Corps has closed sections of it.

**Response:** Concur. The Multiple Resource Management classification corresponds more closely with the 1980 Master Plan and Ivy Hill Park provides recreation development opportunities in close proximity. Legal access is a limiting factor at Ivy Hill Wildlife Management Area. Recreation is removed as a Recommended Future Use.

**Comment:** Area 6.34 Cherokee Council should be labeled Old North State Council, H. Clay Hemrick Scout Reservation. Several councils merged in the 1990s to form the new Old North State Council.

**Response:** Concur. The current name of the referenced camp is H. Clay Hemeric Scout Reservation. The name on the site sheet and corresponding figures was changed to H. Clay Hemeric Scout Reservation and the management agency listed as Old North State Council of BSA.

**Comment:** Section 6.8 Kerr Lake State Recreation Areas - should state that Steele Creek Marina is subleased.

**Response:** Concur. Text has been added to indicate Steele Creek Marina is subleased.



**Comment:** Section 6.9 E-Ten - Etu - Should state what agency of North Carolina that it is leased to.

**Response:** Concur. Specific lessee added to site sheet.

**Comment:** Section 6.5 - South Dike Park - Should list development needs - boat ramp, parking, beach, picnic sites, restrooms. Especially since in Palmer Point section it lists under development needs a new boat ramp at South Dike Park.

**Response:** Concur. Development needs - boat ramp, parking, beach, picnic sites, and restrooms have been added to the site sheet for South Dike Park.

**Comment:** Section 6.43 - Clarksville Marina - Should list restroom facilities and pump out facility as development needs.

**Response:** Comment noted. Development needs - restroom facilities and pump out facilities have been added to the site sheet for Clarksville Marina. As noted earlier in the Master Plan, recommendations made in the Resource Plan do not represent a requirement for existing or future lease holders, but address USACE's goals for Kerr Reservoir as a whole.

**Comment:** Table 10 needs to be put in alphabetic order, the bottom of the table is not in order.

**Response:** Concur. Table 10 has been alphabetized.

**Comment:** Through-out the document the state agencies should be listed as NCDPR, NCWRC, Virginia Department of Conservation and Recreation, & VDGIF. You don't list the Corps of Engineers as ACE, you list it as USACE.

**Response:** Concur. The acronyms for state agencies have been expanded to the format including state and agency name.

**Comment:** Mooresville Woods (north of Clarksville on Hwy 15) was listed in previous master plans as a possible recreation area. It was left out of this master plan, why? It has great access and has a great view of the lake.

**Response:** Concur. Mooresville Woods classification has been changed to future recreation. A site sheet has been developed for Mooresville Woods.

**Comment:** The ends of the railroad bridge and Business 58 bridge are classified as project operations, why? No other bridge ends are classified as project operations. In fact the land on both ends of the 58 bridge are state owned and the Corps only has a flowage easement.

**Response:** Comment noted. The Land Classification has been changed to flowage easement. The classification as Project Operations reflected the 1980 Master Plan; however, the Land Classification as flowage easement reflects current operations.

**Comment:** Change the 3 coves surrounding Long Grass Plantation from "future recreation" to a classification within Multiple Resource Management, that would allow 1 dock. "Wildlife" or "Vegetative" classification. The New classification would protect the integrity of our property. Our property is designated as a historic "Farm District."

**Response:** Comment noted. The Land Classification and Recommended Future Use of Recreation is consistent with the 1980 Master Plan and supports the continued use of the recreational lease known as Presbyterian Point Camp. The Camp, established in 1956, is currently leased to the YMCA. The integrity of the historic property referenced in the comment will not be compromised by the Recommended Future Use. The Master Plan is not a "construction document" that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if proposed actions are consistent with the Master Plan, the site specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis. If not consistent with the Master Plan, additional review to determine if the action is appropriate and possible update of the Master Plan is required before the site specific compliance review can be conducted. Coordination with the State Historic Preservation Office during these site-specific reviews will continue to afford protection to the historic Farm District property.

**Comment:** I request that Presbyterian Point (6.19) have an allocation change from "Red" (leased) to "green". Presbyterian Point Church Camp has been closed for many years and the century old buildings are hazardous and in derelict condition. The camp has been abandoned. There is NO public access to Presbyterian Point. Reallocation would allow low density recreation from homeowners. Long Grass Point (6.20) should also be re-allocated from re-stripped to green. The entire peninsula is surrounded by private land. If Presbyterian Point is re-allocated from "red" to "green" the residents could have access to the lake within the community.

If not, all of Presbyterian Point (6.19) is changed to green, at least some portion could have a variance to allow for a community dock.

**Response:** Comment noted. The Land Classification and Recommended Future Use of Recreation is consistent with the 1980 Master Plan and supports the continued use of the recreational lease known as Presbyterian Point Camp. The Camp, established in 1956, is currently leased to the YMCA. Access to the site exists across an established farm road. Land Classifications and Recommended Future Uses are just one of many factors that influence shoreline zoning and no one Land Classification will guarantee the establishment of appropriate zoning for docks within the Shoreline Management Plan. The Land Classification and Recommended Future Use remains Recreation.

**Comment:** The new Master Plan for Kerr Lake shows Presbyterian Point (6.19) as "Red Zone" Public Recreation. This property is adjacent to my Century Farm "Center Hill" and is shown on Corps of Engineers maps as Tract C-210. In my comment card of 11-10-11, I requested that Presbyterian Point (6.19) be re-allocated to "Green Zone" for Low Density Recreation. My reasons for this change are below:

1. There is no public road access going to the former camp and it is surrounded by private land.
2. The camp has been abandoned and unused for many years. A decade ago the Presbyterian Church found it to be a financial burden and ceased their summer camp program. The 55+ year old buildings are a safety hazard and create a distinct liability for the COE. They are dilapidated and not up to present day code standards. They are dangerous.
3. The highest and best use of the (6.19) property would be Low Density Recreation (Green Zone). The Tract C-210 property as well as the camp itself floods in high water. Of the 200 plus acres designated Presbyterian Point (6.19), only 13.7 acres are above the 320 high water mark. The rough topography and flooding of adjacent Tract C-210 makes it difficult and expensive to build an access road to the camp on COE land.
4. The septic system of the former camp is a big problem. The land cannot sustain installation of another septic system. At the close of the camp by the Presbyterian

Church ten years ago, the camp was on its 3rd septic system. This system failed numerous times and created contamination and environmental problems.

5. Since there are no physical boundaries between our Century Farm (in the same family for 100+ years) and the former camp, trespassers create an ongoing problem for us and a liability issue for the Corps of Engineers.

This is my formal request to change the proposed Master Plan usage of Presbyterian Point (6.19) designated quasi-public (Red Zone) to "limited residential use" (Green Zone) allowing for private docks and low density recreation. I also suggest the former camp be permanently closed and the buildings demolished.

**Response:** Comment noted. The Land Classification and Recommended Future Use of Recreation is consistent with the 1980 Master Plan and supports the continued use of the recreational lease known as Presbyterian Point Camp. Responses to the individual points made in the comment are provided below.

1. Access to the site exists across an established farm road.
- 2 & 3. The Master Plan is not a "construction document" that provides specific direction on developing select sites and structures.
4. Current and future use of the area requires compliance with all state and county health codes to include septic.
5. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if a proposed action is consistent with the Master Plan, the site-specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis.

**Comment:** Thank you for the opportunity to review the proposed Land Management Plan (LMP) for John H. Kerr Dam and Reservoir. My comments are specific to the properties located on NC State Road 1368 (Frank Bullock Rd) to NC State 1367 (dirt road).

I do not agree with and oppose the designation of these properties as Recreation (Currently Undeveloped). I believe the cove adjacent to the defined properties, above, is inappropriate for further development due to the following reasons:

- the cove is small and fairly remote,
- the cove is very shallow and heavily populated with tree stumps which renders it impractical for commercial development,
- there is a large utility tower just outside of the cove which requires careful navigation and could be dangerous for heavy ingress and egress.

For these reasons, I believe that area should be re-designated as "Multiple Resource Management" Wildlife and Low Density Recreation - green vs. candy stripe - as a more accurate and realistic depiction of the use of that portion of Kerr.

I am anxious to see the LMP move forward so that the Shore Management Plan can be completed. I eagerly await; as I would entertain working with the Corp in redeveloping the vegetation; and work on stabilizing the shoreline of the Corp property adjacent to my two lots.

**Response:** Comment noted. Areas not currently developed for recreation must be classified as Multiple Resource Management, in accordance with the regulations for preparing Master Plans. U.S. Army Corps of Engineers has chosen to display the subclassification (Future Recreation) in an effort to highlight areas for potential lease/sublease. U.S. Army Corps of Engineers believes the area referenced in the comment is suitable for land based recreation and concurs that it may not be suitable for all water-based recreation. This determination is due to a number of factors but most directly relates to the number of recreational and private water access areas already available in this area. The Future Recreation designation also allows for the possible expansion of land based facilities from the adjacent state park. However, the Master Plan is not a "construction document" that provides specific direction on developing select sites and structures. As indicated in the Master Plan and associated Programmatic Environmental Assessment, if a proposed action is consistent with the Master Plan, the site-specific proposal would still require appropriate National Environmental Policy Act review and other environmental compliance requirements on a case-by-case basis.

**Comment:** Please give consideration to the classification at the end of Epps Fork Road, (Long Grass Point) that would provide the greatest consideration for limited development zoning. Rezoning requested 2022 and on file with COE.

**Response:** Long Grass Point's (6.20) Land Classification and Recommended Future Use of Recreation is consistent with the 1980 Master Plan. The site currently supports limited public recreation and the state road access makes this site ideal for the establishment of more extensive recreational opportunities. The Land Classification and Recommended Future Use remains Recreation.

**Comment:** Consideration for simplified dredging permit ref. sedimentation Paragraph pg. 22 "..minimal change.."? Note last survey 2001. indicates silt accumulation higher than normal in confluence of Nut Bush and Main River. Given that we reside in this area and have seen an increase in silt accumulation, we need some simplified process to allow dredging to return our cove to what it was 20 years ago.

**Response:** Comment noted. The referenced Master Plan section on sedimentation was intended to provide an overview of the sedimentation status of the reservoir and not specifics concerning individual coves. The last sedimentation survey was conducted in 1997 and concluded that sedimentation does not impose a significant impact on the operation of the John H. Kerr Dam and Reservoir. Dredging can be considered and allowed in accordance with appropriate permits from the U.S. Army Corps of Engineers and the respective state.

**APPENDIX E  
PROJECT DATA**

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Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
10D Total	Clifford-Urban land complex, 8 to 20 percent slopes	2.31	0.00
11C Total	Clover fine sandy loam, 8 to 15 percent slopes	70.27	0.03
11D Total	Clover fine sandy loam, 15 to 25 percent slopes	6.39	0.00
12B Total	Clover-Bentley complex, 2 to 8 percent slopes	4.95	0.00
13A Total	Codorus loam, 0 to 2 percent slopes, occasionally flooded	1087.49	0.48
14A Total	Codorus and Hatboro soils, 0 to 2 percent slopes, frequently flooded	2086.54	0.93
15A Total	Dan River loam, 0 to 2 percent slopes, occasionally flooded	969.51	0.43
16A Total	Danripple sandy loam, 2 to 8 percent slopes, very rarely flooded	826.29	0.37
17B Total	Appomattox clay loam, 2 to 8 percent slopes, severely eroded	49.83	0.02
1B3 Total	Appomattox clay loam, 2 to 8 percent slopes, severely eroded	115.14	0.05
1C3 Total	Dogue silt loam, 2 to 8 percent slopes, rarely flooded	16.75	0.01
20B Total	Dogue silt loam, 2 to 8 percent slopes, rarely flooded	280.95	0.12
21D Total	Fairview sandy loam, 15 to 25 percent slopes	119.00	0.05
21E Total	Fairview sandy loam, 25 to 45 percent slopes	4.72	0.00
22B Total	Georgeville silt loam, 2 to 8 percent slopes	27.85	0.01
22C Total	Georgeville silt loam, 8 to 15 percent slopes	11.85	0.01
23D Total	Goldston-Montonia complex, 15 to 25 percent slopes	459.65	0.20
23E Total	Goldston-Montonia complex, 25 to 45 percent slopes	538.80	0.24
24B Total	Halifax sandy loam, 2 to 8 percent slopes	6.68	0.00
24C Total	Halifax sandy loam, 8 to 15 percent slopes	36.50	0.02
25B Total	Herndon silt loam, 2 to 8 percent slopes	0.02	0.00
25C Total	Herndon silt loam, 8 to 15 percent slopes	10.80	0.00
26B Total	Jackland-Orange complex, 2 to 8 percent slopes	11.24	0.00
27B Total	Lackstown fine sandy loam, 2 to 8 percent slopes	82.98	0.04
27C Total	Lackstown fine sandy loam, 8 to 15 percent slopes	44.82	0.02
28B Total	Masada sandy loam, 2 to 8 percent slopes, rarely flooded	95.93	0.04
2B Total	Banister-Kinkora complex, 0 to 4 percent slopes, rarely flooded	965.42	0.43
31B Total	Minnieville loam, 2 to 8 percent slopes	23.10	0.01
32B3 Total	Minnieville clay loam, 2 to 8 percent slopes, severely eroded	0.90	0.00
32C3 Total	Minnieville clay loam, 8 to 15 percent slopes, severely eroded	20.53	0.01
33C Total	Montonia-Goldston complex, 8 to 15 percent slopes	166.40	0.07

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
34B Total	Montonia-Nanford complex, 2 to 8 percent slopes	54.53	0.02
35B Total	Nanford-Badin complex, 2 to 8 percent slopes	40.50	0.02
35C Total	Nanford-Badin complex, 8 to 15 percent slopes	250.35	0.11
35D Total	Nanford-Badin complex, 15 to 25 percent slopes	297.66	0.13
36B Total	Nathalie sandy loam, 2 to 8 percent slopes	13.73	0.01
36C Total	Nathalie sandy loam, 8 to 15 percent slopes	45.12	0.02
37B Total	Oak Level loam, 2 to 8 percent slopes	13.41	0.01
37C Total	Oak Level loam, 8 to 15 percent slopes	24.01	0.01
39D Total	Poindexter gravelly silt loam, 15 to 25 percent slopes, very stony	91.60	0.04
3B Total	Bentley loamy sand, 2 to 8 percent slopes	2.71	0.00
3C Total	Bentley loamy sand, 8 to 15 percent slopes	6.97	0.00
40B Total	Rasalo-Orange complex, 2 to 8 percent slopes	36.40	0.02
41A Total	Riverview loam, 0 to 2 percent slopes, occasionally flooded	871.40	0.39
42C Total	Spriggs sandy loam, 8 to 15 percent slopes	7.39	0.00
42D Total	Spriggs sandy loam, 15 to 25 percent slopes	70.31	0.03
42E Total	Spriggs sandy loam, 25 to 45 percent slopes	6.61	0.00
43B Total	Spriggs-Rasalo complex, 2 to 8 percent slopes	25.90	0.01
43C Total	Spriggs-Rasalo complex, 8 to 15 percent slopes	207.67	0.09
43D Total	Spriggs-Rasalo complex, 15 to 25 percent slopes	125.99	0.06
45C Total	Stoneville loam, 8 to 15 percent slopes	0.76	0.00
46B Total	Straightstone loam, 2 to 8 percent slopes	9.02	0.00
47B Total	Tarrus-Badin complex, 2 to 8 percent slopes	225.78	0.10
47C Total	Tarrus-Badin complex, 8 to 15 percent slopes	576.03	0.26
47D Total	Tarrus-Badin complex, 15 to 25 percent slopes	546.48	0.24
48D Total	Toast sandy loam, 15 to 25 percent slopes	63.56	0.03
49A Total	Toccoa fine sandy loam, 0 to 3 percent slopes, occasionally flooded	254.73	0.11
4A Total	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded	637.44	0.28
50B Total	Turbeville loam, 2 to 8 percent slopes	114.80	0.05
50C Total	Turbeville loam, 8 to 15 percent slopes	14.88	0.01
51B Total	Udorthents loamy, 2 to 8 percent slopes	20.63	0.01
52B Total	Urban land	32.72	0.01

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
53B Total	Virgilina gravelly silt loam, 2 to 8 percent slopes	41.77	0.02
54B Total	Virgilina gravelly silt loam, 2 to 8 percent slopes, very stony	0.08	0.00
55C Total	Virgilina-Poindexter complex, 8 to 15 percent slopes, very stony	112.23	0.05
56B Total	Wolftrap-Easthamlet complex, 2 to 8 percent slopes	35.82	0.02
57B Total	Yadkin fine sandy loam, 2 to 8 percent slopes	32.62	0.01
57C Total	Yadkin fine sandy loam, 8 to 15 percent slopes	71.51	0.03
58B3 Total	Yadkin clay loam, 2 to 8 percent slopes, severely eroded	5.86	0.00
5A Total	Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently flooded	2836.06	1.26
6C Total	Cid silt loam, 8 to 15 percent slopes	259.56	0.12
7B Total	Cid-Lignum complex, 2 to 8 percent slopes	152.09	0.07
8B Total	Clifford sandy loam, 2 to 8 percent slopes	27.66	0.01
8C Total	Clifford sandy loam, 8 to 15 percent slopes	18.72	0.01
9B3 Total	Clifford clay loam, 2 to 8 percent slopes, severely eroded	0.21	0.00
9C3 Total	Clifford clay loam, 8 to 15 percent slopes, severely eroded	21.87	0.01
AaA Total	Altavista loam, 0 to 3 percent slopes, rarely flooded	100.02	0.04
AaB Total	Abell fine sandy loam, 1 to 6 percent slopes	48.73	0.02
AbB Total	Abell soils, 2 to 6 percent slopes	39.88	0.02
Ad Total	Alluvial land	1.96	0.00
AfA Total	Altavista fine sandy loam, 0 to 2 percent slopes	0.26	0.00
AfB Total	Altavista fine sandy loam, 2 to 6 percent slopes	51.44	0.02
AgB2 Total	Appling fine gravelly sandy loam, 2 to 6 percent slopes, eroded	15.52	0.01
AgD2 Total	Appling fine gravelly sandy loam, 6 to 15 percent slopes, eroded	39.28	0.02
AgE2 Total	Appling fine gravelly sandy loam, 15 to 25 percent slopes, eroded	3.09	0.00
AIE2 Total	Appling fine sandy loam, 15 to 25 percent slopes, eroded	1.20	0.00
AnB Total	Appling sandy loam, 2 to 6 percent slopes	201.02	0.09
ApB Total	Appling fine sandy loam, 2 to 6 percent slopes	3537.35	1.57
ApC Total	Appling fine sandy loam, 6 to 12 percent slopes	1662.15	0.74
ApC3 Total	Appling clay loam, 4 to 10 percent slopes, severely eroded	1.89	0.00
ApE3 Total	Appling clay loam, 10 to 20 percent slopes, severely eroded	2.71	0.00
ArC Total	Appling sandy clay loam, 6 to 12 percent slopes, severely eroded	25.26	0.01
AuA Total	Augusta fine sandy loam, 0 to 2 percent slopes	29.42	0.01

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
<b>AuB Total</b>	Augusta fine sandy loam, 2 to 6 percent slopes	55.76	0.02
<b>Bn Total</b>	Buncombe loamy sand	75.08	0.03
<b>Bt Total</b>	Buncombe-Toccoa complex	20.93	0.01
<b>BuA Total</b>	Buncombe loamy fine sand, 0 to 2 percent slopes, occasionally flooded	67.63	0.03
<b>CaB Total</b>	Cecil sandy loam, 2 to 6 percent slopes	32.03	0.01
<b>CcB2 Total</b>	Cecil fine gravelly sandy loam, 2 to 6 percent slopes, eroded	4.92	0.00
<b>CcD2 Total</b>	Cecil fine gravelly sandy loam, 6 to 15 percent slopes, eroded	21.26	0.01
<b>CeB Total</b>	Cecil fine sandy loam, 2 to 6 percent slopes	1187.00	0.53
<b>CeB2 Total</b>	Cecil fine sandy loam, 2 to 6 percent slopes, eroded	2277.23	1.01
<b>CeC Total</b>	Cecil fine sandy loam, 6 to 12 percent slopes	448.42	0.20
<b>CeC2 Total</b>	Cecil clay loam, 6 to 10 percent slopes, eroded	45.49	0.02
<b>CeD2 Total</b>	Cecil fine sandy loam, 6 to 15 percent slopes, eroded	987.63	0.44
<b>CgC Total</b>	Cecil clay loam, 6 to 12 percent slopes, severely eroded	235.99	0.10
<b>ChA Total</b>	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded	1334.19	0.59
<b>CIB3 Total</b>	Cecil clay loam, 2 to 6 percent slopes, severely eroded	2.35	0.00
<b>CID3 Total</b>	Cecil clay loam, 6 to 15 percent slopes, severely eroded	11.36	0.01
<b>CIE3 Total</b>	Cecil clay loam, 15 to 25 percent slopes, severely eroded	22.79	0.01
<b>Cn Total</b>	Chewacla silt loam	283.66	0.13
<b>CoA Total</b>	Congaree silt loam, 0 to 2 percent slopes, occasionally flooded	272.02	0.12
<b>CoB Total</b>	Colfax fine sandy loam, 2 to 6 percent slopes	1.60	0.00
<b>Cr Total</b>	Congaree silt loam	143.64	0.06
<b>CrA Total</b>	Congaree-Chewacla complex, 0 to 2 percent slopes, frequently flooded	653.00	0.29
<b>CuB Total</b>	Cullen clay loam, 2 to 6 percent slopes	188.77	0.08
<b>CuB2 Total</b>	Cullen loam, 2 to 6 percent slopes, eroded	16.50	0.01
<b>CuC Total</b>	Cullen clay loam, 6 to 12 percent slopes	127.80	0.06
<b>CuD2 Total</b>	Cullen loam, 6 to 15 percent slopes, eroded	40.52	0.02
<b>CuE2 Total</b>	Cullen loam, 15 to 25 percent slopes, eroded	24.36	0.01
<b>CvB3 Total</b>	Cullen clay loam, 2 to 6 percent slopes, severely eroded	8.84	0.00
<b>CvD3 Total</b>	Cullen clay loam, 6 to 15 percent slopes, severely eroded	48.31	0.02
<b>Cw Total</b>	Chewacla silt loam	276.26	0.12
<b>DAM Total</b>	Dam	8.85	0.00

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
<b>EnB Total</b>	Enott loam, 2 to 6 percent slopes	582.41	0.26
<b>EnB2 Total</b>	Enon fine sandy loam, 2 to 6 percent slopes, eroded	2.57	0.00
<b>EnC Total</b>	Enott loam, 6 to 12 percent slopes	376.20	0.17
<b>EnC2 Total</b>	Enon fine sandy loam, 6 to 10 percent slopes, eroded	6.46	0.00
<b>EoC3 Total</b>	Enon clay loam, 4 to 12 percent slopes, severely eroded	8.45	0.00
<b>GeB Total</b>	Georgeville silt loam, 2 to 6 percent slopes	3842.08	1.71
<b>GeB2 Total</b>	Georgeville silt loam, 2 to 6 percent slopes, eroded	12.49	0.01
<b>GeC Total</b>	Georgeville silt loam, 6 to 12 percent slopes	1955.44	0.87
<b>GeD Total</b>	Georgeville silt loam, 8 to 15 percent slopes	3.81	0.00
<b>GeD2 Total</b>	Georgeville silt loam, 6 to 15 percent slopes, eroded	46.38	0.02
<b>GeE2 Total</b>	Georgeville silt loam, 15 to 25 percent slopes, eroded	108.29	0.05
<b>GgB Total</b>	Georgeville silty clay loam, 2 to 6 percent slopes, severely eroded	129.09	0.06
<b>GgB3 Total</b>	Georgeville silty clay loam, 2 to 6 percent slopes, severely eroded	50.51	0.02
<b>GgC Total</b>	Georgeville silty clay loam, 6 to 12 percent slopes, severely eroded	32.47	0.01
<b>GgD3 Total</b>	Georgeville silty clay loam, 6 to 15 percent slopes, severely eroded	183.20	0.08
<b>GoC Total</b>	Goldston silt loam, 4 to 10 percent slopes	1402.48	0.62
<b>GoD Total</b>	Goldston silt loam, 10 to 15 percent slopes	16.25	0.01
<b>GoF Total</b>	Goldston silt loam, 15 to 35 percent slopes	263.07	0.12
<b>GuC Total</b>	Gullied Land, 6 to 30 percent slopes	32.30	0.01
<b>GuE Total</b>	Gullied land-Cecil complex, moderately steep	1.40	0.00
<b>HaB Total</b>	Helena fine sandy loam, 2 to 6 percent slopes	267.37	0.12
<b>HbC Total</b>	Helena-Worsham complex, 6 to 12 percent slopes	76.13	0.03
<b>HeB Total</b>	Helena fine gravelly sandy loam, 2 to 6 percent slopes	2580.74	1.15
<b>HeC Total</b>	Herndon silt loam, 6 to 12 percent slopes	1211.52	0.54
<b>HeC2 Total</b>	Helena fine gravelly sandy loam, 6 to 10 percent slopes, eroded	2.35	0.00
<b>HnB2 Total</b>	Herndon silt loam, 2 to 6 percent slopes, eroded	25.30	0.01
<b>HnD2 Total</b>	Herndon silt loam, 6 to 15 percent slopes, eroded	49.78	0.02
<b>HrB Total</b>	Herndon silt loam, 2 to 6 percent slopes	127.22	0.06
<b>HrB3 Total</b>	Herndon silty clay loam, 2 to 6 percent slopes, severely eroded	1.62	0.00
<b>HrC Total</b>	Herndon silt loam, 6 to 10 percent slopes	22.91	0.01
<b>HwB Total</b>	Hiwassee clay loam, 2 to 6 percent slopes	212.49	0.09

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
<b>IrB Total</b>	Iredell loam, 2 to 6 percent slopes	1232.49	0.55
<b>IrB2 Total</b>	Iredell loam, 2 to 6 percent slopes, eroded	71.21	0.03
<b>IrC Total</b>	Iredell loam, 6 to 12 percent slopes	50.02	0.02
<b>IrC2 Total</b>	Iredell loam, 6 to 10 percent slopes, eroded	152.39	0.07
<b>LgB Total</b>	Lignum silt loam, 0 to 4 percent slopes	1.62	0.00
<b>LmB Total</b>	Lignum silt loam, 2 to 6 percent slopes	80.43	0.04
<b>LoB Total</b>	Louisburg sandy loam, 2 to 6 percent slopes	94.87	0.04
<b>LoC Total</b>	Louisburg sandy loam, 6 to 20 percent slopes	1821.72	0.81
<b>LoD Total</b>	Louisa fine sandy loam, 6 to 15 percent slopes	78.83	0.04
<b>LoE Total</b>	Louisburg loamy coarse sand, 15 to 40 percent slopes	230.99	0.10
<b>LuC Total</b>	Louisburg sandy loam, 4 to 10 percent slopes	0.68	0.00
<b>LuD Total</b>	Louisburg sandy loam, 10 to 15 percent slopes	1.38	0.00
<b>LuF Total</b>	Louisburg sandy loam, 15 to 35 percent slopes	27.48	0.01
<b>McD3 Total</b>	Madison clay loam, 6 to 15 percent slopes, severely eroded	0.46	0.00
<b>MdB Total</b>	Masada fine sandy loam, 2 to 6 percent slopes	161.22	0.07
<b>MkB2 Total</b>	Mecklenburg loam, 2 to 6 percent slopes, eroded	21.24	0.01
<b>MkC2 Total</b>	Mecklenburg loam, 6 to 12 percent slopes, eroded	61.29	0.03
<b>MtB Total</b>	Mattaponi fine sandy loam, 1 to 6 percent slopes	113.80	0.05
<b>NaB Total</b>	Nason gravelly loam, 2 to 6 percent slopes	164.80	0.07
<b>NaC Total</b>	Nason gravelly loam, 6 to 10 percent slopes	30.37	0.01
<b>NaD Total</b>	Nason silt loam, 12 to 20 percent slopes	1251.31	0.56
<b>NaE Total</b>	Nason gravelly loam, 10 to 25 percent slopes	19.05	0.01
<b>OaB Total</b>	Orange silt loam, 1 to 6 percent slopes	734.28	0.33
<b>OaC Total</b>	Orange silt loam, 6 to 12 percent slopes	118.35	0.05
<b>OrB Total</b>	Orange silt loam, 2 to 6 percent slopes	0.04	0.00
<b>OrB2 Total</b>	Orange silt loam, 2 to 6 percent slopes, eroded	3.00	0.00
<b>PaC Total</b>	Pacolet fine sandy loam, 6 to 12 percent slopes	37.20	0.02
<b>PaD Total</b>	Pacolet fine sandy loam, 12 to 20 percent slopes	921.18	0.41
<b>PaE Total</b>	Pacolet sandy loam, 10 to 25 percent slopes	577.69	0.26
<b>PaF Total</b>	Pacolet sandy loam, 25 to 50 percent slopes	0.44	0.00
<b>PcD Total</b>	Pacolet clay loam, 12 to 20 percent slopes, severely eroded	18.83	0.01

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
<b>PhB Total</b>	Pacolet sandy loam, 2 to 8 percent slopes	7.74	0.00
<b>Pt Total</b>	Pits	2.03	0.00
<b>Ro Total</b>	Roanoke silt loam	67.00	0.03
<b>TaD Total</b>	Tatum silt loam, 12 to 20 percent slopes	2583.19	1.15
<b>TaE Total</b>	Tatum loam, 10 to 25 percent slopes	182.48	0.08
<b>TcD Total</b>	Tatum silty clay loam, 12 to 20 percent slopes, severerly eroded	72.92	0.03
<b>To Total</b>	Toccoa fine sandy loam	88.49	0.04
<b>ToA Total</b>	Toccoa fine sandy loam, 0 to 2 percent slopes, occasionally flooded	123.00	0.05
<b>TvB3 Total</b>	Turbeville clay loam, 2 to 6 percent slopes, severely eroded	2.89	0.00
<b>TvD3 Total</b>	Turbeville clay loam, 6 to 15 percent slopes, severely eroded	5.31	0.00
<b>VaB Total</b>	Vance sandy loam, 2 to 6 percent slopes	413.26	0.18
<b>VaC Total</b>	Vance sandy loam, 6 to 10 percent slopes	2.18	0.00
<b>W Total</b>	Water	47379.11	21.07
<b>WdD Total</b>	Wedowee fine sandy loam, 12 to 20 percent slopes	611.82	0.27
<b>We Total</b>	Wehadkee fine sandy loam, overwash	86.71	0.04
<b>WeA Total</b>	Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded	593.23	0.26
<b>WeD Total</b>	Wedowee sandy loam, 8 to 15 percent slopes	2433.16	1.08
<b>WeE Total</b>	Wedowee sandy loam, 15 to 40 percent slopes	553.61	0.25
<b>Wh Total</b>	Wehadkee silt loam	1013.43	0.45
<b>Wk Total</b>	Wehadkee-Chewacla complex	245.51	0.11
<b>WkC Total</b>	Wilkes sandy loam, 4 to 10 percent slopes	263.71	0.12
<b>WkE Total</b>	Wilkes sandy loam, 10 to 40 percent slopes	1396.35	0.62
<b>WIB Total</b>	Wickham fine sandy loam, 2 to 6 percent slopes	40.26	0.02
<b>WIC2 Total</b>	Wickham fine sandy loam, 6 to 10 percent slopes, eroded	35.36	0.02
<b>WmD Total</b>	Wilkes fine sandy loam, 6 to 15 percent slopes	54.41	0.02
<b>WmF Total</b>	Wilkes fine sandy loam, 15 to 35 percent slopes	102.01	0.05
<b>WnC3 Total</b>	Wilkes soils, 4 to 10 percent slopes, severely eroded	0.93	0.00
<b>WnF3 Total</b>	Wilkes soils, 10 to 35 percent slopes, severely eroded	48.29	0.02
<b>Wo Total</b>	Worsham soils	20.67	0.01
<b>WoA Total</b>	Worsham loam, 0 to 2 percent	15.53	0.01
<b>WoB Total</b>	Worsham fine sandy loam, 1 to 6 percent slopes	625.82	0.28

Table E-1: Soils Located Within the Kerr Reservoir Project Boundary

Symbol	Description	Acres	% of TOTAL
<b>WwB Total</b>	Wedowee sandy loam, 2 to 8 percent slopes	162.11	0.07
<b>WwC Total</b>	Wedowee sandy loam, 8 to 15 percent slopes	351.43	0.16
<b>WwE Total</b>	Wedowee sandy loam, 15 to 30 percent slopes	15.23	0.01



## Federally- and State-listed Endangered Species, Threatened Species, Species of Concern and Candidate Species in the Kerr Reservoir Region

### Granville County, North Carolina

Major Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County - Status
Invertebrate Animal	<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	E	E	S1	G1G2	Granville - Current
Invertebrate Animal	<i>Alasmidonta undulata</i>	Triangle Floater	T	None	S2	G4	Granville - Current
Invertebrate Animal	<i>Alasmidonta varicosa</i>	Brook Floater	E	FSC	S1	G3	Granville - Current
Invertebrate Animal	<i>Elliptio lanceolata</i>	Yellow Lance	E	FSC	S1	G2G3	Granville - Current
Invertebrate Animal	<i>Fusconaia masoni</i>	Atlantic Pigtoe	E	FSC	S1	G2	Granville - Current
Invertebrate Animal	<i>Lampsilis cariosa</i>	Yellow Lampmussel	E	FSC	S1	G3G4	Granville - Current
Invertebrate Animal	<i>Lampsilis radiata</i>	Eastern Lampmussel	T	None	S1S2	G5	Granville - Current
Invertebrate Animal	<i>Lasmigona subviridis</i>	Green Floater	E	FSC	S1	G3	Granville - Historical
Invertebrate Animal	<i>Orconectes carolinensis</i>	North Carolina Spiny Crayfish	SC	None	S3	G3	Granville - Current
Invertebrate Animal	<i>Orconectes virginianensis</i>	Chowanoke Crayfish	SC	FSC	S3	G3	Granville - Obscure
Invertebrate Animal	<i>Strophitus undulatus</i>	Creeper	T	None	S2	G5	Granville - Current
Invertebrate Animal	<i>Villosa constricta</i>	Notched Rainbow	SC	None	S3	G3	Granville - Current
Vascular Plant	<i>Acmispon helleri</i>	Carolina Birdfoot-trefoil	SR-T	FSC	S3	G3	Granville - Current
Vascular Plant	<i>Baptisia australis</i> var. <i>aberrans</i>	Prairie Blue Wild Indigo	T	None	S2	G5T2	Granville - Current
Vascular Plant	<i>Delphinium exaltatum</i>	Tall Larkspur	E-SC	FSC	S2	G3	Granville - Historical
Vascular Plant	<i>Echinacea laevigata</i>	Smooth Coneflower	E-SC	E	S1	G2G3	Granville - Current
Vascular Plant	<i>Isoetes piedmontana</i>	Piedmont Quillwort	T	None	S2	G3	Granville - Current
Vascular Plant	<i>Marshallia</i> sp. 1	Butner Barbara's-buttons	SR-L	FSC	S1	G1	Granville - Current
Vascular Plant	<i>Phemeranthus</i> sp. 1	Piedmont Fameflower	E	None	S1?	G1?	Granville - Current
Vascular Plant	<i>Portulaca smallii</i>	Small's Portulaca	T	None	S2	G3	Granville - Current
Vascular Plant	<i>Ptilimnium nodosum</i>	Harperella	E	E	S1	G2	Granville - Current
Vascular Plant	<i>Pycnanthemum torrei</i>	Torrey's Mountain-mint	SR-T	FSC	S1	G2	Granville - Historical
Vascular Plant	<i>Ruellia humilis</i>	Low Wild-petunia	T	None	S1	G5	Granville - Current
Vascular Plant	<i>Scleria</i> sp. 1	Smooth-seeded Hairy Nutrush	SR-L	FSC	S1	G1	Granville - Historical
Vascular Plant	<i>Solidago ptarmicoides</i>	Prairie Goldenrod	E	None	S1	G5	Granville - Current

Vance County, North Carolina

Major Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County - Status
Invertebrate Animal	<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	E	E	S1	G1G2	Vance - Current
Invertebrate Animal	<i>Alasmidonta undulata</i>	Triangle Floater	T	None	S2	G4	Vance - Current
Invertebrate Animal	<i>Elliptio lanceolata</i>	Yellow Lance	E	FSC	S1	G2G3	Vance - Current
Invertebrate Animal	<i>Fusconaia masoni</i>	Atlantic Pigtoe	E	FSC	S1	G2	Vance - Current
Invertebrate Animal	<i>Lampsilis cariosa</i>	Yellow Lampmussel	E	FSC	S1	G3G4	Vance - Current
Invertebrate Animal	<i>Orconectes carolinensis</i>	North Carolina Spiny Crayfish	SC	None	S3	G3	Vance - Current
Invertebrate Animal	<i>Strophitus undulatus</i>	Creeper	T	None	S2	G5	Vance - Current
Invertebrate Animal	<i>Villosa constricta</i>	Notched Rainbow	SC	None	S3	G3	Vance - Current
Vascular Plant	<i>Camassia scilloides</i>	Wild Hyacinth	T	None	S1	G4G5	Vance - Current
Vascular Plant	<i>Phacelia covillei</i>	Buttercup Phacelia	SR-T	FSC	S3	G3	Vance - Current
Vertebrate Animal	<i>Ambloplites cavifrons</i>	Roanoke Bass	SR	FSC	S2	G3	Vance - Current
Vertebrate Animal	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	None	S3B,S3N	G5	Vance - Current
Vertebrate Animal	<i>Lanius ludovicianus</i>	Loggerhead Shrike	SC	None	S3B,S3N	G4	Vance - Current
Vertebrate Animal	<i>Necturus lewisi</i>	Neuse River Waterdog	SC	None	S3	G3	Vance - Historical
Vertebrate Animal	<i>Noturus furiosus</i>	Carolina Madtom	T	FSC	S2	G2	Vance - Current

NC NHP database updated on Friday, February 12th, 2010.  
Search performed on Thursday, 8 April 2010 @ 12:26:40 EDST

Warren County, North Carolina

Major Group	Scientific Name	Common Name	State Status	Federal Status	State Rank	Global Rank	County - Status
Invertebrate Animal	<i>Alasmidonta heterodon</i>	Dwarf Wedgemussel	E	E	S1	G1G2	Warren - Current
Invertebrate Animal	<i>Alasmidonta undulata</i>	Triangle Floater	T	None	S2	G4	Warren - Current
Invertebrate Animal	<i>Elliptio lanceolata</i>	Yellow Lance	E	FSC	S1	G2G3	Warren - Current
Invertebrate Animal	<i>Elliptio steinstansana</i>	Tar River Spiny mussel	E	E	S1	G1	Warren - Current
Invertebrate Animal	<i>Fusconaia masoni</i>	Atlantic Pigtoe	E	FSC	S1	G2	Warren - Current
Invertebrate Animal	<i>Lampsilis radiata</i>	Eastern Lampmussel	T	None	S1S2	G5	Warren - Current
Invertebrate Animal	<i>Orconectes carolinensis</i>	North Carolina Spiny Crayfish	SC	None	S3	G3	Warren - Current
Invertebrate Animal	<i>Strophitus undulatus</i>	Creeper	T	None	S2	G5	Warren - Current
Invertebrate Animal	<i>Villosa constricta</i>	Notched Rainbow	SC	None	S3	G3	Warren - Current
Vascular Plant	<i>Acmispon helleri</i>	Carolina Birdfoot-trefoil	SR-T	FSC	S3	G3	Warren - Historical
Vertebrate Animal	<i>Aimophila aestivalis</i>	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	Warren - Current
Vertebrate Animal	<i>Ambloplites cavifrons</i>	Roanoke Bass	SR	FSC	S2	G3	Warren - Current
Vertebrate Animal	<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	None	S3B,S3N	G5	Warren - Current
Vertebrate Animal	<i>Lampetra aepyptera</i>	Least Brook Lamprey	T	None	S2	G5	Warren - Current
Vertebrate Animal	<i>Necturus lewisi</i>	Neuse River Waterdog	SC	None	S3	G3	Warren - Current

NC NHP database updated on Friday, February 12th, 2010.  
Search performed on Thursday, 8 April 2010 @ 12:32:11 EDST

Source: NCNHP 2010

Charlotte County, Virginia



Virginia Department of Game and Inland Fisheries

4/8/2010 1:11:50 PM

Fish and Wildlife Information Service

**27 Species Booklets for Fish, Amphibians, Reptiles, Birds, Mammals, Mollusks, Other Aquatic Invertebrates, Terrestrial Invertebrates, Marine Mammals, Plants having Status or Wildlife Action Plan codes "FE, FT, FS, SE, ST, SS" in (037) Charlotte County**

[Help](#)

A Species Booklet Pop-up Window is opened when you click on any common name.  
Table is currently ordered by Status importance \* - Click another column header to sort by that column.

<a href="#">Species Code</a>	Status *	WAP **	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>
040129	ST	I	<a href="#">Sandpiper, upland</a>	<i>Bartramia longicauda</i>
040293	ST	I	<a href="#">Shrike, loggerhead</a>	<i>Lanius ludovicianus</i>
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	<i>Ammodramus henslowii</i>
010353	ST	II	<a href="#">Darter, Carolina</a>	<i>Etheostoma collis</i>
040093	FSST	II	<a href="#">Eagle, bald</a>	<i>Haliaeetus leucocephalus</i>
010070	ST	IV	<a href="#">Shiner, whitemouth</a>	<i>Notropis alborus</i>
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	<i>Lanius ludovicianus migrans</i>
010174	SS	II	<a href="#">Bass, Roanoke</a>	<i>Ambloplites cavifrons</i>
020023	SS	II	<a href="#">Salamander, mole</a>	<i>Ambystoma talpoideum</i>
040266	SS	II	<a href="#">Wren, winter</a>	<i>Troglodytes troglodytes</i>
040094	SS	III	<a href="#">Harrier, northern</a>	<i>Circus cyaneus</i>
040034	SS	III	<a href="#">Heron, tricolored</a>	<i>Egretta tricolor</i>
040036	SS	III	<a href="#">Night-heron, yellow-crowned</a>	<i>Nyctanassa violacea violacea</i>
040204	SS	III	<a href="#">Owl, barn</a>	<i>Tyto alba pratincola</i>
040270	SS	III	<a href="#">Wren, sedge</a>	<i>Cistothorus platensis</i>
040264	SS	IV	<a href="#">Creeper, brown</a>	<i>Certhia americana</i>
040180	SS	IV	<a href="#">Tern, Forster's</a>	<i>Sterna forsteri</i>
040364	SS		<a href="#">Dickcissel</a>	<i>Spiza americana</i>
040032	SS		<a href="#">Egret, great</a>	<i>Ardea alba egretta</i>
040366	SS		<a href="#">Finch, purple</a>	<i>Carpodacus purpureus</i>
040285	SS		<a href="#">Kinglet, golden-crowned</a>	<i>Regulus satrapa</i>
040112	SS		<a href="#">Moorhen, common</a>	<i>Gallinula chloropus cachinnans</i>

040262	SS		<a href="#">Nuthatch, red-breasted</a>	<i>Sitta canadensis</i>
040189	SS		<a href="#">Tern, Caspian</a>	<i>Sterna caspia</i>
040278	SS		<a href="#">Thrush, hermit</a>	<i>Catharus guttatus</i>
040314	SS		<a href="#">Warbler, magnolia</a>	<i>Dendroica magnolia</i>
050045	SS		<a href="#">Otter, northern river</a>	<i>Lontra canadensis lataxina</i>

Halifax County, Virginia



Virginia Department of Game and Inland Fisheries

4/8/2010 1:22:11 PM

Fish and Wildlife Information Service

**29 Species Booklets for Fish, Amphibians, Reptiles, Birds, Mammals, Mollusks, Other Aquatic Invertebrates, Terrestrial Invertebrates, Marine Mammals, Plants having Status or Wildlife Action Plan codes "FE, FT, FS, SE, ST, SS" in (083) Halifax County**

[Help](#)

A Species Booklet Pop-up Window is opened when you click on any common name.  
Table is currently ordered by Status importance \* - Click another column header to sort by that column.

<a href="#">Species Code</a>	Status *	<a href="#">WAP **</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>
040129	ST	I	<a href="#">Sandpiper, upland</a>	<i>Bartramia longicauda</i>
040293	ST	I	<a href="#">Shrike, loggerhead</a>	<i>Lanius ludovicianus</i>
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	<i>Ammodramus henslowii</i>
010353	ST	II	<a href="#">Darter, Carolina</a>	<i>Etheostoma collis</i>
040093	FSST	II	<a href="#">Eagle, bald</a>	<i>Haliaeetus leucocephalus</i>
010070	ST	IV	<a href="#">Shiner, whitemouth</a>	<i>Notropis alborus</i>
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	<i>Lanius ludovicianus migrans</i>
010110	FS	III	<a href="#">Jumprock, bigeye</a>	<i>Moxostoma ariommum</i>
060029	FSSS	III	<a href="#">Lance, yellow</a>	<i>Elliptio lanceolata</i>
010174	SS	II	<a href="#">Bass, Roanoke</a>	<i>Ambloplites cavifrons</i>
040266	SS	II	<a href="#">Wren, winter</a>	<i>Troglodytes troglodytes</i>
040094	SS	III	<a href="#">Harrier, northern</a>	<i>Circus cyaneus</i>
040034	SS	III	<a href="#">Heron, tricolored</a>	<i>Egretta tricolor</i>
040036	SS	III	<a href="#">Night-heron, yellow-crowned</a>	<i>Nyctanassa violacea violacea</i>
040204	SS	III	<a href="#">Owl, barn</a>	<i>Tyto alba pratincola</i>
040270	SS	III	<a href="#">Wren, sedge</a>	<i>Cistothorus platensis</i>
010394	SS	IV	<a href="#">Killifish, speckled</a>	<i>Fundulus rathbuni</i>
040264	SS	IV	<a href="#">Creeper, brown</a>	<i>Certhia americana</i>
040180	SS	IV	<a href="#">Tern, Forster's</a>	<i>Sterna forsteri</i>
040364	SS		<a href="#">Dickcissel</a>	<i>Spiza americana</i>
040032	SS		<a href="#">Egret, great</a>	<i>Ardea alba egretta</i>
040366	SS		<a href="#">Finch, purple</a>	<i>Carpodacus purpureus</i>

040285	SS		<a href="#">Kinglet, golden-crowned</a>	<i>Regulus satrapa</i>
040112	SS		<a href="#">Moorhen, common</a>	<i>Gallinula chloropus cachinnans</i>
040262	SS		<a href="#">Nuthatch, red-breasted</a>	<i>Sitta canadensis</i>
040189	SS		<a href="#">Tern, Caspian</a>	<i>Sterna caspia</i>
040278	SS		<a href="#">Thrush, hermit</a>	<i>Catharus guttatus</i>
040314	SS		<a href="#">Warbler, magnolia</a>	<i>Dendroica magnolia</i>
050045	SS		<a href="#">Otter, northern river</a>	<i>Lontra canadensis lataxina</i>

Mecklenburg County, Virginia



Virginia Department of Game and Inland Fisheries

4/8/2010 12:39:48 PM

Fish and Wildlife Information Service

**29 Species Booklets for Fish, Amphibians, Reptiles, Birds, Mammals, Mollusks, Other Aquatic Invertebrates, Terrestrial Invertebrates, Marine Mammals, Plants having Status or Wildlife Action Plan codes "FE, FT, FS, SE, ST, SS" in (117) Mecklenburg County**

[Help](#)

A Species Booklet Pop-up Window is opened when you click on any common name.  
Table is currently ordered by Status importance \* - Click another column header to sort by that column.

<a href="#">Species Code</a>	<a href="#">Status *</a>	<a href="#">WAP **</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>
010214	FESE	I	<a href="#">Logperch, Roanoke</a>	<i>Percina rex</i>
040129	ST	I	<a href="#">Sandpiper, upland</a>	<i>Bartramia longicauda</i>
040293	ST	I	<a href="#">Shrike, loggerhead</a>	<i>Lanius ludovicianus</i>
040385	ST	I	<a href="#">Sparrow, Bachman's</a>	<i>Aimophila aestivalis</i>
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	<i>Ammodramus henslowii</i>
010353	ST	II	<a href="#">Darter, Carolina</a>	<i>Etheostoma collis</i>
040093	FSST	II	<a href="#">Eagle, bald</a>	<i>Haliaeetus leucocephalus</i>
060173	FSST	II	<a href="#">Pigtoe, Atlantic</a>	<i>Fusconaia masoni</i>
010070	ST	IV	<a href="#">Shiner, whitemouth</a>	<i>Notropis alborus</i>
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	<i>Lanius ludovicianus migrans</i>
010174	SS	II	<a href="#">Bass, Roanoke</a>	<i>Ambloplites cavifrons</i>
040266	SS	II	<a href="#">Wren, winter</a>	<i>Troglodytes troglodytes</i>
040094	SS	III	<a href="#">Harrier, northern</a>	<i>Circus cyaneus</i>
040034	SS	III	<a href="#">Heron, tricolored</a>	<i>Egretta tricolor</i>
040036	SS	III	<a href="#">Night-heron, yellow-crowned</a>	<i>Nyctanassa violacea violacea</i>
040204	SS	III	<a href="#">Owl, barn</a>	<i>Tyto alba pratincola</i>
040270	SS	III	<a href="#">Wren, sedge</a>	<i>Cistothorus platensis</i>
040264	SS	IV	<a href="#">Creepers, brown</a>	<i>Certhia americana</i>
040180	SS	IV	<a href="#">Tern, Forster's</a>	<i>Sterna forsteri</i>
040364	SS		<a href="#">Dickcissel</a>	<i>Spiza americana</i>
040032	SS		<a href="#">Egret, great</a>	<i>Ardea alba egretta</i>
040366	SS		<a href="#">Finch, purple</a>	<i>Carpodacus purpureus</i>



040285	SS		<a href="#">Kinglet, golden-crowned</a>	<i>Regulus satrapa</i>
040112	SS		<a href="#">Moorhen, common</a>	<i>Gallinula chloropus cachinnans</i>
040262	SS		<a href="#">Nuthatch, red-breasted</a>	<i>Sitta canadensis</i>
040189	SS		<a href="#">Tern, Caspian</a>	<i>Sterna caspia</i>
040278	SS		<a href="#">Thrush, hermit</a>	<i>Catharus guttatus</i>
040314	SS		<a href="#">Warbler, magnolia</a>	<i>Dendroica magnolia</i>
050045	SS		<a href="#">Otter, northern river</a>	<i>Lontra canadensis lataxina</i>
<p>* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; SC=State Candidate; CC=Collection Concern; SS=State Special Concern</p> <p>** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need</p> <p>List completeness is dependent on a search for published scientific records of which there may be many naming counties but few for other area types.</p>				

audit no. 285530 4/8/2010 12:39:48 PM Virginia Fish and Wildlife Information Service

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Source: VDGIF 2010

### Explanation of Codes:

E	Endangered	"Any species or higher taxon of plant whose continued existence as a viable component of the State's flora is determined to be in jeopardy" (GS 19B 106: 202.12). (Endangered species may not be removed from the wild except when a permit is obtained for research, propagation, or rescue which will enhance the survival of the species.)
T	Threatened	"Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (GS 19B 106:202.12). (Regulations are the same as for Endangered species.)

---

SC      Special Concern      "Any species of plant in North Carolina which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]" (GS 19B 106:202.12). (Special Concern species which are not also listed as Endangered or Threatened may be collected from the wild and sold under specific regulations. Propagated material only of Special Concern species which are also listed as Endangered or Threatened may be traded or sold under specific regulations.)

---

C      Candidate      Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are also either rare throughout their ranges (fewer than 100 populations total) or disjunct in North Carolina from a main range in a different part of the country or world. Also included are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. These are species which have the preponderance of their distribution in North Carolina and whose fate depends largely on their conservation here. Also included are many species known to have once occurred in North Carolina but with no known extant occurrences in the state (historical or extirpated species); if these species are relocated in the state, they are likely to be listed as Endangered or Threatened. If present land use trends continue, candidate species are likely to merit listing as Endangered or Threatened.

---

SR      Significantly Rare      Species which are very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and are declining.

---

EX	Extirpated	Extinct
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-L	Listed	The range of the species is limited to North Carolina and adjacent states (endemic or near endemic). These are species which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and declining.
----	--------	--

---

-T	Throughout	These species are rare throughout their ranges (fewer than 100 populations total)
----	------------	---

---

-D	Disjunct	The species is disjunct to North Carolina from a main range in a different part of the country or world.
----	----------	--

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-P	Peripheral	The species is at the periphery of its range in NC. These species are generally more common somewhere else in their ranges, occurring in North Carolina peripherally to their main ranges, mostly in habitats which are unusual in North Carolina.
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-O	Other	The range of the species is sporadic or cannot be described by the other Significantly Rare categories
----	-------	--

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P_	Proposed	A species which has been formally proposed for listing as Endangered, Threatened, or Special Concern, but has not yet completed the legally mandated listing process.
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<b>Table E-2: Annual Visitation</b>	
<b>Year</b>	<b>Visitation</b>
2011	1,672,735
2010	1,685,958
2009	1,742,162
2008	1,736,269
2007	1,704,795
2006	1,709,824
2005	1,830,516
2004	1,861,946
2003	1,595,114
2002	2,050,733
2001	2,336,771
2000	2,223,561

Note: Visitation listed by Fiscal Years

**Table E-3: Recreation Areas and Facilities at Kerr Reservoir (as of 2011)**

Management Area	Fee Area	Campground	Boat Ramp	Marina	Swim Beach	Picnic Shelter	Trails	Exhibits/Museum	Operating Agency
Bluestone Landing	X		X						C
Buffalo Park	X	X	X		X				C
Buffalo Springs Wayside								X	C
Clarksville Marina	X		X	X					M
Clover Landing			X						C
Eagle Point Landing			X						C
Eastland Creek Landing	X		X						C
Flemingtown Road Landing			X						N
Grassy Creek Park	X		X		X				C
Hyc0 Landing			X						V
Island Creek Park	X		X			X			C
Ivy Hill Park	X		X		X	X			C
Kerr Reservoir Management Area			X			X	X	X	C
Kerr Lake State Recreation Area	X	X	X	X	X	X	X	X	N/M
Liberty Hill Trail							X		C
Longwood Park	X	X	X		X	X			C
North Bend Park	X	X	X		X	X	X		C
Occonechee State Park	X	X	X	X		X	X	X	V
Palmer Point Park	X		X		X	X			C
Rudds Creek	X	X	X		X	X			C
Staunton View Park	X		X						C
Williamsboro Wayside									Fishing Access N
Willow Grove Marina				X					M

Notes: C – U.S. Army Corps of Engineers  
N – State of North Carolina Agency

V – Commonwealth of Virginia Agency  
M – Private Concessioner

**Table E-4: Kerr Reservoir Boat Ramp Elevations (as of 10/22/2010)**

<b>RAMP</b>	<b>OPERATED BY</b>	<b>TOP ELEVATION</b>	<b>BOTTOM ELEVATION</b>
Bluestone	USACE	305.52'	289.0'
Buffalo	USACE	303.72'	R-285'/L-290'
Eagle Point	USACE	306.72'	L-292.0' R-291.7'
Eastland Creek	USACE	309.15'	L-290.2' R-286.2'
Grassy Creek	USACE	306.56'	L-291.6' R-289.3'
Island Creek	USACE	315.74'	288.4'
Ivy Hill	USACE	307.69'	284.8'-
Longwood	USACE	308.60'	L-290.1' R-286.2'
North Bend Park (Area C)	USACE	309.51'	L-291.7' R-285.8'
North Bend Park (Old Marina-A)	USACE	314.69'	290.9'
North Bend Park (Main)	USACE	311.73'	285.0'
Palmer Point	USACE	304.94'	293.3'
Rudd's Creek (Campground)	USACE	307.13'	293.0' - single
Rudd's Creek Day Use	USACE	306.34'	285.0' - double
Staunton View	USACE	306.7	291.2'
Henderson Point (Campground)	KLSRA	304.79'	289.5' - double
Henderson Point (Shelter 1)	NCWRC	306.47'	290.0'
Henderson Point (Shelter 2)	KLSRA	306.8'	291.79'
Henderson Point (Shelter 3)	KLSRA	306.67'	292.87'

**Table E-4: Kerr Reservoir Boat Ramp Elevations (as of 10/22/2010)**

<b>RAMP</b>	<b>OPERATED BY</b>	<b>TOP ELEVATION</b>	<b>BOTTOM ELEVATION</b>
Kimball Point Park	KLSRA	304.28'	285.77'
Nutbush #1 (at picnic shelter)	KLSRA	302.83'	292.41'
Nutbush #2 (NEW RAMP- 4 LANES)	KLSRA	310.0'	L-291.0' R-288.0'
Nutbush #3 (South side of Bridge)	KLSRA	302.7'	UNKNOWN/Old Road Bed
Satterwhite Point (J.C. Cooper)	KLSRA	303.38'	292.35'
Clarksville Marina	Subleased by Town of Clarksville, VA	305.38'	289.9'
Satterwhite Point Marina	Subleased by NCDNR	307.03'	294.0'
Steele Creek (Townsville New)	Subleased by NCDNR	310.0	?
Steele Creek (Townsville Old)	Subleased by NCDNR	305.31'	290.5'
Bullocksville	KLSRA	305.92'	291.75'
County Line	NCWRC	306.71'	L-294.5' R-285.0'
Flemingtown Road	NCWRC	305.21'	292.9'
Hibernia	KLSRA	305.82'	L-290.48' R-293.2'
Hibernia	NCWRC	305.43'	290.6'
Occoneetchee (Old #1)	VDCR	304.88'	291.6'
Occoneetchee #1 (New-HWY 58)	VDCR	308.25'	289.0'
Occoneetchee #2 (Park Office)	VDCR	308.30'	289.0'

**Table E-4: Kerr Reservoir Boat Ramp Elevations (as of 10/22/2010)**

<b>RAMP</b>	<b>OPERATED BY</b>	<b>TOP ELEVATION</b>	<b>BOTTOM ELEVATION</b>
Staunton River State Park	VDCR	310.0'	291.0'
Clover	VDGIF	313.0'	292.0'
Hyco River	VDGIF	313.0'	291.0'



**Table E-5: Water Withdrawals as of July 2011**

<b>Water User</b>	<b>Agreement Type</b>	<b>Storage (acre-feet)</b>	<b>2010 Daily Average Withdrawal (mgd)</b>
Kerr Lake Regional Water System	Water Storage	10,292	6.2
Dominion-Mecklenburg Power Station	Water Storage	600	1.5
Virginia Beach, VA	Water Storage	10,200	0
VA Department of Corrections	Water Storage	23	0
Clarksville, VA	Grandfathered	--	--
Burlington Industries	Grandfathered	--	--

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**APPENDIX F  
MASTER PLAN UPDATE MEMOS**





**Department of the Army**  
Wilmington District, Corps of Engineers  
69 Darlington Avenue  
Wilmington, North Carolina 28403-1343

**John H. Kerr Dam and Reservoir  
Master Plan Update Memorandum**

**Description of Change:**

**Justification for Change:**

**Page Numbers Removed from Master Plan:**

**Pages Added to Master Plan:**

**Approvals**

\_\_\_\_\_  
Michael Womack, Operations Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
Daniel Brown, Chief, Lakes Branch

\_\_\_\_\_  
Date



**APPENDIX G  
FEDERAL LAWS**

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### **General Laws and Authorities**

**Public Law 534, 78th Congress (58 Stat. 887), 22 December 1944. Flood Control Act of 1944, as amended.** This Act authorizes the construction of certain public works on rivers and harbors for flood control and other purposes. Section 4 authorizes providing facilities at reservoir areas for public use, including recreation and fish and wildlife conservation. As amended in 1962 by Section 297 of Public Law 87-874, the Act authorizes USACE to develop and maintain park and recreation facilities at all water resources projects controlled by the Secretary of the Army.

**Public Law 88-578 (78 Stat. 897), 3 September 1964, Land and Water Conservation Fund Act of 1965, as amended.** Planning for recreation development at USACE projects is coordinated with the appropriate states so that the plans are consistent with public needs as identified in the respective state's outdoor recreation plans.

**Public Law 89-72 (79 Stat. 213), 9 July 1965, Federal Water Project Recreation Act, as amended.** This Act requires that full consideration be given for recreation and fish and wildlife enhancement opportunities; that recreation planning be based on coordination of use with existing and planned federal, state, and local recreation; and that non-federal administration of recreation and enhancement areas be encouraged. It requires that no facilities for recreation and fish and wildlife enhancement be provided without cost sharing except those justified to serve other project purposes or as needed for public health and safety. The views of the Secretary of the Interior regarding the extent to which proposed recreation and fish and wildlife development conforms to and is in accordance with the respective state's outdoor recreation plan shall be included in any project report.

**Public Law 90-483 (82 Stat. 731), 13 August 1968, Rivers and Harbors Act of 1968, as amended.** This Act authorizes the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and other purposes. Section 210 restricts the collection of entrance fees at USACE lakes and reservoirs after 31 March 1970 to users of highly developed facilities requiring the continuous presence of personnel. No authorization under this Act is required to implement this Master Plan, as the law specifically exempts USACE from regulation under Section 10.

**Executive Order 11644, 8 February 1972, Use of Off-Road Vehicles on Public Lands.** This Executive Order establishes a uniform federal policy regarding the use of vehicles; such as trail bikes, snowmobiles, dune buggies, and other off-road vehicles; on public lands. Section 3 provides guidance for establishing zones of use for such vehicles. This order was amended by Executive Order 11989. Currently USACE restricts off-road vehicle use on project lands.

**Public Law 99-662 (100 Stat. 4082), 17 November 1986, Water Resources Development Act of 1986.** This legislation sets forth non-federal cost-sharing requirements for all water resources projects. Section 906 of this Act supplements the responsibility and authority of the Secretary of the Army pursuant to the Fish and Wildlife Coordination Act. This section requires any mitigation for fish and wildlife losses to be undertaken or acquired before any construction of the project commences, or shall be undertaken or acquired concurrently with lands and interests in lands for project purposes. USACE will coordinate with the U.S. Fish and Wildlife Service (USFWS) when constructing any projects under the Master Plan and will address any fish and wildlife mitigation that is required before the construction of any project commences.

#### **Environmental Quality Statutes**

**40 Stat. 755, 13 July 1918, Migratory Bird Treaty Act (MBTA), as amended.** The MBTA of 1918 is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent overutilization. Executive Order 13186 (2001) directs executive agencies to take certain actions to implement the Act. When development proposed in the Master Plan is scheduled to occur, compliance with the MBTA will be considered along with environmental compliance for the specific activities.

**54 Stat. 250, 8 June 1940, Bald Eagle Protection Act of 1940, as amended.** This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof. The Act defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. Individual projects proposed as a result of the Master Plan will adhere to the management guidelines developed by the USFWS to avoid disturbing bald eagles.

**Public Law 83-566 (68 Stat. 666), 5 August 1954, Watershed Protection and Flood Prevention Act.** This Act authorizes the Secretary of Agriculture to cooperate with states and other public agencies in works for flood prevention and soil conservation, as well as the conservation, development, utilization, and disposal of water. This Act imposes no requirements on USACE Civil Works projects.

**Public Law 85-624 (72 Stat. 563), 12 August 1958, Fish and Wildlife Coordination Act.** This law amends and renames the Fish and Wildlife Coordination Act of 10 March 1934. The 1958 Act requires that: (1) fish and wildlife conservation receive equal consideration with other features of water resources development programs; (2) proposals for work affecting any body of water be coordinated with the USFWS and state wildlife agencies; (3) recommendations of the USFWS and state wildlife agencies be given full consideration; and (4) justifiable means and measures for wildlife purposes, including mitigation measures, be adopted. It also required that adequate provisions be made for the use of project lands and waters for the conservation, maintenance, and management of wildlife resources, including their development and improvement. The Act provides that the use of project lands primarily for wildlife management by others be in accordance with a general plan approved jointly by the Department of the Army, Department of the Interior, and state wildlife agencies. When site-specific proposals are made under the Master Plan, USACE will coordinate with the USFWS, the North Carolina Department of Natural Heritage, VDGIF, VDCR, and other relevant state and local agencies.

**Public Law 86-717 (74 Stat. 817), 6 September 1960, Conservation of Forest Lands in Reservoir Areas.** This law provides for the development and maintenance of forest resources on USACE managed lands and the establishment and management of vegetative cover so as to encourage future resources of readily available timber and to increase the value of such areas for conservation. Resource Objectives and Development Needs for the management units include planting trees and shrubs to increase the amount of woody vegetation for winter and nesting cover for upland and big game species; planting trees, food plots, native grasses, and/or marsh grasses to supplement the existing food sources for upland and big game species and/or waterfowl; and developing additional woody habitat.

**Public Law 87-88 (75 Stat. 204), 20 July 1961, Federal Water Pollution Control Act Amendments of 1961, as amended.** Section 2 (b) (1) of this Act gives USACE responsibility for water quality management of USACE reservoirs. This law was amended by the Federal Water Pollution Control Act Amendment of 1972, Public Law 92-500.

**Public Law 89-80 (79 Stat. 244), 20 July 1965, Water Resources Planning Act.** This Act is a congressional statement of policy to meet rapidly expanding demands for water throughout the nation. The purpose is to encourage the conservation, development, and use of water-related land resources on a comprehensive and coordinated basis by the federal, state, and local governments; individuals; corporations; business enterprises; and others concerned. The USACE held public open houses and agency meetings and invited public input on the Master Plan and associated PEA.

**Public Law 90-583 (82 Stat. 1146), 17 October 1968, Noxious Plant Control.** This law provides for a control of noxious weeds on land under the control of the federal government. Resource Objectives and Development Needs for management units, included in Chapter 5 and Chapter 6 of this Master Plan, include the control of noxious weeds.

**Public Law 91-190 (83 Stat. 852), 1 January 1970, National Environmental Policy Act of 1969, as amended.** Section 101 of this Act establishes a national environmental policy. Section 102 requires that all federal agencies shall, to the fullest extent possible, (1) use a systematic, interdisciplinary approach that integrates natural and social sciences and environmental design arts in planning and decision making; (2) study, develop, and describe appropriate alternatives to recommend courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources; and (3) include an Environmental Impact Statement (EIS) in every recommendation or report on proposals for major federal actions significantly affecting the quality of the human environment. A PEA and Finding of No Significant Impact (FONSI) have been prepared for this Master Plan, as an EIS is not required.

**Public Law 91-224 (84 Stat. 114), 3 April 1970, Environmental Quality Improvement Act of 1970.** This Act assures that each federal department or agency conducting or supporting public works activities which affect the environment shall implement the policies established under existing law. The USACE ensures that activities at the Kerr Reservoir project are in compliance with existing laws.

**Public Law 91-604 (84 Stat. 1676), 31 December 1970, Clean Air Act, as amended.** The purpose of this Act is to protect public health and welfare by the control of air pollution at its source, and to set forth primary and secondary National Ambient Air Quality Standards to establish criteria for states to attain, or maintain. Some temporary emission releases may occur during construction activities that are recommended under the Master Plan; however, air quality is not expected to be impacted to any measurable degree.

**Public Law 92-500 (86 Stat. 816), 18 October 1972, The Federal Water Pollution Control Act Amendments of 1972, as amended.** This law amends the Federal Water Pollution Control Act and establishes a national goal of eliminating pollutant discharges into waters of the United States. Section 404 authorizes a permit program for the disposal of dredged or fill material in the nation's waters that is to be administered by the Secretary of the Army acting through the Chief of Engineers. This law was later amended by the Clean Water Act of 1977, Public Law 95-217, to provide additional authorization to restore the Nation's water. The project is in compliance with this law. If any planned construction activities should involve the temporary or permanent placement of dredged or fill material into any water body or wetland area at Kerr Reservoir, a permit pursuant to Section 404 is required.

**Public Law 92-574 (86 Stat. 1234), 27 October 1972, Noise Control Act, as amended.** This Act establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. federal agencies are required to limit noise emissions to within compliance levels. Noise emission levels at sites where development was proposed in the Kerr Reservoir Master Plan would temporarily exceed current levels temporarily during periods of construction; however, appropriate measures would be taken to keep the noise levels within the compliance levels.

**Public Law 93-205 (87 Stat. 884), 28 December 1973, Conservation, Protection, and Propagation of Endangered Species Act of 1973, as amended.** This law repeals the Endangered Species Conservation Act of 1969. It also directs all federal departments/agencies to carry out programs to conserve endangered and threatened species of fish, wildlife, and plants and to preserve the habitat of these species in consultation with the Secretary of the Interior. This Act establishes a procedure for coordination, assessment, and consultation. This Act was amended by Public Law 96-159.

**Public Law 93-523 (88 Stat. 1660), 16 December 1974, Safe Drinking Water Act, as amended.** This Act amends the Public Health Service Water Act to assure that the public is provided with safe drinking water. This law states that all potable water at civil works projects will meet or exceed the minimum standards required by law. This Act was amended by the Safe Drinking Water Act Amendments of 1986, Public Law 99-339 of 1986, and Public Law 104-182.

**Public Law 93-629, (88 Stat. 2148), 3 January 1975, Federal Noxious Weed Act of 1974, as amended.** Section 15, added to the Act in 1990, requires noxious weed control management on federal lands and sets forth the process by which it is to be accomplished. Resource Objectives and Development Needs for management units in the Master Plan include the control of noxious weeds.

**Executive Order 11988, 24 May 1977, Floodplain Management.** This order outlines the responsibilities of federal agencies in the role of floodplain management. Each agency shall evaluate the potential effects of actions on floodplains and should not undertake actions that directly or indirectly induce growth in the floodplain, unless there is no practical alternative. Agency regulations and operating procedures for licenses and permits should include provisions for evaluation and consideration of flood hazards. Construction of structures and facilities on floodplains must incorporate flood proofing and other accepted flood protection measures. Agencies shall attach appropriate use restrictions to property proposed for lease, easement, right-of-way, or disposal to non-federal public or private parties.

**Executive Order 11990, 24 May 1977, Protection of Wetlands.** This order directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands. Section 2 states that agencies shall avoid undertaking or assisting in new construction located in wetlands unless there is no practical alternative. Prior to construction of any facilities proposed in the Kerr Reservoir Master Plan, a site-specific NEPA analysis, including an assessment of potential impacts to wetlands, would be coordinated with federal and state agencies. If a Section 404 permit is required, coordination regarding compliance with the Executive Order would be accomplished prior to permit issuance.

**Public Law 95-217 (91 Stat. 1566), 27 December 1977, Clean Water Act of 1977, as amended.** This Act amends the Federal Water Pollution Control Act of 1970 and extends the appropriations authorization. The Clean Water Act is a comprehensive federal water pollution control program that has as its primary goal the reduction and control of the discharge of pollutants into the nation's navigable waters. The Clean Water Act of 1977 has been amended by the Water Quality Act of 1987, Public Law 100-4. Any action involving placement of fill in waters of the U.S. at the Kerr Reservoir by USACE or other entity, with the exception of certain minor activities as discussed in 33 CFR Part 323.4, would require a Section 404 authorization and Section 401 water quality certification.

**Executive Order 12088, 13 October 1978, Federal Compliance with Pollution Control Standards.** The purpose of this order is to ensure federal compliance with applicable pollution control standards. Section 1-4, Pollution Control Plan, in which each agency was required to submit an annual plan for the control of environmental pollution to the Office of Management and Budget, was revoked by Executive Order 13148, which was revoked by Executive Order 13423.

**Public Law 95-632 (92 Stat. 3751), 10 November 1978, Endangered Species Act Amendments of 1978.** This law amends the Endangered Species Act Amendments of 1973. Section 7 directs agencies to conduct a biological assessment to identify threatened or endangered species that may be present in the area of any proposed project. This assessment is conducted as part of a federal agency's compliance with the requirements of Section 102 of NEPA. The USACE would conduct biological assessments on proposed projects when necessary.

**Public Law 96-159 (93 Stat. 3751), 28 December 1979, Endangered Species Act of 1973, as amended.** This amendment expanded the Act to protect endangered plants. This amendment requires the publishing of a summary and map when proposing land as critical habitat and requires federal agencies to ensure projects "are not likely" to jeopardize an endangered species. In addition, it authorizes all those seeking exemptions from the Act to get permanent exemptions for a project unless a biological study indicates the project would result in the extinction of a species. The USACE would ensure that any development or management activities proposed in the Master Plan are not likely to jeopardize an endangered species.

**Public Law 96-366 (94 Stat. 1322), 29 September 1980, Fish and Wildlife Conservation Act of 1980.** This law enables states to obtain funds to conduct inventories and conservation plans for nongame wildlife. It also encourages federal departments and agencies to use their statutory and administrative authority to conserve and promote conservation in accordance with this Act. This Master Plan promotes conservation at Kerr Reservoir by including Resource Objectives and Development Needs that protect and enhanced wildlife habitat and reduce erosion.

**Public Law 96-510 (94 Stat. 2797), 11 December 1980, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).** Typically CERCLA is triggered by (1) the release or substantial threat of a release of a hazardous substance into the environment; or (2) the release or substantial threat of a release of any pollutant or contaminant into the environment that presents an imminent threat to the public health and welfare. To the extent such knowledge is available, 40 CFR Part 373 requires notification of CERCLA hazardous substances in a land transfer. Compliance with this Act is required on a case-by-case basis for real estate activities such as easements, grants, etc.

**Public Law 97-98 (95 Stat. 1341), 22 December 1981, Farmland Protection Policy Act.** This Act instructs the Department of Agriculture, in cooperation with other departments, agencies, independent commissions and other units of the federal government, to develop criteria for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses. This Master Plan does not propose any changes to agricultural land.

**Public Law 99-339 (100 Stat. 642), 19 June 1986, Safe Drinking Water Act Amendments of 1986.** These amendments provide further regulation regarding national primary drinking water, enforcement of these regulations, and variances and exemptions to the Act. These amendments also provide for the protection of underground sources of drinking water.

**Public Law 100-4 (101 Stat. 7), 4 February 1987, Water Quality Act of 1987.** This Act amends the Federal Water Pollution Control Act to not only provide for renewal of the quality of the nation's waters but also provide construction grant amendments, standards, enforcement, permits, and licenses. This Act includes more provisions for monitoring non-point source pollution (contaminants that come from many different sources).

**Public Law 101-233 (103 Stat. 1968), 13 December 1989, North American Wetlands Conservation Act.** This Act establishes the North American Wetlands Conservation Council (NAWCC, 16 U.S.C. 4403) to recommend wetlands conservation projects to the Migratory Bird Conservation Commission. Section 9 of the Act addresses the restoration, management, and protection of wetlands and habitat for migratory birds on federal lands. federal agencies acquiring, managing, or disposing of federal lands and waters are to cooperate with the USFWS to restore, protect, and enhance wetland ecosystems and other habitats for migratory birds, fish and wildlife on their lands, to the extent consistent with their missions and statutory authorities. Prior to construction of any facilities proposed in this Master Plan, a site-specific NEPA analysis, including an assessment of potential impacts to wetlands, would be coordinated with federal and state agencies.

**Executive Order 12692, 7 June 1995, Recreational Fisheries.** This Executive Order mandates that federal agencies, to the extent permitted by law and where practicable, improve the quality, function, and sustainable productivity and distribution of aquatic resources for increased recreational fishing opportunities. USACE will continue to cooperate with state and local agencies to manage fisheries at Kerr Reservoir. Many management units include a Resource Objective to provide and maintain access to Kerr Reservoir for fishing.

**Public Law 104-182 (110 Stat. 1613), 6 August 1996, Safe Drinking Water Act Amendments of 1996.** These amendments strengthen protections on tap water, improve public access to tap water contaminant information, strengthen standards to protect public health from the most significant threats to safe drinking water, and provide money that communities need to upgrade drinking water systems. North Carolina and Virginia enforce the amendments at public works systems throughout the state.

**Executive Order 13112, 3 February 1999, Invasive Species.** This Executive Order directs federal agencies to Act to prevent the introduction of or to monitor and control invasive (non-native) species, to provide for restoration of native species, to conduct research, to promote educational activities, and to exercise care in taking actions that could promote the introduction or spread of invasive species. Resource Objectives and Development Needs for management units include the control of invasive species.

**Executive Order 13195, 18 January 2001, Trails for America in the 21st Century.** This Executive Order requires federal agencies to protect, connect, promote, and assist trails of all types throughout the United States.

**Executive Order 13352, 26 August 2004, Facilitation of Cooperative Conservation.** This Executive Order requires that the Secretaries of the Interior, Agriculture, Commerce, and Defense and the Administrator of the Environmental Protection Agency shall carry out the programs, projects, and activities of the agency that they respectively head that implement laws relating to the environment and natural resources in a manner that: a) facilitates cooperative conservation; b) takes appropriate account of and respects the interests of persons with ownership or other legally recognized interests in land and other natural resources; c) properly accommodates local participation in federal decision making; and d) provides that the programs, projects, and activities are consistent with protecting public health and safety. The Ker Reservoir office coordinates with federal, state and local agencies and non-governmental organizations to develop, manage, and monitor resources at the Kerr Reservoir.



**Executive Order 13423, 24 January 2007, Strengthening Federal Environmental, Energy, and Transportation Management.** This Executive Order requires federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation.

**Executive Order 13443, 17 Aug 2007, Facilitation of Hunting Heritage and Wildlife Conservation.** The purpose of this order is to direct federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. Resource Objectives and Development Needs for many management units at Kerr Reservoir include providing and maintaining lake access for hunting and providing opportunities for hunting.

### **2.26.3 Cultural Resource Statutes**

**Public Law 59-209, 59th Congress (34 Stat. 225), 8 June 1906, The Antiquities Act.** This Act makes it a federal offense to appropriate, excavate, injure, or destroy any antiquity, historic ruin, monument, or object of scientific interest located on lands owned or controlled by the United States without having permission from the Secretary of the department having jurisdiction thereof. Paleontological resources are regulated under this Act. USACE works with all law enforcement agencies to maintain a network of individuals that would be able to respond quickly to incidents of looting and artifact collecting.

**Public Law 86-523 (74 Stat. 220), 27 June 1960, Reservoir Salvage Act, as amended.** This Act provides for (1) the preservation of historical and archaeological data that might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any federal reservoir construction projects; (2) coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistorical, or archaeological data; and (3) expenditure of funds for recovery, protection, and data preservation. This Act was amended by Public Law 93-291. Any construction proposed at Kerr Reservoir connected to operation and maintenance of the facility is reviewed in advance by USACE Wilmington District cultural resources staff. In all cases avoidance of historic properties is the Proposed Action. When such disturbance is unavoidable, suitable protection or data recovery will be implemented as required by the Act.

**Public Law 89-665 (80 Stat. 915), 15 October 1966, National Historic Preservation Act, as amended (NHPA).** This Act states a policy of preserving, restoring, and maintaining cultural resources and requires that federal agencies (1) take into account the effect of any undertaking on any site on or eligible for the National Register; (2) afford the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on such undertaking; (3) nominate eligible properties to the National Register; (4) exercise caution in the disposal and care of federal property that might qualify for the National Register; and (5) provide for the maintenance of federally owned sites on the National Register. All ground-disturbing activities proposed on Kerr Reservoir project lands are coordinated in advance with the SHPO, ACHP, and any other interested parties under Section 106 of the Act.

**Executive Order 11593, 13 May 1971, Protection and Enhancement of the Cultural Environment.** Section 2 of the order outlines the responsibilities of federal agencies in accordance with NEPA, NHPA, the Historic Sites Act of 1935, and the Antiquities Act of 1906. Section 3 outlines specific responsibilities of the Secretary of the Interior including review and comment upon federal agency procedures submitted under this order.

**Public Law 93-291 (88 Stat. 174), 24 May 1974 Preservation of Historical and Archeological Data.** This Act amends the Reservoir Salvage Act, Public Law 86-523, to provide for the preservation of historical and archaeological data (including relics and specimens), which might otherwise be lost as the result of the construction of a dam. Section 3(a) requires any federal agency to notify the Secretary of the Interior in writing when the agency finds, or is notified in writing by an appropriate historical or archaeological authority, that its activities in connection with any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical or archaeological data. Section 7(a) requires any federal agency responsible for a construction project to assist/transfer to the Secretary of the Interior such funds as may be agreed upon, but not more than 1 percent of the total appropriated project costs. The costs of survey, recovery, analysis, and publication shall be considered non-reimbursable project costs. USACE will notify the Secretary of the Interior in writing if a USACE activity may destroy significant scientific, prehistoric, or archeological data.

**Public Law 95-341 (92 Stat. 469), 11 August 1978, American Indian Religious Freedom Act of 1978.** The Act protects the rights of Native Americans to exercise their traditional religions by ensuring access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. No proposals in this Master Plan would adversely affect the protections offered by this Act. Access to sacred sites by tribal members would be provided.

**Public Law 96-95 (93 Stat. 721), 31 October 1979, Archaeological Resources Protection Act of 1979.** This Act protects archaeological resources and sites that are on public and tribal lands, and fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals. It also establishes requirements for issuance of permits by the federal land managers to excavate or remove any archaeological resource located on public or Indian lands. All persons proposing to engage in archeological excavation on Kerr project lands are required to apply for and obtain a permit under this Act.

**Public Law 101-601 (104 Stat. 3042), 16 November 1990, Native American Graves Protection and Repatriation Act.** This Act provides for the protection of Native American and Native Hawaiian cultural items. It establishes a process for the authorized removal of human remains, funerary, sacred, and other objects of cultural patrimony from sites located on land owned or controlled by the federal government. The Act requires federal agencies and federally assisted museums to return specified Native American cultural items to the federally recognized Indian tribes or Native Hawaiian groups with which they are associated. Notification of all inadvertent discoveries of such items covered by the Act is reported to the appropriate affiliated descendant or tribe in order of precedence as set by the Act. Any claims to such items are reviewed and the procedures to repatriate within the Act are followed.

**Executive Order 12898, 11 February 1994, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.** Federal agencies shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States. Development and management activities proposed in this Master Plan will not disproportionately impact minority or low-income populations.

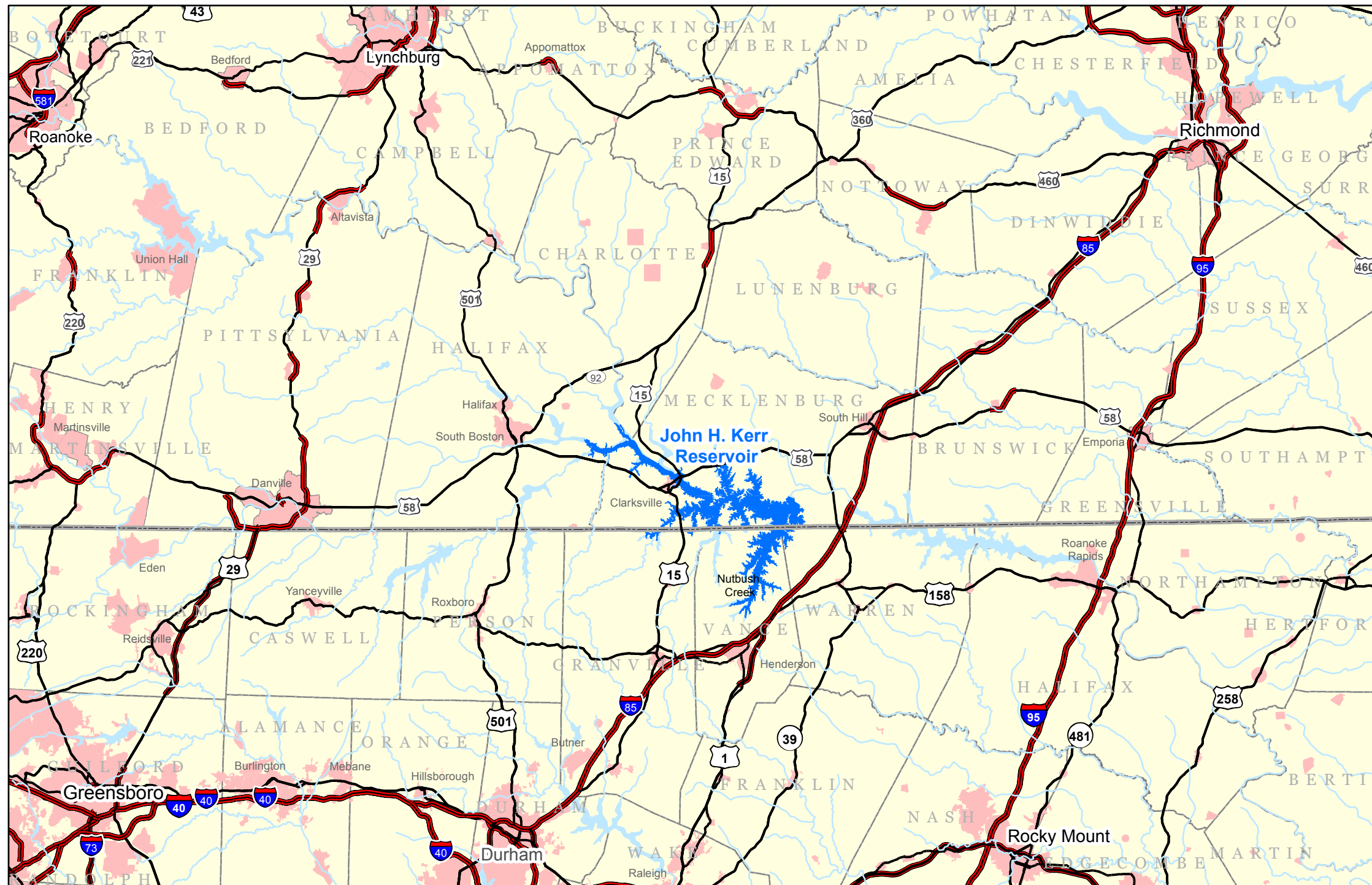
**Executive Order 13007, 24 May 1996, Indian Sacred Sites.** This Executive Order requires that agencies avoid damage to Indian sacred sites on federal land, and avoid blocking access to such sites for traditional religious practitioners. The federal government gives tribes notice when an impact to a sacred site may occur.

**Executive Order 13175, 6 November 2000, Consultation and Coordination with Indian Tribal Governments.** This Executive Order requires regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes. Section 3 establishes policymaking criteria when formulating and implementing policies that have tribal implications. Section 5 (a) says each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. Tribal representatives were consulted with as part of the Kerr Reservoir Master Plan and PEA scoping and were provided copies of the Master Plan and PEA for review.

**Executive Order 13287, 3 March 2003, Preserve America.** This Executive Order encourages federal agencies to recognize and manage the historic properties in their ownership as assets that can support department and agency missions while contributing to the vitality and economic well-being of the Nation's communities. This Executive Order also encourages federal agencies to seek partnerships with state, tribal, and local governments and the private sector to make more efficient and informed use of their historic, prehistoric, and other cultural resources for economic development and other recognized public benefits.

**APPENDIX H  
FIGURES**

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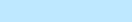




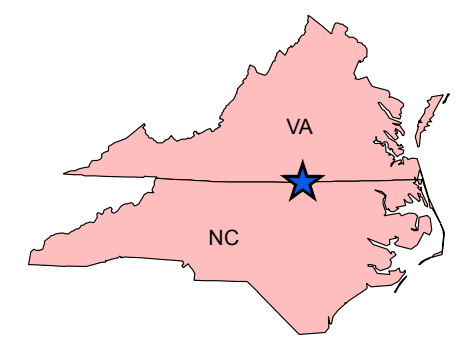
Kerr Reservoir is located approximately 80 miles southwest of Richmond, Virginia. It includes approximately 50,000 acres of open water and an additional 55,000 acres of surrounding land, referred to as project lands, along the border of Virginia and North Carolina. In Virginia, the reservoir and surrounding lands are located within Mecklenburg, Charlotte, and Halifax counties. In North Carolina, the site is located in portions of Warren, Vance, and Granville counties. These areas are easily accessible via the principal highways in the region, including Interstate 85, U.S. Route 58, and Virginia Highway 4, which crosses the dam. Secondary and county highways provide access to much of the surrounding lands.

# John H. Kerr Reservoir

Figure 1  
Regional Location

## Legend

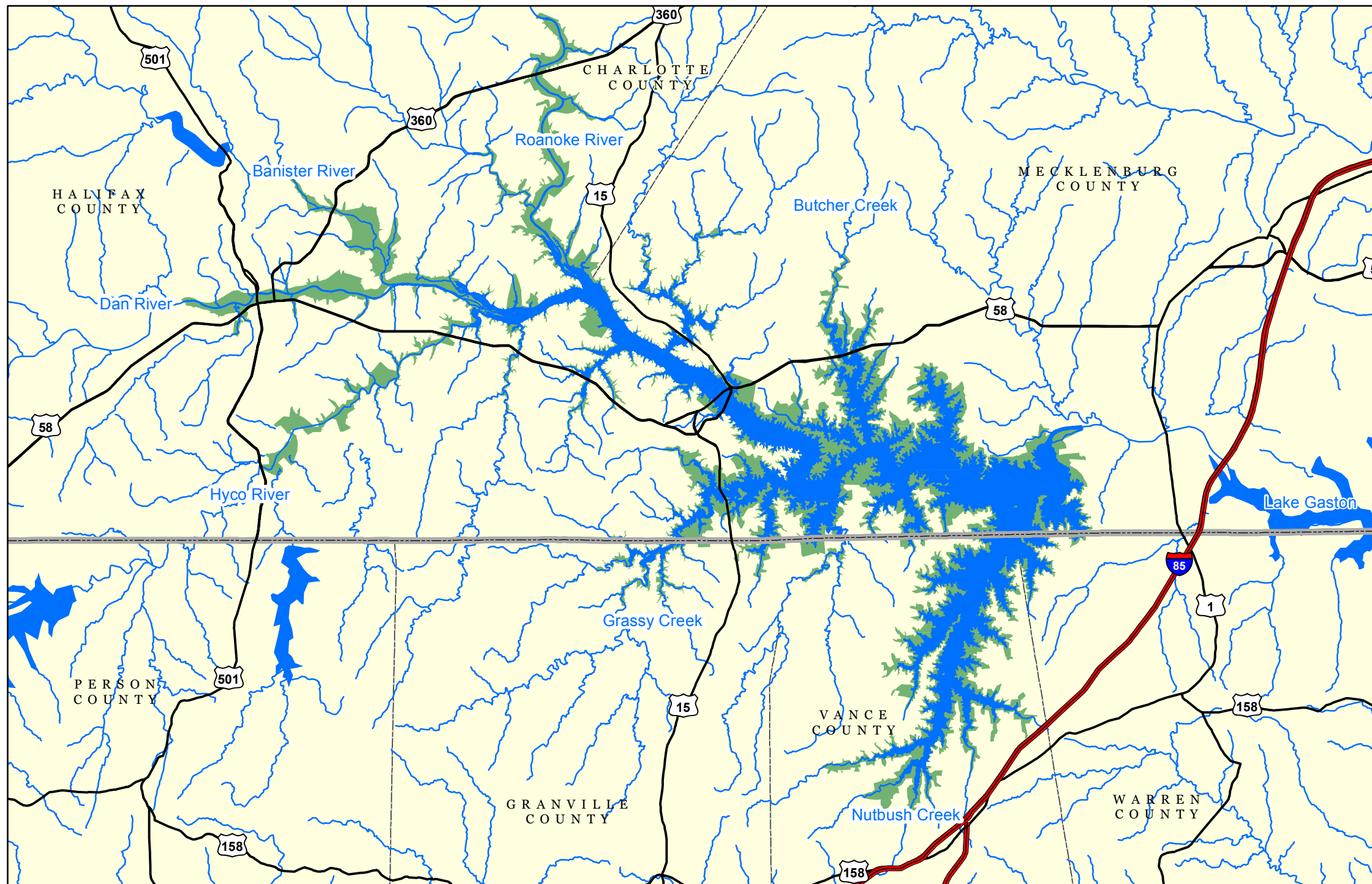
-  Streams and Rivers
-  Interstate
-  US Route
-  State Boundary
-  Waterbodies
-  Municipal Boundary
-  County Boundary



Sources: TIGER 2000 and 2002







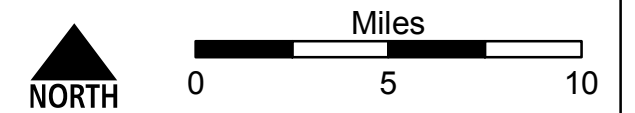
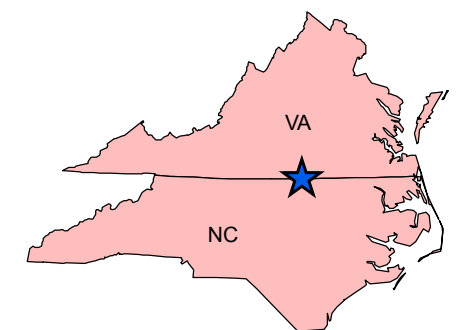
Kerr Reservoir includes 55,000 acres of surrounding project lands. The USACE actively manages the majority of these project lands. USACE owns or holds easements over the surrounding lands up to a minimum elevation of 320 feet msl east of the Route 58 bridge and 325 feet msl west of the bridge. Additional lands were purchased above these minimum elevations to carry out authorized project purposes, in select areas of the project.

John H. Kerr Reservoir

Figure 2  
Project Lands

Legend

- Interstate
- US Route
- State Boundary
- Streams and Rivers
- Project Lands
- Waterbodies
- County Boundary

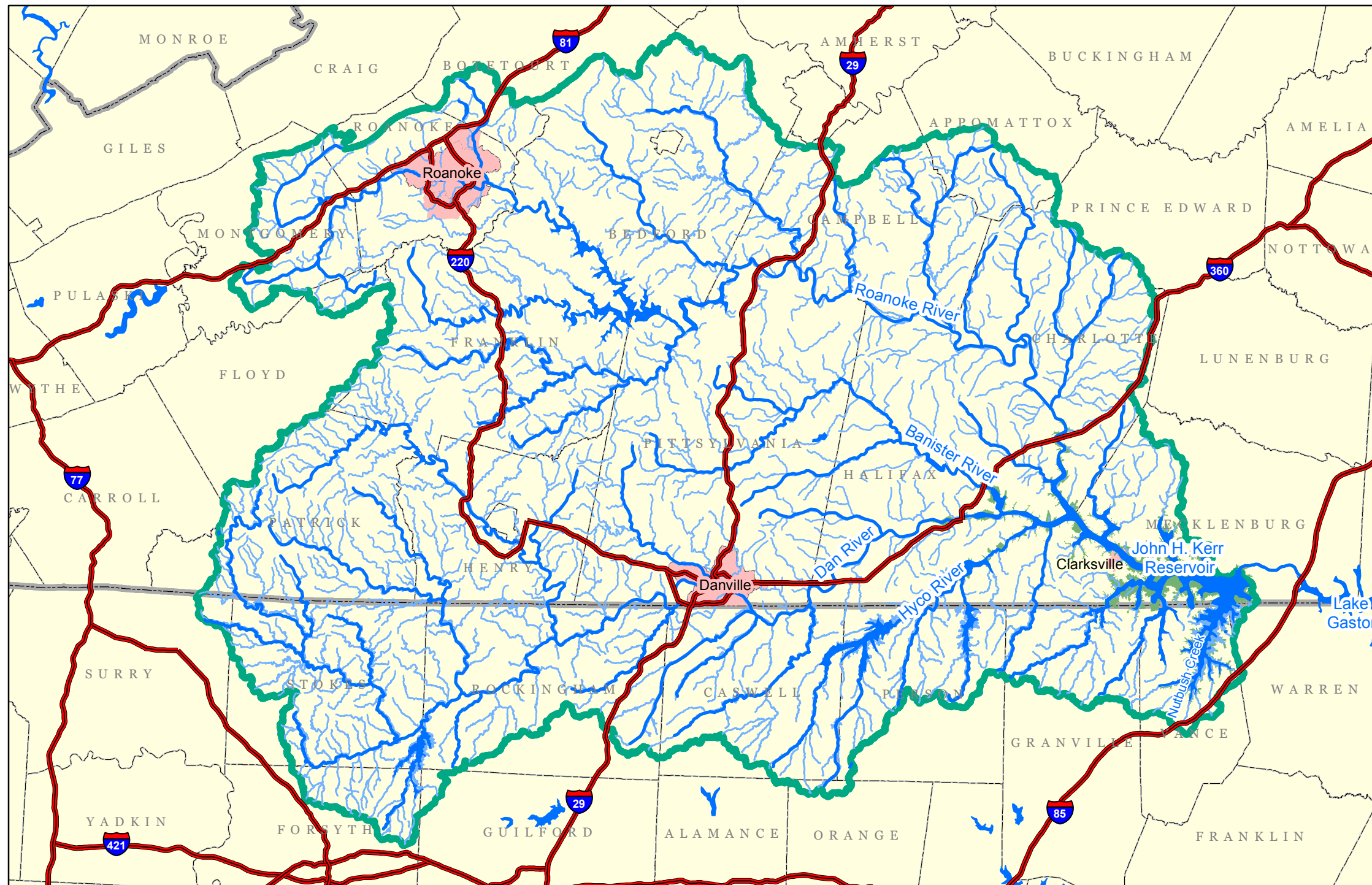


Sources: ESRI 2000; National Hydrography Dataset 2010; Tiger 2000; USACE 2010



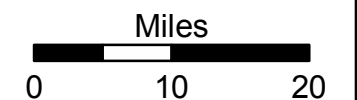
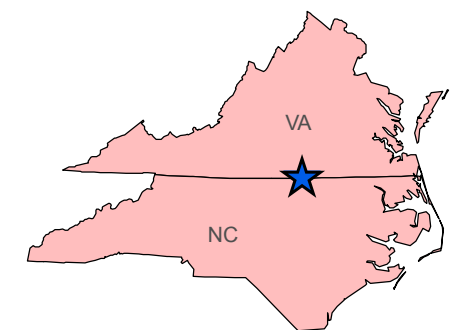
John H. Kerr Reservoir

Figure 3  
Hydrology



**Legend**

- Interstate
- Streams and Rivers
- Secondary Streams
- Waterbodies
- Project Lands
- Watershed
- State Boundary
- County Boundary



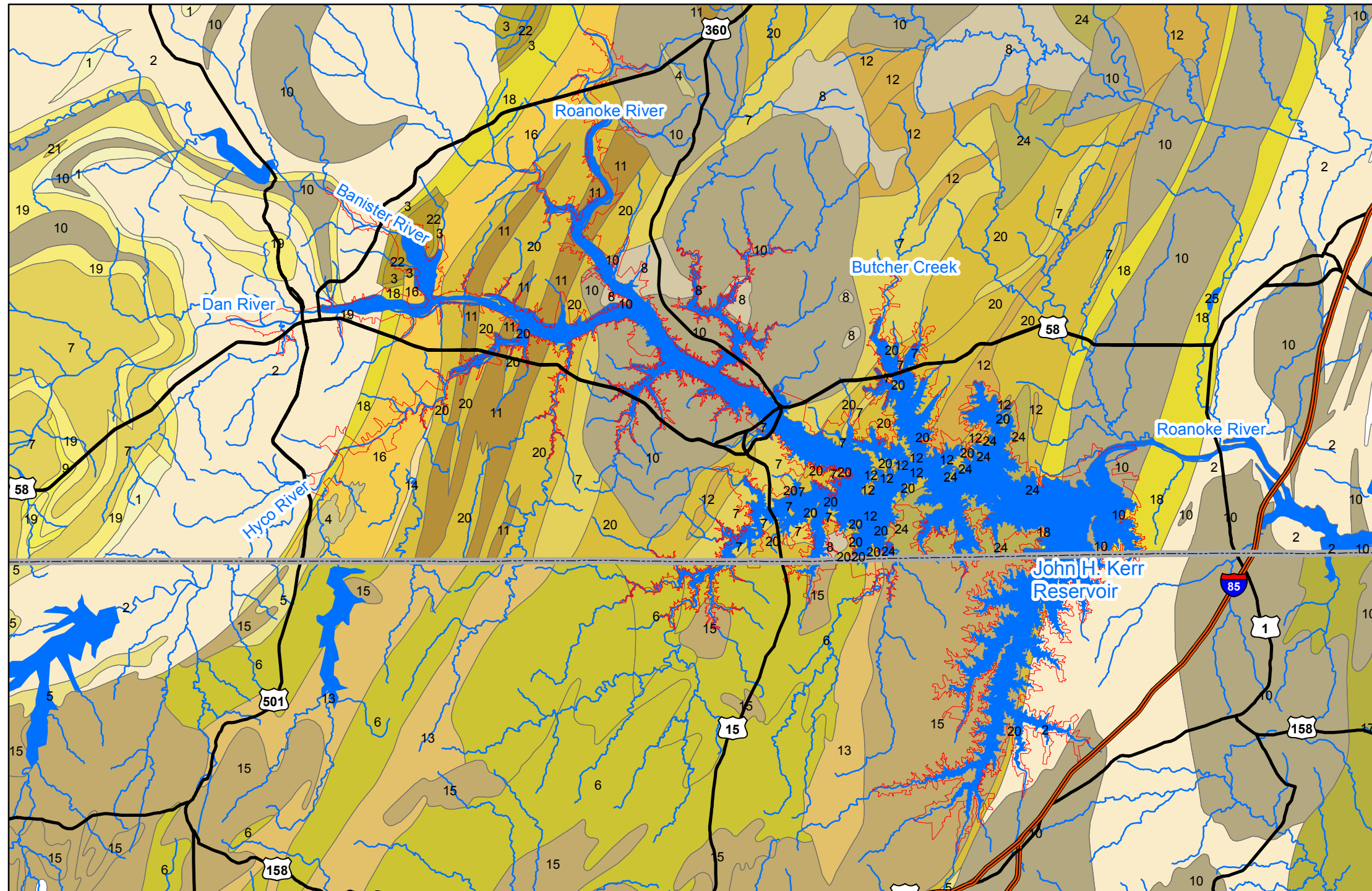
The movement of water is influenced by regional and site specific conditions, including annual and seasonal precipitation patterns and the geology and landforms that make up the project. The quality of surface water within the reservoir is influenced by conditions throughout its watershed, including land use patterns and the presence of pollution sources. Water quality in Kerr Reservoir is measured by state agencies and published in each state's 303(d) Impaired Waters Assessment. The most recent 303(d) list available was completed in 2012 (draft). The report identifies all of Kerr Reservoir as not meeting water quality standards established for safe fish consumption (VDEQ 2012). This finding is supported by North Carolina's 2012 Draft 303(d) report which reports Nutbush Creek as being impaired. The impairment is due to the ecological/biological integrity of the water column (NCDWQ 2012).

Sources: ESRI 2000 and 2002; National Hydrography Dataset 2010; TIGER 2000; USDA 2010



John H. Kerr Reservoir

Figure 4  
Geology

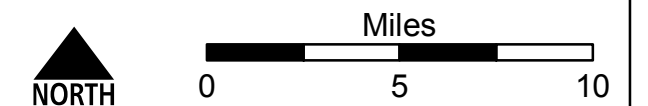
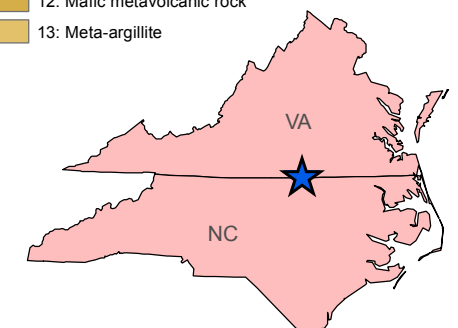


**Legend**

- Interstate
- US Route
- Streams and Rivers
- Waterbodies
- Project Boundary

**Geology**

- |                             |                       |
|-----------------------------|-----------------------|
| 1: Amphibolite              | 14: Meta-conglomerate |
| 2: Biotite gneiss           | 15: Metamorphic rock  |
| 3: Conglomerate             | 16: Metavolcanic rock |
| 4: Diorite                  | 17: Mica schist       |
| 5: Felsic gneiss            | 18: Mylonite          |
| 6: Felsic metavolcanic rock | 19: Pelitic schist    |
| 7: Felsic volcanic rock     | 20: Phyllite          |
| 8: Gabbro                   | 21: Quartzite         |
| 9: Gneiss                   | 22: Sandstone         |
| 10: Granite                 | 23: Shale             |
| 11: Greenstone              | 24: Tonalite          |
| 12: Mafic metavolcanic rock |                       |
| 13: Meta-argillite          |                       |



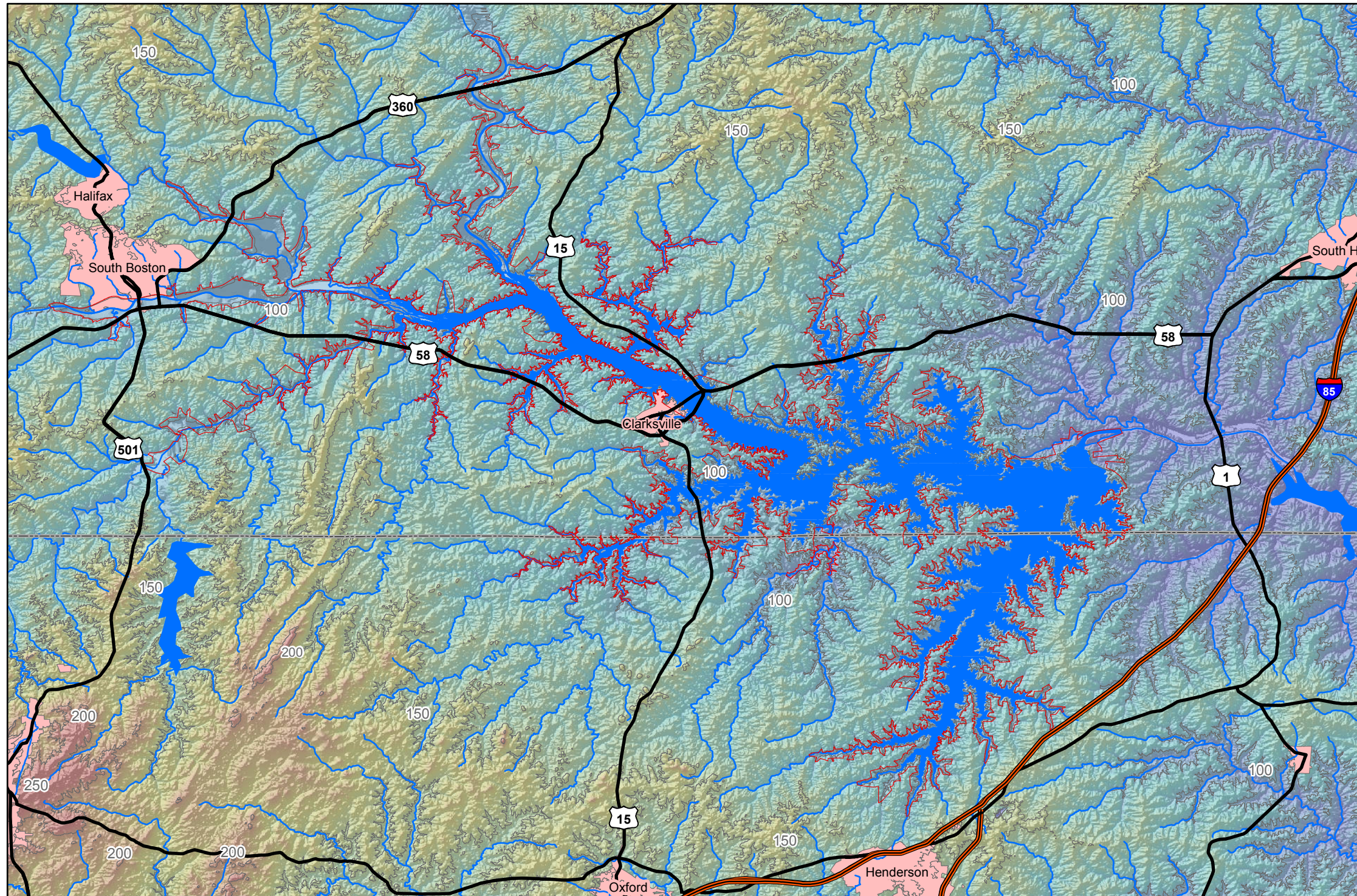
Geology within the project boundary is consistent with the Piedmont region of Virginia and North Carolina. This old, structurally complex region contains a wide variety of igneous and metamorphic rocks which have been heavily weathered due to relatively long exposure at the earth's surface. Exposed geologic resources, or outcrops, exist on high slopes and along the shoreline of the reservoir. The apparent disconnect between the geology in Virginia and North Carolina is assumed to be because the data originated from separate sources.

Sources: ESRI 2000; National Hydrography Dataset 2010; TIGER 2000; USGS 2007 and 2010



John H. Kerr Reservoir

Figure 5  
Topography



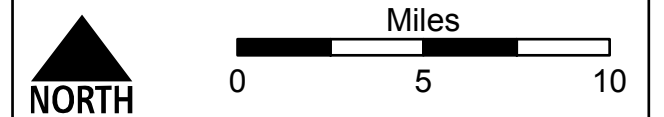
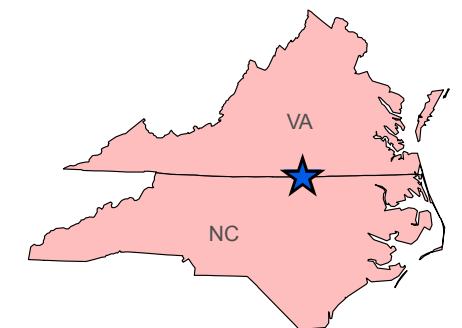
Legend

- Interstate
- US Route
- Contours
- Streams and Rivers
- Waterbodies
- Project Boundary
- State Boundary

Elevation (in msl)

- High : 436 feet
- Low : 26 feet

(50 foot contours labeled on map)

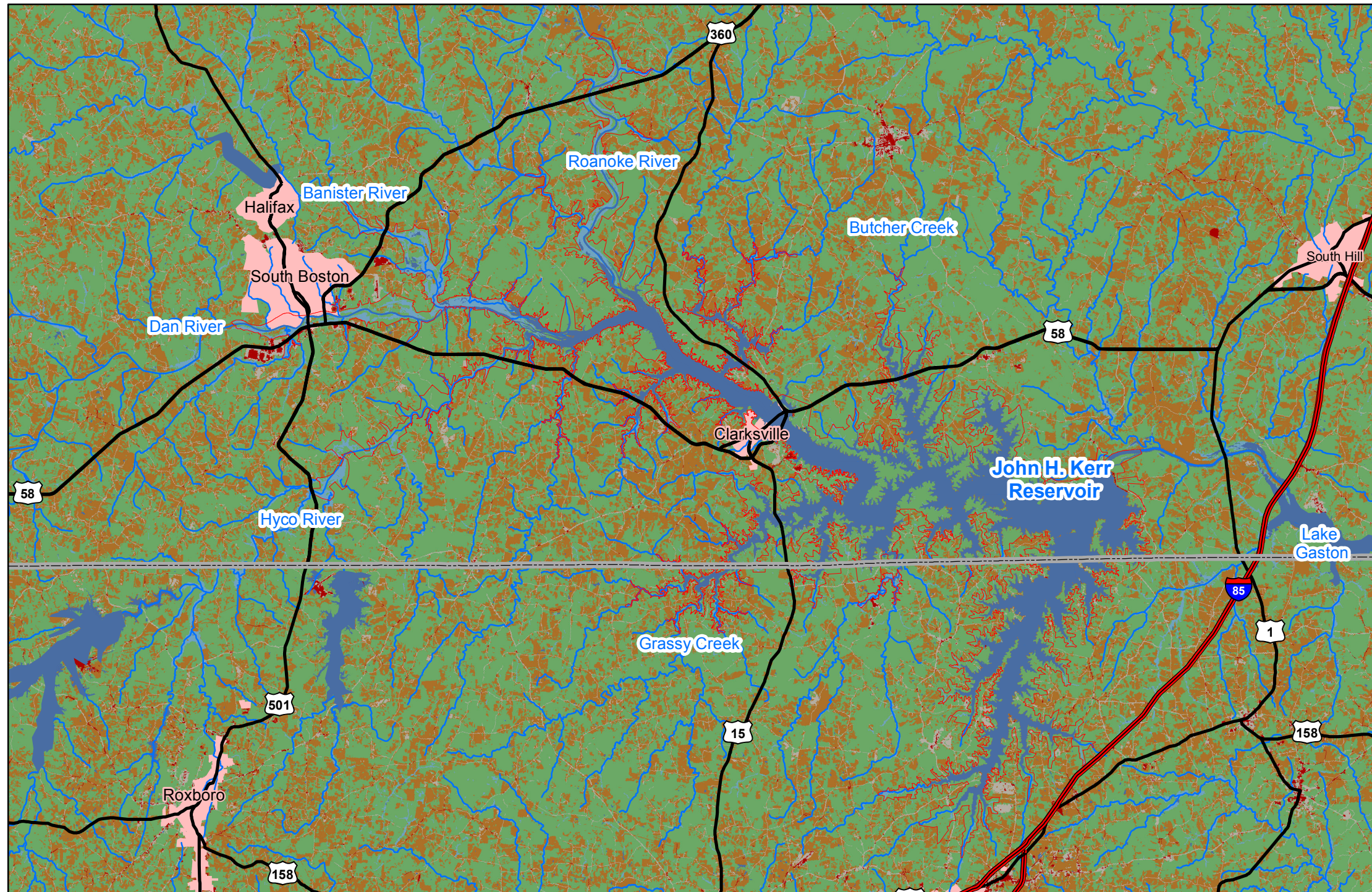


Project lands are characteristic of the Piedmont, consisting of rolling hills and relatively level valleys. The slopes extending to the south bank of the reservoir are generally less steep than those on the north bank (USACE 1980). Erosion and changes in topography are most severe where natural vegetation has been disturbed or where the banks are exposed to frequent wave action.


Sources: ESRI 2000; National Hydrography Dataset 2010; NHP 2009; Tiger 2000; USACE 2010







The Southside Planning District Commission, which serves more than 88,000 citizens in Brunswick, Halifax, and Mecklenburg counties in Virginia, identifies the land use of the majority of non-Project lands adjacent to the project as Vacant Land and Woodland. Agriculture also is prominent throughout the region and row crops such as tobacco and soybeans are popular (SPDC 2010).






 USACE Wilmington Master Plan

## John H. Kerr Reservoir







### Figure 6 Land Cover

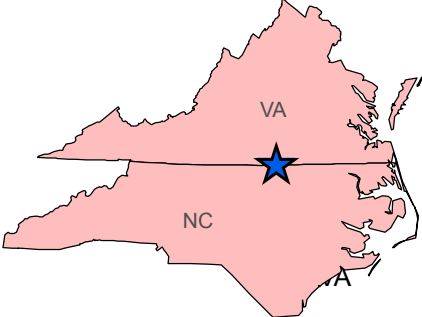
**Legend**


**Primary Roads**

-  Interstate
-  US Route
-  Streams and Rivers
-  Project Boundary
-  State Boundary

**Land Cover**

-  Barren
-  Agriculture/Shrub/Scrub
-  Forest
-  Developed
-  Wetlands
-  Water

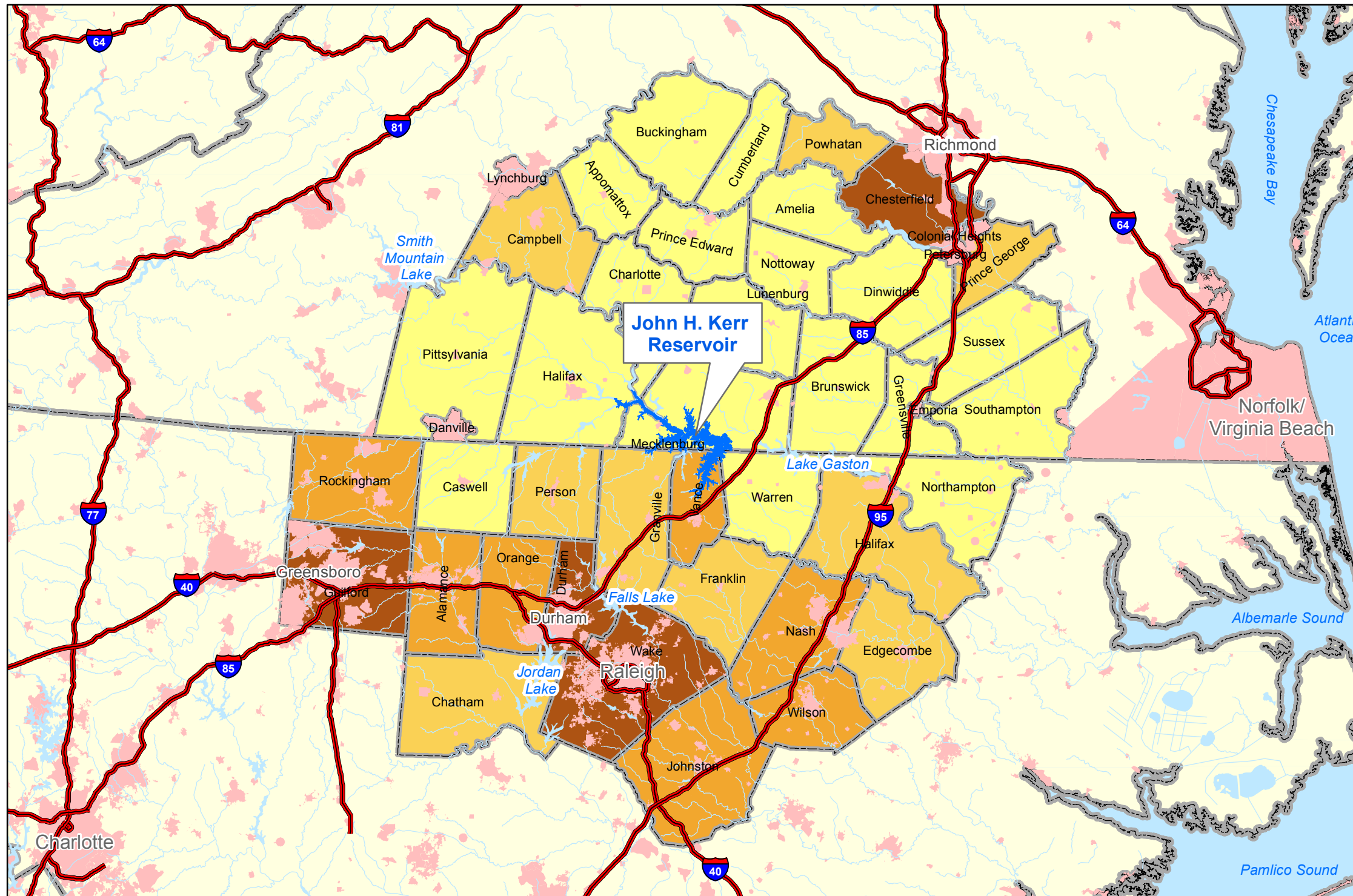


 NORTH

Miles  
0 5 10

Sources: ESRI 2000; National Hydrography Dataset 2010; National Land Cover Database 2001; TIGER 2000; USACE 2010





The regions of demographic and socioeconomic significance, considered here as the general market area in which the reservoir is situated, are divided into two geographic tiers: the six counties directly adjacent to the shoreline of Kerr Reservoir and the 42 counties within a 75 mile radius of the reservoir. Overall, population growth within the combined market area is projected to experience a faster rate of growth than both the state of North Carolina and Virginia.

**USACE Wilmington Master Plan**

**John H. Kerr Reservoir**

**Figure 7  
Market Area**

**Legend**

- Interstate
- Streams and Rivers
- Waterbodies
- Municipal Boundary

Counties within 75 Miles

Population per square mile

- 24.7 - 64.0
- 64.1 - 133.5
- 133.6 - 332.2
- 332.3 - 1037.1
- 1037.2 - 2212.8
- State Boundary

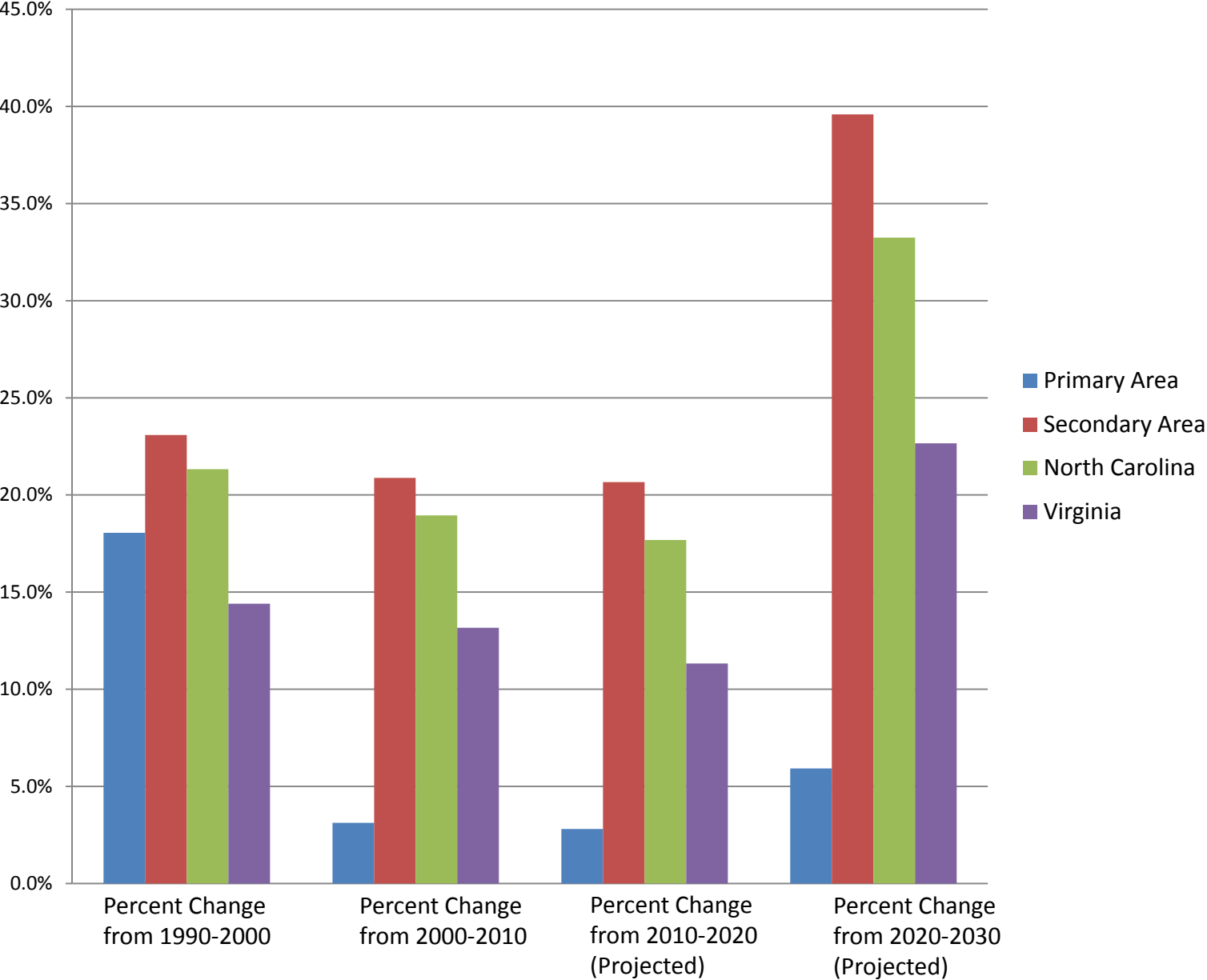
**NORTH**

Miles  
0 15 30

Sources: ESRI 2000; National Hydrography Dataset 2010; NHP 2009; Tiger 2000; USACE 2010



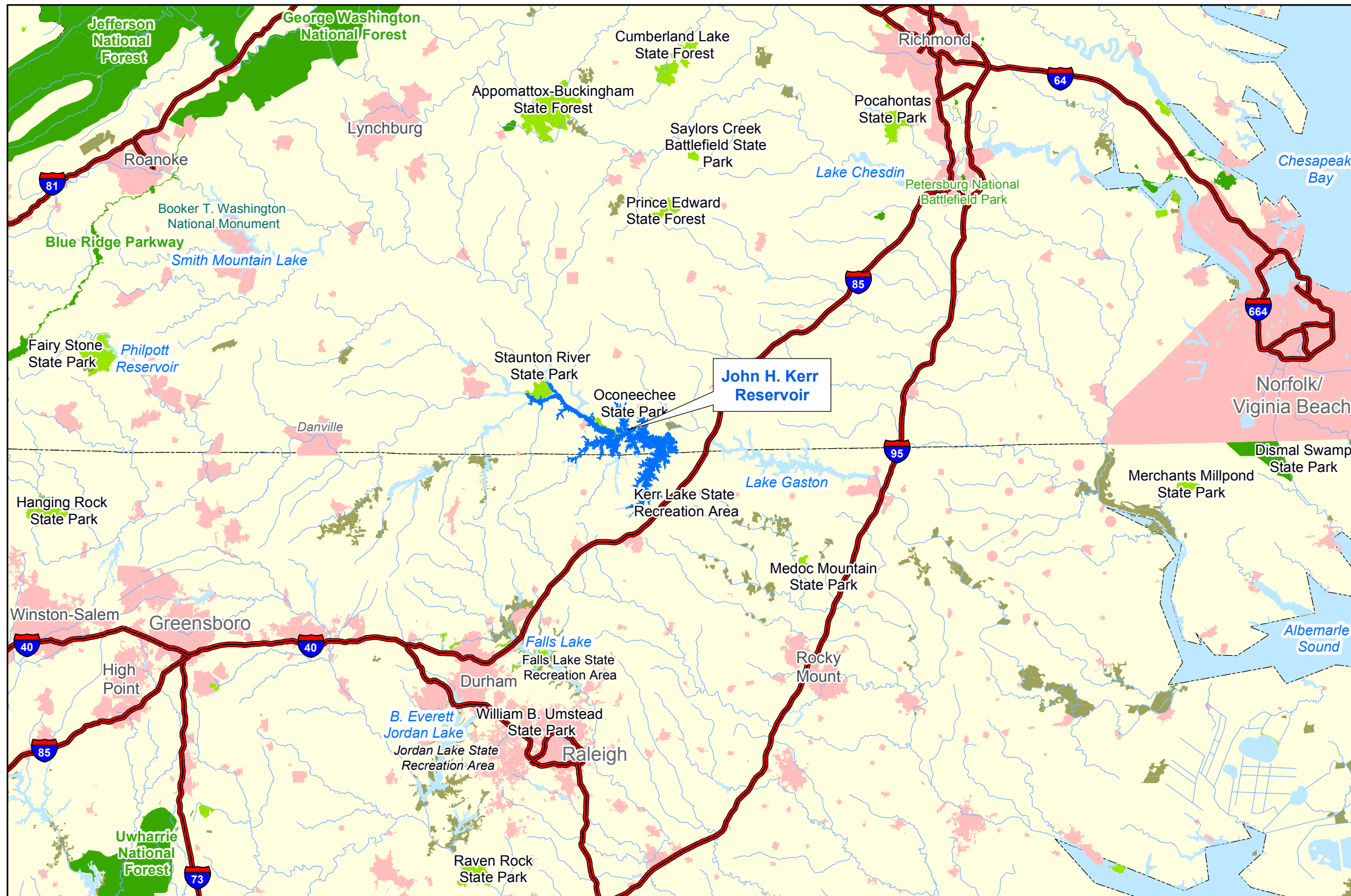
**Figure 8: Historic and Projected Percent Population Growth for the Primary and Secondary Areas, North Carolina, and Virginia**





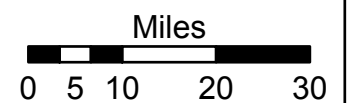
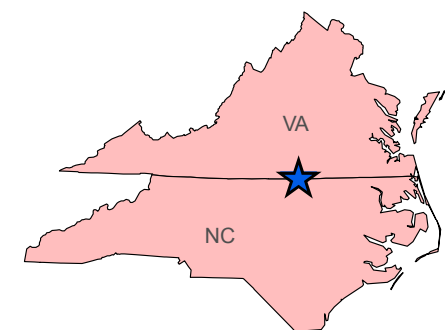
# John H. Kerr Reservoir

## Figure 9 Regional Recreation



### Legend

- Interstate
- Streams and Rivers
- Waterbodies
- Federal Lands
- State Parks
- Game Lands
- Municipal Boundary
- State Boundaries

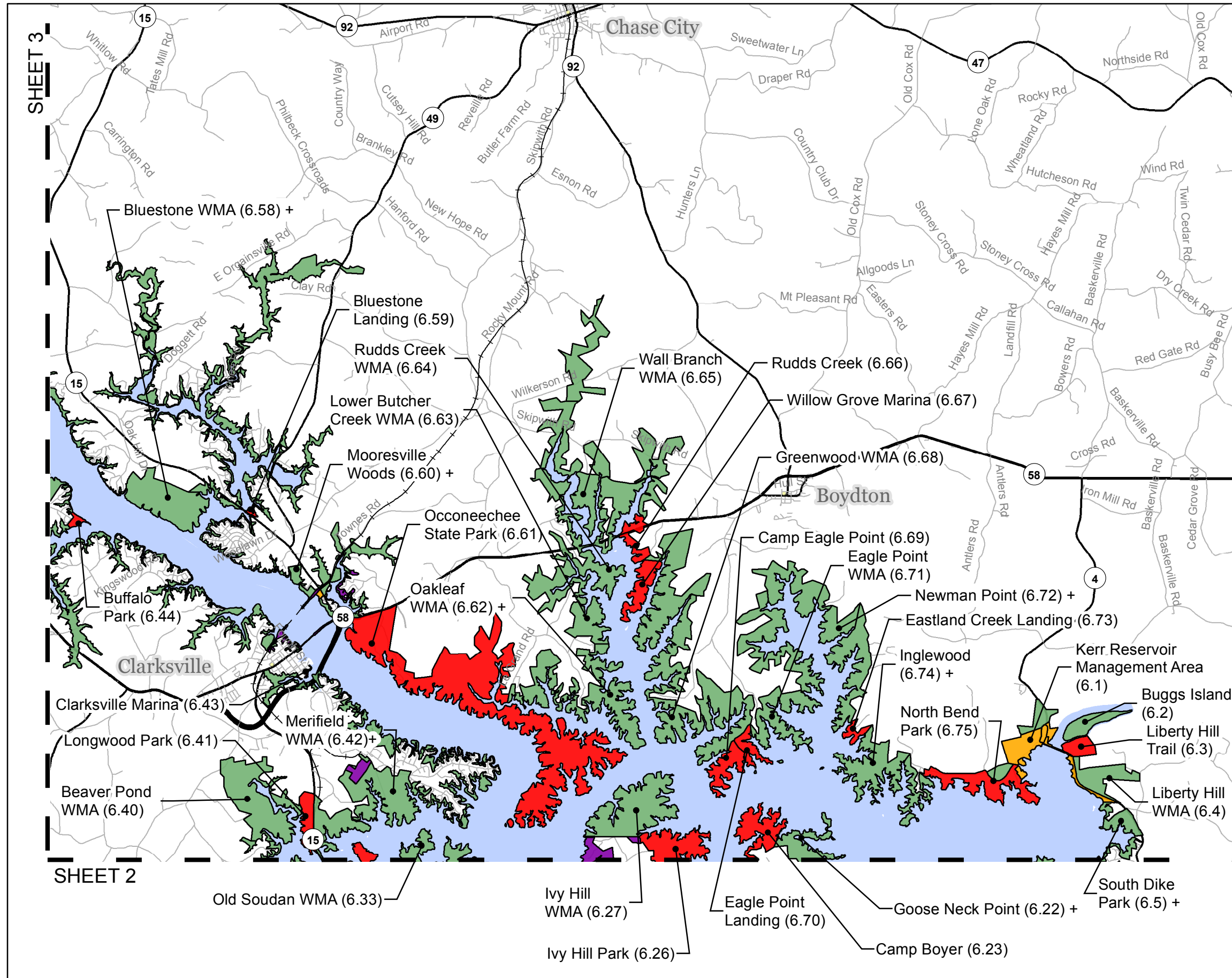


Recreation resources providing similar opportunities at a similar scale within this region comprise several state parks including: Eno River State Park, William B. Umstead State Park, Medoc Mountain State Park, Smith Mountain Lake State Park, Goodwin Lake-Prince Edward State Park, and Holiday Lake State Park. Several state forests also are located in the Virginia portion of the region. Two USACE operated lakes, B. Everett Jordan and Falls Lake, are located near Raleigh-Durham and provide recreational opportunities to that area. Several other large lakes are located in the region, including Smith Mountain Lake, Philpott Reservoir, Hyco Lake, Lake Gaston, and Roanoke Rapids Lake. Other recreational resources within the region include local parks, and state and national historical sites.

Sources: ESRI 2000; National Hydrography Dataset 2010; NHP 2009; Tiger 2000; USACE 2010



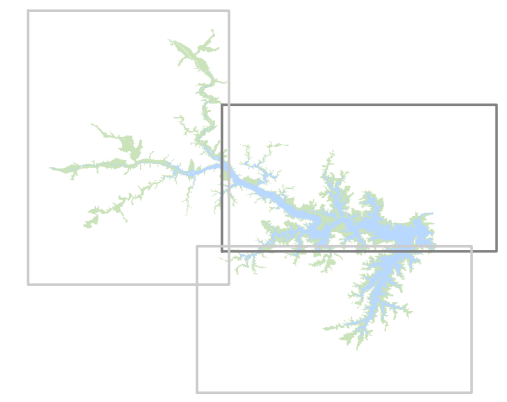



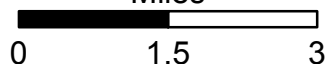


**Legend**

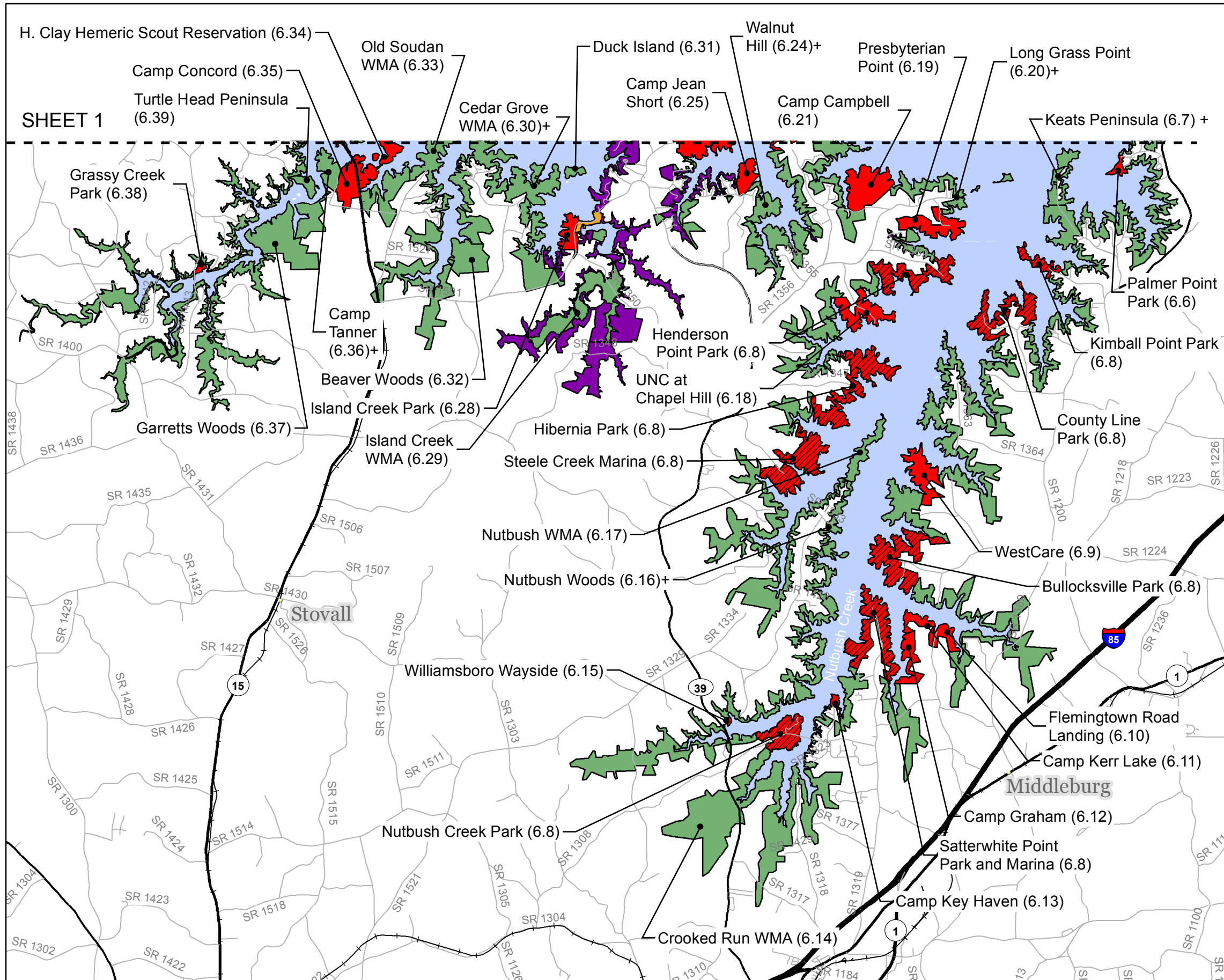
-  Project Operations
-  Recreation
-  Multiple Resource Management
-  Easement Lands

(6.X) Master Plan Site Number  
 + Future Recreation Classification



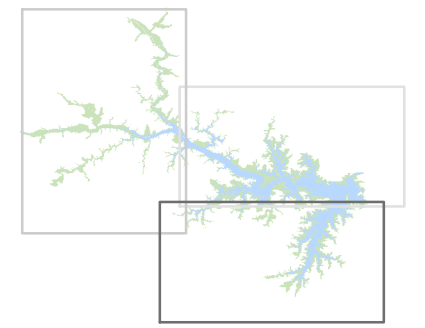
 **NORTH**  
 Miles  
 0 1.5 3  
 Map for planning purposes only





USACE Wilmington Master Plan  
**John H. Kerr Reservoir**  
 Figure 11  
 Existing Land Classification (2012)  
 Sheet 2

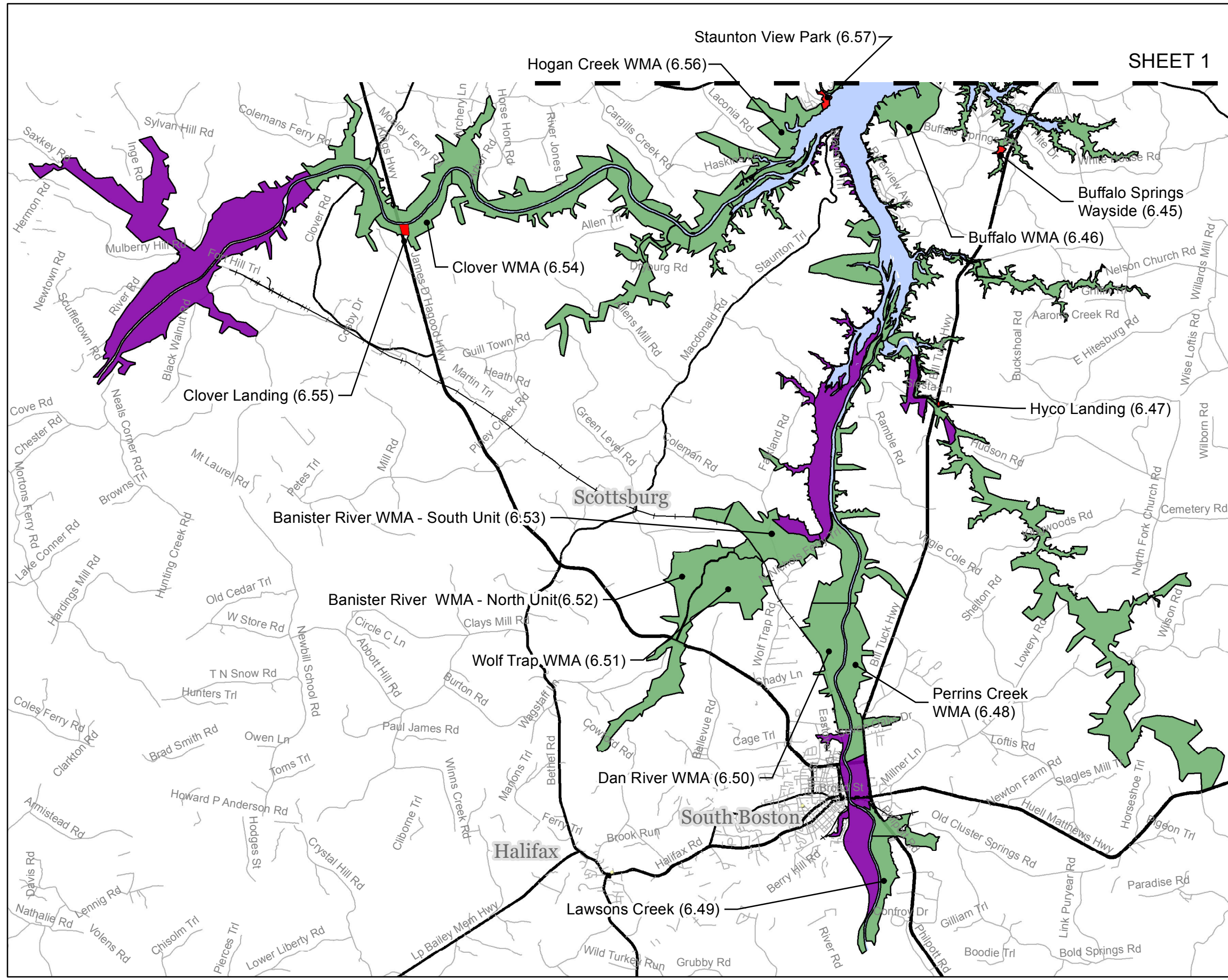
- Legend**
- Project Operations
  - Recreation
  - Multiple Resource Management
  - Easement Lands
  - Kerr Lake SRA
  - (6.X) Master Plan Site Number
  - + Future Recreation Classification



**NORTH**  Miles  
 0 1.5 3

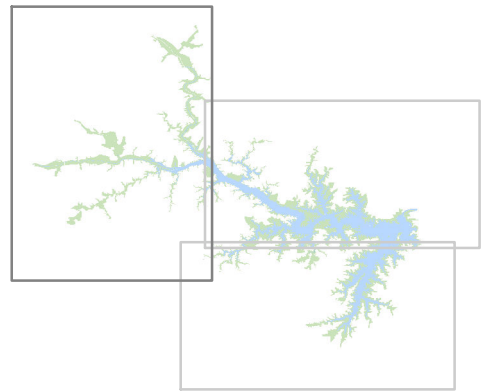
Map for planning purposes only





**Legend**

- Project Operations
- Recreation
- Multiple Resource Management
- Easement Lands
- (6.X) Master Plan Site Number

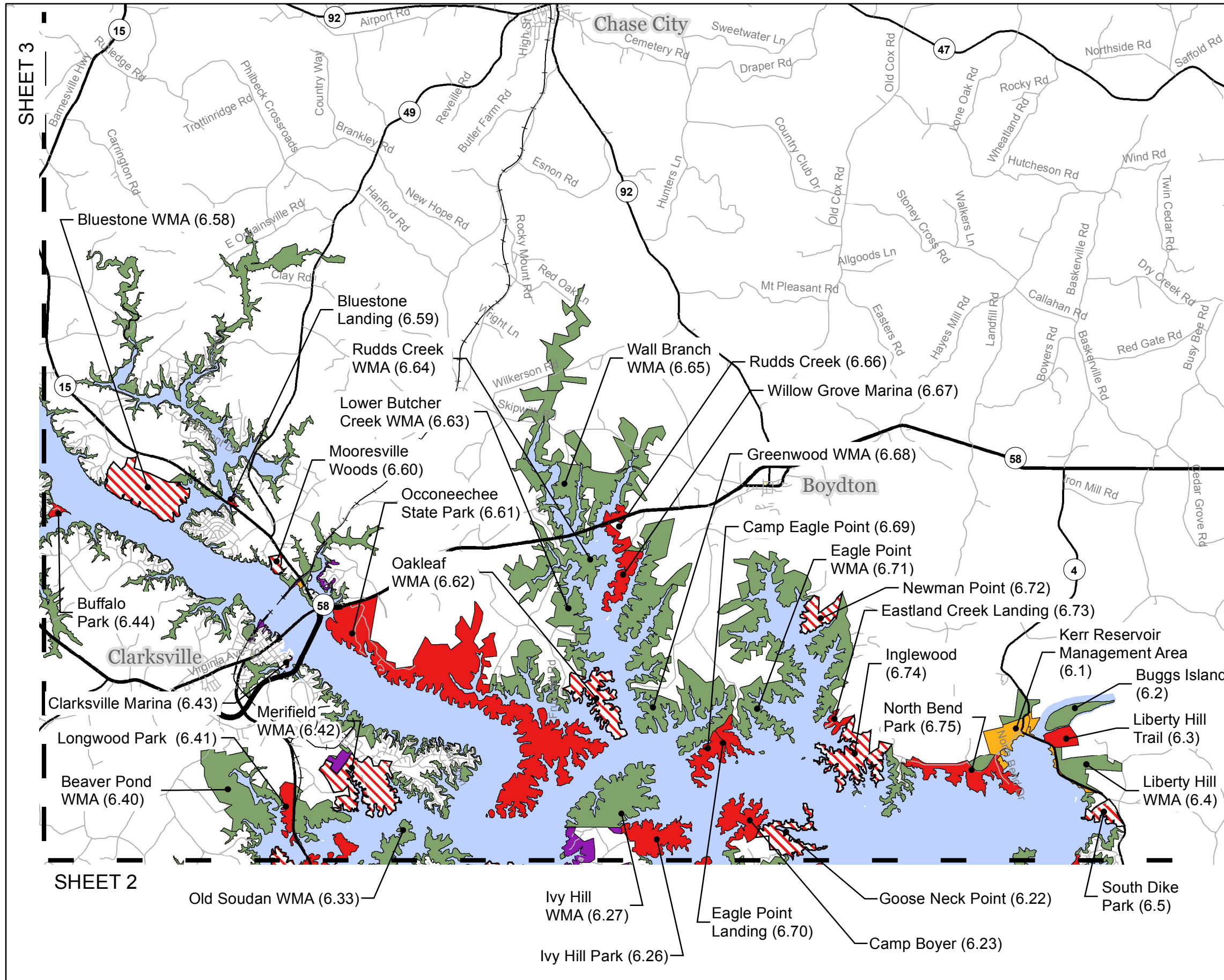



**NORTH**





Miles

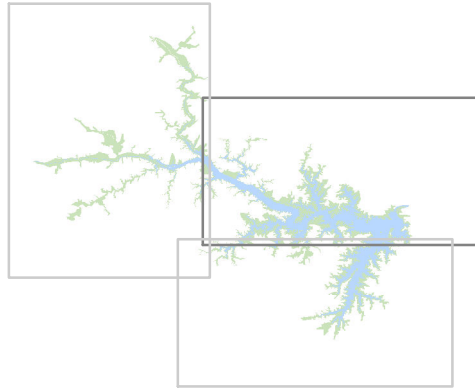
Map for planning purposes only








**USACE Wilmington Master Plan**  
**John H. Kerr Reservoir**  
**Figure 13**  
**Recommended Future Use**  
**Sheet 1**

- Legend**
-  Project Operations
  -  Recreation
  -  Easement Lands
  - Multiple Resource Management Sub Class**
  -  Recreation (Currently Undeveloped)
  -  Wildlife and Low Density Recreation
  - (6.X) Master Plan Site Number

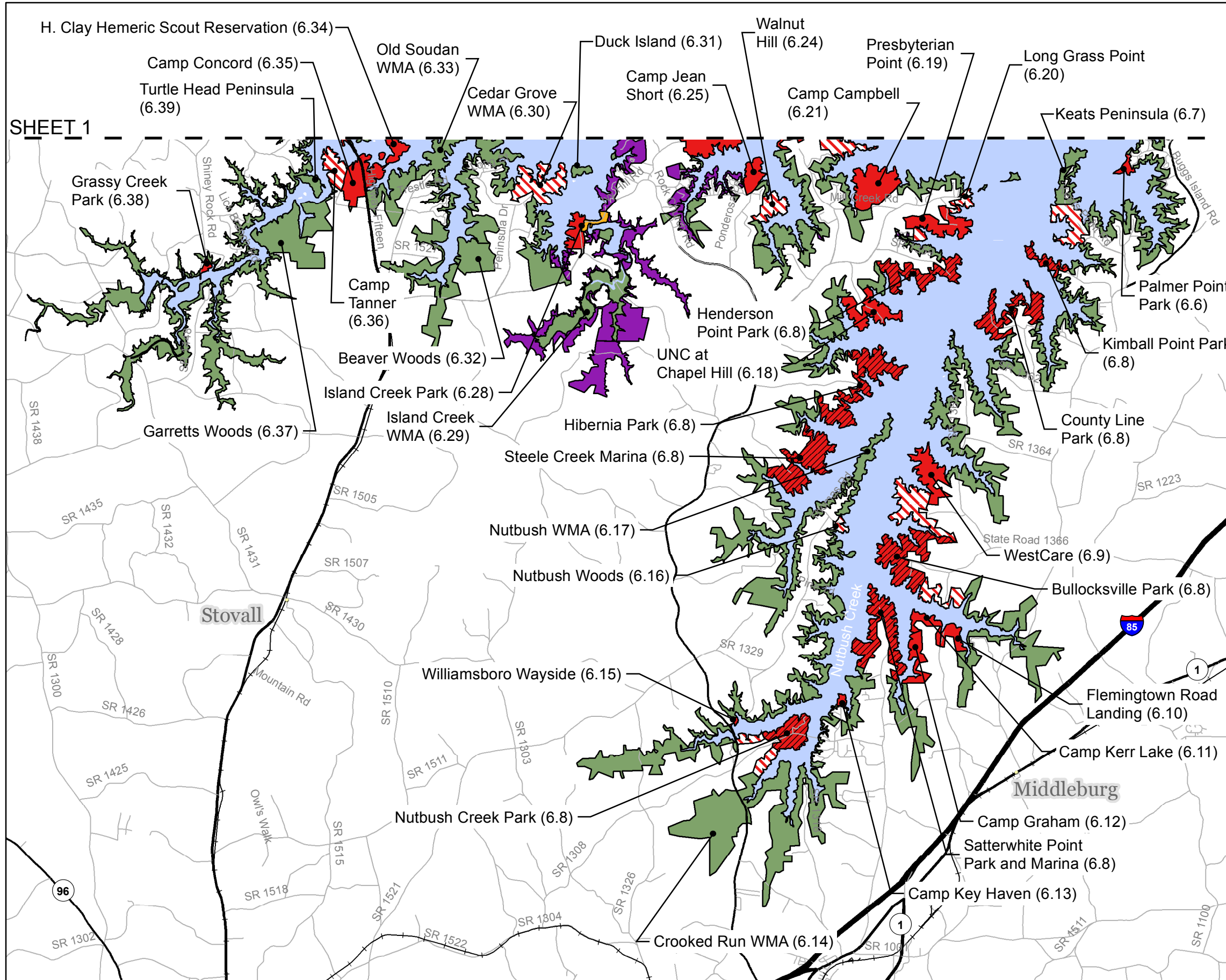



Map for planning purposes only









SHEET 1

 USACE Wilmington Master Plan



**John H. Kerr Reservoir**

Figure 14  
Recommended Future Use  
Sheet 2

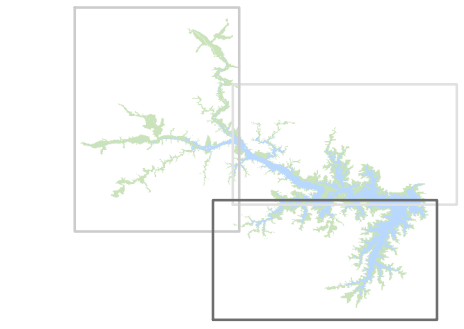
**Legend**


-  Project Operations
-  Recreation
-  Easement Lands
-  Kerr Lake SRA


**Multiple Resource Management Sub Class**

-  Recreation (Currently Undeveloped)
-  Wildlife and Low Density Recreation

(6.X) Master Plan Site Number

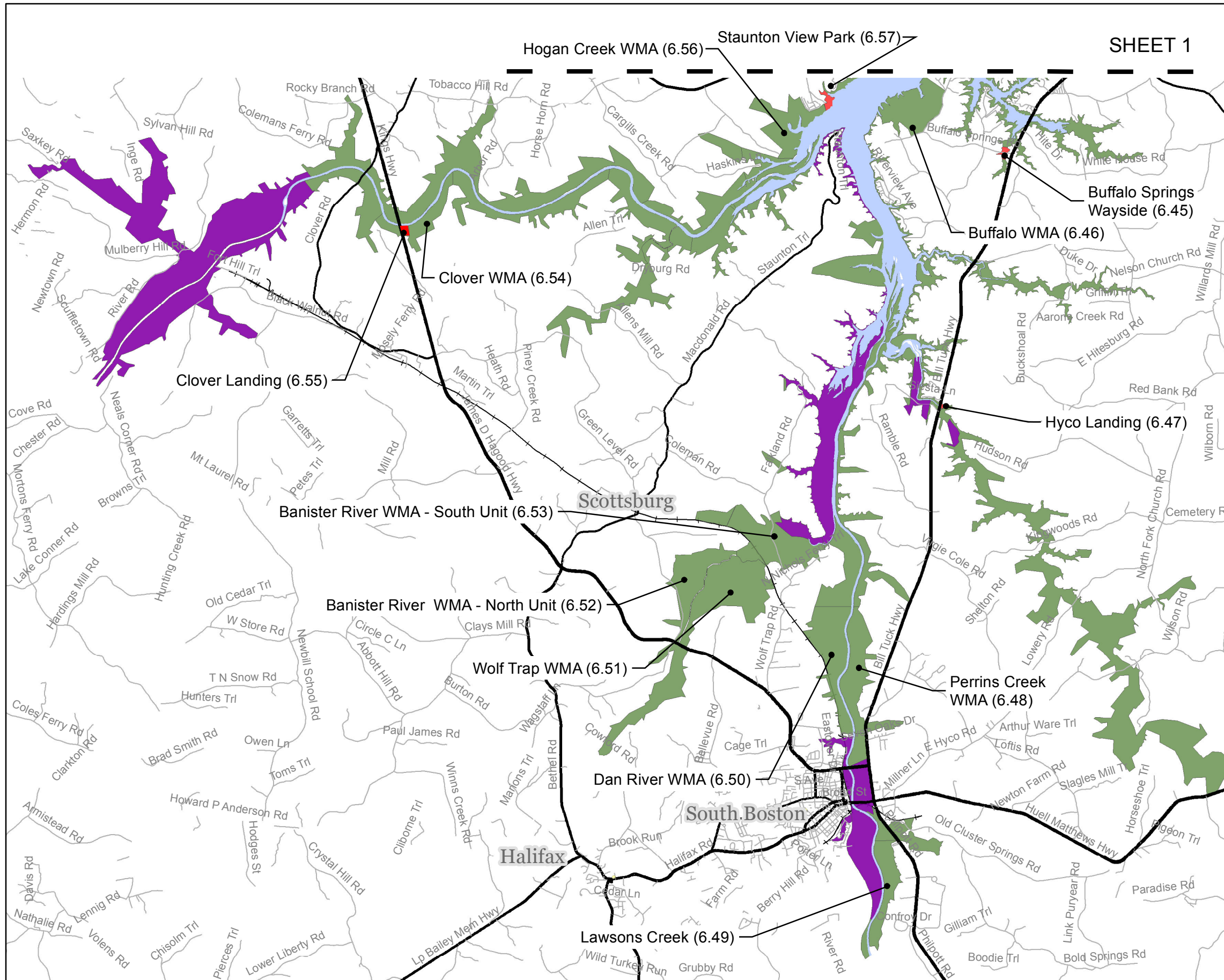


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 Miles 0 2 4

Map for planning purposes only







SHEET 1

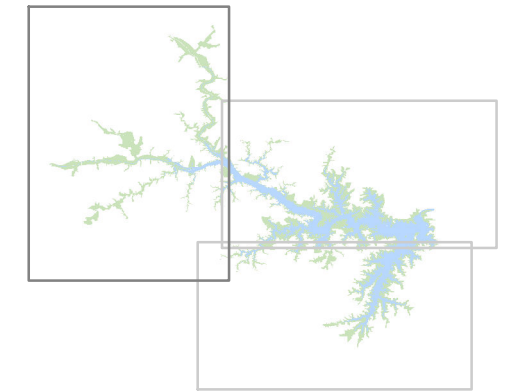
 USACE Wilmington Master Plan


John H. Kerr Reservoir

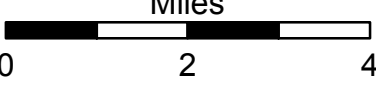
Figure 15  
Recommended Future Use  
Sheet 3

**Legend**

-  Project Operations
-  Recreation
-  Easement Lands
- Multiple Resource Management Sub Class**
-  Recreation (Currently Undeveloped)
-  Wildlife and Low Density Recreation
- (6.X) Master Plan Site Number



 NORTH

 Miles  
0 2 4

Map for planning purposes only

