John H Kerr Reservoir

Aquatic Vegetation Management Program

U.S. Army Corps of Engineers

North Carolina Wildlife Resources Commission

North Carolina Division of Parks and Recreation

Virginia Department of Game and Inland Fisheries

Virginia Department of Conservation and Recreation

North Carolina Cooperative Extension Service

North Carolina State University

June
2013

Table of Contents

I. Introduction

John H. Kerr Dam and Reservoir is a federally owned multipurpose civil works project under the stewardship of the US Army Corps of Engineers (USACE), Wilmington District. The Congressionally authorized purposes of the project are flood damage reduction, hydropower, water supply, recreation, and fish and wildlife conservation.

Kerr Reservoir is located in the Roanoke River basin on the border of Virginia and North Carolina. The project includes approximately 48,900 acres of water and 55,000 acres of land surrounding the reservoir. There are approximately 800 miles of shoreline. The reservoir and surrounding lands are managed by the USACE in partnership and collaboration with multiple state agencies, municipalities, and other stakeholders.

To combat the spread of invasive species the USACE adopted the USACE Invasive Species Policy on June 2, 2009 in accordance with Executive Order 13112 and the National Invasive Species Management Plan. The USACE Invasive Species Policy requires operating projects to include strategies for invasive species management in their project operations and maintenance responsibilities and that these strategies be coordinated with other federal, state, and local agencies

The AVMP has been prepared in coordination with the North Carolina Wildlife Resources Commission, the North Carolina Division of Parks and Recreation, the Virginia Department of Game and Inland Fisheries, the Virginia Department of Conservation and Recreation, North Carolina Cooperative Extension Service, North Carolina State University, and the USACE Engineering Research Development Center (ERDC).

The intent of the John H Kerr Reservoir Aquatic Vegetation Management Program (AVMP) is to maintain a healthy and sustainable reservoir ecosystem dominated by native aquatic vegetation.

Kerr Reservoir AVMP Goals:

1. Encourage the spread and establishment of populations of native aquatic vegetation.
2. Manage established populations of invasive aquatic vegetation to minimize harmful impacts.
3. Prevent introduction and establishment of invasive aquatic vegetation to avoid negative impacts.
4. Develop and improve capacity to identify, report, and effectively respond to newly discovered occurrences of invasive aquatic vegetation.
5. Survey and monitor to ensure management actions are effective.
6. Collaborate with the public, stakeholders, and subject matter experts to ensure that program management actions are based on sound scientific information.
7. Utilize education, communication, and interpretative programs to convey to the public how they can help prevent, identify, detect and control invasive species; to gather public input into program plans; and to promote partnerships for implementation of the program

To accomplish these goals an Action Plan will be developed annually detailing proposed objectives, actions, and responsibilities. The USACE will schedule an agency meeting annually each spring to facilitate development of the Action Plan. To avoid duplication of effort and conflicts with the

objectives of the Kerr Reservoir AVMP, only management activities included in the annual Action Plan may be undertaken on USACE property. Some activities may require additional authorizations and/or permits.

II. Aquatic Vegetation in Kerr Reservoir

In 2011 and 2012 the USACE contracted with North Carolina State University (NCSU) to survey the shoreline for the presence of aquatic vegetation (NCSU 2011, NCSU 2012). Native aquatic vegetation was most prevalent in areas between Clarksville and Longrass Point on Nutbush Creek, including Mill Creek, Butcher Creek, Beaver Creek and Grassy Creek; acreages were not quantified. Native species identified included macroalgae (*Chara sp./Nitella* sp.), variable leaf pondweed *(Potamogeton diversifolius),* sago pondweed (*Potamogeton pectinatus)*, southern waternymph (*Najas guadalupensis*); smartweed *(Polygonum sp.*); and water willow (*Justicia americana*).

Invasive species of aquatic vegetation identified include Naiads (*Najas minor*) and hydrilla (*Hydrilla verticillata*). Hydrilla is the most prevalent invasive exotic species observed infesting approximately 888 acres (NCSU 2012). The majority of hydrilla was found in Little Nutbush Creek, Nutbush Creek, along with some isolated occurrences at North Bend Park. The 2012 survey found no hydrilla in several areas where it had been documented in 2011including small areas at North Bend Park, the Staunton View boat ramp, Occoneechee State Park, Clarksville Marina, the Uppy's Convenience Store dock, and scattered locations mainly along the south shore west of the Clarksville bridge. Low water levels during the survey were may account for the absence.

Documentation of the occurrence of aquatic vegetation prior to the 2011 and 2012 surveys is limited. In 1992 and 1993 small patches of hydrilla (approximately 8 acres total) were documented in the area around the North Bend Park. In July 1996 occurrences of *Chara sp*. and brittle naiad (*Najas minor)* were documented in the Satterwhite Point area of Nutbush Creek. During the summers of 2009 and 2010, hydrilla was reported in the North Carolina portion of Kerr Reservoir. Subsequent sampling and surveys confirmed wide spread occurrence of hydrilla in Nutbush Creek and Little Nutbush Creek, however total acreages were not determined at that time. Hydrilla was also reported in the Staunton River upstream of Staunton View Park.

Once hydrilla has become established it is difficult and expensive to control. Total elimination of hydrilla in Kerr Reservoir is not considered a realistic outcome given the geographic extent of the current hydrilla infestation in Kerr Reservoir and the Roanoke River Basin, and the high variability in effectiveness and limitations of the available control methods.

III. Aquatic Vegetation Management

The USACE, state agencies, lessees, shoreline permit holders, and other stakeholders may participate in activities identified in the Action Plan (Appendix A). All activities must be coordinated with the USACE to avoid duplication of effort and conflicts with the objectives of the AVMP. Certain activities may require additional authorizations and/or permits.

USACE management actions are dependent on available funding. Unless specific appropriations are made for aquatic vegetation management, funding for management activities will be prioritized

along with other authorized missions i.e. power plant maintenance, recreation management, and other natural resources management activities.

The following aquatic vegetation management methods may be utilized individually or in combination:

A. Chemical Control

The type, application rate, and method of application of herbicides will be selected based on site conditions and target species. Guidance and recommendation from the North Carolina Agricultural Chemicals Manual –Aquatic Weed Control, pesticide labels and other appropriate publications will be utilized in planning treatments. Applicators are responsible for compliance with all pesticide label requirements. Pesticides used must be registered in the appropriate State. Use of pesticides classified as "restricted use" by the U.S. Environmental Protection Agency is prohibited

Only licensed and insured commercial pesticide applicators and trained licensed public agency employees will be authorized to use chemical controls for aquatic plants on USACE property. Shoreline permit holders and lessees may hire licensed commercial herbicide applicators that have been authorized by the USACE to treat aquatic vegetation.

Commercial pesticide applicators wishing to obtain authorization to apply aquatic herbicides in Kerr Reservoir must complete and submit a Kerr Reservoir Aquatic Herbicide Applicator Permit (Appendix B). Authorization must be renewed annually. A list of approved applicators can be found on the Kerr Reservoir web site.

Failure to follow Applicator Permit conditions and any unauthorized application of aquatic herbicides are considered violations of Title 36 Code of Federal Regulations, Chapter III Part 327.9 , 327.12, 327.14, and/or 327.18. Violators are subject to fine and/or imprisonment. Shoreline permit holders engaging in unauthorized application of herbicides are also subject to revocation of their shoreline permit. Applicators that violate terms of their applicator's authorization are subject to revocation of their authorization.

NOTE: Concerns regarding potential for corrosion of aluminum pontoons in areas where copper based herbicide compounds have been applied to control aquatic weeds have been raised based on anecdotal reports at Kerr Reservoir and other reservoirs. Galvanic corrosion occurs when two or more different metals are brought into electrical contact under water. Galvanic corrosion of the metal parts of boats and docks can occur in fresh and salt water, but occurs most quickly in salt water due to its greater electrical conductivity. Galvanic corrosion can occur due to improper grounding of vessels and docks. In fresh water the rate of galvanic corrosion can increase if the corrosive potential of the water is increased through introduction of lawn fertilizers, melting salts, or other compounds due to direct application or runoff from land. Galvanic corrosion of metal parts of boats and docks may be avoided by installing a sacrificial anode on the boat hull, motor, and dock. Note that many boats, motors, and docks come equipped with sacrificial anodes. The anode must be in the water to work. The anode must be replaced periodically. Concerned boat owners may also choose to temporarily move boats from areas where copper based herbicides are being applied.

B. Biological Control – Stocking of triploid grass carp (*Ctenopharyngodon idella*)

Stocking of triploid grass carp in Kerr Reservoir is subject to approval of the USACE and receipt of permits from the State of North Carolina and the Commonwealth of Virginia. Due to the sensitive nature of this activity private individuals and organizations are not permitted to stock grass carp or any other species of fish in Kerr Reservoir. Individuals interested in contributing to authorized fish stocking efforts may contact the USACE for information on how to contribute to this activity.

Only grass carp certified as triploid (sterile) will be used for aquatic weed management in Kerr Reservoir. The US Fish and Wildlife Service oversees certification of triploid grass carp via the National Triploid Grass Carp Inspection and Certification Program (NTGCICP). Triploid grass carp stocking will occur at a rate (fish/acre of vegetation) and frequency appropriate to address the target species and areas. Monitoring of target vegetation and fish populations will be utilized to assess effectiveness of stocking and need for additional stocking. Details of any proposed stocking will be coordinated with state fisheries managers and included in the Action Plan.

Unauthorized biological control activities are considered violations of Title 36 Code of Federal Regulations, Chapter III Part 327.9, 327.12, 327.14, and/or 327.18. Violators are subject to fine and/or imprisonment. Shoreline permit holders engaging in unauthorized activities are also subject to revocation of their shoreline permit.

C. Hand Removal

Limited removal of invasive aquatic vegetation by hand and utilizing hand tools may be authorized for management of small areas. Mechanical harvesting, excavation, and suction dredging of aquatic vegetation are not authorized.

Harvesting/removal of vegetation must be done correctly in order to avoid removal of non-target vegetation and disturbance of habitat and to minimize spread of invasive vegetation due to fragmentation of the plants. Plants may be removed by hand (pulling) or with hand tools (rakes and blades). Plants and cuttings must be removed from the water and disposed of properly. Floating mats may be pulled to shore and stranded on high ground.

Shoreline permit holders and lessees wishing to remove aquatic vegetation by hand must request and receive authorization from the USACE prior to beginning removal of the vegetation (Appendix E Application for removal of invasive aquaticvegetation). Permittees are responsible for complying with all laws and regulations regarding handling and disposal of noxious weeds.

In most cases vegetation removed by hand will be left to dry on high ground. Improper disposal or transport of aquatic vegetation classified as a noxious weed is a violation of the state and federal law (The Plant Protection Act - Title 7 Chapter 104, North Carolina - 02 NCAC 48A .1703, Virginia Code § 3.2-800 – 809).

D. Native Aquatic Vegetation

Selected species of native vegetation may be planted to improve aquatic habitat and displace nuisance vegetation. Plantings may be done in combination with other management activities in order to maximize benefits.

Native vegetation planting will utilize techniques identified in the "Update to the Propagation and Establishment of Aquatic Plants Handbook" (Smart et al 2005) including planting of "founder colonies" to establish the presence of desired species and use of exclusion cages to protect plants from herbivory. Areas to be planted will be selected based on water depth, bottom topography, and substrate type. Location and prioritization of planting and species to be planted will be identified in planting plans developed as part of the annual Action Plan.

Planting will not be done in areas where presence of native aquatic vegetation may interfere with human activities. Only native plant stock from known sources and free of nuisance species will be utilized for plantings. Propagation of existing populations of native plants in Kerr Reservoir may also be used as a source of stock for planting.

Due to the sensitive nature of this activity private individuals and organizations are not permitted to plant aquatic vegetation in Kerr Reservoir. Individuals and organizations interested in donating funds for and/or volunteering to assist with authorized native vegetation planting efforts may contact the USACE for information on how to contribute to these activities.

Unauthorized activities are considered violations of Title 36 Code of Federal Regulations, Chapter III Part 327.9, 327.12, and/or 327.14. Violators are subject to fine and/or imprisonment. Shoreline permit holders engaging in unauthorized activities are also subject to revocation of their shoreline permit.

E. Public Education

Public education efforts will focus on informing boaters and fishermen of the importance of cleaning boats, trailers, and other equipment to avoid spreading aquatic nuisance species; facts about native and non-native aquatic vegetation in Kerr Reservoir; and the status of ongoing aquatic vegetation management activities including how the public may get involved.

Activities will include installation and maintenance of nuisance aquatic plant warning signs at all public boat ramps (responsibility of agency managing the access area); posting of aquatic plant management program documents, action plans, and status updates on the USACE website; distribution of general and species specific fliers and pamphlets about aquatic vegetation management through visitor centers, recreation area gate houses, and marinas (responsibility of agency managing the area); and as appropriate inclusion of information on aquatic vegetation management activities in news releases and interpretive programs. Specific actions and responsibilities will be identified in the Action Plan.

F. Survey and Monitoring

Reservoir wide surveys will be conducted as needed, subject to availability of funding, to determine location and extent of aquatic vegetation. Reports of invasive aquatic vegetation will be investigated and actions to address occurrences will be recommended based on extent and severity. Pre and post treatment monitoring will be conducted to determine effectiveness of chemical control, biological control, and native plantings. The USACE will maintain records of survey and occurrence data including Geographical Information System (GIS) database for use in tracking distribution of native and nuisance species and the effectiveness of management actions.

G. Enforcement

Enforcement of existing laws and regulations will be utilized to discourage activities that lead to spread of noxious/invasive aquatic vegetation. Additional laws and regulations may be adopted to address specific concerns.

Unauthorized chemical control activities, biological control activities, removal of vegetation, and/or planting of vegetation on USACE property are considered violations under USACE Rules and Regulations - Title 36 Code of Federal Regulations, Chapter III Part 327.

The USACE has been authorized to offer cash rewards of up to $1,000.00 for information leading to the arrest and prosecution of individuals causing damage to USACE property due to vandalism, larceny, arson, and environmental and cultural degradation. This includes the intentional spread of federally listed noxious weeds including hydrilla, unauthorized application of pesticides, and unauthorized release of fish including grass carp. The reward would be provided through the Corps Watch program, a neighborhood crime-watch deterrence program to protect USACE assets from property damage.. . Individuals who witness or suspect that a crime has been committed against Corps property are encouraged to use the toll-free number, 1-866-413-7970, to report information of theft, vandalism, or any other threats or suspicious activity against USACE property 24 hours a day. Callers can remain anonymous. This program does not replace the 911 emergency notification system.

Other applicable laws/regulations include:

North Carolina
- Noxious Aquatic Weed List - 15A NCAC 02G .0602
- Noxious Weed Act - 02 NCAC 48A 1702 - 1703

Virginia
- Title 2.2 Chapter 2 -Virginia Code § 2.2-220.2
- Title 3.2 Chapter 8 - Virginia Code § 3.2-800 – 809

Federal
- Nonindigenous Aquatic Nuisance Prevention And Control Act - Title I of Public Law 101-646 104 Stat. 4761, 16 U.S.C. 4701
- Lacey Act - 18 USC 42-43 - 16 USC 3371-3378
- Federal Noxious Weed Act Public Law. 93-629, 88 Stat. 2148
- The Plant Protection Act – Public Law 106-224 7 U.S.C. 7701 et seq.

IV. References:

North Carolina State University 2012: Kerr Lake Vegetation Survey 2011

North Carolina State University 2013: Kerr Lake Vegetation Survey 2012

Smart, R. M., Dick, G.O., and Doyle, R.D. 1998, "Techniques for establishing native aquatic plants, *Journal of Aquatic Plant Management* 36: 44-49

AVMP Appendix A:

AVMP Annual Action Plan

2013 Kerr Reservoir AVMP Action Plan

Date: June 2013
Current Status of Invasive Vegetation: 2012 survey estimates 888 acres of hydrilla
Proposed Actions: All proposed actions are dependent on availability of funding.

A. Chemical Control – herbicide treatments

Objective: Target herbicide treatments of hydrilla in high use and high threat areas.

Actions:

1) USACE
   a. Treat hydrilla at USACE managed boat ramps – as needed
   b. Review applicator authorization requests
      - approved applicators for 2013 will be posted upon review of permit requests
   c. Review pre-treatment requests – dependant on dock owner participation
   d. Review post treatment information
2) NC Division of Parks and Recreation
   a. Treat 5 or more acres – date and location to be determined – subject to available funding

B. Biological Control - stocking of triploid grass carp

Objective: Decrease acreage of hydrilla throughout the reservoir with emphasis on Nutbush and Little Nutbush Creek

Actions:

1) USACE
   a. Apply for NC and VA permits to stock triploid grass carp.
   b. Stock fish at recommended rate of 15 fish per vegetated acre x 888 acres of hydrilla = 13,320. Select stocking locations. Potential locations include boat ramps in Nutbush arm of lake are Nutbush Creek, Bullocksville, Hiberina, and County Line, and Steele Creek. Stocking Dates – dependant on availability funding and fish

C. Hand Removal

Objective: Temporarily open areas congested with hydrilla and remove plants in small areas, concentrating on high use and high threat areas

Actions:

1) USACE
   a. Review request for hand removal

D. Native Aquatic Vegetation

Objectives: Promote native aquatic vegetation in areas where invasive plants have been removed and suitable areas that have not been colonized by native vegetation

Actions:

1) USACE
    a. Survey shoreline to identify locations for planting
    b. Identify sources for native vegetation
    c. Draft planting plans for 2014

E. Survey and Monitoring

Objectives: Assess effectiveness of control measures and population of aquatic vegetation

Actions:

1) USACE
    a. Fund 2013 NCSU to complete Kerr Lake Aquatic Vegetation Survey (dependant on availability of funding)

F. Public Education

Objective: Inform the public and stake holders about how to identify native and invasive aquatic vegetation, report occurrences of invasive species, avoid spreading invasive vegetation, participate and/or contribute to aquatic vegetation management activities, and report unauthorized treatment and illegal transport or dispersal of invasive plants.

Actions:

1) All Managing Agencies - install/replace hydrilla warning/information signs at all boat ramps
2) USACE
    a. Maintain AVMP web page
        i. Copies of actions plan, surveys, herbicide treatment information, etc.
        ii. Information and links on identifying aquatic vegetation and avoiding the spread of invasive vegetation on the AVMP web page
        iii. Reporting link for invasive species occurrence and unauthorized activities
    b. Include printed information on aquatic vegetation in shoreline permit holder mailings

G. Enforcement

Objective: Ensure compliance with existing laws and regulations pertaining to aquatic weeds, herbicide application, fish stocking, and planting of aquatic vegetation

Actions:

1) All Managing Agencies – monitor actions and enforce existing laws and regulations
2) USACE – monitor actions and ensure compliance with AVMP – pesticide treatments, fish stocking, and planting of aquatic vegetation.
3) USACE – Publicize information on the Corps Watch program which may provide up to a $1000 reward for information leading to the arrest and prosecution of individuals causing damage to USACE property. This reward applies to any property damage including the intentional spread of federally listed noxious weeds including hydrilla, unauthorized application of pesticides, and unauthorized release of fish including grass carp.

USACE – Consider adoption of a posted restriction requiring removal of plants and animals from boats, trailers and other equipment to avoid spread of invasive species.

AVMP Appendix B:

Aquatic Herbicide Applicator Permit

Kerr Reservoir - Aquatic Herbicide Applicator Permit

Permit #: _____

Permit Instructions:

1. Read the entire permit (2 pages)
2. Complete Applicator Information (If multiple applicators are working for the same company each applicator will need their own applicator permit)
3. Sign Permit (by signing the permit the applicator agrees to all terms and conditions)
4. Attach a current certificate of insurance and current aquatic herbicide applicators license/s
5. Submit original signed permit in person or by mail to USACE, 1930 Mays Chapel Road, Boydton, VA 23917
6. If approved, a signed copy of this permit will be returned to you.
7. Prior to any herbicide treatments authorized applicators must submit the required Pre-Notification and receive approval (see Permit Condition 4 below)

NOTICE: Only licensed and insured commercial pesticide applicators and trained licensed public agency employees will be authorized to use herbicides for control of aquatic plants on US Army Corp of Engineers (USACE) property at John H Kerr Reservoir. Unauthorized activities are a violation of Title 36, Code of Federal Regulations (CFR) Part 327.

Applicator Name (print):	**State Applicator License #:**	**Applicator Signature:** **I certify that I have read and understand the conditions of this permit.**
Company Name:		
Company Address:		
Telephone:	**Cellular Telephone:**	**E-mail:**

Approved by:

Signature **Print Name** ***Date**

USACE John H Kerr Dam and Reservoir – Authorized Representative ***Permit expires at end of the calendar year**

This USACE authorization is provided based on presentation of proof of valid insurance and licensing documents by the applicator. This is not an endorsement or guarantee of quality of the services provided by the applicator. Shoreline permit holders may contract with any applicator holding a current authorization from the USACE to apply aquatic herbicides for the purpose of aquatic vegetation control at Kerr Reservoir. Applicators are responsible for compliance with all applicable laws and regulations including NPDES reporting requirements as administered by the appropriate state.

Permit Conditions:

1. Applicators must be licensed in the aquatics category by the appropriate state(s).
2. Applicators will utilize calibrated equipment to assure proper application rate in accordance with herbicide label instructions.
3. Commercial applicators must furnish a copy of their state applicator license/s and a Certificate of Insurance showing a minimum of $100,000 for property damage, $100,000 for personal injury to or death of one person, and $300,000 per occurrence.
4. Applicators must provide the USACE a completed Pre-Treatment Notification a minimum of 5 business days prior to proposed treatment date. Applicator must not proceed with treatment prior to receiving an approved Pre-Treatment Notification from the USACE.

5. Applicators must provide the USACE a complete Post Treatment Report within 14 days after the treatment.
6. Applicators must comply with all applicable federal, state and local laws and regulations including NPDES reporting requirements.
7. Pesticides used must be registered in the appropriate State. Use of pesticides classified as "restricted use" by the U.S. Environmental Protection Agency is prohibited.
8. Applicators must coordinate with the operators of water intakes of any type (drinking water, irrigation, industrial) in the vicinity of the application site to ensure compliance with all applicable water use restrictions and set back distances listed on the pesticide label and/or state pesticide regulations.
9. Applicators are responsible for posting notices of restrictions on site if required by the herbicide label and/or applicable state laws and regulations.
10. Applicators and the parties that have contracted the applicator's services are responsible for coordination with vessel owners to move vessels out of the herbicide application area and adjacent areas as desired prior to herbicide application.
11. Applicators release and agree to save and hold the United States harmless from any and all causes of action, suits at law or equity of claims or demands or from any liability of any nature whatsoever for or on account of any injuries or damages to persons or property growing out of the execution of and activities under this permit.
12. Applicators assume full responsibility for any damage claims arising from their activities. This includes damage to vessels and other personal property and replacement of or restitution for non-target vegetation, wildlife, or fish killed as a result of herbicide applications.
13. Applicators are responsible for reporting and cleanup of any spills and unauthorized discharges arising from their activities. In addition to any required state and federal reporting requirements, applicators must report any spills and unauthorized discharges to the USACE within 24 hrs.
14. Violation of permit conditions may result in revocation of this authorization.
15. Violation of permit conditions may be considered a violation of Title 36 Code of Federal Regulations, Chapter III Part 327. Violators are subject to fine and/or imprisonment. Shoreline permit holders engaging in unauthorized activities are also subject to revocation of their shoreline permit.
16. The USACE may terminate this permit at any time by giving written notice to the applicator.

AVMP Appendix C:

Aquatic Herbicide Pre-Treatment Notification form

Kerr Reservoir - Aquatic Herbicide Pre-Treatment Notification

(to be completed by the applicator and submitted to the USACE for review and approval prior to the herbicide application)

Date: _____
Applicator Name*: _____ Phone # :_____
USACE Aquatic Pesticide Applicator Permit # :_____
Customer Name:_____ Phone #:_____
USACE Shoreline Permit # (if applicable):_____
Location/Address:_____
>>Attach aerial photograph identifying the treatment area.

Proposed date for herbicide application:_____
Target pest:_____
Pesticide Trade Name, EPA #, and classification**:_____
_____
Form to be applied (liquid, granular): _____

Application Area (sq ft or acres):_____
Application Rate: _____
Mixture: _____
Quantity: _____
Application Equipment:_____

Applicable label water use restrictions:_____
_____
_____

Distance from nearest water intake/s***:

Drinking Water:_____+
Irrigation:_____
Industrial:_____

Name/s of POC/s for intake/s: _____

Other label restrictions to be Implemented:_____
_____

Approved:

Signature: **Print Name:** **Date:**
USACE John H Kerr Dam and Reservoir – Authorized Representative
Authorization expires at end of the calendar year

*The pesticide applicator is responsible for compliance with requirements on the USACE Kerr Reservoir Aquatic Pesticide Applicator Permit, the pesticide label, and all applicable local, state, and federal laws and regulations, including NPDES reporting requirements.
**The pesticide applicator is responsible for determining the appropriate herbicide and application rate in compliance with the product label and all applicable laws and regulations, including NPDES requirements.
***The pesticide applicator is responsible for notification of and coordination with water intake operators.

AVMP Appendix D:

Aquatic Herbicide Post Treatment Report

John H Kerr Reservoir - Aquatic Herbicide Post Treatment Report

(to be completed by the applicator and submitted to the USACE after the herbicide treatment)

Date: _____

Applicator Name*: _____ Phone # :_____

USACE Kerr Reservoir Aquatic Pesticide Applicator Permit # :_____

Customer Name:_____ Phone #:_____

USACE Shoreline Permit # (if applicable):_____

Location/Address:_____

Target pest:_____

Date of herbicide application:_____

Time of Day:_____

Pesticide Trade Name, EPA #, and classification**

_____

_____

Application Area (sq ft or acres):_____

Form applied: _____

_____

Mixture: _____

Application Rate: _____

Quantity Applied: _____

Application Equipment:_____

Air Temperature:_____

Water Temperature:_____

Relative Humidity: _____

Wind Speed and Direction: _____

Cloud Cover: _____

Name/s of water intake point/s of contact notified and date of notification***:_____

_____

_____

_____

Other Label Restrictions Implemented:_____

_____

_____

Post Treatment Evaluation (within 14 days of treatment), indicate amount of biomass reduction (% of reduction):_____

_____

Comments/Observations:_____

_____

_____

Date of evaluation: _____ (attach before and after photos if available)

USACE Receipt Confirmation -- Received by: _____Date: _____

*The pesticide applicator is responsible for compliance with requirements on the USACE Kerr Reservoir Aquatic Pesticide Applicator Permit, the pesticide label, and all applicable local, state, and federal laws and regulations, including NPDES requirements

**The pesticide applicator is responsible for determining the appropriate herbicide and application rate in compliance with the product label and all applicable laws and regulations, including NPDES reporting requirements.

***The pesticide applicator is responsible for notification of and coordination with water intake operators.

AVMP Appendix E:

Aquatic Vegetation Hand Removal Permit

Kerr Reservoir - Aquatic Vegetation Hand Removal Permit

Permit #:_____

Permit Instructions:
1. Read the entire permit
2. Complete Applicant Information
3. Sign Permit (by signing the permit the applicant agrees to all terms and conditions)
4. Submit original signed permit in person or by mail to USACE, 1930 Mays Chapel Road, Boydton, VA 23917
5. If approved, a signed copy of this permit will be returned to you.

Name (print):	Signature: I certify that I have read and understand the conditions of this permit.
Address (location of proposed hand removal:	
Mailing Address (if different from location above):	

Telephone:	Cellular Telephone:	E-mail:

1. Target Plant:_____
2. Removal method of (pulling, cutting, raking): _____
3. Estimated area of removal (include map or drawing): _____
4. Proposed Date of Removal (list specific date/s or indicate ongoing if actions will continue throughout the growing season):_____
5. Disposal Method:_____
6. Contractor Information (if applicable)
   Company Name:_____ Phone #:_____

Approved by:

Signature **Print Name** ***Date**

USACE John H Kerr Dam and Reservoir – Authorized Representative ***Permit expires at end of the calendar year**

Permit Conditions:

1. Applicant must not initiate plant removal until permit is approved. A site visit may be necessary prior to determination being made.
2. Plants targeted for removal may be removed by hand (pulling) or with hand tools (rakes and blades).
3. Pulled plants and plant cuttings must be removed from the water and disposed of properly.
4. Floating mats of vegetation may be pulled up and stranded on the shore in an area where the plants will not reenter the lake.
5. This permit does not authorized excavation of plants, use of power equipment, or access by vehicles or equipment onto government property.
6. At the end of the calendar year the Permittee must provide the USACE a written summary of plant hand removal actions including date/s of removal, tools used, estimate of area kept clear, and if re-growth occurred the time taken for re-grow and the amount of re-growth. Include before and after photos if available.
7. The Permittee is responsible for compliance with all applicable laws and regulations, including restrictions on transportation and disposal of noxious weeds.