

AQUATIC PLANT MANAGEMENT PLAN  
FOR  
U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT  
WATER RESOURCES PROJECTS  
SOUTH CAROLINA AND GEORGIA

Appendix A

CY 2018 Update

Annual Aquatic Plant Treatment Plan

and

Summary of Previous Year's  
Management Program

## **Aquatic Plant Treatment Plan CY 2018**

### **New Savannah Bluff Lock and Dam**

Periodic observations will be conducted to determine plant species, abundance, and distribution during the summer of 2018. Aquatic plants may be treated in the vicinity of the New Savannah Bluff Lock and Dam (NSBLD) using an appropriate plant specific herbicide whenever plant abundance has the potential to impact the operations of this facility. The Savannah District does not have the authority to perform aquatic plant management treatments beyond the boundaries of the NSBLD. Herbicide applications immediately upstream of the NSBLD will not reduce the water hyacinths' continued impacts to the boat ramp, courtesy dock, and buoy line since the source of the infestation extends well upstream of the area. As an alternative to herbicide applications, personnel from the J. Strom Thurmond Power Plant may alter flow rates over the spillway gates to remove the accumulation of water hyacinth or the upstream buoy line may be modified or temporarily removed to prevent the accumulation of water hyacinth on the buoy line.

### **J. Strom Thurmond Lake**

The lake level at the beginning of the growing season was approaching 8.5 feet below normal pool and remained around this elevation through most of the 2017 season. While the lake elevation was at or near full pool at the beginning of 2016, substantial rainfall deficits caused the lake level to drop to more than 10 feet below summer pool elevation by 1 December 2016. Plant growth varied greatly from area to area. In most areas, the hydrilla seldom exceeded three feet in height and was not problematic during the peak of the 2016 recreation season. While deficits continued into 2017 and lake levels remained low but stable in the 2017 growing season, hydrilla began to dominate many areas where it seemed to have disappeared in 2016.

Funding for aquatic plant management is available for the Thurmond Lake Project for fiscal year 2018. The J. Strom Thurmond Project staff will monitor hydrilla growth beginning in May. By mid to late July, treatment needs will be identified and prioritized. It is anticipated that funding may only be available to treat major Corps boat ramps if they are substantially impacted by nuisance aquatic vegetation. The treatment plans will be coordinated with the GADNR, SCDNR, local agencies, and affected outgrantees prior to implementation.

Treatment priorities will be established in accordance with the Aquatic Plant Management plan for U.S. Army Corps of Engineers, Savannah District Water Resources Project, South Carolina and Georgia (APMP). The APMP is available on the Thurmond Project website:

<http://www.sas.usace.army.mil/Portals/61/docs/lakes/thurmond/AquaticPlan.pdf> .

Either Reward with K-TEA or Komeen with Reward will be applied dependent upon site location, desired level of control, and cost per acre. It is anticipated that only one herbicide application per area will be made in 2018.

Existing populations of slender pondweed (*Potamogeton pusillus*), water primrose (*Ludwigia spp.*) and alligatorweed (*Alternanthera philoxeroides*) will continue to be monitored in 2018. No herbicide applications are anticipated unless these plants impact public recreation areas or operations to the pump storage at Richard B. Russell Dam. Selection of appropriate chemicals, acreage treated, and the timing of treatments will be determined by assessing the distribution and abundance of the plants. The treatment plans will be coordinated with the GADNR, SCDNR, local agencies, and affected outgrantees prior to implementation.

Adjoining property owners and other agencies may treat nuisance aquatic vegetation in accordance with the APMP.

The Avian Vacuolar Myelinopathy Plan (AVMP) and associated Environmental Assessment finalized in December 2016 are not intended to replace the APMP. The AVMP outlines procedures to reduce or eliminate impacts of AVM specifically on J. Strom Thurmond Lake.

Surveys of areas identified as having a high potential for bald eagle mortalities were conducted in September 2017. As a part of the AVMP, approximately 205 acres of hydrilla were identified and targeted for treatment in these areas (Bussey Point, Catfish Bay, and Cherokee Day Use). Contracts were also executed for the procurement of grass carp to be stocked at several locations beginning October 2017 and running through April 2019 as a part of the AVMP if required funding is available. Initial stockings of approximately 17,725 grass carp occurred in November 2017.

### **Richard B. Russell Lake**

Hydrilla was first discovered in Richard B. Russell Lake in the McCalla peninsula area during summer 2002 but has not reoccurred at this location since this time. Approximately one-acre of hydrilla was discovered in Bond Creek, a tributary of the Savannah River arm of Richard B. Russell Lake, in January, 2007 and was again found in 2009. This area has been surveyed annually since 2007, but the hydrilla has not increased in distribution or abundance. Brazilian elodea has consistently been detected in the same areas of Richard B. Russell Lake for the past 5-years and the abundance and distribution of this plant appears to be very stable. Approximately 5-10 acres of Brazilian elodea is still present in the Savannah River within 1 to 5 miles downstream of Hartwell Dam. A population of slender pondweed (*Potamogeton pusillus*) has periodically been present in the headwaters of J. Strom Thurmond Lake (RBR Tailwater) with densities requiring treatment in 2012 and 2017. Boat surveys of all known potentially nuisance populations will be conducted periodically throughout the summer and fall of 2017 to determine plant distribution and abundance. Most rangers at the Richard B. Russell Project have been trained to identify and report aquatic plants of concern that would be expected to occur in this area. No treatment is currently planned for 2018.

## **Hartwell Lake**

Aquatic plants have not become abundant in Hartwell Lake. Therefore, no treatment program is planned for CY 18. However, there is concern that hydrilla will be moved from J. Strom Thurmond Lake or Keowee Lake into Hartwell Lake. In an effort to identify the spread of hydrilla as early as possible, boat surveys will be conducted periodically throughout the summer and fall. Most rangers at the Hartwell Project have been trained to identify and report aquatic plants of concern that would be expected to occur in this area. Additionally, the Lake Hartwell Association membership has agreed to report any aquatic vegetation observed.

If hydrilla is located in Hartwell Lake, it is the intent of the Corps of Engineers to treat all known hydrilla infestations during CY 18 using herbicides to minimize the spread of hydrilla within the impoundment. However, if significant infestations are located before scheduled treatment, all treatment areas will be prioritized based on criteria established in the APMP.

Taste and odor issues related to a high density of blue-green algae in the Twenty-Six Mile Creek tributary of Hartwell Lake resulted in the need for Anderson Regional Joint Water System (ARJWS) to perform several treatment actions in the vicinity of their water intake in 2014, 2015, 2016 and 2017. ARJWS has retained the services of aquatic plant management consultants to closely monitor the density of blue-green algae in the vicinity of their intake in Spring and Summer 2018. According to ARJWS, treatments will be conducted in 2018 if necessary to combat taste and odor issues. The appropriate permits will be considered under the APMP at the time of application.

## Aquatic Plant Management Activity Summary CY 2017

### New Savannah Bluff Lock and Dam (NSLBD)

Aquatic plant populations in the upstream embayment were monitored periodically throughout the growing season. The following aquatic plants were identified: elephant ear, water hyacinth, elodea, fanwort, pickerelweed, and cattail. These plants did not impact operations at the NSBLD.

### J. Strom Thurmond Project

The growth rate and distribution of hydrilla was monitored from May through October. No new plant populations were located during routine monitoring activities. Plant growth varied greatly from area to area. In most areas, the hydrilla seldom exceeded three feet in height and was not problematic during the main recreation season. During late summer and early fall, use at some County boat ramps was impacted by hydrilla. Funds were not available in CY 17 to perform any herbicide applications. No treatments were performed under the APMP in 2017.

One permit was requested and issued to adjoining property owners to treat hydrilla around their docks. All herbicide applications were made by a licensed applicator using herbicides approved for the treatment of aquatic plants.

In October and early November of 2010, and again in September and early October of 2015, extensive boat surveys of the lake were conducted with assistance from Georgia Department of Natural Resources, South Carolina Department of Natural Resources, and Warnell School of Forestry and Natural Resources, University of Georgia.

The following table compares the findings of both surveys:

	2010 Survey	2015 Survey
Acres of available habitat lake wide (330 msl - 315 msl)	20,720	20,720
Total acres of hydrilla	<b>4,959</b>	<b>2,363</b>
Total acres where hydrilla is present(330-315 msl)	11,271	10,644
Estimated plant density	44%	22.2%
Percentage of available habitat occupied by hydrilla	24%	11%
Percentage total lake surface impacted by hydrilla (Normal summer elevation - 330' msl)	7.0%	3.3%
Acres not surveyed	1,939	1,250

All acreage estimates were determined by estimating the area between elevations 330' msl and 315' msl using 1-foot contour bathymetry data. Areas that were inaccessible by boat due to low lake levels were not surveyed. Plans are to replicate this survey in 2019.

Maps showing the known locations of hydrilla infestations are on file at the J. Strom Thurmond Lake Operations Project Manager's Office. A map is also posted on the J. Strom Thurmond Project website:  
[http://www.sas.usace.army.mil/Portals/61/siteimages/Lakes/thurmond/Hydrilla\\_Dist\\_2014.pdf](http://www.sas.usace.army.mil/Portals/61/siteimages/Lakes/thurmond/Hydrilla_Dist_2014.pdf)

In 2010, approximately 32 acres of water primrose (*Ludwigia spp.*) and 10 acres of alligatorweed (*Alternanthera philoxeroides*) were discovered growing in the Little River, SC and Dry Fork Creek portions of the lake. In 2011, an additional 62.2 acres of alligator weed was found in Little River, SC and 5.1 acres Big Creek, GA. These plants have continued to expand their distribution within Little River, SC. Plant growth did not impact public recreation area uses.

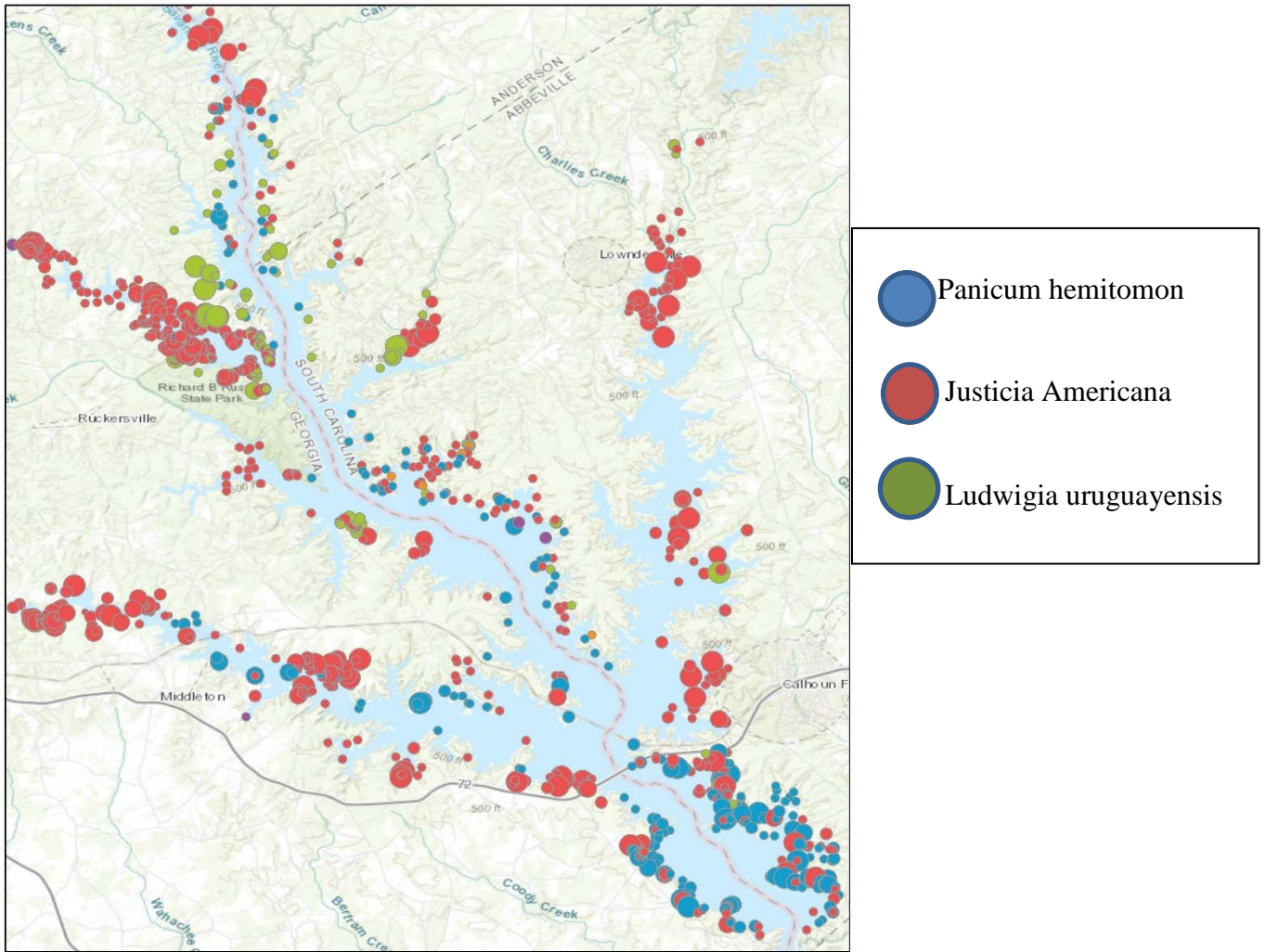
In July 2017, approximately 200 acres of slender pondweed (*Potamogeton pusillus*) was treated in the Savannah River headwaters of J. Strom Thurmond Lake (RBR Tailwater). This same area had previously been treated in 2012 for similar plant density issues related to the fouling of trash racks on the RBR Pumped Storage Units.

## Richard B. Russell Project

A comprehensive aquatic plant survey of RBR Lake was conducted in September and October of 2017. This survey was a joint effort of the Georgia Department of Natural Resources, South Carolina Department of Natural Resources and the U.S. Army Corp of Engineers. While the primary objective of the survey was to document the results of over 20-years of aquatic plant restoration efforts, all submersed and emergent species that were present were noted.

The survey noted 12.3 miles of shoreline emergent plant coverage representing 2.3% of RBR Lake's shoreline miles. The predominant species were; *Justicia Americana* (64%), *Panicum hemitomon* (24%), and *Ludwigia uruguayensis* (11%).

### RBR PLANT DISTRIBUTION



## **Hartwell Project**

Periodic boat surveys of the lake were performed throughout the growing season. The distribution and abundance of water primrose in Eighteen Mile Creek does not appear to have increased relative to previous years.

Taste and odor issues were reported at multiple municipal water intakes in Hartwell Lake since the Summer of 2013. Taste and odor issues related to a high density of blue-green algae in the Twenty-Six Mile Creek tributary of Hartwell Lake resulted in the need for Anderson Regional Joint Water System (ARJWS) to perform several treatment actions in the vicinity of their water intake. These treatments were permitted in accordance with the APMP and were conducted by a licensed applicator in the Spring and Summer of 2017 using Algimycin.