Summary of Public Comments, Responses, and Plan Modifications to the Draft 2023 South Carolina Aquatic Plant Management Plan

Positive: 7
Negative: 1
Neutral: 6

Comments:

From: RD
Subject: Lake Greenwood
Date: Fri 1/13/2023 6:24 PM
I hope there is something in the plan to deal with the invasive plants/weeds that grow more than three feet tall in Lake Greenwood. They will take over a small/medium cove. They are especially bad close to the shoreline.

From: RR
Subject: Phragmites
Date: Fri 1/13/2023 8:23 PM

I see that Georgetown County has numerous areas that is included in the list of sites being treated for invasive plants. I have property in Georgetown County, actually the City of Georgetown that has a problem with one of the invasive plants that is listed, phragmites. The property's in the city of Georgetown. It is a small area, probably only 1/3 to 1/2 acre of the marsh but the phragmites have totally covered the marsh making impossible for the cattails which use to be there to survive. The red wing blackbirds which use to be plentiful are no longer observed. Of course the view of the river and boating is totally blocked. Is this a problem that some agency can give me some guidance or support? What are my options? Thank you for your assistance.

From: PL
Subject: Aquatic vegetation
Date: Mon 1/16/2023 7:20 PM

AGAIN, you take the side of ruining aquatic vegetation at the expense of wildlife. This time I will encourage a law suit.

From: AG
Subject: Aquatic Invasive Weeds
Date: Fri 1/20/2023 1:43 PM

Good afternoon,

to whom it may concern, I thank you for the opportunity to voice my concerns about the invasive aquatic weeds in Lake Moultrie.

I live on a small canal. I have watched through the years, as surrounding canals have been covered over by weeds and are now impenetrable. I am truly concerned that the few remaining canals that lead to my home will also become unnavigable and will close off the access that I have to the lake. My mother has owned this property for close to 50 years and has recently transferred ownership to me. Please, I beg

you to continue to send the airboat to spray the weeds in the canals that lead up to my home. I thank you in advance for keeping the waterways clear and I truly appreciate your efforts!

Would there be any way to dig out the last canal to keep the entrance to the lake accessible?Thank you for your help with these concerns. God bless!

From: RK
Subject: Feedback on Proposed 2023 Aquatic Plant Management Plan
Date: Sun 1/22/2023 4:15 PM

Thank you for posting the proposed plan, and for allowing public input. This input is specific to Lake Wateree.

The addition of funding for treatment of Hydrilla in Wateree is welcome, as Duke Energy discovered it after many years of absence in their recent invasive species survey.

But I would also urge DNR to add funding for treatment of filamentous algae. As you are aware, lyngbya/microseria are increasing in presence on this lake. It's not unusual to see smaller, shallow coves with heavy infestations of mats. The Dutchman Creek, Wateree Creek, Lake Wateree State Park, White Oak Creek areas are all good examples of a significant and growing presence of algal mats. Duke's invasive plant species reports do an excellent job showing the locations. With the increasing inflow of nutrients from upstream in the Catawba River basin, this problem is continuing to worsen.

From: SCCPC
Subject: Public Comments by Santee Cooper Counties Promotion Commission
Date: Mon 1/30/2023 1:53 PM

January 25, 2023

The Santee Cooper Counties Promotion Commission continues to support stocking of triploid grass carp as a best management practice in controlling hydrilla on the Santee Cooper lakes. Biological control is, in our opinion, a much better option than herbicides. It appears from our observation and from comments we receive from fishermen, property owners and yearly tourists that the maintenance stocking of grass carp has reduced hydrilla and allowed for the return of our native submersed and emergent vegetation.

The Santee Cooper Counties Promotion Commission was created by the South Carolina General Assembly to ''improve, enlarge, increase and otherwise enhance recreation and development in the area around the Santee Cooper lakes in the counties of Berkeley, Calhoun, Clarendon, Orangeburg and Sumter. The Santee Cooper lakes were ranked 3rd in the national and 1st in the Southeast in 2021 by BASSMASTER. We believe the best way to maintain our lakes and enhance their status as a major tourist attraction and economic engine for our counties is to balance the interests of all lake users. Managing invasive species Is critical to water quality. We highly support the current method of stocking grass carp.

From: MM
Subject: SCDNA Plan
Date: Mon 1/30/2023 4:32 PM

I live on Lake Wateree, and serve on the board of the Lake Wateree Association. My wife and I live on a cove on the lake, and have observed the increase of algae the past two years. Algae is the most invasive species here, and it's a serious problem in other SC lakes a well.

Yet I see no funds allocated for this need to control and eliminate algae in you Plan. I think it's a serious omission, and a great deal of funds should be included in the Plan.

From: DG
Subject: Invasive Plant
Date: Mon 2/6/2023 2:00 PM

I support the invasive plant management plan .

From: DC
Subject: Aquatic Plant Management Draft
Date: Thu 2/9/2023 8:49 AM

I fully support DNR and the Plant Management Council's draft plan for 2023. Having seen what unchecked invasive weeds can and will do to our lakes, it's comforting to know that professionals like those at DNR and the Council are diligently working to control the weeds and other invasive species. Full speed ahead.

From: TN
Subject: 2023 SC Aquatic Plant Management Plan
Date: Wed 2/15/2023 2:47 PM

I support the 2023 SC Aquatic Plant Management Plan as written. The use of biological control such as triploid grass carp and chemical control is a balanced approach to controlling invasive species.

From: RS
Subject: 2023 South Carolina Aquatic Plant Management Plan
Date: Wed 2/15/2023 2:58 PM

Good Afternoon,

I've been in the aquatic field for 30 years and I would support the 2023 SC Aquatic Plant Management Plan as written. Biological control such as triploid grass carp and aquatic chemical control is a balanced approach to controlling invasive species.

From: CB
Subject: Aquatic Plant Management Plan Comment
Date: Wed 2/15/2023 3:53 PM

Members of the Aquatic Plant Management Council,

I support the 2023 SC Aquatic Plant Management Plan as written.

The Santee Cooper lakes are currently thriving with a variety of submersed native species. Although water quality conditions will inevitably impact submersed plant growth, the current plan to maintain the standing population of grass carp with maintenance stockings will give submersed native plants their best chance to continue to thrive while keeping invasive species in check.

Thank you

From: CM
Subject: 2023 SC Aquatic Plant Management Plan
Date: Wed 2/15/2023 4:45 PM

Greetings,

I support the 2023 SC Aquatic Plant Management Plan as written. The use of biological control such as triploid grass carp in conjunction with chemical control is an integrated and balanced approach to controlling invasive species. Using all the tools in the tool box simultaneously allows for a more balanced ecosystem.

If you have any questions, please do not hesitate to contact me at the information below in my signature line.

All the best

From: BJ
Subject: 2023 SC Aquatic Management Plan Comments from Catawba Riverkeeper
Date: Wed 2/15/2023 10:57 PM

Catawba Riverkeeper is a member-funded environmental nonprofit that educates, advocates, and protects the Catawba-Wateree River and all its tributaries. Our organization represents over 6,000 active members who rely on the watershed for drinking water, recreation, and electricity. Lake Wateree is a major reservoir in the watershed which supplies hydroelectric power, recreational access, municipal drinking water, and is a regional economic driver. The lake also has a history of nuisance aquatic vegetation. We appreciate SCDNR and the Council's work to control hydrilla in the reservoir and the opportunity to comment on the draft 2023 S.C. Aquatic Plant Management Plan. We make the following recommendations:

1. Fund a pilot Microseira wollei (formally Lyngbya) herbicide treatment.

Starting in 2014, each year the agency has recognized the presence of filamentous algae in the reservoir, listed copper based herbicide as a control, and allocated $0 for application. In the most recent shoreline survey (2021) Duke Energy found it at 8% of 1,471 sites. It is widespread across the reservoir (Figure 1) and can cause numerous adverse impacts such as toxin production, harboring fecal bacteria, devaluing property, impeding recreation, and degrading wildlife habitat. Recently studies have found a chelated copper formulation (Captain® XTR) to be an effective treatment.

However, we recognize that this approach to M. wollei management may be ineffective or not applicable to the Lake Wateree infestation. In addition Duke Energy has already begun an unusually low and prolonged drawdown to make dam modifications. The long drawdown (14 months) will shift submerged habitat and possibly rates of M. wollei growth. Successful treatments could be of enormous value for the 2024 summer when lake levels return to full pond and the shallow habitat is restored. We recommend that the agency fund a pilot study with various control methods in 2023 and begin searching for an effective treatment.

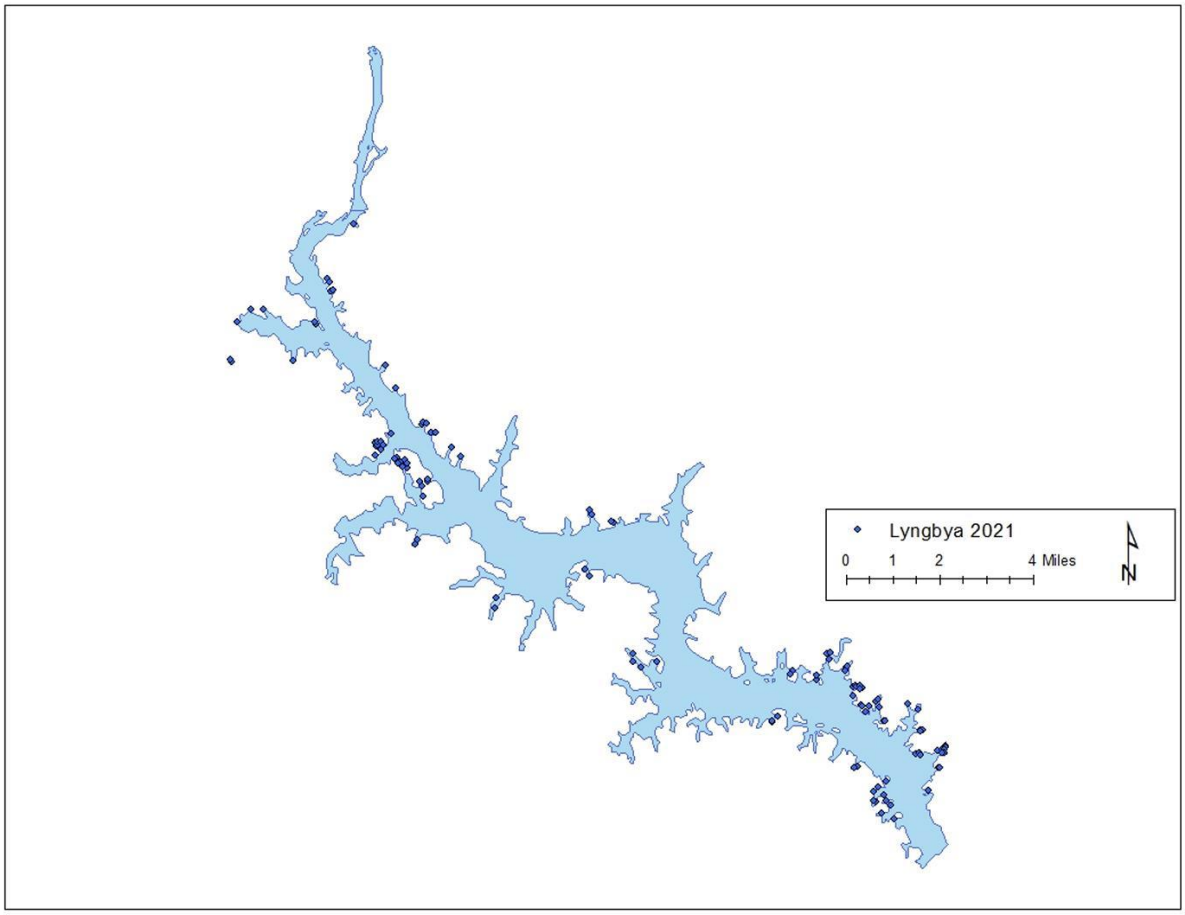

Figure 1. M. wollei (formally Lyngbya) distribution in Lake Watere, Duke Energy, 2021

2. Plan the introduction of desirable native plant species for 2024.

Since 2002 the long term management strategy for Lake Wateree has included cultivating native plants species and the introduction of desirable native plant species. In addition to habitat enhancement, desirable submerged aquatic vegetation (SAV) has been used to limit the growth of nuisance species including M. wollie. In 2022 Catawba Riverkeeper applied for a Duke Habitat Enhancement Program grant to pilot the introduction of Vallisneria for this purpose.

The application was ultimately unsuccessful due to concerns from the reviewing committee, including lake levels, and concerns from SCDNR about the plants proposed for introduction. We chose Vallisneria because of our application partner's previous experience using the SAV to replace M. wollie and their ability to donate the plants for the necessary grant match. There is significant interest and resources available from the Lake Wateree Association, researchers at USC, Duke Energy, and our organization to support a SCDNR plan for SAV introduction in Lake Wateree.

For the River

Response:

1) **Objections to grass carp stocking in the Santee Cooper lakes.**
   According to Nicole Kish, DNR's Assistant Hatchery Coordinator, "100% of the grass carp sold and stocked in South Carolina have been tested for sterility and verified triploid. Conditions of the

SCDNR Nonindigenous Species permit state that permit holders must ploidy-test and verify the sterility of any and all grass carp they intend to sell within the State of South Carolina. SCDNR staff independently verify these results by re-testing a subsample of each shipment before authorizing the vendors to take their fish to market.

To sell triploid grass carp in South Carolina, producers and/or distributors must first apply to be a licensed Commercial Aquaculture and Nonindigenous Species vendor with SCDNR. Applications are reviewed by Department biologists and assessed for potential adverse impacts upon the natural resources of the State, and vendors who wish to sell triploid grass carp must describe the means through which they test and verify ploidy. Many of South Carolina's grass carp vendors are also federally certified under the US Fish and Wildlife Service Triploid Grass Carp Inspection and Certification Program.

Because non-sterile or reproducing grass carp are illegal to possess or import, distributors are required to pre-test 100% of their proposed shipment for sterility using a Coulter Counter. Only then may they request a Transportation Permit from the Department, which authorizes the distributor only to bring triploid grass carp directly to the testing facility at the Cohen Campbell Fisheries Center.

SCDNR staff will then pull a random 5% sample, up to a maximum of 120 fish, to retest and independently verify private sterility testing. The U.S. Fish and Wildlife Service Standards for the National Grass Carp Inspection and Certification Program recommends a sample size of 120 fish for shipments of 1500 fish or greater. Department staff test the 5% sample for ploidy using a Coulter Counter and visually inspect the fish for scars from previous ploidy treatments.

Discovery of a single diploid fish results in a failed shipment. If the shipment fails, vendors may choose to either have their entire shipment escorted back to state lines by SCDNR law enforcement or to have all their grass carp euthanized on site at the Cohen Campbell Fisheries Center.

Since 2010, SCDNR staff have tested 1,132 separate shipments. Only 9 have failed."

The primary objective of Santee Cooper aquatic plant management program is to foster a diverse native aquatic plant community by controlling invasive and nuisance aquatic plants throughout Lake Marion and Lake Moultrie while ensuring all lake user group's interest are considered.

Santee Cooper's current program utilizes integrated pest management (IPM) principles. IPM is an effective and environmentally sensitive approach to manage pests. Through continuing education, cooperative university-level research, and professional training, Santee Cooper lake managers are well versed on the latest methodology and product availability. With this knowledge and various control methods Santee Cooper manages nuisance and invasive aquatic plant species by the most effective means, and with the least possible hazard to people, property, and the environment.

Santee Cooper currently utilizes annual boat surveys, drone surveys and multispectral imagery surveys collected by satellite to monitor aquatic plant populations on Lake Marion and Lake Moultrie. Utilization of satellite imagery began in 2019. Following the transition from fixed-wing hyperspectral imagery to satellite multispectral Santee Cooper began reporting acreages detected and analyzed by the third-party vendor to The Council. Boat and drone surveys are used to verify detected species and survey areas where satellite imagery cannot be utilized. Acreage estimates from boat and drone surveys are not added to total acreage reported. This decision was made by Santee Cooper lake management staff to utilize the most consistent data available. While satellite

imagery does have limitations and can be impacted by environmental conditions, it provides a higher level of consistency than boat and drone surveys. Lake users also report nuisance and invasive species to Santee Cooper lake managers through website forms, email and phone calls. All reports are documented in a database. These surveys and public notifications allow lake managers to identify problematic species, prioritize treatment areas and select the best management tool. Santee Cooper's aquatic plant management tools include biological control, chemical control, educational outreach, and mechanical removal when applicable. Grass carp are a biological tool used to target the invasive species *Hydrilla*.

If there is not a sufficient population of grass carp in the system *Hydrilla* can grow rapidly and outcompete native vegetation. If that occurs, larger stockings of carp may be needed to effectively control the *Hydrilla*. Large reactive stockings are a detriment to native vegetation. The Santee Cooper grass carp stocking program goal is to reach a true maintenance stocking protocol. A true maintenance stocking is replacing the annual population mortality. Santee Cooper lake management staff utilize all available data and their direct experience with invasive species management to estimate the correct grass carp population to control *Hydrilla* while limiting negative impacts to native vegetation on the lake system. True maintenance stocking protocol has never been reached in the history of the stocking program due to numerous reactive decisions. Santee Cooper lake management staff prefer balanced management strategies over reactive management strategies and seek to avoid large scale stockings.

The 12,000 triploid grass carp scheduled to be stocked into the Santee Cooper lakes this year is slightly above the mortality rate for that system. This was recommended because of the 48% increase in *Hydrilla* acres detected by the satellite multispectral survey. Santee Cooper staff also reported regularly identifying *Hydrilla* mixed with the native vegetation and provided pictures and videos collected during drone and boat surveys.

The Council approved stocking 10,000 grass carp annually from 2017 through 2022 in the Santee Cooper lakes. These stockings did not replace annual mortality and effectively lowered the grass carp population while maintaining a diverse age structure. Having multiple ages classes in the system takes advantage of the higher feeding rate of the younger fish, which can also access shallow water to consume newly sprouted *Hydrilla*. The goal was to have multiple age classes in the system with an overall coverage of 1 triploid carp for every 5-6 surface acres of water, if those numbers were sufficient to adequately control the *Hydrilla*. We are now at a point where we feel we need to make small adjustments to the annual stocking rate to account for the changes we are seeing in the *Hydrilla* population. The current grass carp population is 1 carp per 4.64 surface acres of water (160,000 acres). When considering all information provided, including the increase in *Hydrilla* detected by the satellite multispectral survey, we believe the current or slightly higher grass carp population may be adequate to control *Hydrilla* without harming the native vegetation. This decision is more favorable than introducing hundreds of thousands of triploid carp into the system periodically as a reaction to increasing numbers of hydrilla. We realize that doing large, periodic stockings are a detriment to the system by reducing natives and reducing habitat for fish and wildlife.

EPA approved aquatic herbicides continue to be used to control localized growth in priority use areas. These types of treatments are very expensive, and the resources are not available to do on a broad scale.

2) Lake Wateree issues.

Lake Wateree is under the control of Duke Energy. Per their FERC license, they are responsible for vegetation control. DNR assists them as they request with consultations, treatments, and sterile grass carp stockings on all their lakes in SC. DNR will cost share with Duke on treatments and carp stockings if they request assistance with those actions.

Treatments can be done to help control the algae, but without locating the source of the excess nutrients in the system, any treatments will only provide short-term relief and will have to be retreated on a very regular basis, possibly multiple times per year.

3) **Lake Greenwood issues.**
Lake Greenwood is under the control of the Greenwood County Lake Management Department. DNR assists them as they request with consultations, treatments, and sterile grass carp stockings. DNR will cost share with Greenwood County on treatments and carp stockings if they request assistance with those actions.

Vallisneria is a native species that DNR encourages lake owners to allow to grow. However, we understand that it can become problematic. In the cases where it is growing in areas that create issues with navigation and access, we do recommend that it be treated, while allowing it to continue to grow in areas where it is not causing issues or the land adjacent to the lake has not been developed. The untreated areas provide important fish and wildlife habitat.

4) **Lake Moultrie canals.**
This is something that the Santee Cooper staff addresses on a regular basis. This comment was forwarded to them to investigate.

5) **Georgetown County phragmites.**
In Georgetown County and several others along the coast, the property lines extend to the river. These areas, which are often marsh or old rice fields, are private property. The laws that created DNR's Aquatic Nuisance Species Program (Section 49-6-10 and 49-6-20) says that the money we receive from the Water Recreation Fund may only be used to treat public waters. Therefore, *Phragmites* that is growing on private property must be treated at the property owner's cost.