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FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

TRIPLOID GRASS CARP STOCKING FOR AQUATIC VEGETATION MANAGEMENT IN BEECH RESERVOIR

In recent years, invasive aquatic plants have continued to spread within the Tennessee Valley Authority's (TVA) reservoir system, causing environmental and economic impacts. The spread of the invasive species hydrilla (*Hydrilla verticillata*) throughout the TVA system poses the greatest threat. Hydrilla is capable of rapid growth and reproduction given ideal growing conditions. Hydrilla plant fragments can be easily transported from one waterbody to another via recreational and commercial boating. These transportation and reproduction methods have aided in hydrilla establishment throughout the valley causing conflicts with water resource uses.

Among the reservoirs affected by the spread of hydrilla is Beech Reservoir, located in Henderson County, Tennessee. Beech Reservoir serves the central western Tennessee region along the Beech River by providing flood damage reduction and various public recreational opportunities including boating, swimming, fishing, and hunting. The reservoir also serves as the primary drinking source for the City of Lexington, Tennessee, which has a population of nearly 8,000. Recent introductions of hydrilla into Beech Reservoir have severely impacted various uses of the reservoir and the continued spread of the plant within and beyond the reservoir may increase those impacts.

TVA proposes to introduce sterile Triploid Grass carp (*Ctenopharyngodon idella*) as a means of controlling the spread of hydrilla within Beech Reservoir. Grass carp eat submersed aquatic vegetation including hydrilla. Triploid fish are sterile and unable to naturally reproduce in river systems, which enables the fish populations to be easily monitored. Introduction of certified Triploid Grass Carp (CTGC) into a reservoir to control invasive aquatic plant growth is an effective measure to address new infestations of hydrilla that would otherwise continue to spread. Stocking CTGC is cost effective, provides long term aquatic vegetation management, and reduces the need for large scale herbicide and mechanical management techniques once a plant species becomes established.

Alternatives

The proposed action is the subject of an environmental assessment (EA) prepared by TVA. The EA addresses two alternatives. Under the No Action Alternative, TVA would not stock Beech Reservoir with CTGC to address the spread of hydrilla. TVA would continue to manage the aquatic vegetation in this reservoir as it currently does, using its reservoir specific, integrated management approach utilizing targeted herbicide applications in high use public areas such as boat ramps and courtesy docks and the use of mechanical harvesters to open up access to deeper water. These approaches are short term, usually lasting weeks at a time as hydrilla plants grow and re-grow quickly. Such action is not expected to manage the proliferation of hydrilla in the majority of the Reservoir.

Under the Proposed Action Alternative, TVA would stock CTGC for maximized control of hydrilla into Beech Reservoir. As part of TVA's integrated management approach, TVA would add biological control, consisting of sustained, incremental stocking of CTGC, supplemented by limited use of chemical control (application of herbicides) to control hydrilla. Mechanical removal of nuisance aquatic vegetation may also be used as needed when deemed necessary

by program staff. Mechanical removal and chemical control would be implemented according to the methods described in TVA's 1993 Aquatic Plant Management Supplemental Environmental Impact Statement (EIS). TVA would obtain the necessary permits/approvals and follow all procedures required by the US Fish and Wildlife Service and Tennessee Wildlife Resource Agency before and during stocking of CTGC. TVA would survey standing hydrilla biomass and coverage within Beech Reservoir annually to inform all management decisions. TVA would also continue to monitor other reservoirs within the Beech River system (i.e., Cedar, Dogwood, Lost Creek, Pin Oak, Pine, Redbud, and Sycamore reservoirs) for early hydrilla detection. Should hydrilla introductions occur in these reservoirs, TVA would consider if survey and stocking protocol described in this document should be implemented as funding allows and subject to additional environmental review. The Proposed Action Alternative is TVA's preferred alternative. The EA is incorporated herein by reference.

TVA evaluated a range of alternatives for addressing the spread of nuisance aquatic vegetation in its 1993 Supplemental EIS. These included various other biological controls, mechanical controls (harvesting), physical controls (barrier mats), and water level manipulation. None of these alternatives fully meets TVA's objectives, purpose, or need for the project. TVA also considered ceasing all current actions to control hydrilla on Beech Reservoir. However, this alternative would allow hydrilla to grow exponentially and negatively impact the Reservoir.

Impacts Assessment

In the EA, TVA identified relevant environmental issues and reviewed the potential impacts of implementing the project. The proposed action would have no or negligible impacts on air quality; cultural resources; floodplains; water supply; solid and hazardous waste; navigation; noise; terrestrial vegetation; endangered, threatened, or special status plant or aquatic species; transportation; visual resources; land use; natural areas; scenic rivers; prime farmland; or groundwater. The implementation of the Proposed Action Alternative is not expected to negatively affect common wildlife populations and may result in indirect, direct and cumulative benefits to some specific common wildlife species.

The stocking of Beech Reservoir with CTGC would have a minor impact on the ecosystem of the Reservoir as the CTGC begin to feed on hydrilla. This would lead to a decrease in hydrilla biomass and a shift in aquatic species composition and nutrient levels. However, this shift would not impact the overall production (aquatic life, nutrients, etc.) in the reservoir. There is a minor possibility that the introduction of CTGC could drastically reduce aquatic plants in the reservoir and create an algae dominated system. However, TVA's proposed annual monitoring and low to moderate maintenance stocking would greatly reduce the risk of complete aquatic plant removal. Therefore, there would likely be only minor impacts to aquatic plants as hydrilla is reduced over time.

Unavoidable losses of aquatic bed wetlands and localized aquatic habitat would initially occur as CTGC decrease the volume of hydrilla within the aquatic bed wetlands. There would be minor, secondary impacts to aquatic communities (invertebrates, zooplankton, fish) that utilize these aquatic bed wetlands as habitat. TVA has determined that no practicable alternatives exist to remove hydrilla from the existing aquatic wetland beds and that the goals of the proposed action are therefore consistent with the provisions of Executive Order 11990. There is a potential for minor long-term beneficial impacts on wetlands as native populations of submerged, aquatic bed wetlands would reestablish. Grass carp do not consume emergent wetland vegetation; therefore, no direct, indirect or cumulative impacts on the 6 acres of emergent wetlands in the reservoir would occur. No direct, indirect or cumulative impacts to forested wetlands are anticipated under this alternative.

Reviews of the TVA Natural Heritage Database indicated that one state-listed species (northern pine snake) and no federally listed species exist within three miles of the project area. No federally listed species have been documented in Henderson County, Tennessee. However, the U.S. Fish and Wildlife Service has determined that the federally endangered Indiana bat, federally threatened northern long-eared bat (NLEB), and federally protected bald eagle have the potential to occur Henderson County. Suitable foraging habitat for the bald eagle, NLEB and Indiana bat occurs over Beech Reservoir; however, no suitable roosting habitat for the NLEB or Indiana bat occurs within the project area. Open water would continue to be available for foraging bats under this proposed alternative. Therefore, the Indiana bat and NLEB would not be directly, indirectly or cumulatively impacted by the proposed actions. The introduced grass carp would provide an additional food source to bald eagles. The presence of grass carp would keep open water habitats exposed allowing foraging eagles to easily find prey; therefore, bald eagles may benefit from the proposed action alternative. No suitable habitat for the northern pine snake occurs within the project area; therefore, no impacts to this species would occur under the proposed action.

The Proposed Action Alternative would lead to a reduction in the density of hydrilla in open water habitat and around existing recreational facilities, which would provide optimum conditions for recreational activities on Beech Reservoir. Aquatic plants would continue to provide some benefits to boat fishing and waterfowl watching/hunting activities while opportunities for other activities such as general boating, swimming, and shoreline camping would be enhanced. Therefore, beneficial indirect, direct and cumulative recreational impacts are anticipated under the Proposed Action Alternative. This increase in recreational activities would also lead to beneficial direct, indirect and cumulative impacts to the local economy. There would be no disproportionate impacts on minority or poverty communities.

Public Involvement

TVA posted the draft EA on its website for a 45-day public comment period and requested the public to submit comments via mail or email. TVA did not receive any comments during the comment period.

Mitigation Measures

TVA did not identify any non-routine measures necessary to avoid, minimize, or mitigate adverse impacts on the environment.

Conclusion and Findings

Based on the findings and the analyses in the EA, we conclude that the proposed action of TVA stocking CTGC for maximized control of hydrilla into Beech Reservoir. Accordingly, an EIS is not required.

Susan Jacks

Susan R. Jacks
Senior Manager
Project Environmental Planning
Tennessee Valley Authority

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Date Signed