

Harris Chain of Lakes Restoration Council 2003 Report to the Florida State Legislature



*Great Blue
Heron*

Executive Summary

The Harris Chain of Lakes Restoration Council (Council) was established during the 2001 Florida legislative session and, as required by Chapter 373.467 of the Florida Statutes (F.S.), has prepared this *2003 Report to the Florida State Legislature*. The purpose of the Council is to convene regular meetings in order to assess various restoration techniques and management practices to improve water quality and fisheries habitats within the Harris Chain of Lakes. The 2002 Report discussed information gathered during technical presentations and workshops held from December 2001 through November 2002. The Council reviewed numerous restoration alternatives and adopted the following restoration priorities:

1. in-lake dredging;
2. lake level fluctuation;
3. habitat, fisheries, and vegetation;
4. additional issues related to water quality; and
5. restoration of natural systems.

During the period of December 2002 through October 2003 the Council convened nine regular monthly meetings and attended one technical workshop. The Council was provided technical information regarding impacts of historic and existing management practices on water quality, fisheries habitat, and recreational use of water bodies in the Harris Chain of Lakes and associated watersheds in the Upper Ocklawaha River Basin (UORB). Technical presentations were made and information was provided by several state and local agencies including the St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection (FDEP), Florida Fish and Wildlife Conservation Commission (FWCC), Lake County Water Authority (LCWA), University of Florida (UF), and the UF Institute of Food and Agricultural Sciences (IFAS). As required by the enacting legislation a Technical Advisory Group (TAG) was formed of representatives from these groups and served the Council through the year. Additional information was provided by both representatives of private industry, private citizens, and other agencies.

Through the course of the reporting period the Council developed specific recommendations concerning the restoration initiatives and lake management practices as described below:



White Ibis

Lake Level Fluctuation

This lake management issue involves enhanced lake level fluctuation which will provide a wider range of fluctuations for the lakes and aide in restoring the natural vegetation and habitat, and ultimately improve water quality. Water levels in the Harris Chain of Lakes have been largely controlled by weirs, dams and locks. Poor water quality and habitat within the Harris Chain of Lakes can be partially attributed to 40 years of these artificially controlled water levels in the lakes. The SJRWMD proposed an improved water level fluctuation schedule that provides for a wider range of fluctuations.

The Council supports and voted to approve implementation of the enhanced lake level fluctuation schedules presented by the SJRWMD, as a beneficial lake management practice.

Access Canal Dredging

This lake management issue involves the availability of boating access during periods of lake level fluctuation, drawdown or drought. The LCWA has received permit coverage to conduct access canal dredging in Lake Griffin and is in the process of receiving releases from homeowners adjacent to the areas that will be dredged. Access canal dredging is scheduled to be performed prior to implementing the enhanced lake level fluctuation schedule.

The Council supports and voted to approve access canal dredging as a beneficial lake management practice. The Council approved a resolution requesting the SJRWMD transfer \$500,000 in State Appropriations to the LCWA for the purpose of access canal dredging.

Lake Littoral Zone Revegetation / Plant Management

This restoration technique involves better management of near-shore aquatic vegetation in order to provide improved fisheries habitat and water quality. The LCWA, in collaboration with the SJRWMD and FWCC, has prepared an “Initiative for Aquatic Habitat Enhancement in Lakes of the Upper Ocklawaha River Basin” which addresses these issues.

The Council supports various aspects of the Habitat Initiative including enhanced near-shore aquatic vegetation efforts which will provide improved fisheries habitat and improved water quality.

Rough Fish Harvest

This lake management issue involves the potential reduction of phosphorus and improvement of water quality through the removal of rough fish, primarily gizzard shad, from the lakes. Estimates of the number of shad harvested and the amount of phosphorus reduction that may be associated with their removal were presented to the Council by the SJRWMD. The Council viewed these efforts as an experimental investigation.



Cattle Egret

The Council is seeking an independent evaluation of the information presented by the SJRWMD, prior to endorsing it as an approved method of water quality improvement. The Council supports the ongoing research.

Dredging of Resuspendable Sediments

This lake management technique involves potential water quality benefits from dredging the resuspendable portion of sediments from Lake Griffin, as a method to remove phosphorus and other nutrients from the lake. Information was provided to the Council during regular monthly meetings and via a LCWA workshop which presented the current information available on this technology. The Council reviewed the information provided on the dredging of resuspendable sediments from lake bottoms as a method of improving water quality.

The Council agreed to not pursue this lake management practice based on the information presented, including the lack of demonstrated substantial water quality benefits and the high costs associated with this technology.

Alum Treatment of Dredged Material

This nutrient management technique involves the disposition of phosphorus-rich sediments that will be removed during access canal dredging. Alum, a compound of aluminum salts which has the ability to bind with phosphorus, has been a proven treatment method for minimizing available phosphorus in phosphorus-rich sediments.

The Council agreed to support the utilization of alum treatment of the lake sediments and pore water to be disposed as a result of access canal dredging.

Alum Treatment of Marsh Flow-ways

Another aspect of this nutrient management technique is alum treatment within marsh flow-ways in order to minimize the amount of available phosphorus and enhance the ability of the flow-way to provide nutrient reduction and other water quality benefits to lake water which is passed through the flow-way.

The Council will continue to review information on the success of marsh flow-way alum treatments.

Whole-lake Alum Treatments

The Council also reviewed information on whole-lake alum treatment and whether it would provide significant phosphorus reductions in the lakes. The SJRWMD presented information that whole-lake alum treatments should only be utilized in lakes with long residence time of the water within the lakes. Lake Yale is the only lake in the chain with a residence time deemed suitable for this treatment technique.



*Fulvous
Whistling Ducks*

The Council reviewed the information presented on whole-lake alum treatments and agreed to exclude this technique as a recommended lake management practice.

Marsh Flow-way Systems

Another water quality issue discussed was the effectiveness of utilizing marsh flow-way systems as an effective alternative for phosphorus reduction of phosphorus-rich lake water. The Council was presented information on the operation of the Lake Griffin flow-way which offered mixed results with respect to the effectiveness of this alternative.

The Council agreed to continue to review information provided on the benefits of marsh flow-way systems as a potential lake management practice. The Council also agreed that operational limitations for the marsh flow-ways must be established to protect the health of the Harris Chain of Lakes.

Total Maximum Daily Loads (TMDLs) and Pollutant Load Reduction Goals (PLRGs)

The Council was presented information on TMDLs and PLRGs that are being instituted by the FDEP and the Water Management Districts. The FDEP did not issue TMDLs for the Harris Chain of Lakes. The FDEP is requiring the SJRWMD to recommend PLRGs for nutrients of concern within the area lakes. The SJRWMD has recommended PLRGs that are under review by the FDEP as of the writing of this report.

The Council agreed to continue to monitor the TMDL and PLRG programs and will make efforts to comply with the program and goals when they are established.

Potentially Toxic Algae

Another issue discussed was the potential health concerns that have been associated with infections that can be attributed to the release of biotoxins and neurotoxins from blue green algae that have been identified in the lakes and rivers throughout Florida. The Council was presented the research of a medical expert in the diagnosis and treatment of people who may have become infected by biotoxins produced by algae. The Council understands that other experts in the medical field may disagree with Dr. Shoemaker's opinions and agreed that further research on this issue is warranted.

The Council agreed that there are potential health concerns in the Harris Chain of Lakes and put forth a resolution which addresses these potential health concerns that are associated with these biotoxins.

Industrial, Wastewater, and Stormwater Impacts

The Council also reviewed industrial, wastewater and stormwater management practices to minimize discharges that could impact water quality in the lakes and affect human life. Regular updates on the progress of the City of Leesburg



Anhinga

Department of Environmental of Services in their efforts to upgrade their existing sanitary sewer and wastewater treatment facilities were provided to the Council.

The Council offered their continued support of the efforts by the City of Leesburg Department of Environmental Services in the improvement of their sanitary sewer and wastewater treatment systems.

Sport Fish Restocking`

Another lake management issue reviewed was the practice of fish restocking, coupled with improved habitat management, to provide both water quality benefits and economic growth for the area. The FWCC made multiple presentations to the Council on their research and breeding efforts, to better understand the importance of healthy sport fish populations in lakes.

The Council supports the sport fish restocking research and efforts being conducted by the FWCC.

Funding

The issues of cost and available funding were discussed throughout the year. The Council was provided information on the costs of implementing the various water quality technologies and lake management practices, along with the potential benefits to be derived from their implementation. The Council proposes the following funding requests.

- The Council passed Resolution 2003-1 (Appendix 4) for the transfer of \$500,000 in 2002 state appropriations to the LCWA for the purpose of canal access dredging efforts on Lake Griffin.
- The Council passed Resolution 2001-1 (Appendix 9) in support of the SJRWMD request for \$3.25 million for the UORB funding initiative for the fiscal year 2004 – 2005.
- The Council plans to submit a request of \$150,000 from the Legislature for additional funding for the Lake County Mosquito and Aquatic Plant Control.
- The Council plans to submit a request for an additional \$100,000 for revegetation of the littoral zone of the Harris Chain of lakes for fiscal year 2003 – 2004.
- The Council plans to submit a request for \$50,000 for cypress plantings on the Harris Chain of Lakes for the 2003 – 2004 fiscal year.