

**MINUTES OF THE MEETING
of the
HARRIS CHAIN OF LAKES RESTORATION COUNCIL**

The regular meeting of the Harris Chain of Lakes Restoration Council (Council) was held at 9:02 a.m. on October 4, 2018 at the Lake County Board of County Commissioner Chambers, 315 West Main Street, Tavares, Florida.

1. CALL TO ORDER

Chairman Grow called the meeting to order at 9:02 a.m.

2. INVOCATION AND PLEDGE OF ALLEGIANCE

Chairman Grow called for a moment of silence. The Pledge of Allegiance followed.

3. COUNCIL ROLL CALL

Chairman Grow called the roll.

Council members present

Sid Grow, Chairman
Keith Truenow, Vice-Chairman
Skip Goerner
Robert Johnson
Joe Dunn

Council members absent

Don Nicholson
Stephanie Bishop
Wade Boyette
John Stump

TAG Member present

Kevin Coyne
Ryan Hamm (Dan Nelson substitute)
Mark Hoyer
Rolland Fulton
Mike Perry

TAG Members absent

Rolland Fulton
FDOT
ACOE

4. APPROVAL OF MINUTES

Council member Goerner requested further detail on one section of the minutes. Approval of September 14, 2018 minutes was deferred for consideration at the November 2018 meeting.

5. **PRESENTATION**

Review of Aquatic Plants and Ecology with an Emphasis on Hydrilla, Mark Hoyer, University of Florida (UF), Institute of Food and Agricultural Sciences

Mark Hoyer, UF, introduced the topic of *Hydrilla* management, referring Council to the publication “A Beginner’s Guide to Water Management – Aquatic plants in Florida Lakes” produced by Florida LAKEWATCH. Mr. Hoyer reviewed the history of *Hydrilla* research, noting *Hydrilla*, as an invasive plant, became a problem in the 1960s. The Florida Department of Natural Resources was responsible for aquatic plant management at the time and thought *Hydrilla* could be controlled with herbicides.

Mr. Hoyer presented results of a 600-page 1992 report on the relations between aquatic macrophytes and the limnology and fisheries of Florida Lakes. Studies of nutrients, chlorophyll, Secchi depth and percent aquatic plant cover within 60 lakes showed an increase in total fish abundance, birds and alligators as lake trophic status increases from oligotrophic to hypereutrophic.

Analyses of fish species as a percent of total population by weight, as a function of the percent aquatic vegetation covered, found each species has a life history impacted differently by aquatic plants. For example, warmouth populations increased as aquatic vegetation increased, presumably due to protection from predation in lakes with abundant vegetation. Conversely, gizzard shad and anhinga populations decreased with increased plant coverage. Largemouth bass were found to have steady populations throughout all plant coverages. Overall, analyses of harvestable fish to chlorophyll as a function of the percent of aquatic plants showed that lakes with between 15% and 85% plant coverage were the best for harvestable fish populations.

Mr. Hoyer specifically addressed *Hydrilla*, noting a 1996 paper by Kenneth Langeland calling *Hydrilla verticillata* “The Perfect Aquatic Weed” because of multiple modes of propagation. Mr. Hoyer further noted that analyses of 20 years of *Hydrilla* eradication efforts in 10 major Florida Lakes resulted in no complete control. In 2005, Mr. Hoyer and co-authors prepared a document on *Hydrilla* management in Florida in which it was agreed that eradication was not a possibility. Fortunately, despite the fact that *Hydrilla* is an invasive plant, comparisons of lakes with and without *Hydrilla* found no differences between native and exotic vegetation, and fish and aquatic bird communities.

Mr. Hoyer discussed aquatic plant control management options including physical removal, habitat alteration, biological control, and herbicides. Mr. Hoyer noted plant control options must consider the environmental consequences, in particular the fate of aquatic herbicides in the environment. In summary, Mr. Hoyer noted all management activities come with a cost.

Mr. Hoyer’s personal recommendation is that a monitoring program should be established such that *Hydrilla* control measures can be enacted once the plants expand beyond 30% coverage in a given waterbody. Herbicides should be kept in reserve for use once the 30% threshold is breached. Monitoring is critical because *Hydrilla* can grow a foot per day in the right conditions, resulting in 30-50% plant coverage quickly.

Mr. Hoyer discussed the application of the herbicide fluridone (Trade name Sonar), reporting in some large lakes aquatic plants are becoming resistant to the chemicals. In Lake Harris fluridone is effective. Council member Goerner acknowledged the difficulty in controlling aquatic vegetation, and suggested the biggest problem is limited open water access. Mr. Hoyer reiterated that monitoring is critical. It would enable staff to quickly apply direct contact chemicals such as Aquathol to keep public navigation areas open out to open water. Harvesters would also be a solution, whatever is economical.

Council member Johnson queried whether any monitoring of resistance to Aquathol was underway. Mr. Hoyer was not aware of such research.

Mr. Hoyer and Council discussed options and issues for expanding aquatic vegetation in Lake Apopka. One of the main issues was wave action and soft sediments which preclude the attachment of submerged vegetation. Council member Johnson noted Dr. Dan Canfield proposed windbreaks, and Council member Goerner reported using cotton socks to hold rooted vegetation, all without much success. Council member Johnson noted the success of planting submerged aquatic vegetation in burlap bags as observed by Dr. Haller and Council member Johnson during a tour of the lake last year.

Mr. Hoyer noted Dr. Lyn Gettys out of the UF/IFAS Fort Lauderdale Research and Education Center was working on various planting techniques. Council member Goerner suggested areas of the north shore would be a good place for experimental plots of *Hydrilla* and *Vallisneria*. Chairman Grow queried Mr. Hoyer as to whether Dr. Gettys could make a presentation to Council.

Mike Perry, LCWA, noted FWC had a recent meeting in Howey-in-the-Hills in which the whole meeting was focused on *Hydrilla* in Little Lake Harris. The LCWA is working with FWC. And the LCWA board put money in their budget to supplement FWC funding if needed.

Council member Goerner reiterated the importance to boaters to have access and suggested approaching the State for more funding to control *Hydrilla*.

At this point in the meeting (10 a.m.), the Hoyer presentation was suspended due to a time-certain phone-in discussion with the U. S. Army Corps of Engineers, reported under Tab 6 of the minutes.

At 10:15 a.m. the aquatic plant discussion was re-convened. Public comments specifically related to Mr. Hoyer's presentation were heard. Comments are found under Tab 9, Public Comments.

6. FOR INFORMATION

Discussion with John Bearce, U.S. Army Corps of Engineers (USACE) – Jacksonville Office – regarding USACE responsibility with canals.

Mr. John Bearce, USACE, was contacted by phone, and discussed the USACE mission. Mr. Bearce noted the USACE navigation mission is to provide safe, reliable, efficient, effective,

environmentally sustainable waterborne transportation systems for movement of commerce, national security needs, and recreation.

Mr. Bearce then discussed USCAE navigation assets listing inland navigation assets as 27 inland rivers systems, 214 lock chambers @ 172 lock sites, 12,000 miles of inland river channels. Coastal navigation assets included 1,067 navigation projects, 27 lock chambers, 13,000 miles of channels, 929 navigation structures and 844 bridges.

Chairman Grow requested Mr. Bearce to explain the role of USACE with the AB Canal. Mr. Bearce stated the federal government does not manage local navigation projects. In general, these are managed by local entities like counties, or are privately managed and operated homeowner associations, or by a group of users that live on a canal that agree to maintain local navigation channels.

Council member Goerner ask about USACE responsibility and regulation locally, mentioning the Four Rivers Manual. Mr. Bearce noted the Four River Manual appears to deal with regulation schedules for flood control. Flood control systems are different than navigation channels and are not within his purview.

7. **FOR INFORMATION**

Harris Chain of Lakes Restoration Council Second Draft of 2018 Annual Report, Denis Frazel, Harris Council Administrative Support

Denis Frazel, Harris Council Administrative Support, presented the second draft of the Harris Council Annual Report. Mr. Frazel reviewed all sections of the second draft report, noting he had received no comments on the second draft from Council but had made some revisions based on input from TAG members. Mr. Frazel reported the second draft included a figure of a bass as suggested by Council member Bishop.

During review of the Executive Summary, Council member Goerner discussed the *Hydrilla* issue with Mike Perry and requested an estimate of funding needed. Mr. Perry suggested a recommendation of dedicated funding of \$10 million for *Hydrilla* management on the Harris Chain of Lakes. A second recommendation for increased monitoring of *Hydrilla* in the Harris Chain of Lakes was also requested. A motion to approve these recommendations was seconded and approved unanimously.

Under Table 1, Harris Council representation, Council member Dunn noted he was not a physician. The representative title was changed to member at large.

Under Table 3, meeting summary, Mr. Frazel noted he would update the table with the October meeting information.

Under Section 3, Meeting and Presentations, Vice chairman Truenow noted a possible error in text with numeric storage information for the North Shore, provided by Dr. Ann Shortelle under lake level management. Mr. Frazel agreed to review.

Council member Goerner suggested carrying over from the 2017 Annual Report the recommendation for an Office of Program Policy Analysis and Government Accountability (OPPAGA) review of restoration activities by SJRWMD, FWC and LCWA for Lake Apopka and other lakes within the Harris Chain of Lakes. Council member Goerner made a motion to include the recommendation in the 2018 Annual Report. The motion was defeated 2-3 (Yes to include- Council members Goerner and Johnson; No-Chairman Grow, Vice Chairman Truenow, and Council member Dunn).

Mr. Frazel specifically reviewed Section 4. Budget and Expenditures was completed as follows:

The LCWA FY 17-18 budget included \$9,850 for the Harris Chain of Lakes Restoration Council under account 710-349, Water Resources Operating Expenses. In July 2018, Council approved the placement of advertisements in the Leesburg Commercial and Villages Daily Sun newspapers to advertise Council vacancies and agendas using these funds. Expenditures made by Council for the advertising are listed in Table 4.

Table 4. Harris Chain of Lakes Restoration Council Expenditure Statement

Date	Assets	Budget
11/1/17	Previous legislative funds	\$9,850
	Total Assets	\$9,850
	Expenditures	
8/31/18	Leesburg Daily Commercial and Villages Daily Sun Advertising - August	\$343.40
9/1/18	Leesburg Daily Commercial and Villages Daily Sun Advertising – September	\$343.40
10/1/18	Leesburg Daily Commercial and Villages Daily Sun Advertising – October	\$343.40
	Total Expenditures through 10/31/18	\$1,030.20
	Balance	\$8,476.40

Mr. Frazel noted comments on the final draft of the Annual Report would be accepted until October 30. Comments received by then would be added in tracked changes for review and approval at the November 2 Council meeting.

8. AGENCY UPDATES

a. Lake County Water Authority

Council member Goerner expressed his gratitude to Mike Perry, LCWA, for his efforts. Mr. Perry discussed the LCWA as a special taxing authority, noting recent changes in which no eminent domain and no promotion of tourism. Mr. Perry provided an update on repairs to the Nutrient Reduction Facility (NuRF) culvert gate, noting divers mud plugged the culvert. The east pond is being pumped into the west pond so no direct discharges to the AB Canal are occurring. Removing the water from the east pond will allow workers to inspect the gate and make repairs.

Mr. Perry reported all lakes levels are currently at regulation schedule.

Mr. Perry reported he had attended a meeting in Palatka on Minimum Flows and Levels (MFLs). Mr. Perry was particularly interested in potential flows from Lake Apopka for irrigation by the City of Apopka. Mr. Perry noted the Harris Chain of Lakes was now scheduled for MFL development in 2021 and LCWA had requested that schedule be moved up. Susan Davis, SJRWMD, reported the public comment period on the SJRWMD MFL priority list was open until October 16th.

Vice-chairman Truenow proposed Council include a recommendation in the Annual Report to expedite the MFLs for the Harris Chain. A motion to request SJRWMD expedite development of MFLs for the Harris Chain of Lakes prior to 2021 was seconded and unanimously approved.

b. St. Johns River Water Management District

Susan Davis, SJRWMD, provided a brief update on SJRWMD activities. Ms. Davis reported Harris Council-related expenses for the previous month, including Florida Administrative Register notification, website staff support, posting agenda and meeting documents, and administrative support expenses. Ms. Davis noted the agenda and meeting documents are online, and the Harris Council website received 499 page views, and the SJRWMD meeting site received 28 page views in the previous month. Monthly page views are averaging 450.

Ms. Davis reported an estimate of \$84 was obtained for Council nametags. Council member Johnson advised he did not need a nametag.

Ms. Davis noted several SJRWMD Governing Board items of interest to be discussed at the October 9 meeting. Items of interest include the FY 17/18 land management annual review, an overview of SJRWMD recovery efforts post-Irma, and approval of the annual operations and maintenance workplan. In other updates, Ms. Davis reported the Lake Apopka hydrologic management improvement project has been initiated. The goal of the project is to evaluate alternatives for downstream flow, and possible adjustment of the regulation schedule, and work orders are being prepared.

Sump dredging was started in Lake Apopka in September, and a planting project was conducted on the north shore of the McDonald Canal. SJRWMD has also begun pumping from north shore.

Ms. Davis reported a new rainfall dashboard is now located on the front page of the SJRWMD website to improve ease of access to rainfall and hydrologic report information.

Ms. Davis clarified a question about submerged aquatic vegetation (SAV) projects in Lake Apopka. Ms. Davis referred to a list of projects provided in September that includes funded SAV projects underway in Lake Apopka.

Council member Johnson inquired about a possible conference call involving SJRWMD that discussed using 5-6-foot diameter pipe to remove water and nutrients from Lake Apopka. Ms. Davis had no information on such a call and requested Council member provide what information he had so she could follow up. The complete SJRWMD agency report was provided by Ms. Davis and is attached to these minutes.

Chairman Grow noted he had sent SJRWMD an excel spread sheet of projects listed from the 2017 Annual Report last month and some projects were missing from the report. Ms. Kelley reported the list from the 2017 Annual Report included projects from other agencies that are not within the budget responsibility of SJRWMD. Ms. Kelley suggested Council query those agencies directly.

Vice-chairman Truenow left meeting at 11:30 a.m.

Daniel Nelson, FWC, reported on the treatment schedule for Little Lake Harris. Mr. Nelson also reported no fish had been recaptured from Lake Apopka stocking efforts in 2016/2017. MR. Nelson noted numerous fin clips from fish in that size class had been sampled in the spring for genetic analysis. Results are expected shortly.

Mr. Nelson reported FWC had partnered with LCWA to install a handful of green underwater lights at Hickory Point for both aesthetics and expanded angling opportunities. Mr. Perry noted this was the first time an underwater lighted area had been installed in freshwater in a public area.

- c. Florida Department of Environmental Protection
Kevin Coyne reported FDEP had initiated a septic upgrade incentive program worth up to \$10,000 for homeowners in identified springs areas
- d. University of Florida
No comments.

9. **PUBLIC COMMENTS (fill out speaker card and hand to a staff member prior to public comment period)**

Peter Tuite, private citizen, observed thick mats of vegetation forming at the surface from Astatula down to Double Run. Mr. Hoyer noted *Hydrilla* stretches out along the surface as it grows and can form large mats as the vegetation dies.

Mr. Tuite inquired whether nutrient testing was being done. Mr. Hoyer reported plenty of nutrients in all lakes, and that *Hydrilla* is using nutrients from sediments. Mr. Tuite also inquired about eagle deaths from *Hydrilla* in Georgia. Mr. Hoyer was not aware of any bird deaths from *Hydrilla* in Florida but noted a diatom that attaches to *Hydrilla* that may cause illness. Coots eat the *Hydrilla* and can consume the diatom at the same time. Mr. Hoyer did not know if the diatom is found on other aquatic plants.

Mr. Dave Taiche, resident on Lake Harris, questioned Mr. Hoyer about whether the 15-85% plant acceptable for fishing would be acceptable for sailing. Mr. Hoyer reiterated the need to use a trigger for control, then using contact herbicides for keeping navigation areas and deep water open. Mike Perry, LCWA, reported because of Hurricane Irma, and so much water flowing so fast, herbicide treatments were not available for an extended period. Mike Perry agreed it is important for Council to talk with legislators to get funding for FWC for aquatic plant control. Council member Goerner recommended requesting funds for treatment in the Annual Report.

Mr. Roger Schrock commended Council on their efforts and inquired about funding availability for treatment for the rest of the year. Mr. Dan Nelson, FWC, reported all \$2.1 million had been spent for herbicide acquisition, with further treatment to occur this month (October). Further treatment will be dependent on additional funding.

Mr. Russ Filip showed series of 4 photographs of Little Lake Harris full of *Hydrilla*. Mr. Filip estimated 50-70 % of lake as impassable. Mr. Filip suggested using mechanical harvesters to clear docks, addition if diploid grass carp, blocking off the AB Canal, and enforcing a fertilizer ordinance.

Council member Goerner left meeting at 11:39 a.m.

10. COUNCIL MEMBER COMMENTS

Chairman Grow showed copies of the advertisements placed in the local papers on Sunday and Thursday. Chairman Grow asked if anyone from the public had seen the ads. Five members of the public responded affirmatively. Chairman Grow noted the ads would be placed for one more month.

Chairman Grow requested TAG members agency affiliation be included on the agenda and minutes.

Council member Joe Dunn had no comments

Council member Johnson reported the cost of removal of phosphate through the cavitation process was estimated at \$80 per pound, as was discussed during the September Council meeting.

Council member Johnson discussed the water quality presentation by Dr. Havens last month. Council member Johnson disputed statements made by Dr Havens during his presentation, suggesting they were contrary to information previously published by Dr. Havens. Council member Johnson cited a sentence in the abstract of Dr. Havens paper "*Multiyear oscillations in depth affect water quality in Lake Apopka*" stating, "We found no long-term trends in TP or SD and only minor long-term increases in Chl-*a* and TN". Council member Johnson also read the following concluding paragraph from the document, stating "The data indicate no long-term improvements in water quality that could be linked to programs that reduced nutrient inputs to Apopka. Havens et al. (2017), however, during the most recent drought (2012–2014) documented no blooms of cyanobacteria, as had repeatedly occurred during prior droughts. They suggested that the absence of cyanobacteria blooms was evidence of ecological changes starting to happen in response to nutrient input control. Our results do not shed further light on that hypothesis".

Council member Dunn requested a copy of the Havens publication.

11. REVIEW OF ACTION ITEMS REQUESTED DURING MEETING

Chairman Grow noted Council member Goerner had requested LCWA to do further analysis on the Tammie Canal.

Chairman Grow also noted he had given SJRWMD a list of projects in September from the 2017 Annual Report in which 10 projects had not yet been updated. Ms. Davis noted many of the projects listed were from other agencies. Chairman Grow requested an update on those funds.

12. DISCUSSION OF NEXT SCHEDULED MEETING.

Chairman Grow requested Nathalie Visscher be contacted to discuss *Hydrilla* management.

Chairman Grow also requested FWC (Ryan Hamm or Dan Nelson) to update Council on bass releases in Lake Apopka.

Denis Frazel would present the final draft of the Annual Report.

Council members- do you anticipate attending the next Harris Council meeting?

The question was not presented to Council.

9. ADJOURNMENT

Meeting adjourned at 11:57 a.m.