

Final

**MINUTES OF THE MEETING
of the
HARRIS CHAIN OF LAKES RESTORATION COUNCIL
June 3, 2016**

The regular meeting of the Harris Chain of Lakes Restoration Council (Council) was held at 9:04 a.m. on June 3, 2016 at the Lake County Board of County Commissioner Chambers, 315 West Main Street, Tavares, Florida.

Council Members Present

Robert Johnson, Chairman
Skip Goerner, Vice-Chairman
Don Nicholson
Sid Grow
Keith Truenow
Stephanie Bishop
John Stump, ex officio member

Council Members Absent

Hugh Davis
Dr. Ed Schlein

TAG Members Present

Mark Hoyer (University of Florida, UF)
Roland Fulton (St Johns River Water Management District, SJRWMD)
Mike Perry (Lake County Water Authority, LCWA)
Dennis Renfro (Florida Fish and Wildlife Conservation Commission, FWC)

TAG Members Absent

Kevin Coyne (Florida Department of Environmental Protection, DEP)

1. CALL TO ORDER

Chairman Johnson called the meeting to order at 9:04 a.m.

2. INVOCATION AND PLEDGE OF ALLEGIANCE

Councilman Nicholson gave the invocation. The Pledge of Allegiance followed.

3. COUNCIL ROLL CALL; REMINDER FOR OTHERS TO SIGN IN

Chairman Johnson called the roll. Council members Davis, and Schlein were absent.

4. APPROVAL OF MINUTES

Minutes for February 5, 2016, March 4, 2016, April 1, 2016, and May 6, 2016 were unanimously approved as revised.

5. PRESENTATIONS / ACTION ITEMS

A. Review of water quality for the Ocklawaha Chain of Lakes and Emeralda Marsh Conservation Area, and recent pesticide analyses for the Lake Apopka North Shore - Dr. Rolland Fulton, SJRWMD

Dr. Rolland Fulton, SJRWMD, introduced his presentation, noting the focus of the presentation would be on water quality of the Chain of Lakes, focusing on Lake Apopka but also discussing some of the other lakes. Dr. Fulton noted he would also present information on Emeralda Marsh Area III, and recent pesticide analyses for the Lake Apopka North Shore.

Dr. Fulton discussed a table showing Upper Ocklawaha River Basin lakes (UORB) total phosphorus (TP) concentrations for 2014 and 2015, compared to the baseline and target Total Maximum Daily Load (TMDL) concentrations. The TP concentrations in the UORB show large variations between lakes. The sample protocol called for sampled once per month at three locations on Lake Apopka, and Lake Griffin. Other lakes were sampled at single center lake stations.

Vice-chairman Goerner queried Mike Perry about sampling protocols, recalling the protocol for sampling cyanobacteria was specific, with samples acquired from multiple locations, and multiple samples at each location. Mark Hoyer, University of Florida, indicated analyses of 20 years of data demonstrated variance between stations was very low. Mr. Hoyer noted a single station is representative, and numerical nutrient criteria were derived from single stations in the middle of lakes. Dr. Fulton returned to the TP concentrations discussion, noting lakes Eustis, Harris and Griffin Back TP concentrations were close to the TMDL, therefore, suggesting it was reasonable to achieve the TMDL. Dr. Fulton noted Lake Yale was the only lake with increases in TP, suggesting the increase may be linked to the loss of vegetation due to grazing from introduced grass carp.

Lake Beauclair and Dora show decreases in TP concentrations over time but concentrations are not close to TMDL. Dr. Fulton noted there is a lag time in reductions because of internal recycling, so it could be 10 to 15 years before reaching a TMDL. Chairman Johnson inquired about soil sampling in the lake, and whether background TP from sediments was considered. Dr. Fulton reported sediment sampling down to about a meter, but not below the organic layer. Mr. Perry noted when the nutrient reduction facility (NuRF) was operating the TMDL for Lake Beauclair could be met. Dr. Fulton noted Lake Apopka was still a long way from meeting the TMDL.

Dr. Fulton presented a slide showing estimated annual external TP loading and chlorophyll-a (chl-a) concentrations to Lake Apopka from 1989 to 2014. The data shows loading decreases over time, with decreases associated with drops in discharge from the NSRA. Loadings were estimated from a combination of discharges from the lake, with others obtained from a modeling approach using runoff of nutrients from the entire drainage basin. Nicholson inquired about loading of water that feeds to spring water. Dr. Fulton noted they include loadings from springs as well as diffuse loading from lake bottom for Gourd Neck springs. Baseline then is very close to aquifer discharge. Dr. Fulton also noted both TP and chl-a decrease through 1990s with oscillations in concentrations in the 2000s. These oscillations are related water level changes shown in a slide of TP in relation to water level over time. TP increases when water levels down, TP decreases when water levels are higher. The average concentration for TP so far in 2016 has been about 70 $\mu\text{g}/\text{l}$. In April the concentration actually dropped below the TMDL target.

A slide showing the total mass of TP concentrations and water level in Lake Apopka over time also shows decrease from 1990s but remains stable since then. Changes in TP are related to changes in volume. We think the TMDL target concentrations cannot be met if there are continued severe droughts in the lake.

Chairman Johnson requested nutrient levels and toxaphene information for the North Shore Restoration Area.

A graph of the estimated annual external TP loads, and concentrations of TP and chl-a over time for Lake Beauclair shows loading decreased over time because of discharge volumes, as well as reductions in discharges due to the marsh flow-way and NuRF facility. Loading has been below the TMDL for the last nine years. A large decrease in chl-a was similar to changes in TP concentrations. The lowest chl-a occurred in 2010 when the NuRF operated full-time. Chl-a concentrations of 45 ug/l this year are the lowest observed so far.

A graph of the estimated annual external TP loads, and concentrations of TP and chl-a over time for Lake Griffin shows similar decreases in 1990s loading from muck farms and tributary discharges. The TMDLs have been met for the last 8-9 years. Increases observed during 2005 and 2007 were related to weather and not specifically reconnection. Chairman Johnson inquired where marsh flow-way water originated. Dr. Fulton noted the water comes from Lake Apopka, and as water moves through the flow-way sediments and algae are removed.

A table of Emerald Marsh Conservation Area (EMCA) TP and total nitrogen (TN) concentrations in Area 3 and Lake Griffin shows all areas have been below the reconnection target of 200ug/l for the last two years. There is no target concentration for TN, but TN remains low overall. A comparison of concentrations both before and after reconnection, in Areas 2 and 4 shows TP reduced in both areas, and it continues to decline.

Vice-chairman Goerner questioned if analyte concentrations in Lake Griffin marshes have been compared to the Lake Apopka NSRA. Dr. Fulton noted Lake Griffin reconnection was less difficult because pesticide concentrations were low, much lower than concentrations in the NSRA. Vice-chairman Goerner requested the nutrient data for the NSRA noting it was previously very high in the EMCA. The reason for the questioning was to see if it was feasible to reconnect the marshes by comparing EMCA data to NSRA data. Vice-chairman Goerner noted a Memorandum of Understanding from 2003 between USFWS and SJRWMD that mandated testing and mandatory reports.

A time-series graph of TP concentrations in the EMCA Area 3 shows TP concentrations dropped over time, though some recent increases may be due to vegetation mat breakdown. A time-series graph of TN concentrations in the Lake EMCA Area 3 was very similar. Vice-chairman Goerner requested a comparison of nutrient data between the EMCA (before and after reconnection) and the NSRA.

Dr. Fulton introduced the presentation of pesticides in the NSRA, describing a schematic of water movement into and through the NSRA areas. Pesticide sampling was conducted over the last two years and data were compared to toxicity thresholds for both SJRWMD toxicity reference levels (TRVs) for ecological risk (previously described by Dr. Coveney for bird mortality) and Florida Department of Health (FDOH) screening values for human consumption. Both screenings were for whole fish. These screenings were levels used for establishing safe wetlands in the NSRA. For sediments, all values fell below the TRVs, so it was safe to flood certain areas.

A data table of NSRA fish pesticide samples for 2014-2015 showed some exceedances of FDOH targets from the NSRA. In units 1 and 2, sand farm minnows and mosquitofish were used for analyses. In the Duda Farms and West Marsh units the sample fish included bluegill and crappie. The data showed Duda and Sand farms with the best results, but there were still exceedances in one-third of samples tested. The data gives an indication that fish are not safe for human consumption, part of the reason for not reconnecting the marsh. Chairman Johnson requested the data on the dead fish and dead birds from the MOU. Dr. Fulton noted SJRWMD continues to monitor for dead wildlife, and have collected a limited number of animals.

Vice-chairman Goerner requested a comparison of the Harris Bayou project and the EMCA. Dr. Fulton noted no recent pesticide analyses in Area 3, but Areas 5 and 7 have been recently sampled. Potentially, Harris Bayou data could be provided.

Chairman Johnson remarked TP and pesticides should not be a reason to stop reconnecting the NSRA. Dr. Fulton noted that is exactly why SJRWMD has not reconnected the NSRA. Flooding of certain areas was allowed because screening levels were below ecological threshold levels. However, when comparing to human consumption screening levels, preliminary studies shows fish not safe for consumption. Chairman Johnson requested the United States Fish and Wildlife Service (USFWS) Memorandum of Understanding (MOU) be sent to all Council members.

Chairman Johnson discussed fish testing in Lake Apopka and the NSRA. Fish testing in the NSRA uses whole fish for ecological risk assessment while human consumption risk assessment uses fillets. Dr. Fulton reiterated NSRA flooding was permitted because samples for ecological risk were within limits. Whereas samples to assess human consumption risk exceeded limits; therefore, reconnection and release of fish exceeding the limits into Lake Apopka was prohibited.

Dr. Fulton reviewed the requests from the Council, to include nutrient data from the NSRA, EMCA and Harris Bayou. Vice-chairman Goerner requested fish pesticide data to compare fillet data to fillet data not fillet data to whole fish data. Dr. Fulton advised the data to compare fillets from the Lake to fillets on the NSRA is not available.

B. Discussion of draft letter to the Florida Fish and Wildlife Conservation Commission on Harris Council Planning - Council members, Harris Chain of Lakes Restoration Council

Chairman Johnson introduced the discussion of the Harris Council draft letter to FWC noting one of the main reasons for the Harris Council was to develop a plan to clean up Lake Apopka. On a separate topic, Chairman Johnson requested the complete document of the NSRA Management Plan. Chairman Johnson questioned whether USFWS was prohibiting SJRWMD from reconnecting the NSRA. Dr. Fulton reported SJRWMD does need to have approval from USFWS for significant operational changes.

Chairman Johnson reported he had researched a similar council in Citrus and Hernando counties. Chairman Johnson noted their annual reports include projects with justifications and dollar amounts. The report is presented to the legislature to approve or fund. Chairman Johnson suggested the Harris Council develop a similar plan and requested copies of the annual report be forwarded to Council.

Chairman Johnson presented his ideas on drafting a plan from the Council, including a list of action items (Numbered List of Action Items attached). Chairman Johnson recommended developing a list of actions associated with a dollar amount to submit to the legislature.

Chairman Johnson described Action Item #1—connect the north shore to the lake. Chairman Johnson noted Dr. Canfield (University of Florida) stated this action needs to be done. Mr. John Stump reported on his examination of lake elevations, noting there is a fair amount of land in which there could be flooding issues on offsite properties. Mr. Stump queried whether Lake Apopka water levels would decrease, noting the goal of connecting is to impart flow from NSRA to Lake Apopka, not the reverse. Mr. Stump discussed the issue of flocculent material in the lake, suggesting it be moved from the lake bottom to expansive portions of land on the north shore (10-50 acres) as a test project.

Chairman Johnson queried Dr. Fulton on the status of the dredge on the north shore. Dr. Fulton reported the dredge was moving sediments into the Duda pond, noting future dredging at the mouth of the Apopka Beauclair canal. The dredging project is to create a sump area in just one area for repeated dredging activities. Mr. Stump requested a copy of the scope of work. Dr. Fulton noted Mr. Bob Naleway, SJRWMD, was the project manager. Vice-chairman Goerner noted part of the reason for dredging was boat access.

Chairman Johnson continued the discussion of Action Item #1 citing a USFWS report from 2004 that the main goal is to reconnect the lake. Chairman Johnson reiterated the main goal of the Council is a letter to FWC.

Chairman Johnson described Action Item #2—determine the various elevations of the north shore and the lake.

Action Item #3—do not build a flat marsh. Chairman Johnson noted Dr. Canfield suggested constructing geotubes to help maintain vegetation and had submitted a report to FWC, #DO-A2B751, stating dollar costs for a test project on the southwest shore. Chairman Johnson requested the Council review the list and determine items to be included in the letter to FWC.

Chairman Johnson suggested Susan Davis, SJRWMD, or Denis Frazel, Harris Council Administrative Support, draft the Harris Council letter to FWC. Ms. Davis advised she would consult with the SJRWMD management team. Chairman Johnson suggested the letter consist of statute references, request an outline of feasible projects, and project costs.

Councilwoman Bishop suggested the proposed letter would be appropriate for the annual report. Chairman Johnson did not think the letter would be completed in time for inclusion in the annual report, though it could be reported that a letter was in preparation. Chairman Johnson advised his intent was to distribute the letter according to the statute so agencies act. Vice-chairman Goerner suggested it was most important to have the letter prepared for the legislative delegation in December/January in which it can be presented in a public forum. Chairman Johnson noted an upcoming meeting with Senator Hays to discuss the Council and to identify other legislators that might be interested in Council activities.

Chairman Johnson discussed the new laws coming into effect on July 1 and whether the Council had any actions that need to be taken. Vice-chairman Goerner noted no action could be taken until three meetings had passed. Ms. Davis suggested lining up potential candidates as soon as possible.

Chairman Johnson agreed to write the draft letter to FWC, in which Ms. Davis could review the letter and provide comments prior to the next Harris Council meeting. Chairman Johnson advised he would like to receive outlines from the various agencies not extensive reports. The Sunshine Law was discussed in terms of communication between Council members and TAG regarding the drafting and review of the letter. Ms. Davis advised she could not be the conduit for discourse on the letter between Council members. Ms. Davis noted items already in the public record could be forwarded by Mr. Frazel. Chairman Johnson agreed to send a list of documents to Mr. Frazel for distribution to Council members and TAG. Chairman Johnson requested a report on Lake Apopka from November 2010 be provided to the Council.

Councilman Nicholson noted 21 items on the discussion list, and all are items for the agencies to address. Councilman Grow noted discussing this issue at the January Harris Council meeting—to bring scientists together to evaluate restoration actions on the lake.

6. COUNCIL & AGENCY QUESTIONS & ANSWERS

Mr. Renfro updated the Council on FWC activities. The state has a recreational boating and fishing grant to help work with high schools to create fishing clubs. The goal is to recruit new anglers as part of the Fishing League. Mr. Renfro noted FWC is evaluating the floating tussocks in Area 3 and how to address them before reflooding the area.

Mr. Mark Hoyer, UF, provided additional information on the bubbling project, noting Lakewatch was conducting sampling. UF was also measuring sediments several different ways, both inside and outside of the bubble area. Mr. Hoyer reported a new volunteer for Beauclair sampling, and possibly two more volunteers for Lake Apopka.

Mr. Mike Perry, Lake County Water Authority (LCWA), reported on lake levels in Lake Apopka noting levels have fallen below the minimum desirable elevation. No flow since 26th of May, as below desirable level.

Mr. Perry reported the middle lakes were below regulatory schedule. Lake Griffin was below regulatory schedule but above the minimum desirable elevation; therefore, minimum flows continue through Burrell and other structures. Mr. Perry noted LCWA is moving into the next phase of a study of the quantity and quality of runoff downstream of the NuRF. This study is occurring around Mr. Truenows' property. The next project is to evaluate nutrient loading in Trout Lake and Lake Yale.

Mr. Perry noted the LCWA budget has \$5,000 for the Council, as it has had for the past several years. Finally, Mr. Perry noted some interest in Lake Denham and possible creating a spray field in the area.

Chairman Johnson discussed procedures for development of the letter to FWC. Ms. Davis reported a workshop could be held but there were noticing requirements so a decision would need to be made quickly. The Council decided to forego a workshop and discuss the letter at the next meeting.

7. PUBLIC COMMENTS

None.

8. COUNCIL MEMBER COMMENTS

A. Johns son comment

B.

C. Johnson to Renfro last doh was 2013 when were whole fish. Rolly 2004-2008 fish were collected. Higiin ran whole fish from FWC. Rolly will be pesenting dats.

D.

E.

F. Chairman Johnson discussed his recent trip to Lake Apopka to look at aquatic vegetation. He noted spadderdock present, though less than 1% of the lake was covered. Some planted *Vallisneria* and bulrush was also observed. Chairman Johnson speculated on the effect of alum on plants, and the possibility of lower survival in alum areas. Finally, Chairman Johnson noted clear water emanating from the flow-way. Chairman Johnson also noted bubblers still working, but the water in the surrounding area did not look clear. Chairman Johnson requested verification on the efficacy of the bubblers.

Mr. Dennis Renfro, FWC, Renfro reported the bubbler project was ending this month. Research groups from Michigan and Florida are conducting sampling for two months after closing the project. A copy of the report will be provided to Council when completed. Mr. Renfro noted areas of spadderdock were visible in Google Earth imagery.

Vice-chairman Goerner discussed a conversation he had with Dr. Dan Canfield about the possibility of joining the Council as an ex officio member. Vice-chairman Goerner noted Dr. Canfield would agree to the appointment if the Council was in unanimous support. Such an appointment would have to be approved by Dr. Canfield's supervisor at the University of Florida (UF).

Councilman Nicholson moved to approve Dr. Canfield as an ex officio member. The motion was seconded by Vice-chairman Goerner and unanimously approved.

Mr. Hoyer noted a request letter should be sent to Dr. Bill Lindberg at the UF Institute of Food and Agricultural Sciences.

Councilman Nicholson reported there was a private operator providing boat tours on Lake Griffin. Vice-chairman Goerner noted difficulty in navigating the Silver River. Vice-chairman Goerner queried whether the Corps of Engineers has an office at SJRWMD, and whether there is a way to contact the Corps. Mr. Renfro agreed to check on management of the Silver River.

G. The Next Scheduled Meeting is tentatively scheduled for July 8, 2016. Chairman Johnson suggested moving the scheduled August 5th meeting to August 12. Ms. Davis agreed to check with the Lake County about scheduling the meeting room.

9. ADJOURNMENT

The meeting adjourned at 11:57 a.m.