

FINAL

**MINUTES OF THE MEETING
of the
HARRIS CHAIN OF LAKES RESTORATION COUNCIL
January 13, 2017**

The regular meeting of the Harris Chain of Lakes Restoration Council (Council) was held at 9:03 a.m. on January 13, 2017 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
Sid Grow
Keith Truenow
Stephanie Bishop
John Stump

Council Members Absent

Don Nicholson, Secretary
Vacant, Attorney
Vacant, Physician

TAG Members Present

Rolland Fulton (St. Johns River Water Management District, SJRWMD)
Dennis Renfro (Florida Fish and Wildlife Conservation Commission, FWC)
Mike Perry (Lake County Water Authority, LCWA)

TAG Members Absent

Kevin Coyne (Florida Department of Environmental Protection, DEP)
Mark Hoyer (University of Florida, UF)

1. CALL TO ORDER

Chairman Johnson called the meeting to order at 9:01 a.m.

2. INVOCATION AND PLEDGE OF ALLEGIANCE

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

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

Chairman Johnson called the roll. Council member Nicholson was absent.

4. APPROVAL OF MINUTES

Approval of minutes from November 4, 2016 were tabled until recommended revisions were submitted for review and approval by Chairman Johnson.

5. PRESENTATIONS / ACTION ITEMS

* Action items requested by council members are in bold.

A. Review of SJRWMD Technical Memorandum 56, Water Quality Changes in Lake Apopka, Florida, and the St. Johns River Water Management District's Restoration Program

Dr. Rolland Fulton, SJRWMD, presented an overview of water quality changes in Lake Apopka based on SJRWMD Technical Memorandum 56, produced by Mike Coveney, Ph.D., former SJRWMD scientist. Dr. Fulton described Lake Apopka, a large 31,000-acre shallow lake with a formerly extensive sawgrass of 20,000 acres along the north shore that was converted to farms. Farm development of the marsh area progressed from 8000 acres in 1947, until 1985 when all the north shore was being farmed.

Between the 1930s and 1980s muck increased nutrient loading to Lake Apopka changing the ecology of the lake from a clear water, mesotrophic system dominated by macrophytic aquatic plants, abundant gamefish and firm organic and mineral sediments, to a turbid, hypereutrophic system dominated by algal blooms, and flocculent, nutrient-rich sediments. A pie chart of baseline phosphorus (P) loading from 1989-1994 indicated more than 53 metric tons per year out of a baseline loading of 62 metric tons per year were derived from agricultural lands. SJRWMD set a Total Maximum Daily Load (TMDL) reduction target of 15.9 metric tons of P to improve lake water quality.

SJRWMD primary restoration program goals for Lake Apopka were to restore farmlands to wetlands to reduce P inputs and provide habitat. Provided wetland filtration to remove P from lake water, and remove gizzard shad (*Dorosoma cepedianum*) to remove P and reduce P recycling. In addition, SJRWMD planned to plant native species and fluctuate water levels to develop habitat and prevent expansion of *Hydrilla verticillata*.

Dr. Fulton discussed a series of graphs showing reduced P loading, noting loading targets have been met in dry years, but not yet in wet years. Dr. Fulton described how the marsh flowway reduces particulate P as water moves through, with water leaving flowway having lower P levels. While loading has been reduced by about 80%, it is uncertain whether loading targets can be met in wet years because of new loading. Dr. Fulton reported costs of infrastructure to address wet-year loading is under development.

An overall set of summary slides of water quality improvements showed reductions in mass of constituents by volume of water quality, with reduction in mass of total phosphorus (TP), total nitrogen (TN), and chlorophyll *a* (Chl-*a*), and total suspended solids (TSS) over time. A slide of transparency (Secchi depth) showed clearer water with high water, but less clear water with low water conditions, suggesting little improvement in transparency over the longer term.

A graph of Chl-*a* versus TP showed a very high correlation to P concentrations. There was a similar correlation with TSS, suggesting high TSS may be associated with higher concentration of algal detritus than dying algae.

SJRWMD's expectation is a reversal of eutrophication of Lake Apopka. Reduced P loading is resulting on lower P concentrations and lower levels of phytoplankton, which should provide greater water transparency, increased submerged aquatic vegetation (SAV), and increased game fish populations. The expected change of events is so far operating through the water transparency step. The expanded regrowth of SAV should continue to help improve water clarity. Nearly 48 acres of

SAV were mapped in 2015, and the entire periphery of the lake now has some SAV. 2016 data is currently under review. Dennis Renfro, FWC reported no plans by FWC for planting in FY16/17. Dr. Fulton noted SJRWMD would like projects for more SAV expansion and the Allied micro-bubbler project is one of those trial projects.

In conclusion, Dr. Fulton reported annual TP loading to Lake Apopka has been reduced from ~62 to ~11 MT (2010-14), reduced P loading has led to reduced TP concentrations with reduced Chl-*a*, increased transparency, and increased SAV. Neither wind resuspension nor sediment P stores have prevented the recovery. Extreme low lake stage results in poor water quality, interrupting or reversing improvements, so sustained improvements will require sustained water levels within normal ranges. Council discussed both the presentation and future options for the north shore. **An action item request was made by Council to resend topographic maps of the north shore to Council members.**

6. COUNCIL & AGENCY QUESTIONS & ANSWERS

A. Review of reports on the Allied Group aeration project in Lake Apopka by TAG members

Mike Perry, Lake County Water Authority, noted aeration is not a new technique, and has been previously applied to small ponds to improve aeration. Mr. Perry suggested aeration has limited use beyond pond applications. Mr. Perry indicated the Allied Group use of proprietary diffusers and special bacteria did not work to expectations, in concurrence with the University of Florida (UF) report on the project. Mr. Perry speculated the aeration basically moved sediments outside of aeration zones, but did not eliminate flocculant. There was no change in nutrients between treated and outside control areas. The reported dissolved oxygen (DO) improvements were typical for aerators. Mr. Perry did not agree with Allied Group pronouncements regarding sediment improvements, vegetation expansion, influxes of invertebrates, and cattail elimination concur with UF findings that FWC required. Mr. Perry did not recommend the use of the technique elsewhere in the Harris Chain and suggested Council not recommend funding for projects. Vice-chairman Goerner agreed with Mr. Perry's summary. Chairman Johnson queried Mr. Perry about any beneficial use of the technique around boat ramps. Mr. Perry suggested the technique would have limited success as storm events would move sediments back into aerated areas. Chairman Johnson concurred with UF report. Councilman John Stump questioned whether the project had been terminated.

Dennis Renfro, FWC, noted the project had not been terminated and was now under SJRWMD direction with legislative funding. Mr. Renfro reported FWC is no longer involved in the project. Mr. Renfro also noted he would not be commenting on the reports as he was the project manager.

Councilman Truenow inquired as to why the project was passed from FWC to DEP to WMD. Mr. Renfro reported project management changes were due to different funding sources, and the shift in the agencies responsible for oversight of those funding sources.

Ron Hart, LCWA, provided an independent analysis of the project and noted several inconsistencies as stated in the reports. The Allied Group reported decreases in phosphate in a project in India but provided no backup data. The Allied Group did not consider how organic matter was digested and how sediment can be transported from one area to the next. Mr. Hart speculated the matter was not removed, just relocated. The report showed aerial images depicting muck and cattail reduction, but no dates associated with images.

Mr. Hart noted a statement regarding benthic invertebrate expansion yet the study did not specify any prior benthic sampling. Mr. Hart suggested the overall project was set up without proper independent controls, therefore did not address many variables, and lacked quantitative documentation. The small footprint of the project was not likely having an impact on overall lake, as stated. Mr. Hart suggested changes in water quality at the test site were related to large lake area, not the test site itself.

Dr. Fulton reported to Council a general agreement with the observation provided by Mr. Perry and Mr. Hart, and three main comments. First regarded muck reduction. The Allied Group estimated a six-inch reduction in sediment depth, while UF estimates ranged between 0 and 6 inches of change. Dr. Fulton noted survey quality equipment was not used for sonar locations, and mapping was within the area of study with no independent ground truthing. Since there were no control areas for the mapping studies, it is not possible to conclude changes. The proposed mechanism for loss of muck due to enhanced decomposition is possible, but the simple transport of sediments out of the area cannot be ruled out.

Regarding water quality, the Allied Group reported similar improvements in the study and control area, but SJRWMD found water quality also similar much further away from the project site. SJRWMD concluded the Allied Group project had no effect on water quality improvements.

Dr. Fulton's third area of comment regarded cattail cover. Aerial photos of cattail cover show cyclical changes with high and low water levels, and SJRWMD confirmed herbicide treatment of cattails during that time period of the Allied Group project. The herbicide treatment of cattails took place in January 2015, which was before the beginning of the Allied project (May 2015), but that treatment still could have contributed to the retreat of cattails during the experiment.

Dr. Fulton noted SJRWMD is still interested in exploring aeration produced by diffusers to promote better habitat for eelgrass to grow. The aerator will continue to be operated within test plots of eelgrass in both treatment and control areas to see whether the diffusers improve growth of eelgrass.

Councilwoman Bishop inquired about the study timeframe. Dr. Fulton reported the project would last 6 months and would be evaluated by an independent group to see if plants survive. Dr. Fulton reported the new contract is a sole source contract with the Allied Group for \$330,000 and was developed through discussion between the Allied Group, SJRWMD, and DEP.

Council discussed making a formal recommendation opposing aeration projects. Councilman Stump suggested it should be an annual report recommendation. Vice-chairman Goerner suggested the Council put on record, and send a message to appropriate agencies, whether after reviewing data Council will, or will not support projects. Vice-chairman Goerner offered a motion that Council, until further review, does not support the expenditure of any more money on aeration projects. The motion was seconded by Councilman Grow and approved unanimously.

Councilman Stump **asked for the reporting schedule on the aeration project.** Vice-chairman Goerner suggested Mark Hoyer do a literature review or analysis on the aeration project at a later date.

B. Agency Updates

Mr. Renfro reported FWC has initiated a slow rate of flow into Area 3. FWC is still working on the removal of tussocks, and levees are expected to be breached shortly. Mr. Renfro noted FWC had sprayed the hydrilla.

7. **PUBLIC COMMENTS**

Lynda Bystrak addressed Council regarding Lake Yale. Ms. Bystrak reported studies on the lake are complete and pollution sources have been identified. Ms. Bystrak suggested Council might want to know about pollution in other Harris Chain lakes besides Lake Apopka.

8. **COUNCIL MEMBER COMMENTS**

Chairman Johnson requested the August meeting date be shifted by one week. There were no objections by Council.

Chairman Johnson recommended Council provide available funds as awards for Lake County science fair winners. Vice-chairman Goerner offered a motion to provide a certificate and 3 awards for \$50 each for 3 grade levels. Motion was seconded by Chairman Johnson and unanimously approved.

Chairman Johnson reported he had sent fish data to the Florida Department of Health (FDOH) regarding pesticide limits. FDOH replied they could not any judgement because *Gambusia* is not a gamefish.

Chairman Johnson also reiterated a request to **Kevin Coyne for the DEP response to the Harris letter dated 8/29/16.**

Councilman Sid Grow presented a summary document on actions and presentations made at the Friends of Lake Apopka (FOLA) meetings on 1/10/17 and 1/1/17. Councilman Grow read the bulleted summary into the record. The summary document is posted on the Council web site. **Councilman Grow requested copies of the summary be provided to Council.**

Councilman Grow also presented an outline of the agency responses of the Harris Chain of Lakes Restoration Council letter dated 8/29/16 and requested Council to review the comments and provide specific questions to Susan Davis for SJRWMD speaker Erich Marzolf to address at the next Council meeting. **Councilman Grow requested copies of the outline be provided to Council.**

Councilman Grow reported the action item **requesting a statement from the top management at SJRWMD as to why the Council would not be included in viewing the listing of the projects, and on how the money (\$5 million) is to be spent** is still not complete. Councilman Grow reiterated his request.

Councilman Truenow inquired about the one million fish released in Lake Apopka and why Council had not received information about the release in a timely fashion. Mr. Renfro discussed the FWC pilot release study with fish being distributed throughout the lake in the vicinity of long-term monitoring stations. The study is an opportunity to stock larger fingerlings (1-2 inches), which will feed on zooplankton in the lake. Lake Apopka was chosen because long-term monitoring is already underway, but other hypereutrophic lakes are being considered.

Mr. Renfro noted three TV stations were on site to provide expanded coverage of Lake Apopka. The project will take one year to evaluate. Sampling by FWC staff is due to begin in a month or two, once the fish have had an opportunity to grow.

Mr. Renfro requested presentation powerpoints be provided prior to the Council meetings.

Councilwoman Bishop discussed the existing project list in the Annual Report and suggested extra columns be added, including a Council comment list, whether the project had been reviewed by Council, and whether the project was supported by Council. Councilwoman Bishop suggested Council focus on supporting implementation of projects on the Annual Report list that were approved by Council.

Councilman Stump inquired whether SJRWMD had completed permitting on the Lake Apopka dredging project and requested Dr. Fulton provide an update.

9. REQUESTS FOR ACTION

- Council requested topographic maps of the north shore.
- Councilman Stump requested the reporting schedule on the Allied Group aeration project.
- Chairman Johnson reiterated a request to Kevin Coyne for the DEP response to the Harris letter dated 8/29/16.
- Councilman Grow requested copies of FOLA summary be provided to Council.
- Councilman Grow requested copies of his outline of agency responses be provided to Council.
- Councilman Grow reiterated the July 2016 action item requesting a statement from the top management at SJRWMD as to why the Council would not be included in viewing the listing of the projects, and on how the money (\$5 million) is to be spent.
- Councilman Stump requested Dr. Fulton provide an update on permitting and dredging on Lake Apopka.

10. ADJOURNMENT

The meeting adjourned at 12:01PM.