FINAL

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

June 6, 2014

The regular meeting of the Harris Chain of Lakes Restoration Council (Council) was held at 9:10 a.m. on June 6, 2014 at the Lake County Board of County Commissioner Chambers, 315 West Main Street, Tavares, Florida.

Members Present	Members Absent
Skip Goerner, Chairman	Keith Truenow, Secretary
Robert (Bob) Johnson, Vice Chairman	Hugh (Dave) Davis II
Lloyd Woosley	Dr. Ed Schlein
Don Nicholson	
Sid Grow	

1. CALL TO ORDER

Chairman Goerner called the meeting to order at 9:10 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 Goerner called the roll. Secretary Truenow and Council members Davis and Schlein were absent.

4. APPROVAL OF MINUTES

Councilman Woosley made a motion to approve the revised November 1, 2013 meeting minutes. Councilman Grow seconded the motion (Council members Woosley, Grow, and Johnson voted yes. Chairman Goerner and Councilman Nicholson voted no). The motion passed. Councilman Nicholson made a motion to approve the May 2, 2014 meeting minutes. Councilman Woosley seconded the motion and the motion passed with a unanimous vote.

5. PUBLIC COMMENTS

There were no comments from the public.

6. PRESENTATIONS / ACTIONS

A. Presentation – Ecological Considerations in Setting MFLs and Lake Regulation Targets for the Ocklawaha Chain of Lakes

Rolland Fulton, PhD, Environmental Scientist VI, St. Johns River Water Management District (SJRWMD) gave a presentation on the ecological considerations in setting minimum flows and the effects of MFLs (minimum flows and levels) on water quality. The primary ecological goal in setting the targets for water levels in Lake Apopka and the Harris Chain of Lakes are healthy lake and plant communities, floodplain wetlands, and for fish and wildlife. The primary economic constraint is flood control. The evaluation of water quality, recreation, navigation, water storage and water supply is also required.

There are similarities and differences between MFL and lake level regulation targets. MFL targets are protected (SJRWMD rule); a recovery strategy is required if the system does not meet the targets. MFLs are minimum water levels, so levels higher than that are fine. The purpose of MFLs is to prevent over use of water and the goal is to prevent significant harm to the resource. The SJRWMD uses lake level regulation targets for modeling of regulation schedules. These targets require both high and low levels, so higher water levels are not always acceptable. The purpose of the targets is fluctuation in lake levels for healthy littoral wetland communities. The goal is to create optimal conditions, as feasible, but it is not mandatory that we meet these goals.

Higher water levels provide sufficient flooding of floodplain habitat, prevent the encroachment of upland plants into the wetland areas, and protect organic soils from oxidation. Low water levels permit seed germination of wetland plants in exposed sediments, provide for consolidation of the exposed sediments, and allow expansion of vegetation into deeper areas. Lake level fluctuation is beneficial to fish, wildlife, and water quality.

The primary basis of MFL recommendations is to enhance littoral wetland habitat around the lakes. Lake littoral wetland protects water quality and shorelines from erosion, provides fish spawning and juvenile nursery areas, aquatic plant production and diversity, and habitats for fish, birds, mammals, reptiles, and prey.

Data from 20 wetland transects were used to develop the MFLs. The sites were relatively undisturbed wetlands and habitat for a variety of wetland types. Transects range in size to 2,485 feet in length. SJRWMD surveyed the vegetation, soils, and vertical and horizontal locations of the sites. The wetland transects sites were depicted on an aerial map. Council member Woosley questioned the different size of the polygons and colors. Mr. Fulton explained use of different colors to distinguish between transects that are close to one another and polygon lengths are proportional to transect lengths. Council member Grow asked for the average size of transects. Mr. Fulton did not find an average but shared the sizes range from approximately 100 to 2,485 feet. Council member Woosley asked about variability in the nature of substrates, vegetation, and characterization of transects. He also asked for generalizations. Mr. Fulton stated that there were some transects in all the lakes that had the hardwood swamp habitats in which SJRWMD is particularly interested. Lake Griffin and Lake Yale have the most significant representation of sawgrass marsh. Councilman Woosley asked about the use of benchmarks for the MFLs and water level variability of the ecosystem over time. Mr. Fulton stated that that is a possibility. Chairman Goerner asked for an estimate of acreage of the sawgrass marsh in Lake Yale and Lake Griffin. Mr. Fulton stated that estimates are not available at this time. He explained that he may get an estimate of shallow marsh habitat from mapping of wetlands but differentiation of a single species (sawgrass) from that mapping effort is unlikely. Chairman Goerner is interested in knowing how much natural sawgrass is left; he commented on prior marketing of sawgrass for pulp from Lake Griffin. Mr. Fulton reported that some of the historic areas that had larger amounts of sawgrass became muck farms and

now they are restoration areas. The biggest areas of remaining natural sawgrass habitat are north of Lake Griffin and along the Ocklawaha going northward from Lake Griffin. Councilman Woosley encourages the use of a benchmark system to examine effectiveness; Mr. Fulton stated that use of the present data (geolocation, satellite imagery) might allow for this. Councilman Woosley and Chairman Goerner want it noted in the annual report that they support the use of a benchmark system.

Mr. Fulton presented an example of the Lake Dora Transect 2 – Trimble Park to show the types of data collected; the horizontal axis shows the distance along the transect and the vertical axis shows the elevation. Different colored lines along the top of the graph depict the different types of wetland habitat. This transect started in an upland habitat, went into a transitional habitat between uplands and wetlands, then a hardwood swamp area, then another hardwood swamp area with a distinctly different composition, then a shallow marsh, and then an aquatic bed. The points at the bottom show information on the types of soil (non-hydric, hydric, and histic epipedon). Council member Woosley asked what criteria were used in selecting the transect sites. Mr. Fulton stated use of relatively undisturbed wetland habitats, a variety of wetland habitats, and at least one transect on each lake that had a high quality hardwood swamp (the key habitat involved in MFL recommendations). Councilman Woosley asked if there was an attempt to limit the sites to public lands for institutionalization. Mr. Fulton stated that the sites are on public and private land; accessibility was an issue for some of the sites on private land.

Three components of lake level targets are magnitude (the elevation), duration (how long water levels are at target elevations) and return interval (how often that target occurs in terms of years). Councilman Woosley asked if staff superimposed a natural model over the manmade system or if this is an attempt to replicate the historical manmade alteration. Mr. Fulton stated efforts to protect the existing habitat and not return to historic unregulated systems for these lakes. Mr. Woosley asked if the hypothesis is that replication of historical magnitude, duration, and re-occurrence prevents further deterioration of the environment because the desirable goal in known. Mr. Fulton stated that the attempt is to protect existing habitat and not to restore the historical fluctuation in water levels. Councilman Woosley asked if this was a fixed scenario; Mr. Fulton said this could potentially change.

Councilman Nicholson questioned the definition of a navigable body of water. Councilman Woosley referenced the Rivers and Harbors Act of 1899, and cautioned against the inappropriate use of the word navigation. Chairman Goerner would like to know exactly what that means in Lake Griffin and when it is navigable water. Councilman Woosley stated use of the term navigable waters in the Rivers and Harbors Act. The Clean Water Act broadened the definition of the term to waters of the United States and this encompasses the term navigable waters. Chairman Goerner stated concern that the water level in Lake Griffin was much lower than the surrounding lakes; he wants to know if and how the Rivers and Harbors Act apply to MFLs, and if it provides for minimum flows for navigation from Lake Griffin and through the canals. Mr. Fulton does not have a specific answer; he recollected that navigation up a channel that goes through Lake Griffin is supposed to be four feet in depth but that it does not address access to the lake from surrounding areas. Councilman Nicholson recalled that, many years ago, the Council presented a code of regulations that included the whole body of water – the channel, canals, and etcetera.

Mr. Fulton stated the development of three water level targets for the MFLs and the regulation schedules. SJRWMD developed a high water target to provide sufficient flooding of wetland habitat

to protect hardwood swamp and prevent encroachment by upland plant species into wetland areas. The elevation is such that the water level is above the average elevation of hardwood swamp for at least 30-60 days (duration component), and this should occur at least once every 2 years on average (return interval component). The difference between the MFLs and the regulation schedule targets is the 30-day duration for the MFL; this is the minimum duration that is necessary to protect that habitat from degradation. The 60-day duration is the regulation schedule target for more optimal conditions for that habitat. SJRWMD developed an average water level to protect wetlands and organic soils from over-draining. The water level should not drop lower than 0.3 feet below the average elevation of deep organic soils (MFL target) or of upper wetland habitat (regulation schedule target) for more than 180 days (duration component), no more than once every 1.7 years (MFL return interval) or 2 years (regulation schedule return interval), on average. Councilman Grow asked about the consequence of a rainfall deficit similar to the past several years. Mr. Fulton explained that this is based on average return intervals over a long period (modeling over approximately a fifty-year period) so a single drought of a few years would not violate the MFLs. The elevation was determined based on studies conducted in the Everglades during periods of draw down and the loss of organic soils; 0.3 feet below the soil surface resulted in zero loss. A deeper drawdown would result in the loss of soil. The third water level target is a low water level target. This design will expose the marsh habitat for seed germination and consolidation of sediments in the marshes. The water level should drop to roughly the lower elevation of shallow marsh but not for more than 120 days and no more than once every five years (MFL target), but at least once every ten years (regulation schedule target) on average. SJRWMD will compare actual or modeled lake levels over a long period with the targets.

Florida Statutes require consideration of the value of nine water resource assessments for freshwater systems in setting MFLs; these are fish, wildlife, detrital material transfer, aesthetic and scenic, filtration and absorption of nutrients, sediment loads, water quality, recreation, navigation, and maintenance of freshwater supply.

Water level fluctuations are beneficial to long-term water quality but water quality tends to deteriorate during low-water periods. SJRWMD evaluated the effects of MFL's on water quality during low-water intervals. Basin restoration has resulted in lower nutrient loading and improved water quality; these changes made it more difficult to assess the relationships between water levels and water quality. Mr. Fulton provided a graph of total phosphorus (red squares) and Chlorophyll-a (green triangles) from 1984-2011 to show the stability of external loading and water quality. The category "other sources" includes storm water run-off from residential and urban areas, agricultural run-off, septic tanks, and atmospheric deposition. Council member Woosley emphasized, in regards to the graph, that the majority of the data, except for the phosphorus and chlorophyll measurements, are estimates (i.e., relative numbers).

The hurricanes in 2004 resulted in varying periods of poor water quality due to a large pulse of external loading to the lakes in watershed runoff, and due to high winds and waves that disturbed sediments and shallow vegetated habitats. The assessment of water quality impacts of MFLs included the use of water level and water quality data beginning in 2001 (excluding time periods impacted by the 2004 hurricanes), the evaluation of relationships between water level and water quality (TP, TN, chlorophyll, TSS, Secchi transparency), and examination of water elevations at which fish kills were reported. Mr. Fulton presented graphs of hypothetical and actual data with regard to water levels (elevations) and water quality. Council member Woosley mentioned use of a recurrence interval plot for a frequency analysis. Mr. Fulton examined the relationship between

varying durations of water levels and water quality and found that the water level, but not the duration of the water level, affected water quality. Council member Woosley asked about the use of a cluster analysis. Mr. Fulton responded that SJRWMD did not use cluster analysis or any other multivariate analyses to determine if the data was normally distributed. The R^2 value that is on some of the graphs provided by Mr. Fulton is the amount of variability in the depicted water quality measure that is accounted for by water level variations. Chairman Goerner questioned differences in the data sets in Lake Griffin and Lake Apopka based on similar water quality in times past. He is concerned about the low water levels on Lake Griffin and the results of the analysis. Mr. Fulton stated different responses of the lakes are due to the average depths of the lakes, the surface areas, and the fetch. Chairman Goerner wants more research and additional understanding. He further added that the graph labeled as "Lake Apopka stage and reported fish kills 2001-2012" does not track the location of reported fish kills and excludes fish kills due to freeze events.

In summary, Mr. Fulton explained that SJRWMD defined threshold water elevations of concern at which water quality doubles (or Secchi depth transparency is halved), or at which fish kills frequently have been reported. Hydrological modeling will be used to determine whether frequency of occurrence of the water elevations of concern change under MFL conditions. Mr. Fulton provided hypothetical examples of negligible and substantial effects of MFLs on water quality. Council member Woosley encouraged Mr. Fulton to consider use of non-parametric statistics for a more defensible and less arbitrary way for defining water quality impacts. A draft will be available for public review and comment at the end of next year for all of the lakes except Lake Yale, which is due the following year.

B. Council Workshop Discussion – Harris Chain of Lakes Restoration, Chairman Skip Goerner, HCOLR Council

Kraig McLane, SJRWMD provided the Council with a printed summary of past and proposed presentations in 2014 for the workshop discussion. Council member Woosley recommended identification of goals and then the activities needed to achieve those goals. Chairman Goerner wants to determine the direction and interests of the Council. He is interested in increasing natural, historic, vegetation in disturbed wetlands on the north shore of Lake Apopka and Lake Griffin, reconnection of the marshes on Lake Apopka and changes in the types of vegetation. He believes the current use of Apopka's marsh for birding is more detrimental than other potential uses, and wants more information of the geology of the Harris Bayou. He supports implementing a no harvesting of trophy bass strategy in one or more of the lakes to make it an outstanding bass fishery. Chairman Goerner and Council member Woosley want this to be a target that is in the annual report. Council member Grow offered that he had nothing to add. Vice Chairman Johnson is interested in fish stocking, the control of hydrilla, and re-establishment of aquatic vegetation in the lakes. He advocates de-emphasization of the control of total phosphate and believes that the use of $10,000,000 for deep plowing was a boondoggle. He recalled that deep plowing was supposed to eliminate the pesticides yet last month SRWMD reported flooding to prevent pesticides from moving up the chain. Council member Woosley believes the overarching goal to be that clear water translates into better habitat, fisheries, and public-use opportunities. Having stated the goal, he provided specific objectives, sub-objectives, and offered to provide a written copy of the framework. Kraig McLane, SJRWMD recommended including this as an addendum to the minutes. Council member Woosley shared that a criticism of past annual reports is that it has been task oriented versus objective oriented. He mentioned the importance of appropriate vegetation management on the north

shore and the enhancement of sawgrass. Council member Nicholson is most interested in clear water. From an economic standpoint, he also values seaplanes and fishing events.

Mike Allen, University of Florida (UF), believes management of hydrilla can have a huge impact on fisheries and a lake becoming a world-class bass fishery. Lake Istokpoga is one of the state's top bass fisheries; hydrilla serves as fish habitat in the south end of the lake, but is aggressively treated and sprayed in the north end. Similarly, there is a lot of hydrilla in Lake Lochloosa but spraying is limited and only applied to sections to keep it away from docks and ensure navigation. Mr. Allen recommends that the Council recognize the different management strategies for hydrilla in other lakes. The Council recognized this as a potential pilot project in one of the lakes.

Mike Perry, LCWA shared that he contacted Dr. Dan Canfield, Professor of Limnology, UF and he (Canfield) still does not have travel funds to attend Council meetings and does not request this from LCWA. Mr. Canfield is evaluating the logistics, available funding, and will contact Mr. Perry. Chairman Goerner shared that he will ask LCWA for increased funding for the Council. Council member Woosley advised that he purchased a home near the Butler Chain of Lakes and will be leaving the Council in the future.

Chairman Goerner nominated Mike Perry, LCWA as the interim chair for an organizational meeting of the Technical Advisory Group (TAG) and requested that the TAG evaluate findings of today's workshop. Mr. McLane will coordinate the meeting and advertisement.

7. COUNCIL & AGENCY QUESTIONS & ANSWERS

Mike Perry, LCWA reported that the current water level at Lake Apopka is 64.10 feet, the regulatory schedule is 65.6 feet, and the minimum desirable is 65.4 feet. The current water level at the Super Pond is 61.1 feet, the regulatory schedule is 62 feet, and the minimum desirable is 61 feet. The current water level at Lake Griffin is 56.9 feet, the regulatory schedule is 58.1 feet, and the minimum desirable is 57 feet. He commented on differences in rainfall in the different lakes and scheduled budget meetings and hearings.

Dennis Renfro, Fisheries Resource Coordinator, Florida Fish and Wildlife Conservation Commission (FWC) reports coordination of a Ducks Unlimited Greenwing event that was very beneficial to the community. Approximately 120 or more youth, aged five to fifteen participated in multiple stations. Each station allowed them to catch a fish, shoot a gun, and an arrow from a bow. Live alligator and snake specimens were available and Deputy Sheriffs brought their Special Weapons and Tactic vehicles and a helicopter. Every child went home with a rod and reel due to generous donations and Secretary Keith Truenow participated in the event. Mr. Renfro met with Commissioner Sean Parks, Steve Romano, city engineer, and the city planner on federal funding (sport fish restoration) and building of the dock and boat ramp at Montverde. He met with anglers to discuss and survey the proposed rule change that limits the harvest of largemouth bass over 16 inches to one. On Lake Griffin, largemouth bass anglers are targeting the new fish attractors; FWC's recorded catch rate is 3.5 bass per angler hour. Statewide catch rate is less than a half of a bass per hour. He purchased 700 mossback plastic fish attractors and delivery is next week.

Jay Brawley, SJRWMD reported that Governor Scott did not veto the $3,000,000 line item for Lake Apopka in the 2014-2015 budget. He added that solicitation of the Lake Apopka $3,900,000 request for qualifications was made on June 11, 2014. He had an interview with a reporter from The Villages

Daily Sun newspaper, (Mike Salerno) about Lake Apopka. He added that he visited the culvert site at Lake Yale and met with the Director, Jim Stivender of Lake County Public Works. Council member Woosley asked for review of the north shore area and identification of areas that are considerably hands-off because of the agreement with Fish and Wildlife versus potential areas for adaptive plant management, flooding, and interconnection. Mr. Brawley will review the land management plan and invited TAG members review.

Chris Ferraro, Florida Department of Environmental Protection (DEP) reported that the Goose Prairie Peat Mine has not submitted an application and the upper Ocklawaha Basin Management Plan (BMAP) goes to the Secretary for adoption in July 2014. EPA's withdrawal of the Federal Water Quality Criteria delayed implementation of the state's criteria (surface water quality standards) and adoption of the proposed human health criteria is on hold until further evaluation of EPA's national standards. Chairman Goerner asked for continued updates on the Goose Prairie Peat Mine.

8. COUNCIL MEMBER COMMENTS

A. Comments

There were no comments from the Council members.

B. Discussion of Next Scheduled Meeting:

The Council cancelled the meeting on July 11, 2014 and the next meeting is August 1, 2014. Tom Champeau, FWC, will provide information on legislative funding for Lake Apopka and Michael Cullum, SJRWMD, will review the MFL's and lake level management. Chairman Goerner wants to review the outline of today's workshop and postponed discussion of the Central Florida Water Initiative. Mr. McLane reported the August 2014 meeting will be at an alternate location (e.g., Tavares City Hall) due to planned renovations and asked for suggestions. The Council had no recommendations. Representative Metz's office received no applications for the Environmental Engineering vacancy; Representative Metz asked for the Councils' feedback. Chairman Goerner recommends advertising the vacancy again and Council member Nicholson suggests placing an advertisement in the Villages Daily Sun.

9. ADJOURNMENT

The meeting adjourned at 12:14 p.m.

Council member Woolsey's June 6, 2014 addendum is below**:**

Clearer water translates into better aquatic habitat, fisheries, and public-use and economic opportunities for the Harris Chain of Lakes

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An overarching (action) goal for the Harris Chain of Lakes

Objective 1 – Control nutrient and sediment inputs

a. Continued long-term support for the LCWA Nutrient Removal Facility (NuRF) for treating non-flood discharges from Lake Apopka to the lakes downstream.
b. Minimize direct releases from Harris Bayou into Lake Griffin with the construction of by-pass infrastructure.
c. Continued long-term support for agricultural, urban, and other categories of structural and non-structural best management practices as part of the total maximum daily load program, which the key implementation strategy under the Upper Ocklawaha BMAP.

Objective 2 – Continue to improve aquatic habitat and water quality

a. Directly connect marshlands within the North Shore Restoration Area to Lake Apopka in those areas where the SJRWMD is not subject to land/water use restrictions as part of the agreement with the U.S. Fish and Wildlife Service.
b. Support a pilot program to allow hydrilla to grow naturally in selected areas of Lake Apopka in an attempt to stabilize lake bottom sediments, improve water clarity, and provide important fisheries habitat. Hydrilla would be controlled to prevent encroachment into areas of the lake with public access and navigation opportunities, private docks, and habitat supporting the crappie fishery.

Objective 3 – Capitalize on habitat and water-quality improvements

a. Gain the support of the FWC for designating the Harris Chain of Lakes as Trophy Bass Resource by implementing a catch-and-release only regulation for largemouth bass of 16 inches or greater in length.
b. Improve public access to Lake Apopka, particularly in the deeper sections of the lake along the western shore.