

FINAL

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

June 3, 2005

The regular meeting of the Harris Chain of Lakes Restoration Council (Council) was held at 9:00 AM on June 3, 2005 at the Lake County Board of County Commissioners' Chambers, 315 West Main Street, Tavares, Florida.

Members Present

Hugh (Dave) Davis II, Chairman
Thomas A. Cook, MD, Secretary
W. Thomas Brooks
Charles C. Clark
Keith Farner
Robert Kaiser, P.E.
Rick Powers, P.G.

Members Absent

Skip Goerner, Vice Chairman
Don Nicholson

1. CALL TO ORDER

Chairman Dave Davis called the meeting to order at 9:00 AM.

2. INVOCATION AND PLEDGE OF ALLEGIANCE

The Invocation was given by Councilman Robert Kaiser, followed by the Pledge of Allegiance.

3. ROLL CALL

Chairman Davis called roll. Vice Chairman Skip Goerner and Councilman Don Nicholson were absent.

4. APPROVAL OF MINUTES

Gene Caputo of the St. Johns River Water Management District (SJRWMD) notified the Council that the draft May Meeting Minutes had not been received and they would be discussed during the July meeting.

5. DISCUSSION ITEMS

Proposed Contract Renewal of Berryman & Henigar, Inc.

Mr. Caputo notified the Council that the proposal for continuing services of Recording Secretary by Berryman & Henigar, Inc. had not been received and the discussion of the proposal would be scheduled for the July meeting.

6. PRESENTATIONS

Overview of Legislative Session – Senator Carey Baker

Senator Carey Baker was not available to speak at the June meeting due to his commitment to the National Guard. Mr. Caputo said that he would contact the Senator again to possibly schedule his presentation for the July meeting.

Status and Capabilities of the Florida Bass Conservation Center – Rick Stout, Manager, Richloam State Fish Hatchery and Florida Bass Conservation Center

Rick Stout with the Florida Fish and Wildlife Conservation Commission (FWCC) and Manager of the Richloam State Fish Hatchery, provided an update on the renovation of the facility, which was originally constructed in 1965-1966;

- Largest in the State for indoor spawning
- Full control over water temperature, air temperature and light
- 6 – 80' flowing channels (“raceways”)
- Filters 6,600 gallons per minute which is recycled for use at the facility
- Can produce 1.5 million large mouth bass fingerlings per year in the 3.5” to 4’ size class
- 9 species including large mouth bass, channel catfish, bluegill, shell crackers, and white catfish
- 300,000 channel catfish per year
- Florida Largemouth Bass are a unique strain
- Able to work with fish genetics

Councilman Tom Brooks asked if all of the fish produced at the facility are released by FWCC personnel. Mr. Stout said yes and explained that prior to 1985 private individuals could obtain fish to stock their own ponds, but that is no longer the case. All of the fish currently produced there are released to waters of the State.

Councilman Keith Farner asked about the survivability of the farm raised fish when released into the wild. Mr. Stout explained that they are developing a specific feed for bass that will produce larger and healthier fish because the current feed produces bass with fatty livers that do not survive very well after being released. He said the improved feed and producing larger fish may increase the success rate of the released fish to over 30%; currently the success rate is about 20%. Mr. Stout explained that the success rate will also be increased by spawning the bass a couple of months earlier than normal so when they are

released the fingerlings will feed on the shad fry. Renovation of the Richloam facility is expected to be completed by September 2005 and begin releasing fish in the Spring 2006.

Chairman Davis asked if the facility has a pond where the young fish have the ability to feed on natural food prior to being released into the wild. Mr. Stout said that the only feeder fish they raise are for the brood stock of the bass and catfish.

Secretary Tom Cook asked if the fatty liver issue only affects the bass and how is it they are sure it is a result of the feed? Mr. Stout explained that extensive research of all the environmental factors appear to indicate the feed produces excess fat which is stored in the liver and they have only seen this in the large mouth bass. Secretary Cook also asked if the new feed they are developing will help prevent fatty livers in the fish. Mr. Stout said that the improved balance of amino acids and fat would allow the fat to be burned up as energy and not be stored in the liver.

Councilman Brooks asked if the Council would be able to visit the facility once the renovation is complete. Mr. Stout said he would be glad to have them visit.

Councilman Charles Clark asked if the facility currently has the ability to spawn 3.5” bass which could be released to coincide with the shad spawning in Lake Griffin. Mr. Stout explained that they have worked with spawning to target other forage fish such as Nile perch and they are confident they could do the same for the shad. He said if the weather permits, they are going to spawn the fish early and will produce advanced fingerlings that are under 4’ which will be ready for release in the Spring. These fish will be better able to compete with the shad populations in the lakes.

Councilman Clark also asked about the success rate of the fish in lakes with poor water quality comparing Lake Griffin to Lake Apopka saying that in Lake Griffin the phosphorus level is 10% higher than in Lake Apopka, the chlorophyll concentration is four times greater and the Secchi Depth is approximately one-half of what it is in Lake Apopka. Mr. Stout said that water quality is an important factor for the bass to be successful, along with the availability of a good food source. He explained that they are reviewing their post-stocking data from their efforts in Lake Talquin and it appears to suggest that multiple stockings of fewer fish may be more successful than one stocking of numerous fish.

Councilman Clark asked what some of the water quality parameters would be for the bass to be successful. He also noted that the Secchi Depth in Lake Griffin was 20 centimeters (cm) or about 10” and wanted to know if that would be an issue. Mr. Stout said the Dissolved Oxygen (D.O.) should be 2.0 to 2.5 milligrams per liter (mg/l) or higher and at the facility they will maintain an approximate 60% saturation of D.O. With respect to water clarity they maintain a Secchi Depth of approximately 18” at the facility because it is important they have a good supply of phytoplankton which feed the zooplankton, that the bass will feed on. He cautioned that excessive blue green-algae would not be beneficial because of the potential for toxins which would affect the fish, but a good supply of unicellular algae would be beneficial.

Councilman Tom Brooks asked Councilman Clark his thoughts about the limited ability of to bass to spawn in Lake Griffin. Councilman Clark said that it was his understanding that due to the lack of near-shore vegetation; only a limited number of bass are able to spawn. Mr. Stout explained that male bass excavate nests to spawn, therefore the quality of the substrate or sediments is also important. Councilman Clark then asked if it was Mr. Stout's opinion that the poor water quality will support the bass restocking effort. Mr. Stout said that he was not familiar with the water quality in Lake Griffin and referred the question to John Benton.

John Benton (FWCC) explained that water quality has never prevented fish from spawning in the Harris Chain of Lakes (HCOL) and that the Richloam facility is intended to assist lakes that are failing. In fact, they had good success stocking Lake Apopka in the early 1980s despite the poor water quality. Mr. Benton said that Lake Griffin had a great year for fish production in 2004 and can continue to do so because the improving water quality and habitat in the lake will make it even more productive. They are continuing to monitor the conditions in the lake and the poor water quality that was caused by the hurricanes of 2004.

Councilman Farner asked Mr. Benton's opinion as to whether there should be more effort/money spent on improving near-shore habitat as opposed to stocking the lakes. Mr. Benton said that the larger bass survive fine in open water but the smaller fish need the littoral communities to survive.

Councilman Rick Powers asked about the cost per fish for those released including survivability, transportation, and other associated costs. Mr. Stout said the old facility produced bass in the 1990s for about \$0.25 per fish for advanced fingerlings and less than \$0.02 per fish for those 1' to 1.5" in length. The net cost for the advanced fingerlings is approximately \$1.00 per fish including transportation, survivability and the other costs. Mr. Stout explained that these estimates should be true of the new facility, but the final costs are not yet known.

Algae Update – Dr. Andy Reich, Florida Department of Health

Dr. Andy Reich of the Florida Department of Health (FDOH)-Division of Environmental Health in Tallahassee said that he is working with Russ Melling of the Lake County Health Department and Secretary Cook on a public education program regarding the issue of cyanobacteria (blue-green algae) in the lakes. In updating the Council on their activities over the past year he explained that they are working with the county health departments which included assembling a Public Health Technical Advisory Committee (TAC) who have been developing generic response plans during harmful algal bloom conditions. This plan will provide guidance to local authorities for actions to be taken when algal blooms occur in recreational waters. The TAC is being spearheaded by the Florida Wildlife Research Institute in St. Petersburg who will hold a conference in September during which they will adopt some of the recommendations in the plan. Dr. Reich explained that once the recommendations are adopted they will be provided to participating county health

departments who can act on them based on their specific needs. He said the FDOH will continue to work with the counties to develop specific action for their situations.

FDOH is also reviewing their regulation of fresh water public beaches. Dr. Reich explained that they are currently selecting a number of fresh water recreational areas around the State to conduct studies on how blue-green algal blooms affect people in those areas. He also said that they are working with the Centers for Disease Control (CDC) to study the mechanisms of exposure to people who recreate in and around lakes experiencing algal bloom conditions. Dr. Reich explained that the FDOH is coordinating with not only the CDC to conduct the study in Lake County, but also with the Florida Department of Environmental Protection (FDEP), LCWA, Lake County Health Department (LCHD), Mote Marine Laboratory and others because there is a lot of information available in the county on cyanobacteria. Dr. Reich said that the FDOH Internal Review Board (IRB) has approved the study with the use of volunteers and it is currently pending approval of the CDC IRB.

Dr. Reich went on to explain the study by saying volunteers will be provided personal air monitors that they will wear while water skiing, jet skiing, fishing, etc. to measure any aerosol exposure to toxins in the algae that may be present. He said after the volunteer, who has been explained the risks and consented to the study, has been recreating around a bloom for an hour or so; they will submit to a blood test along with an interview to determine if there are any symptoms. Additionally, water samples will be collected in the same areas where the volunteers are in the water. Dr. Reich believed the initial study will be conducted at Hickory Point on Little Lake Harris.

Councilman Kaiser asked if any air sampling would also be conducted away from the lake and Dr. Reich replied that not only will air samples be collected on the lake but around the lake also.

Councilman Farner asked if the study will include the risk of exposure to people who live around the lake but don't actually go in the water. Dr. Reich said they are going to maximize their ability to document exposure and how that may affect people. He also said that the study will include sampling on another lake that is not experiencing algal bloom conditions to be used as a "control" in the study.

Councilman Powers asked if the procedures for this study had been used before or are they entirely new. Dr. Reich said they will be using some of the procedures from Red Tide studies they conducted in Sarasota, that were very successful.

Councilman Farner said he had seen that the LCWA had received negative media attention for their expenditures for sampling in the lakes and asked if the data they had collected influenced the FDOH in making their decision to conduct their study here in Lake County. Dr. Reich said yes, because the FDOH only has a limited amount of funds available to conduct the study and the fact that so much data has already been collected in Lake County proved very instrumental in their decision.

Councilman Brooks asked if the blood sampling is done very soon after the exposure will there be sufficient time for the toxins to enter the blood stream. Dr. Reich said yes and added that although there is a test to identify the toxin microcystin, they are still developing a test to identify the toxin cylindrospermopsin, which can both be found in blue-green algae.

Councilman Brooks then suggested that the Council works very closely with the FDOH before issuing any statements for news releases, for fear of causing undue concern with the general public. Dr. Reich agreed.

Councilman Clark asked about his risk of exposure from his sprinkler system which draws water directly from Lake Griffin and he breathes up to 3 hours per day, twice a week due to the prevailing winds blowing the mist from the sprinklers towards his house. Dr. Reich said the intent of the study is to look at all avenues of exposure.

Councilman Farner asked if there is the potential for delayed symptoms that are “event triggered” that will also be explored. Dr. Reich said that the study will conduct a follow-up interview with the volunteers two weeks after their initial exposure to document any changes in their condition.

Secretary Cook asked about the timing of the study and Dr. Reich said they plan to conduct it this Summer. He also said that representatives from the FDOH were going to visit Hickory Point that weekend to determine the type and number of people who would be available to participate. Secretary Cook also asked if Dr. Reich would include the results of the study in the article he was going to write for the Lake County Medical Society. Dr. Reich said yes and thought it was a great idea.

Secretary Cook thanked Dr. Reich for all of his efforts.

Agency Updates

Dr. Larry Battoe (SJRWMD) provided updates on recent water quality for the lakes and provided the following data:

Parameter	Apopka	Beauclair	Dora	Eustis	Griffin	Harris	Yale
Total Phosphorus (µg/l)	80	91	63	40	72	41	26
Chlorophyll a (µg/l)	39	111	125	44	149	24	40
Secchi Depth (cm) (ft)	39 (1.3)	38 (1.3)	37 (1.2)	72 (2.4)	25 (0.8)	133 (4.4)	54 (1.8)

He said that the lakes are slow to recover from the effects of the hurricanes last Fall, especially Lake Griffin which currently has higher chlorophyll concentrations and lower

Secchi Depths than Lake Apopka. He surmised that this was due to the fact that Lake Griffin receives runoff from other lakes in the chain where Lake Apopka does not.

Dr. Battoe then explained that they are having vegetation management issues at the Lake Apopka Marsh Flow-way (LAMF) and they are looking into ways of controlling it. One method would be to introduce tilapia (grass carp) into the flow-way, but currently the D.O. is too low to support them.

Councilman Kaiser asked if the SJRWMD was pursuing a method of aeration of the water released from the flow-way to increase the D.O. Dr. Battoe said the District determined that aeration would be too expensive.

Councilman Clark reminded the Council that his research of total phosphorus in Lake Beauclair concluded that phosphorus may be entering the lake from sources other than Lake Apopka and water from the flow-way in the Apopka-Beauclair (A-B) Canal. Dr. Battoe agreed because currently the TP in Lake Beauclair is higher than in Lake Apopka and the 40 µg/l being discharged from the flow-way. He estimates that the sod farm and residential canals downstream from Lake Beauclair may be contributing phosphorus to the lake.

Chairman Davis asked if there is a direct relationship of Secchi Depths to chlorophyll concentration. Dr. Battoe explained that Secchi Depths can be influenced by a number of factors besides chlorophyll including detritus and dead algae that has been resuspended from the bottom of the lakes. He went on to say the Secchi Depth has more of an exponential relationship with chlorophyll where a moderate reduction in chlorophyll will greatly increase Secchi Depth.

John Benton (FWCC) gave a brief update on the electrofishing efforts saying they were continuing to analyze the data collected and will present a report to the Council once it is complete and has been through the Quality Assurance process. No further updates were provided by Mr. Benton.

Councilman Brooks suggested that the Council should visit the Richloam Hatchery in March of 2006. Mr. Benton said anytime would be fine with them.

Dr. Canfield provided an extended discussion on the issues of bass restocking. He explained that bass only need three basic things to reproduce; water, oxygen and a food source. In addition to the basic needs the fish also need habitat for them to use as cover while they grow to maturity. He said that all the lakes in the chain are currently producing bass and the restocking efforts of the advanced fingerlings and larger fish are intended to improve their survivability and increase their reproduction. Dr. Canfield explained that currently the fish have what he described as a 1% survivability rate to live to be three years old and grow to approximately 14" in size, which is very popular for the anglers. In his example of the survivability rate he explained that if 200,000 fingerlings were released into

a lake, approximately 25% or 50,000 would survive the first year, approximately 5,000 would survive the second year and approximately 500 would survive to their third year.

Dr. Canfield also reminded the Council that they approved the access canal dredging and lake level fluctuation program, which will help improve fisheries habitat and increase the number of fish in the lakes. He said an increased number of fish will have an increased economic impact on the area, due to the increased number of anglers coming to fish in the lakes.

Councilman Farner asked what the best combination of techniques would be to restore the lakes, from the management issues they have reviewed. Dr. Canfield said that it depends on the perspective of the individual/organization who is asking the question, as to what would be most beneficial to the lakes. His advice to the Council was that they would have to weigh out all the issues facing them and then make their own decisions.

Councilman Clark expressed his opinion that the Council was formed to improve water quality and he questioned the use of public funds to restock the lakes saying that he would like to talk with Senator Carey Baker to get his perspective, as to the mission of the Council. Councilman Brooks explained that his opinion was that the first issue the Council was charged with when they were formed was improved water quality. Now that they have discussed the issues for almost four years, a new perspective as to improving the lakes has developed. Councilman Brooks believed that the economic benefits of restocking the lakes may provide more emphasis on water quality.

Chairman Davis requested that a discussion of the enacting legislation be scheduled for a later meeting, so they can be provided guidance on the mission of the Council. Councilman Brooks fully agreed and believed the information provided to the Legislature by the Council may have broadened the scope of their desires for the future of the lakes, from just the water quality issue when the Council was formed.

Councilman Kaiser provided an update of the wastewater facilities renovations by the City of Leesburg saying that they are going to be spending an additional \$14 to \$15 million on these renovations. He said that they have come a long way in the last four years towards reducing contaminated discharge from their facilities.

No further agency updates were provided.

7. COUNCIL MEMBER COMMENTS

Discussion of July 8, 2005 Meeting

Mr. Caputo provided a summary of scheduled agenda items for the July 8th Council meeting including:

- A discussion of the May and June Meeting Minutes
- A discussion of the Berryman & Henigar continuing services proposal

- A presentation by Dr. Larry Battoe and Mike Coveney on the TMDL program
- Legislative update which may be provided by Senator Carey Baker

Mr. Caputo also reminded the Council that their July meeting had been rescheduled to July 8th as opposed to the first Friday in July.

Council Member Comments

Councilman Kaiser expressed his continued desire that an alternative energy source be explored for the Lake Apopka Marsh Flow-way and provided the following amounts of pollutants generated by the use of electricity during one year of flow-way operation:

1.8 million kilowatt hours of electricity
9.65 tons of SO_x (sulphur oxides)
3.9 tons of NO_x (nitrogen oxides)
1,693.7 tons of CO₂ (carbon dioxide)

He explained that most people do not realize the amount of pollution generated by producing electricity and an alternative source of energy could greatly reduce or eliminate that pollution. Councilman Kaiser continued to express his desire to have a feasibility study conducted on the use of wind generated power at the flow-way.

There were no additional comments made by the Council.

8. PUBLIC COMMENTS

No public comments were made.

9. ADJOURNMENT

The meeting was adjourned at 11:00 AM.

Respectfully submitted by:

Chairman Dave Davis

Secretary Thomas Cook, M.D.