

**To:** Attendees

**From:** HDR Engineering Inc.

**Date:** April 26, 2004

**Subject:** Lake Okeechobee Watershed Project – Public Meeting  
Wednesday, March 24, 2004

**Attendees:** See Attached

**Handouts:**

- Meeting Agenda (Attached)

**Presentations:**

- Lake Okeechobee Watershed Project Overview
- Lake Okeechobee Protection Plan
- Lake Istokpoga Watershed, Concerns & Issues
- Hydrilla Management in Lake Istokpoga
- Lake Istokpoga – Operational Issues
- Lake Istokpoga Minimum Flows & Levels
- Lake Istokpoga Habitat Enhancement
- Wetlands Alternative Evaluation

A public workshop was held on March 24, 2004 at the Lorida Community Center in Lorida, Florida to disseminate information about the Lake Okeechobee Watershed Project and receive input from the general public. Two separate sessions were held, one in the afternoon and the other in the evening to allow for increased public participation. During each session, a series of presentations were made by technical experts and attendees were encouraged to ask questions and provide feedback.

The workshop was held in the Lake Istokpoga watershed as its primary goal was to relay information to the public about the expansion of the Lake Okeechobee Watershed to include areas around and north of Lake Istokpoga. Information was solicited from the attendees on problems and issues related to Lake Istokpoga and its drainage basins.

The following is a summary of the technical presentation made at the meeting and it includes questions and issues that were raised by the public and answers provided.

**LAKE OKEECHOBEE WATERSHED PROJECT OVERVIEW– Lewis Hornung (SFWMD)**

Lewis started his presentation with describing the primary purposes of the LOW Project, namely improve water quality in Lake Okeechobee, provide for better management of lake water levels and reduce damaging releases to the estuaries and restore the hydrology of isolated wetlands. He then outlined the objective of the Lake Istokpoga Regulation Schedule Project (LIRSP) which was to develop an operational plan to address water resources problems in the Lake Istokpoga Basin in order to enhance fish and wildlife benefits, flood protection, and water supply. He then listed the problems identified by the LIRSP and the solutions that were recommended, the most significant one of which was that the LIRSP be incorporated into the LOW Project. The revised LOW Project Study area that now extends north of Lake Istokpoga all the way up to Lake Arbuckle was shown to the audience.

Lewis then talked about Lake Istokpoga Water Levels emphasizing that prior to 1962, the lake levels ranged over a fairly wide range and since the construction of the S-68 structure, the variations in the levels have been dramatically reduced. The variations in high and low lake levels have become even more restricted since 1991 when the regulation schedule was revised.

Several historical aerial photographs of Lake Istokpoga were shown which vividly demonstrated changes in the lake as a result of the constrained lake level fluctuations. This was followed by a discussion of the Corps six-step planning process and Lewis mentioned that the Lake Istokpoga Watershed (LIW) study is currently in the first three steps. Once these steps are completed, the LIW will be completely folded into the rest of the LOW Project and from there on the LIW will be dealt with simply as a fifth planning area.

Known problems and concerns in Lake Istokpoga were then highlighted and opportunities available to the LOW Project to remedy some of the problems were mentioned. The problems and opportunities are the basis of the Lake Istokpoga-specific evaluation criteria that are currently being developed.

Lewis then went on to describe the Corp's Plan Formulation process and how the LOW Project is tackling it. Tools being used by the project such as the Land Suitability Model were identified and a summary of the plan formulation process was presented. The presentation ended with a description of the future steps that will be taken in the planning process once the final recommended plan is identified.

**Question:** *What is a Project Feature?*

**Answer:** *A reservoir is an example of a project feature, wetland restoration sites, and chemical treatments are also examples.*

**Question:** *Will SFWMD purchase the land used for Project Features?*

**Answer:** *Yes, if it is within the boundaries of a BLOB.*

**Question:** *What does Environmental Justice refer to?*

**Answer:** *During the land selection process any bias toward lands occupied by minority populations will be avoided.*

**Question:** *Will the Project Features be available for public use?*

**Answer:** *This ultimately depends on the type of Project Feature selected. For instance, a chemical treatment will have no value to public use. The value to public will be a consideration in the selection process.*

**Question:** *Will the public have an input on the recreation area placement?*

**Answer:** *Yes, the purpose of meetings such as this one is to receive public comment on such issues.*

**Question:** *Are any Project Features going to be implemented north of Lake Istokpoga?*

**Answer:** *Lake Istokpoga is not officially part of the Project Purpose. It is unlikely that any Project Features will be implemented north of Lake Istokpoga to enhance the water quality in the lake.*

#### **LAKE OKEECHOBEE PROTECTION PLAN– Susan Gray (SFWMD)**

Susan began her presentation by stating that Lake Okeechobee is a regional, multi-purpose, water resource. The lake's three major sources of environmental impacts being high phosphorus loads primarily from altered land uses such as agriculture and dairy, altered hydrology due to draining of land for agriculture, and spread of exotic species. She then presented several graphs that showed that in-lake phosphorus concentrations have steadily increased over time and are much higher than the SWIM target established by the District.

She then described the components of the Lake Okeechobee Protection Act (LOPA) which is intended to achieve restoration of Lake Okeechobee and went on to show the area covered by the act. Major land uses in the watershed were then described followed by the agency responsibilities as established by LOPA. Budget sheets showing expenditures and encumbrances of each of the three agencies, SFWMD, FDEP, and FDACS, were shown and discussed.

Susan then described the components of the LOPP, which is a critical program element of LOPA and showed a chart that summarized estimated phosphorus load reductions by plan components. Projected cost distribution of LOPP was discussed and State and/or District funding requirements were identified. She showed a chart that summarized proposed funding from the State through 2015. The SFWMD has budgeted \$5 million/year for regional projects, urban stormwater projects, exotics control, and research and monitoring. The State will fund another \$5 million/year through FDACS for BMP planning and implementation.

**Question:** Has a date of completion been set for the Kissimmee Project?

**Answer:** The project will be ongoing until 2007.

**Question:** When will the next phase begin?

**Answer:** There are many ongoing projects that will continue over time.

**Question:** Will the money for these projects be moved to Lake Okeechobee?

**Answer:** There are no financial concerns at this time.

**Question:** If LOPP is the only solution for Lake Istokpoga water quality, how long before results will be seen?

**Answer:** Very soon since the lake is not saturated with Phosphorous.

**Question:** Is LOPP the only thing that can be done?

**Answer:** No, county and municipal measures can be taken but the public has to take action to get the local governments to act.

**Question:** Cattle have been seen in the high water along creeks and ditches, is this going to be taking place in the whole watershed?

**Answer:** This is a serious problem and a solution would be to construct fences to keep the cattle out of the water.

**Question:** According to a report put out by the University of Florida, Lake Istokpoga will be saturated with phosphorous in 15 years. The BMP's through LOPP will not stop the lake from being saturated with Phosphorous. So there is no real plan is set to save Lake Istokpoga from being saturated.

**Answer:** It is correct that there is no separate plan for Lake Istokpoga. Again local governments should be asked to help put programs into effect. Allow me to reiterate that the primary focus and the project purpose of LOPP is Lake Okeechobee Watershed.

**Public Comment:** It is just great to see that Lake Istokpoga is on the map and things are moving in the right direction to help the lake.

## **LAKE ISTOKPOGA WATERSHED, CONCERNS & ISSUES – Jennifer Brunty (Highlands County)**

Jennifer began with a definition of a watershed and identified major issues that are common in the LIW including stormwater runoff, septic tanks, sewage treatment plants, industrial discharges, agricultural practices, etc. She identified Arbuckle Creek as the largest contributor of nutrients to the Lake; flows and loads in Josephine Creek on the other hand, are much smaller compared to Arbuckle Creek. Small amount of phosphorus enter the lake from inflow canals and atmospheric deposition.

She went on to discuss the methodology and results of a watershed water quality survey conducted by the SFWMD in 2002. Copies of the report are available through Paul Ritter's office at the SFWMD.

This was followed by a discussion of the major sources of phosphorus loading in the Arbuckle Creek and Josephine Creek Watersheds. Graphs showing concentration of total phosphorus in the two creeks were shown. In addition to the data collected by the SFWMD, water quality results from a Lake Watch Study were also presented. On-going work was then identified and it was mentioned that the SFWMD has granted Highlands County \$109,000 to conduct a more intensive study in the lake, near the shorelines and in the canals. Nutrient leaching from wildlife islands will also be studied.

Jennifer closed her presentation by summarizing the major issues and concluding that addressing the pollution sources to Arbuckle Creek through implementation of Best Management Practices and creation of wetlands will greatly reduce phosphorus loadings to the lake.

**Question:** *Since there has not been water flow studies done with water going into Lake Istokpoga, all of this information is an educated guess, and why is Arbuckle Creek the only water source into Lake Istokpoga researched.*

**Answer:** *The loads going into the lake are not being tested. What are being tested are concentration levels. The amount of concentration that Josephine Creek contributes is negligible compared to the concentration of Arbuckle Creek.*

**Question:** *It seems obvious that Phosphorous is a problem that nothing seems to fix it, can this reported data be sent to any other groups that can help the situation?*

**Answer:** *The data reports are sent to several agencies.*

**Question:** *Has Spring Lake been considered as contributing to the high levels of concentration.*

**Answer:** *Spring Lake is being considered, more information is needed.*

**Comment Bo Griffin (FDACS):** *The Department of Agriculture is currently working on the Lake Istokpoga Watershed. Agriculture producers should feel free to come to the Department of Agriculture to sign up for programs to be implemented.*

**Question:** *Has the Department of Agriculture had success signing up agriculture producers into the programs?*

**Answer Bo Griffin (FDACS):** *Yes, within the four priority basins 83 percent of the agriculture areas are in programs with BMP measures.*

## **HYDRILLA MANAGEMENT IN LAKE ISTOKPOGA – Jeff Schardt (FDEP)**

Jeff Schardt of FDEP's Bureau of Invasive Plant Management began his presentation with describing his Bureau's responsibilities which include accommodating Hydrilla control, reducing control costs, reducing herbicide use and raising awareness regarding the difficulties in controlling Hydrilla and the increased risk if Hydrilla is not controlled. He described the statutory authority under which his Bureau operates and identified the public water bodies that they are responsible for, which include sovereign lands, public

ramps, 450 lakes and rivers covering 1.25 million acres. The department has 350 active management programs with a \$25 million budget. Program priorities include floating plants (hyacinth), new Hydrilla infestations, access points and trails, open holes in Hydrilla mats, etc.

Hydrilla infestation problem was then described and pictures were shown of floating island (tussocks). Problems associated with the floating islands include flood control, navigation, recreation, and environmental. With regards to Hydrilla infestation statewide, he stated that approximately 110,000 acres are infested with about 50,000 acres covered with standing crop and that 18% of the statewide population is in Lake Istokpoga. The plant grows about 2 inches a day. Numerous photographs of lakes across the state showing Hydrilla infestation were shown.

Hydrilla control program was then described and the different methods of controlling the infestation include biological, chemical, mechanical, and cultural/physical were described. Pros and cons of each method were presented.

Mention was made of the Fluridone treatment, which in the past has been very successful, losing its effectiveness as a tolerant strain of Hydrilla appears to be spreading in the lake. Twice as much Fluridone is being used now to control Hydrilla as was used in the 1980s.

The last part of the presentation focused on the costs associated with Hydrilla control. A chart describing the costs associated with controlling Hydrilla infestation at varying lake elevations as shown. At lake elevation of 39.5 feet cost of Hydrilla control was \$3.35 million and used 5.2 tons of active ingredient. At 38.5 feet elevation, only 4.4 tons of active ingredient is needed and the cost drops to \$2.86 million.

**Question:** *Is research being done for the production of a new herbicide to be used on Hydrilla?*

**Answer:** *Yes, there is one herbicide in the testing phase, but is still at least three years from production.*

**Question:** *Is the government involved in the development of the product?*

**Answer:** *No, the reason is that the government doesn't want to take the risk that it will not work.*

**Question:** *The number one problem seems to be Phosphorous. Does the ridding of Hydrilla with herbicide contribute to the Phosphorous problem?*

**Answer:** *There will be no major contribution due to the slow responding herbicide that is used.*

## **LAKE ISTOKPOGA OPERATIONAL ISSUES – Bob Howard (SFWMD)**

Bob gave a short presentation on the operational issues that influence lake levels. He showed print out of two graphs that depicted how the lake levels respond to various operational changes. He also indicated that his group was available to answer any

questions or provide additional information on the operational issues as they impacted the local systems.

### **LAKE ISTOKPOGA MINIMUM FLOWS & LEVELS – John Zahina (SFWMD)**

John started his presentation with an overview of what Minimum Flow Levels (MFLs) are and introduced key concepts such as what are resources that need to be protected and what is meant by “significant harm”. He went on to describe MFLs as a key factor in water supply planning and stated that the fact that they are used in evaluating Consumptive Use Permits and in developing other resources protection tools such as reservations.

He then described the legislative mandate supporting the MFL initiative and defined MFL as flows or levels needed to protect water resources from significant harm, based on specified criteria. The MFL criteria development process was then described using a flow diagram.

He then went on to describe the Lake Istokpoga Resources functions and provided an overview of the technical relationships between water levels and identified resources. He closed his presentation with a time line that described when the significant milestones in the MFL establishment process can be expected. A draft document describing Minimum Level Criteria for Lake Istokpoga is expected to be completed by Fall of 2004. Scientific peer review and public workshops are planned for Spring 2005. Rule making will be initiated in late Spring 2005 and a rule will be published in the F.A.W. by Fall 2005. A final draft is expected to be approved by the SFWMD governing Board by Fall of 2005.

### **LAKE ISTOKPOGA HABITAT ENHANCEMENT – Beacham Furse (FFWCC)**

Beacham began his presentation with slides showing location of Lake Istokpoga and fish resources in the lake. He then went on to discuss the fluctuations in lake levels and how they have changed since the S-68 structure became operational and the impact of the regulation schedule revision. A chart showing mean stage by month for the period 1937 to 2003 graphically demonstrated the change that has taken place in the lake.

This was followed by a discussion of the Hydrilla and Tussock problem in the lake. A slide depicting Hydrilla coverage for the period 1987 to 2003 was shown along with numerous photographs that highlighted the problem. Historical aerial photographs of the lake were then shown to demonstrate how the littoral zone of the lake has changed over time. It was also mentioned that the total phosphorus contained in the approximately 2,000 acres of tussock has been estimated at 440 tons and that the tussocks are an unstable phosphorus sink in the lake.

This was followed by a discussion of the Lake Istokpoga draw down and muck removal project that was approved by the SFWMD in 2001 to take advantage of the then prevailing drought conditions. The objective of this project was to enhance littoral areas along the lake shoreline by removing tussocks and organic sediments. The project was

initiated in March and completed by July of 2001. Numerous photographs of the project were shown and described. Slides showing the lake following the completion of the tussock removal were also shown.

Overall the project removed 2.4 million cubic yards from 1,308 acres along 21 miles of the Lake Istokpoga shoreline. Of the 249 tons of phosphorus removed, approximately 165 tons is contained in 36 in-lake storage islands that were constructed with the dredged material and 81 tons were disposed in four upland sites.

This was followed by a discussion of the Lake Istokpoga Evaluation Program, the goal of which is to document effects of the littoral zone enhancement, DEP's Hydrilla management, and special regulations for largemouth bass. The primary objective is to maintain evaluation criteria at or above baseline levels (1997-2000). The largemouth bass special regulations, which went into effect in July 2000, impose a protective slot limit in which all bass from 15 to 24 inches must be released. The daily bag limit is of three bass, of which only one may be 24 inches or longer.

Beacham then went on to describe the fish community response within the Lake Istokpoga Enhancement Sites and noted that the total number of species had increased from 18 in 2001 to 27 by April 2003. In the same period, species diversity increased from 2.74 to 2.95, density (number per acre) increased from 18,511 to 75,852 and the economic value (\$/acre) rose from 10,506 to 20,350. Results of an electrofishing study and data on largemouth bass evaluation criteria were then presented.

He then described additional studies that are currently underway including the Bass Habitat Utilization Radio Telemetry Project and the Bass Natality, Growth and Feeding study being conducted by the University of Florida. Preliminary results of the telemetry study were shown.

#### **WETLANDS ALTERNATIVES EVALUATION – Steve Schubert/Gina Ralph (USFWS)**

For the afternoon session, the presentation was made by Steve Schubert, Gina Ralph made the presentation at the evening session.

The presentation started by describing the reason why it is important to restore wetlands in the Lake Okeechobee Watershed Project. The primary reason cited was that restoring wetlands supports major CERP and LOW Project objectives.

The wetland restoration siting process was then described. A GIS tool that allows the study team to identify and prioritize locations for wetlands restoration in the project study area was described. The overall goal is to determine the ecological lift or restoration potential using the acres of wetlands restored expressed as habitat units for either plants or animal species or ecosystem types.

Suitability criteria for selecting sites for wetland restoration were described and a series of GIS-based maps were used to show how the criteria were applied and what the results of the criteria application were. Thirty or more sites have been prioritized for further evaluation during the planning process.

**Public Comments**

No additional public comments were received at this point.

**ADJOURNMENT**

## Lake Okeechobee Watershed Project

Lake Istokpoga Workshop  
March 24, 2004

Lorida Community Center  
1909 Oak Avenue, Lorida, FL 33857

### Agenda – Afternoon Session

01:00	Welcome / Introductions	
01:05	LOW Project Overview	Lewis Hornung (SFWMD)
01:20	Lake Okeechobee Protection Plan	Susan Gray (SFWMD)
01:40	Lake Istokpoga Watershed, Concerns, & Issues	Jennifer Brunty (Highlands County)
02:00	Hydrilla Management in Lake Istokpoga	Jeff Schardt (DEP)
02:20	Lake Istokpoga – Operational Issues	Bob Howard (SFWMD)
02:40	Lake Istokpoga – Minimum Flows & Levels	John Zahina (SFWMD)
03:00	Lake Istokpoga – Habitat Enhancement	Beacham Furse (FFWCC)
03:20	Wetlands Alternatives Evaluation	Steve Schubert (USFWS)
03:40	Discussion/Public Comments	
04:00	Adjourn	

### Agenda – Evening Session

06:00	LOW Project Overview	Lewis Hornung (SFWMD)
06:20	Lake Okeechobee Protection Plan	Susan Gray (SFWMD)
06:40	Lake Istokpoga Watershed, Concerns & Issues	Jennifer Brunty (Highlands County)
07:00	Lake Istokpoga – Operational Issues	Bob Howard (SFWMD)
07:20	Lake Istokpoga – Habitat Enhancement	Beacham Furse (FFWCC)
07:40	Wetlands Alternatives Evaluation	Steve Schubert (USFWS)
08:00	Adjourn	