

# **An East Lake Management Plan**

August 2002

Submitted to:

Hillsborough County  
Public Works Department  
Engineering Division  
Stormwater Management Section

Submitted by:

Daniel E. Canfield, Jr.  
Mark V. Hoyer  
Christine A. Horsburgh  
And  
Eric J. Schulz

Department of Fisheries and Aquatic Sciences  
Institute of Food and Agricultural Sciences  
University of Florida

**Table of Contents**

Introduction..... 3

Summary of Recommendations for the Management of East Lake ..... 4

Recommendations, Justifications, and Approaches for the Management of East Lake ..... 6

Section I. Who is in Charge at East Lake?..... 6

Section II. Management of Water Level and Access/Weir Placement and Control at East Lake . 7

Section III. Management of Water Quality as Related to Human Safety in East Lake ..... 10

Section IV. Management of Fish and Wildlife Concerns at East Lake ..... 11

Section V. Management of Aquatic Plants at East Lake ..... 14

Prioritization of Recommendations for the Management of East Lake..... 15

Additional Questions asked by Citizens ..... 17

Appendix I ..... Tab # 1

Appendix II ..... Tab # 2

Appendix III..... Tab # 3

## **Introduction**

In June 2001, the Stormwater Management Section of Hillsborough County's Public Works Department contracted with the Department of Fisheries and Aquatic Sciences of the University of Florida/Institute of Food and Agricultural Sciences to develop a lake management plan for East Lake. The Department was asked to use an innovative approach that was used at Lake Tsala Apopka in the late 1990s called "The TEAM Approach." TEAM stands for Together for Environmental Assessment and Management.

TEAM is a three-step process for developing comprehensive and integrative lake management plans and water resource policy. It involves "stakeholders," lay citizens, and technical "experts." These people identify, define, and prioritize their concerns and potential courses of action concerning a water resource issue(s). Then, "pro" and "con" information is developed for each issue. Once this information is provided to the citizens, they come together to discuss and ultimately vote on a course(s) of action with regard to a lake management plan or water resource policy. A complete copy of the published TEAM paper is included at the end of this document (Appendix I).

The formal development of the East Lake Management Plan began on September 29 2001, when a representative group of citizens was assembled to advance their concerns regarding potential problems at East Lake. Following a write-up of this meeting (Appendix II), a representative group of scientific professionals was gathered in December 2001 to discuss their concerns regarding the management of East Lake. Despite differences in their experiences, the citizens and professionals had many similar concerns.

Following the December meeting the "pro" and "con" of each issue were assembled (compilation of the facts as best known). In April 2002, the citizens involved in the first meeting received a compilation of the available information. They were also provided some viable options for the management of East Lake (see report entitled "Historical Information and Pros and Cons of Issues Identified by Citizens and Professionals Regarding the Future Management of East Lake" – Appendix III). On July 13 (2002), the available citizens met to discuss the options and advance their ideas about how to manage East Lake.

The following pages constitute the proposed East Lake management plan. This plan follows very closely the recommendations of the citizens and is provided to appropriate policy makers and the overall public for due consideration. Because there is a lack of appropriate information on some subjects, certain information gathering programs are proposed. If these programs are initiated soon, there may be a need to modify this East Lake management plan within 4-8 years. Certainly, any lake management plan must be adaptable when new information becomes available or experience dictates a change. It is important to remember that any successful lake management plan must be considered a "living document", just like the constitution of United States.

## **Summary of Recommendations for the Management of East Lake**

### **Section I. Who is in Charge at East Lake?**

Recommendation 1. Establish an appointed eight-member East Lake Management Advisory Board (with seven voting members) to oversee the implementation of the Management Plan and advocate the involvement of other needed professional agencies. The Hillsborough County Commission should appoint seven dedicated members who are willing to spend considerable time toward the management of East Lake. One member of the board shall be from Mary Help of Christians School. Another member shall be from the Church of the Living Waters. Four members shall be selected from residents of the East Lake Park Subdivision. The final voting member shall represent the Audubon Society, but the member must be a resident of the East Lake Park Subdivision. A non-voting member shall be appointed from the Stormwater Management Section of the Hillsborough County Public Works Department.

Recommendation 2. The Board shall be responsible for continuing a modified TEAM Approach on a continuing basis to receive citizen and professional input on emerging issues as well as report to the citizens the ongoing results of active management projects. This is particularly needed regarding issues related to the island that is now classified as a bird refuge. The group meeting on July 13, 2002 agreed to table discussions on the island because no consensus could be reached but they also agreed to keep all communications open to continue discussion of this most important issue.

### **Section II. Management of Water Level and Access/Weir Placement and Control in East Lake.**

Recommendation 1. Maintain current water control structures and build a new adjustable weir just up-stream of existing structures and set the overflow at 23.5 ft mean sea level. Water level regulation by the new control structure in East Lake shall be by the East Lake Management Advisory Board.

Recommendation 2. Initiate maintenance dredging, as soon as possible, of East Lake's access canals to restore the historical configuration of the canals and dredge elsewhere as needed.

### **Section III. Management of Water Quality as Related to Human Safety in East Lake.**

Recommendation 1. Maintain current citizen water quality monitoring program conducted by Florida LAKEWATCH to monitor long-term nutrient concentrations, chlorophyll levels and water clarity.

Recommendation 2. Initiate a comprehensive total and fecal coliform bacteria monitoring program to determine if East Lake is being contaminated by urban development. Also determine if high bacteria counts are due to false positives.

Recommendation 3. Initiate a comprehensive sampling/monitoring program of sportfish to determine if fish fillets have unacceptable levels of heavy metals (such as mercury or lead) and/or organic contaminants that could pose a human health risk.

### **Section IV. Management of Fish and Wildlife Concerns at East Lake**

Recommendation 1. Initiate a fish population monitoring program in conjunction with the study on fish contamination to assess the status of East Lake's fish population before any fish management activities are proposed by the East Lake Management Advisory Board.

Recommendation 2. Initiate a comprehensive fisheries creel by use of volunteers on East Lake to determine how many people are fishing (effort), harvest rate and the success rate of the anglers.

Recommendation 3. Initiate a comprehensive aquatic bird survey using volunteers to determine bird abundance, species richness and determine which birds are using what parts of East Lake.

### **Section V. Management of Aquatic Plants at East Lake.**

Recommendation 1. Initiate a maintenance control program for water hyacinth with boaters and waterfront residents removing all plants that they can find.

Recommendation 2. Use high water levels to reduce the abundance of cattails and then where needed control cattails by the use of herbicides.

## **Recommendations, Justifications, and Approaches For the Management of East Lake**

### **Section I. Who is in Charge at East Lake?**

Recommendation 1: Establish an appointed eight-member East Lake Management Advisory Board (with seven voting members) to oversee the implementation of the Management Plan and advocate the involvement of other professional agencies as needed. The Hillsborough County Commission should appoint dedicated members who are willing to spend considerable time on the management of East Lake. One member of the board shall be from Mary Help of Christians School. Another member shall be from the Church of the Living Waters. Four members shall be selected from residents of the East Lake Park Subdivision. If Possible the final voting member shall represent the Audubon Society. It would also be prudent if the Audubon Society representative was a resident of the East Lake Parks Subdivision. A non-voting member shall be appointed from the Stormwater Management Section of the Hillsborough County Public Works Department.

Justification: The ultimate success of a Comprehensive Lake Management Plan requires continual citizen involvement and an entity that will become the Plan's preeminent sponsor. In 2002, the Stormwater Management Section of the Hillsborough County Public Works Department, the Florida Department of Environmental Protection, and the Southwest Florida Water Management District are the most active and successful participants in the management of East Lake. However, these three entities have specific statutory limitations and broader issues of concern that can prevent them at certain times from being the best preeminent sponsor of the Plan.

An appointed East Lake Management Advisory Board has an advantage in that it can insure fresh citizen input from the Board and East Lake residents. An independent Advisory Board is also in the best position to oversee and advocate the implementation of the Plan when numerous federal, state, and local agencies have some involvement in the management of the lake. Such an Advisory Board is also well suited to make needed modifications to the Plan when new issues arise.

Approach: The East Lake Management Advisory Board should consist of 8 appointed members with seven having voting privileges. One member of the board shall be from Mary Help of Christians School as the School is the largest adjoining landowner. Another member shall be from the Church of the Living Waters as this is the second largest adjoining landowner. Four members shall be selected from residents of the East Lake Park Subdivision. The Subdivision is extremely active regarding lake management issues. The final voting member shall represent the Audubon Society, but the member shall be a resident of the East Lake Park Subdivision. This is important as the island supports many birds and everyone recognizes that communication with the Audubon Society must be kept open. Finally, a non-voting member shall be appointed from the Stormwater Management Section of the Hillsborough County Public Works Department to

insure direct communication with the public agencies that are charged with doing lake management activities.

The Advisory Board's primary responsibility will be advancing the objectives of the East Lake management plan. This will entail working closely with established management agencies such as the Southwest Florida Water Management District, the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission and the Hillsborough County Board of County Commissioners. The Advisory Board, however, will also have to receive citizen and professional input on emerging issues and modify the management plan as needed.

Recommendation 2: The Board shall be responsible for continuing a modified TEAM Approach on a continuing basis (every four to six years) to receive citizen and professional input on emerging issues as well as report to the citizens the results of continuing management projects. This is particularly needed regarding issues related to the island that is now classified as a bird refuge. The group meeting on July 13, 2002 agreed to table discussions on the island for a while because no consensus could be reached. They also agreed not to let this problem stop action on other important management activities.

Justification: During the development of the East Lake Management Plan, it became apparent that citizen involvement was key. By working with a diverse group of citizens, the widest possible range of concerns was documented. The Advisory Board, therefore, might consider using the TEAM Approach to solicit the wide-ranging concerns of citizens living not only along the lake, but also elsewhere in surrounding areas. Using the TEAM Approach would also allow the East Lake Advisory Board to receive citizen input in a timely and focused manner.

Approach: The East Lake Advisory Board should sponsor Step 1 of the TEAM Approach at least every four to six years. The format used for Step 1 during the development of the East Lake Management Plan remains valid and many citizens participating in the process indicated that Step 1 was extremely useful (see Appendix II) and that they would continue to participate if the East Lake Advisory Board implemented such a format. Steps 2 and 3 should not be needed for a number of years because most of the scientific information would be the same unless new issues were brought forth. When they are needed, the Advisory Board could then obtain the financial resources needed to sponsor a complete TEAM Approach. By implementing only Step 1, any financial commitments can be greatly limited.

## **Section II. Management of Water Level and Access/Weir Placement and Control in East Lake.**

Recommendation 1: Maintain current water control structures, build a new adjustable weir just up-stream of existing structures and set the overflow at 23.5 ft mean sea level. Water level

regulation by the new control structure in East Lake shall be by the East Lake Management Advisory Board unless emergency flood control measures are needed.

Justification: The primary existing fixed-weir at East Lake's outlet has an overflow at 23.5-ft mean sea level. The Southwest Florida Water Management District also once established 23.5-ft mean sea level as the "maximum desirable" water level for East Lake. However, fluctuations in water levels within East Lake are due to variations in regional rainfall, groundwater levels, and runoff from the watershed. Consequently, water level can drop below at 23.5-ft mean sea level during dry periods and can rise above at 23.5-ft mean sea level during wet periods. Because higher water levels can diminish the flood protection capability within East Lake, an adjustable control structure is recommended to insure water levels can be dropped when a large storm such as a hurricane is approaching. The adjustable control structure is also recommended in case it is decided in the future that dropping water levels below 23.5-ft mean sea level is desirable for enhancing fish and wildlife habitat. Decisions about managing water levels are the responsibility of the East Lake Management Advisory Board because water level is the number 1 lake management issue for most citizens.

Approach: The current water level control structure is located downstream of East Lake's outlet and just south of US I-4. This structure needs to be maintained not only because of its potential influence on lake levels, but because it helps retard downstream water flow so that the water exiting from East Lake will enter a treatment system operated by the Stormwater Management Section of the Hillsborough County Public Works Department. There is sufficient land just upstream of the treatment system's intake to build an adjustable control structure with an outflow set at 23.5-ft mean sea level.

The control structure should have the capability to be opened enough to drop water levels in East Lake below 23.5-ft mean sea level. However, the intake pipe of the Stormwater Management's treatment system has a minimum water intake of about 22.9-ft mean sea level. If it is desired to lower East Lake's water level below this level and still treat the water, accommodations to pump the water into the intake will have to be made. Conversely, there are frequent times when the water level will not exceed 23.5-ft mean sea level in East Lake and there will be no exiting water to treat.

The primary lake management issue for citizens participating in the East Lake TEAM project was water level. Sometimes misinformation fueled the debates. Therefore, it is recommended that East Lake Management Advisory Board should be the group determining what level East Lake's water should be held at. East Lake is an urban lake and discussions regarding the dropping of water levels is most appropriate for this group. However, flood levels should be determined from existing water level data and a level should be determined so an agency like the Stormwater Management Section of the Hillsborough County Public Works Department can open the structure for emergency flood protection, especially when the East Lake Management Advisory Board cannot be convened in a timely manner.

Recommendation 2: Initiate maintenance dredging, as soon as possible, of East Lake's access canals to restore the historical configuration of the canals and dredge elsewhere as needed.



Justification: East Lake is now an urban lake. Over time, boating has developed as one of the primary uses of the lake. The construction of canals created one of the major attributes that attracted people to the lake. Over the last half of the 20<sup>th</sup> century, the canals have filled with sediments and restricted boat access to the lake. Sediment accumulation has also occurred in other areas around the perimeter of the lake. Boating access and lake front access has, therefore, been restricted during low water.

The State of Florida recognizes the importance of canals to communities such as the East Lake Park Subdivision. Consequently, the State permits the maintenance dredging of existing canals as well as dredging in selected areas. Raising the lake's water level to 23.5-ft mean sea level will restore most boating access. However, removing sediments from the canals and other near-shore areas will restore boat access to the lake for all but the most extreme drought conditions. This would eliminate the boating access issue for most residents and cause no major lake-wide environmental change or harm. The removal of soft sediment in the canals may even enhance spawning habitat for some of the major sportfish in East Lake.

Approach: Proposals to remove or modify the canals and near-shore areas of East Lake must take into consideration the potential effects on nearby land use of the area. The most cost-effective form of dredging would be hydraulic dredging, but a disposal site for the excavated sediments would be needed. Mary Help of Christians School owns considerable vacant land where the dredged materials could easily be deposited if consent could be granted. The School would benefit because their lake recreational area needs to have muck removal to insure recreational access.

Another source for sediment disposal would be in-lake by either expanding the existing island or creating a new island near the East Lake Park Community Center. Neither concept was strongly supported by the citizens attending the final TEAM meeting. These options, however, should remain open for future consideration by the East Lake Management Advisory Board because in-lake disposal may be the only option if upland disposal sites are not available. Additionally, the political will of the people could change, especially because the issues related to the island were tabled and left for future discussions.

As with most lake management activities, there will be costs and the immediate question that will arise is who should pay. Because most of the immediate visible benefits of dredging would accrue to the East Lake Park Subdivision, the first answer is that they should pay. The Hillsborough County Board of Commissioners by ordinance 98-53 established a special taxing district, the East Lake Park Special Dependent District. A seven-member board of trustees governs the District. If the trustees could be convinced to support the project, some allocated dollars should be used as match dollars to obtain funding from other sources.

Hillsborough County and the Southwest Florida Water Management District will receive indirect benefits related to the management of the region's water resources. These agencies, therefore, should be approached to be major contributors to the dredging project. Again, the dredging project would provide greater flexibility to these agencies in order to achieve not only their stormwater objectives, but also their environmental objectives for East Lake.

### **Section III. Management of Water Quality as Related to Human Safety in East Lake.**

Recommendation 1: Maintain current citizen water quality monitoring program conducted by Florida LAKEWATCH to monitor long-term nutrient, chlorophyll levels water clarity.

Justification: Nutrient enrichment of lakes has been a major concern in Florida since at least 1960. At East Lake, there's been sufficient concern by citizens that discussions have been held regarding the construction of retention ponds and the implementation of other nutrient control programs. Analysis of the existing water quality data indicates there's been no significant enrichment of East Lake to date and that the nutrient concentrations are at levels that would be expected from the geology in which East Lake exists. Thus, nutrient enrichment is not the problem that many individuals believed it was. However, it is prudent to continue existing nutrient-related water quality monitoring to insure that a problem does not arise in the future.

Approach: Florida LAKEWATCH is the State of Florida's volunteer citizen lake monitoring program (Chapter 91-69; s 240.5329, F.S.). The program is designed to work with citizens who collect monthly water samples which are analyzed for total phosphorus, total nitrogen and chlorophyll concentrations. The citizens also measure water clarity by use of a Secchi disc. Currently, citizens at East Lake are monitoring the water and their efforts are supported by funding from the Stormwater Management Section of the Hillsborough County Public Works Department in conjunction with the Southwest Florida Water Management District. Florida LAKEWATCH is operated by the University of Florida and is funded in part through the Florida Department of Environmental Protection's Water Quality Assurance Trust Fund. With this funding support, and the continued efforts of citizen volunteers, Florida LAKEWATCH should be able to continue the existing nutrient-related monitoring on the long-term.

Recommendation 2: Initiate a comprehensive total and fecal coliform bacteria monitoring program to determine if East Lake is being contaminated by urban development. Also determine if high bacteria counts are due to false positives.

Justification: The citizens participating in the TEAM Approach were concerned greatly by the possible effects of bacterial contamination at East Lake. The available evidence suggests that the lake generally has no massive contamination problem, but high bacteria counts do occur. Therefore, a monitoring program has the potential of better determining if a problem exists and alerting lake users of any impending problem.

Approach: The Stormwater Management Section of the Hillsborough County Public Works Department has funded a one-year bacteriological study of East Lake. After evaluating the results, consideration should be given to conducting a more detailed study to ascertain the possible sources of bacteria. Particular attention should be directed toward determining if the high fecal coliform counts are due to false positives from the genus *Klebsiella*. The other potential source that needs to be considered is from the birds roosting on the island. The birds using the island could be a major source of contamination, but they represent a natural source

that humans have little control over. There are also tests available that can be used by volunteers. An effort should be made to determine if reliable information on bacteria contamination could be gathered by the volunteers participating in the Florida LAKEWATCH program. If a suitable volunteer monitoring program can be developed, the citizens using East Lake could monitor the lake more frequently and more intensely.

Recommendation 3: Initiate a comprehensive sampling/monitoring program of sportfish to determine if fish fillets have unacceptable levels of heavy metals (such as mercury or lead) and/or organic contaminants that could pose a human health risk.

Justification: When issues related to nutrient enrichment and bacterial contamination are set aside, the number one issue for the citizens is heavy metal and/or organic contamination of East Lake. There are virtually no data on these subjects because of the tremendous expense associated with conducting heavy metal and organic contamination environmental studies. However, when the debates are distilled, the concerns of the citizens can be refined to one simple question: "Are the fish safe to eat?"

Conducting a sampling/monitoring program of the sportfish in East Lake is relatively inexpensive compared to other possible alternatives. If contamination levels are nonexistent, as well may be the case, or any contamination is at acceptable limits, this finding would allay citizen concerns and allow this issue to be put to rest. If contamination is found, advisories about eating fish could be issued immediately. Studies could then be designed to find and correct problems.

Approach: An initial study should be designed in which 10 fish of each major type of sportfish (for example, largemouth bass, black crappie, and bluegill) in East Lake is sampled by electrofishing to obtain fish fillets. The fish fillets should then be sent to reputable laboratories to determine if contamination of the fillets is present. Sampling should be limited to legal size fish due to the cost of sampling for contaminants. If contamination is found in legal sized fish, then smaller sized fish will have to be sampled to conduct appropriate risk assessment. If contamination is found, detailed studies will then have to be conducted to find the source(s), but if none is found the lake should then be monitored every five years to allay fears.

The exact cost of this type of study is unknown, but it will be expensive. It is estimated that \$75,000 would be needed for the laboratory studies alone. Collecting fish from East Lake, however, would also be expensive. Therefore, this study should be done in concert with the recommended fish monitoring program discussed in Section IV below. This would allow the use of fish collected in those studies and preclude the need for a separate field staff, thus providing considerable cost savings.

#### **Section IV. Management of Fish and Wildlife Concerns at East Lake**

Recommendation 1: Initiate a fish population monitoring program in conjunction with the study on fish contamination to assess the status of East Lake's fish population before any fish management activities are proposed by the East Lake Management Advisory Board.

Justification: One of the foremost concerns for many of the citizens participating in the TEAM Approach is the fishing at East Lake. However, the vast majority of users want to maintain high (23.5-ft mean sea level) water levels as long as possible. Good fishing and stable water levels can be incompatible objectives on the long-term, therefore drawdowns (water level fluctuations) are often proposed at urban lakes, reservoirs and natural lakes with control structures to improve fisheries.

While some groups or individuals recommend increased annual fluctuation, the available evidence in Florida indicates that fluctuations can be spaced at irregular intervals. For example, drawdowns that occur every three years can optimize largemouth bass populations in many lakes. If the goal is to improve bass populations but not to optimize the population, the drawdown might only be needed once every five years. However, one drawdown is probably needed every 5 to 7 years. Unfortunately, all the factors controlling largemouth bass populations are unknown and the best way to ascertain if a drawdown is needed is to directly monitor the fish population.

Approach: The fish population of East Lake should be assessed in the spring and fall using electrofishing. With the fisheries information that would be obtained, the status of East Lake's fish population could routinely be compared with the fish life found in other Florida lakes ranging in size and productivity. This approach was used in the winter of 2002 to provide a preliminary fish population assessment. Conducting similar assessment over the long-term would provide the East Lake Management Advisory Board with a quantitative basis for assessing various lake management decisions relative to the fish population. If this approach is adapted, the fisheries crews could also simultaneously collect the fish needed for the study on fish contamination (thus saving considerable money).

Recommendation 2: Initiate a comprehensive fisheries creel by use of volunteers on East Lake to determine how many people are fishing (effort), harvest rate and the success rate of the anglers.

Justification: The catching of fish, as noted previously, is a major enjoyment for people using East Lake. The quality of "catching of fish", however, can differ significantly from assessments of the quality of the fish population. Information on the quality of fishing is also needed on the long-term to assure that the memory of people is correct. This information will also permit a quantitative evaluation of the success of various management strategies.

The fisheries creel survey should be conducted simultaneously with a lake user survey. This recommendation is made because the same field crew can collect fisheries creel data and recreational-use data. The user part of the survey will aid in the general management of the East Lake and assist the East Lake Management Advisory Board in making future fisheries/recreational management decisions.

Approach: Part of the needed information can be obtained using angler diaries. Florida LAKEWATCH has a program for volunteers using angler diaries and any volunteers from East Lake can join at no cost. Success requires that anglers keep track of their fishing efforts and return their diaries in a timely manner.

Volunteers from East Lake can also help conduct the fisheries/recreational surveys. The survey should be based on the Florida Fish and Wildlife Commission's random fisheries creel protocol. This protocol will randomly select the days and times between sun-up and sundown that the survey should be conducted. The survey should be conducted over one complete year to have the greatest impact.

The Florida Fish and Wildlife Conservation Commission should be contacted to perform the initial set-up of Lake Use/Fisheries survey. After the basic information has been collected, the Commission should be requested to perform the final computer analysis. If the Commission does not have sufficient time or personnel to conduct the survey in a timely manner, then the East Lake Management Advisory Board could request the Stormwater Management Section of the Hillsborough County Public Works Department to try to find funds to accomplish this task. If this situation arises Florida LAKEWATCH probably could provide the needed assistance.

Recommendation 3: Initiate a comprehensive aquatic bird survey using volunteers to determine bird abundance, species richness and determine which birds are using what parts of East Lake.

Justification: Aquatic birds provide enjoyment for some people using East Lake and are major players in the ecology of East Lake. The island located in East Lake is currently designated as an Audubon bird refuge. The East Lake Management Advisory Board will have to deal with unresolved controversies and many of the controversies will deal either directly or indirectly with aquatic birds. Currently, there is limited or no information on the size of bird populations, the types of birds or what areas of East Lake the birds are using. Unless information is obtained on aquatic birds, the success or failure of specific management programs will be hotly debated in future years, as there will be no baseline information for a comprehensive evaluation.

Approach: Florida LAKEWATCH has developed three different protocols for volunteer monitoring of aquatic birds that can be used at lakes like East Lake. Information collected by volunteers can be used to compare the bird life at East Lake to the bird life found at other Florida lakes ranging in size and productivity. At the minimum, all aquatic species of birds using East Lake should be surveyed by the volunteer(s). The birds should be surveyed in the summer and the winter to obtain data on both resident and migratory populations of aquatic birds. If the volunteers are sufficiently committed, habitat usage can also be defined. The approach of using volunteers who live on the lake is probably the best approach. The Florida Fish and Wildlife Conservation Commission probably would not perform the required type of study because of limited resources and their designation of East Lake as a private lake.

There are several methods that can be used to count aquatic birds. The one most recommended by Florida LAKEWATCH includes a monthly whole-lake count taken by circling the whole lake as close to shore as possible and counting all aquatic birds. For the lakes like East Lake, whole-lake counts would be the simplest and least expensive method to use. Again if the volunteers are

sufficiently committed, birds can be counted and recorded with the individual habitat that they are using. Both methods will yield a general estimate of species richness and bird abundance by species.

## **Section V. Management of Aquatic Plants at East Lake**

Recommendation 1: Initiate a maintenance control program for water hyacinth with boaters and lakefront homeowners physically removing all plants that they can find.

Justification: Water hyacinth is one of Florida's most problematic aquatic plant species. Under the right environmental conditions, water hyacinth can grow very rapidly and can significantly cover an entire lake and block boat access within one summer. Consequently, the water hyacinth has been Florida's number one aquatic weed species for over one hundred years.

Water hyacinths are currently present in low numbers at East Lake. Mechanical removal of water hyacinth has been tried at other Florida lakes and has failed when hyacinths are abundant. East Lake's plant population, however, is low enough that removing, by hand, all water hyacinths that can be found currently has a chance of keeping hyacinth populations at a non-problematic abundance. If this removal fails, a maintenance control program using aquatic herbicides can be initiated with little or no impact on East Lake.

Approach: This project should be conducted by East Lake's boaters once during the spring/early summer and late summer/fall. During these periods, some hyacinths will be bearing their distinctive purple flowers. Examination of these plants will provide boaters with a distinctive search pattern and assist removal efforts.

The best chance of mechanical removal being successful is if the East Lake community can organize community workdays as hyacinths can be abundant and very heavy to lift out of boats. Removed hyacinths can be composted, but the compost pile should be in an area where smells from the decaying plants and their associated small animals will not disturb neighbors.

If East Lake's boaters fail in their efforts to control hyacinths, there probably will eventually be a year where the plants expand beyond control. When this happens, the East Lake Management Advisory Board must quickly initiate maintenance control program using aquatic herbicides. The herbicide of choice is known as 2,4-D. This herbicide is relatively inexpensive and routinely used throughout Florida. Once the water hyacinth begins to expand, the East Lake Management Advisory Board must act quickly because the problem will become significantly worse and require the use of more herbicides. For those individuals concerned about placing more organic matter (mud) on the bottom of the lake, it must be explained that sloughing leaf litter from living hyacinths accounts for more organic matter per year than killing the plant outright. For those individuals concerned about the use of aquatic herbicides, the risk to humans posed by correctly applied 2,4-D is non-existent.

Recommendation 2: Use high water levels to reduce the abundance of cattails and then where needed control cattails by the use of herbicides.

Justification: Cattails are the dominant aquatic plant in East Lake. Cattail abundance expands during periods of low water and recedes during periods of high water. Because East Lake experienced very low waters due to drought and management activities, cattail abundance expanded to undesirable levels. With the proposed plans to raise water levels, cattail abundance will recede. Being that East Lake is an urban lake, the use of herbicides will permit the removal of undesirable cattails from any remaining areas that the users of East Lake decide on.

Approach: Once the East Lake Management Advisory Board through their management activities or natural conditions raise the water level in East Lake, an aquatic plant biologist with the Florida Department of Environmental Protection should be contacted to discuss the development of an overall aquatic plant management program for East Lake. Questions to be addressed are how many and where the plants should be controlled and what permits are required. Once the basics are established, the riparian owners should be contacted to determine their preferences.

As mentioned previously, East Lake is an urban lake. Control of the cattails should be linked with a major aquascaping program for the lake. The citizens participating in the East Lake TEAM program were not opposed to plants. Planting plants like the bulrush in select locations to enhance plant diversity, but not interfere with human uses was a desirable option. Selecting desirable plants and planting them in areas once dominated by cattails will not only reduce future cattail growth, but enhance the aesthetic beauty of East Lake. However, success of an aquascaping program will require close coordination with the riparian owners and a clear delineation of total costs and who will pay.

### **Prioritization of Recommendations for the Management of East Lake**

The State of Florida has and is spending hundreds of millions of dollars for eutrophication control and lake restoration. In the 1980s and 1990s, some professionals used to say the most important elements in lake management are phosphorus and nitrogen. However, experience has shown the most important elements in lake management are silver and gold!

In a utopian world, cost would not be considered, but the reality at East Lake is that costs and who will pay need to be considered in order to fully implement the management plan. We, however, recognize that funding opportunities can materialize at any time and from sources that are unexpected. It is, therefore, our opinion that the recommendations made in this report be prioritized as follows.

*Section I: Recommendation 1 - Establish an appointed eight-member East Lake Management Advisory Board (with seven voting members) to oversee the implementation of the Management Plan and advocate the involvement of other needed professional agencies. The Hillsborough County Commission should appoint members. One member of the board shall be from Mary Help of Christians School. Another member shall be from the Church of the Living Waters. Four members shall be selected from residents of the East Lake Park Subdivision. The final voting*

*member shall represent the Audubon Society, but the member must be a resident of the East Lake Park Subdivision. A non-voting member shall be appointed from the Stormwater Management Section of the Hillsborough County Public Works Department.*

Creating the Advisory Board discussed in this recommendation can be done by early 2003 without significant cost. If this management plan is not to become a dusty document on someone's shelf, a group of individuals needs to oversee the process. We, therefore, believe implementation of this recommendation is critical. The remaining recommendations are ordered in four groups based on cost, potential for quick success and difficulty in achieving goals. Success bring more success so we advise all to focus on a few recommendations until they are achieved, rather than attacking all recommendation at once.

#### Group 1

There are some remaining recommendations that will cost virtually nothing or very little to implement in the year 2002. Some management issues are already funded and there may be opportunity to increase funding in 2003. Implementation of these recommendations will also maintain the recognition that something is being done at East Lake as other paperwork is completed to advance the management plan.

*Section III: Recommendation 1 - Maintain current citizen water quality monitoring program conducted by Florida LAKEWATCH to monitor long-term nutrient concentrations, chlorophyll levels and water clarity.*

*Section III: Recommendation 2 - Initiate a comprehensive total and fecal coliform bacterial-monitoring program to determine if East Lake is being contaminated by urban development. Also determine if high bacterial counts are due to false positives.*

*Section V: Recommendation 1 - Initiate a maintenance control program for water hyacinth with boaters removing all plants that they can find.*

*Section V: Recommendation 2 - Use high water levels to reduce the abundance of cattails and then where needed control cattails by the use of herbicides.*

#### Group 2

There is often opposition to the funding of more studies. However, the East Lake Management Plan has identifies some new studies that need to be done in order to alleviate concerns and advance future management decisions. Funding for the studies can probably be obtained in late 2002 or 2003. The proposed projects are listed in the order that they should be funded.

*Section IV: Recommendation 1 - Initiate a fish population monitoring program in conjunction with the study on fish contamination to assess the status of East Lake's fish population before any fish management activities are proposed by the East Lake Management Advisory Board.*



*Section IV: Recommendation 2 - Initiate a comprehensive fisheries creel by use of volunteers on East Lake to determine how many people are fishing (effort), harvest rate and the success rate of the anglers.*

*Section IV: Recommendation 3 - Initiate a comprehensive aquatic bird survey using volunteers for East Lake to determine bird abundance, species richness and determine which birds are using what parts of East Lake.*

### Group 3

There are some recommendations that will involve a substantial financial commitment. Some issues may already have some funds allocated for the year 2003. However, it is probably realistic not to expect funding until after October 2003 or even 2004. Therefore, the recommendations are listed in the order that they should be funded in order to advance the management plan most quickly.

*Section II: Recommendation 1. Maintain current water control structures and build a new adjustable weir just up-stream of existing structures and set the overflow at 23.5 ft mean sea level. Water level regulation by the new control structure in East Lake shall be by the East Lake Management Advisory Board.*

*Section II: Recommendation 2 - Initiate maintenance dredging, as soon as possible, of East Lake's access canals to restore the historical configuration of the canals and dredge elsewhere as needed.*

*Section III: Recommendation 3 - Initiate a comprehensive sampling/monitoring program of sportfish to determine if fish fillets have unacceptable levels of heavy metals (such as mercury or lead) and/or organic contaminants that could pose a human health risk.*

### Group 4

The following final recommendation is no less important than those mentioned above. However, it can be implemented after a couple years of work have been completed or the other proposed projects are well advanced.

*Section I: Recommendation 2 - The Board shall be responsible for continuing a modified TEAM Approach on a continuing basis to receive citizen and professional input on emerging issues as well as report to the citizens the results of management projects. This is particularly needed regarding issues related to the island that is now classified as a bird refuge. The group meeting on July 13, 2002 agreed to table discussions on the island because no consensus could be reached.*

### **Additional Concerns by Citizens**

### Concern I – Status of Island Ownership and Use.

The most significant area of controversy that this conflict resolution process was unable to resolve was the future status of the island and use of the island. Positions have been taken regarding ownership that can only be resolved by the Courts. Possible compromises regarding use were put forward but rejected. However, there was consensus that communications with the Audubon Society must be maintained and that decisions could be deferred to a later date without delaying other management activities at East Lake.

### Concern II – Stocking Sportfish into East Lake.

There is a strong desire to improve the fishing in East Lake. Stocking was suggested but there is little evidence that traditional stocking approaches work in lakes like East Lake. Consequently, the stocking option was not advanced. However, there are experimental approaches that might achieve the objectives of the angling community.

The stocking of large numbers of adult fish (primarily largemouth bass) has been suggested as a means to reestablish a more favorable biological balance. East Lake would be an excellent candidate lake because it is: (1) relatively small; (2) has limited public access; and (3) is close to a supply of adult fish. If the users of East Lake wished to try this type of experiment, the lake would first have to become a “catch and release” lake. Funds would have to be raised to move large numbers of adult largemouth bass into East Lake. This type of funding might be garnered from several areas including but not limited to; private donations, local, county or state agency funding sources.

## Appendix I

The TEAM Approach, Together for the Environmental Assessment and Management”: A process for Developing Effective Lake management Plans or Water resource Policy

## Appendix II

Findings from a Workshop on Citizen's  
Concerns Regarding the Future Management  
of East Lake

## Appendix III

Historical Information and Pros and Cons of  
Issues Identified by Citizens and  
Professionals Regarding the Future  
Management of East Lake