



# NEWSLETTER OF THE FLORIDA LAKE MANAGEMENT SOCIETY

Fall 1999

Volume 12, No. 2

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## CENTRAL FLORIDA CHAPTER FLORIDA LAKE MANAGEMENT SOCIETY

The Central Florida Chapter of the Florida Lake Management Society has received approval to be officially recognized. At the August 20th FLMS Board of Directors meeting at Reedy Creek, Kevin McCann and Rick Baird presented the names of 10 current dues-paying FLMS members willing to form a Central Florida Chapter and serve as officers. This regional chapter will modify the By-Laws of the first FLMS regional chapter from the Tallahassee area into its own. The Board accepted the proposal for the Central Florida Chapter without dissent.

The boundaries of the regional chapter were not defined. In accordance with the FLMS By-Laws, there need be no boundaries established. Anyone anywhere in the state may be a member of the Central Florida Chapter. Dues were not established. The only requirements to be a member of the Central Florida Chapter are: (1) support the mission of FLMS, and (2) be a dues paying member of FLMS. The chapter name has not been decided. The use of "Central Florida Chapter " is only for convenience.

One of the first official acts will be to set-up a meeting of all interested parties later this year. In addition, anyone interested should e-mail Kevin or Rick in order that an e-mail address list can be created to facilitate communication. In the year 2000, much information exchange will be done over the Internet.

The purpose of a Central Florida FLMS chapter is to exchange information, make contacts, and facilitate a forum to exchange ideas on lake management issues at the local or regional level. It is our goal to develop personal contacts among homeowners and the lake management professional so that lakefront homeowners will feel comfortable, the way they are with their Lakewatch professional. The Central Florida Chapter will host occasional Saturday workshops, like the Clean Lakes Coalition did. By being a member of the local chapter, lakefront homeowners will get the newsletter with updates on meetings, Internet chats and unlimited access to professional lake managers on local and regional issues.

Rick Baird

### INSIDE THIS ISSUE:

Award Nominations (p. 3)  
Bulletin Board (p. 6)  
Conference Info (p. 7)  
Feature Article (pp. 4-5)  
Letter from the President (p. 2)  
Monitoring Update (p. 3)

## **LETTER FROM THE PRESIDENT**

I am looking forward to serving this year as the President of the Florida Lake Management Society. It is already obvious to me that I have a very talented group of Officers and Directors to work with and anticipate a productive year.

Before I talk about the upcoming year, I would like to reflect back on our 1999 Annual Conference in Safety Harbor. FLMS has always had the reputation for being able to put together great conferences that are informative, well run, and entertaining. The 1999 conference was no exception with an outstanding program, nice facilities, and plenty of opportunities to network and socialize with fellow lake managers. What is most impressive is that members of our society do our conferences completely in-house. By doing all the work in-house, we are able to generate a profit which is the main source of funding for our society. I would like to extend our appreciation to Nancy Page, Doug Robinson, Don Hicks, Pam Leasure, Tom Cuba and Lisa Baltus. Their hard work resulted in a very successful conference. Thanks also to Jim Griffin for getting citizens involved in our society by coordinating an excellent session on Public Involvement in Aquatic Resource Management.

And speaking of our annual conference, plans are underway for a very exiting year 2000 meeting (see enclosed information). The FLMS Board had been leaning toward not having our own conference in 2000 since the North American Lake Management Society would be having their International Symposium in Miami during the fall of 2000. However, having a joint meeting with NALMS in the fall presented some logistical problems since many of our functions, such as changing of the Officers and Board members, take place during our spring meeting. Also, it just would not feel right not to have our own annual meeting. When Jeff Herr and Harvey Harper of ERD stepped up and volunteered to organize this year's conference, the FLMS Board of Directors voted to continue our long-standing tradition of annual meetings. Jeff will be Conference Chair and Harvey will put together the technical program, which should make for a very memorable meeting.

Finally, some other news of particular interest. The Board of Directors has voted to approve a Central Florida Chapter of the Florida Lake Management Society (see enclosed article). There are many local lake issues and interested citizens in this area, so I anticipate a lot of activity from this new chapter. I hope that all of our Central Florida members will get involved in this Chapter. Another area where our Society has made progress is our web-site. Since Kim Schildt volunteered to work on the site, it has improved in leaps and bounds.

There are many other projects and operational duties the Board is working on, but we are limited on what we can accomplish. There will also be plenty of work in setting up our annual conference. Anyone who is interested in becoming more involved in any aspect of our society is welcome to contact me or any of the other Board members.

Thanks - Kevin McCann

## **FIRST CALL FOR AWARD NOMINATIONS**

Each year, our Society solicits nominations for a variety of awards. Now is the time to offer names for consideration for one of the following awards. Please submit nominations to Rob Mattson at 904/362-1001 or e-mail him at mattson\_r@srwmd.state.fl.us. Please include a statement supporting your

nomination which provides information about the nominee, his/her qualifications for the award, and why you feel they should receive the award. Please forward all nominations by December 15, 1999.

**Marjorie Carr Award:** The Society's highest award. Given for life-time work/achievement on behalf of Florida's aquatic resources.

**Edward Deevey, Jr. Award:** Given to a professional for outstanding contributions to advancing our scientific understanding of Florida aquatic resources.

**Scott Driver Award:** Given to a citizen advocate for outstanding service/effort to promote the protection of Florida aquatic resources.

**Aquatic Resources Award (formerly the Service in Government Award):** Given to a professional (government, private sector or academic) for recognition of their efforts to restore, protect and advance understanding of Florida aquatic resources.

**Marjory Stoneman Douglas Award:** Given to individuals in the media for exceptional efforts to report on aquatic resource issues in Florida.

**Bob Graham Award:** Given to an elected official who demonstrates exceptional commitment to stewardship of Florida's aquatic resources.

**President's Award:** Given at the discretion of the Society's President for contributions by an individual to the Society and its Mission.

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### **UPDATE ON STATEWIDE MONITORING PROGRAM NETWORK**

The Department of Community Affairs Florida Coastal Management Program (FCMP) is supporting the formation of a statewide network of monitoring programs. The initiative was born on May 28<sup>th</sup> at the last session of the FLMS annual meeting. This session, organized by Jim Griffin, (Hillsborough County Lake and Stream Programs Coordinator) and sponsored by FCMP, was dedicated to organizing a State of Florida Volunteer Monitoring Association. More than 25 group representatives attended and participated in the session. The FCMP would like to address two issues raised at the meeting: (1) availability of technical and financial assistance; and (2) a directory of volunteer monitoring programs. To provide technical assistance, training, and financial support to local communities, FCMP has created the Coastal Partnership Initiative. This program will support projects that address initiatives related to remarkable coastal places, community stewardship, access to coastal resources, and working waterfronts. Request for proposals were announced in August. In response to the directory, a survey has been distributed and the information will be displayed on the Internet website this fall. If you have any questions or would like to provide additional information, comments, or suggestions, please contact Kim Mikita by phone at 850/414-8536 or by e-mail at [kimberly.mikita@dca.state.fl.us](mailto:kimberly.mikita@dca.state.fl.us).

Ernesto Lasso de la Vega

## **CYANOBACTERIA BLOOMS HITTING THE HEADLINES WITH TOXINS AND EXOTIC SPECIES - WHAT'S HAPPENING?**

By

Erich Marzolf, Andrew Chapman and John Burns\*  
Division of Environmental Sciences, St. Johns River Water Management District  
\*Florida Harmful Algal Bloom Task Force

Over the past several decades, cyanobacteria (blue-green bacteria) blooms in Florida may have become more severe due to the perceived increase in duration, frequency and size of blooms that have occurred in some of our most notable lakes and estuaries, including Lake Okeechobee, Lake Apopka, the St. Johns River and Florida Bay.

Cyanobacteria are structurally similar to bacteria but, like plants, use sunlight to grow. Cyanobacteria occur naturally in both fresh and marine water bodies. Most live with other types of algae and microscopic animals in floating plankton. Some species of cyanobacteria do not need much of the nutrient nitrogen present in the water because they are able to obtain nitrogen from the air. These cyanobacteria actually increase nitrogen levels in the water. Lower levels of the nutrient phosphorus in the water usually limit growth of these cyanobacteria. Therefore, reducing phosphorus levels in water bodies is the most effective means of preventing blooms of nitrogen-fixing cyanobacteria. Cyanobacteria multiply quickly in lakes with high nutrient levels, particularly when the water is warm and the weather is calm. This proliferation causes "blooms" that turn the water green, often with floating layers of green "scum".

Cyanobacteria blooms which last more than a few months are often harmful to lake ecosystems. Plankton is the base of the food chain in open water bodies; phytoplankton use sunlight to make food and are eaten by microscopic zooplankton. Small fish eat the zooplankton, and larger fish and other large animals eat the small fish. However, cyanobacteria are often difficult to eat or are of poor nutritional value for zooplankton. Consequently, zooplankton, particularly types that are the best fish food, often decline during blooms. This is often followed by declines in sportfish populations. Equally important, persistent blooms block sunlight that feeds plants growing on the bottom of lakes, resulting in the loss of rooted aquatic vegetation, which is valuable habitat. When blooms end, the decay of the cyanobacteria consumes much of the dissolved oxygen in the water, sometimes causing fish to die. The dead cyanobacteria cells settle to the bottom of water bodies, creating layers of soft sediments.

Cyanobacteria blooms were recorded in Europe as early as 1188. A small number of cyanobacteria species are responsible for most freshwater algal blooms worldwide. Many are from the genera *Anabaena*, *Aphanizomenon*, *Cylindrospermopsis*, *Microcystis* and *Planktothrix* (or *Oscillatoria*). Species from each of these genera occur in freshwater lakes in Florida.

### **Toxic Algae?**

Cyanobacteria are known to produce neurotoxins, hepatotoxins and paralytic shellfish poisons. Species of special concern in Florida include *Microcystis aeruginosa*, *Anabaena circinalis*, *Anabaena flos-aquae*, *Cylindrospermopsis raciborskii*, *Aphanizomenon* spp. and *Lyngbya wollei*. The few reported cases of toxins from cyanobacteria in Florida lakes involved *Microcystis* and *Anabaena*, and, more recently *C. raciborskii*. Although toxins from cyanobacteria have an aquatic origin, they appear to be more hazardous to terrestrial mammals. Primary problems associated with toxins from cyanobacteria include damage to the nervous system or liver of animals that ingest the toxin. Cyanobacteria and their associated toxins are believed to have existed in Florida lakes for thousands of years. However, information regarding toxins from cyanobacteria and risks to humans, fish and wildlife is very limited. Also, little is known about the environmental conditions that cause toxin production. However, no instances of human poisoning from toxins from cyanobacteria have been documented in Florida. No systematic survey of cyanobacteria toxins has been accomplished in Florida.

Cyanobacteria toxins are released when the cell dies or is ingested. Most toxic events attributed to cyanobacteria involve livestock, when animals are forced to drink water in which large amounts of algae have been concentrated along the shoreline due to prevailing winds. Previous toxic events where human health has been at risk from toxins from cyanobacteria have involved the application of copper sulfate to control blooms in public water supplies. The mass algal death caused by the copper sulfate released toxin into the water. Surface drinking water supplies can contain cyanobacteria, their toxins and other substances that are responsible for taste and odor problems. Human health may be at risk if algal toxins are consumed directly through drinking water or indirectly through water contact recreation.

### **A New Kid on the Lake**

A species common in Australia, *Cylindrospermopsis raciborskii* was first identified in the United States in the 1950s and in Florida in the mid-1990s. Recently, it has been found in approximately 25 lakes throughout north and central Florida. *C. raciborskii*, a nitrogen-fixing cyanobacteria, is different from some other bloom-forming cyanobacteria that occur in Florida because it rarely forms surface scums and appears to require less phosphorus to grow. Beginning in 1996, levels of chlorophyll in Lake Griffin noticeably increased and the lake became greener. Surveys by the St. Johns River Water Management District of Lake Griffin's plankton revealed that *C. raciborskii* made up 95 percent of the phytoplankton biomass in the lake.

In more recent surveys in the Harris Chain-of-Lakes, *C. raciborskii* has been found to dominate the phytoplankton biomass in other lakes, such as Lake Yale, that have lower average phosphorus levels than Lake Griffin. This suggests that this species more efficiently uses phosphorus than other native cyanobacteria. The rapid spread of a new non-native organism is not unusual, as evidenced by the rapid spread of hydrilla and many other non-native plant species. The SJRWMD is beginning a study to determine why *C. raciborskii* has grown so quickly and how it can best be controlled to improve water quality in lakes.

### **What's Being Done**

In 1997, the Florida Harmful Algal Bloom Task Force (HAB) was formed due to concerns about harmful algae in freshwater and marine habitats. This multi-agency task force includes members from the Water Management Districts, Florida Marine Research Institute, Florida Department of Health, Florida Department of Environmental Protection, and the University of Florida.

A special Florida legislative appropriation provided funding for a statewide survey to detect the presence of cyanobacteria and their toxins in Florida's surface waters. Samples are being collected and analyzed this year from 125 surface water bodies throughout Florida that have cyanobacteria blooms. Results from this preliminary survey will be available in 2000. Additional funding has been provided by the Florida Legislature to investigate harmful algal blooms and to assess their potential effects on water resources and public health.

For additional information, contact:

John Burns at (904) 329-4392 (e-mail: [John\\_Burns@district.sjrwmd.state.fl.us](mailto:John_Burns@district.sjrwmd.state.fl.us)) Or

Andrew Chapman at (904) 329-4872 (e-mail: [Andrew\\_Chapman@district.sjrwmd.state.fl.us](mailto:Andrew_Chapman@district.sjrwmd.state.fl.us))



### **BOARD OF DIRECTORS MEETINGS**

The FLMS Board of Directors has established the following schedule of meetings for the 1999-2000 year. The meetings are open to all FLMS members. Any FLMS member is invited to attend to view the Society in action or provide input on current issues.

#### 1999

November 12 - Orlando  
December 17 - Gainesville

#### 2000

January 21 - Winter Haven  
March 3 - Orlando  
April 7 - West Palm Beach  
May 19 - Orlando

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### **CALENDAR OF EVENTS**

Dec. 1-4, 1999	North American Lake Management Society (NALMS)	Reno, Nevada
March 22-25, 2000	Southeast Lakes Management Society (SE2000)	Columbus, Georgia
May 22-25, 2000	Florida Lake Management Society (FLMS)	Hawk's Cay-FL Keys

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### **CLASSIFIEDS**

Classified ads can be placed free-of-charge in the FLMS Newsletter for employment opportunities in the fields of lake management and aquatic resources. Contact Sharon Darling at (407) 855-9465 or by e-mail at: [sdarling@erd.org](mailto:sdarling@erd.org).

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### **WANTED - Laboratory Chemist:**

Chemist position available at well-respected water quality research company in the Orlando area. Chemistry degree required with 2-3 years experience in inorganic analyses. Experience with autoanalyzer and AA desirable. Needs good computer and record-keeping skills. Salary commensurate with experience. Contact Jeff Herr at (407) 855-9465 or fax resume to Jeff at (407) 826-0419..

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### **RECEIPT OF NEWSLETTERS**

If you are receiving multiple copies of the Newsletter, or wish to be removed from the Newsletter mailing list, please contact Sharon Darling at ERD (e-mail: [sdarling@erd.org](mailto:sdarling@erd.org) or by phone at: 407/855-9465).

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### **FLMS HAS A WEB PAGE!!**

Did you know that FLMS has a web page? Check us out at: <http://www.nalms.org/flms/home.html>

**DON'T MISS THE  
11<sup>TH</sup> ANNUAL MEETING (FLMS 2000)  
OF THE  
FLORIDA LAKE MANAGEMENT SOCIETY**

*May 22-25, 2000*

*Hawk's Cay Resort  
on the Atlantic Ocean in the Beautiful Florida Keys*

In addition to the traditional technical program, pre- and post-conference workshops are planned in the areas of stormwater management and environmental statistics.

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**PRELIMINARY CALL FOR PAPERS**

The Florida Lake Management Society (FLMS) is accepting abstracts for its Eleventh Annual Meeting (FLMS 2000) to be held at Hawk's Cay Resort in the Florida Keys on May 22-25, 2000. Abstracts are solicited on all issues related to lake and watershed management in Florida. Those interested in presenting a paper at the conference should submit the title, author's name(s) and address, and a **250 word** abstract to Harvey Harper - Technical Program Coordinator at Environmental Research & Design, Inc.; 3419 Trentwood Blvd., Suite 102; Orlando, FL 32812; Phone: (407) 855-9465; Fax: (407) 826-0419; or e-mail: hharper@erd.org. The deadline for abstract submittals is **Friday, January 7, 2000**. Selected authors will be asked to provide a two-page summary of their paper for publication in the Conference Proceedings.

For general questions regarding directions, registration fees or accommodations, please contact Jeff Herr - Conference Coordinator - at (407) 855-9465 (e-mail: jherr@erd.org).

**A special Conference Information Package will be mailed to all FLMS members during November.**



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**MEMBERSHIP FORM**

**FLORIDA LAKE MANAGEMENT SOCIETY**  
(A Chapter of the North American Lake Management Society)  
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Lakeland, FL 33804-2448

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