



# FLMS Newsletter

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**Florida Lake Management Society**

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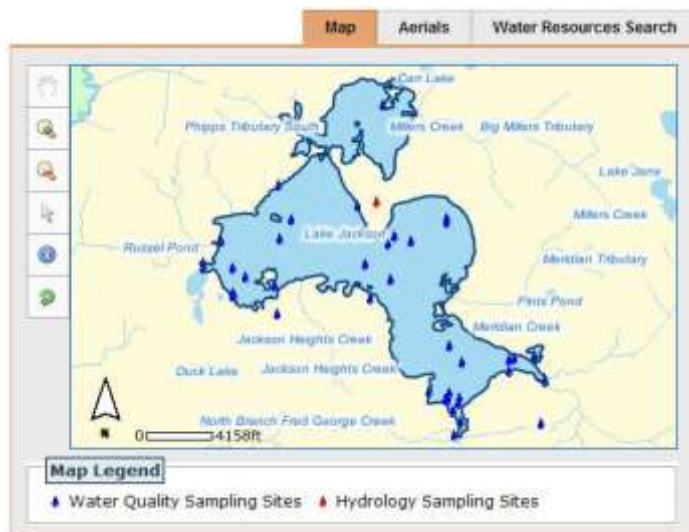
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## Atlas Programs Bring Water to the Web

Though it gets mentioned fairly regularly in this newsletter, some FLMS members may not be familiar with all the capabilities of the Water Atlas, an innovative web-based tool that can help the public better understand our natural waters and be a great boon to water managers. Using Geographic Information Systems (GIS), active web pages, and web-enabled database management systems, the Water Atlas websites are designed to provide citizens, scientists, professionals, and planners with comprehensive and current water quality, hydrologic and ecologic data. In addition, they provide information about local conservation efforts, volunteer and recreational opportunities, and a library of scientific and educational materials on water-resource issues.

The Water Atlas program is a [collection of websites](#) created and administered by the [Florida Center for Community Design and Research](#) at the University of South Florida in Tampa. Originally created as an atlas of Hillsborough County lakes in 1997, it has since expanded both geographically and functionally and aims to be a “one-stop-



*Sample water quality station map from the Water Atlas*

shop” for all things water-related. It now includes nine county Atlases and the [Tampa Bay Estuary Atlas](#), and soon will add the Charlotte Harbor Estuary Atlas. In addition to lakes, it also contains water quality and hydrologic data for other types of water bodies, including ponds, rivers/streams, bays, estuaries and inshore marine waters, as well as the watersheds that bind them together.

The mission of the program is to “provide a comprehensive information resource that helps citizens, scientists and resource managers make informed decisions concerning our vital water resources.” It

does this by providing a spatially-organized, web-delivered view of water resource data. While it is a repository for cold, hard facts, acquiring and organizing information from over 225 different data sets and making it available to the public in multiple formats, it also attempts to give that data meaning by providing “[Learn More](#)” articles that tell Atlas users how samples are collected, how they should be interpreted, and explaining their significance. Atlas users can display data in their raw, tabular form or graphically in custom tables and graphs, and

*(continued page 6)*

## President's Corner



*Shannon Carter Wetzel taking care of Florida's lakes*

Just a quick note this month to remind all of you to submit your abstracts for this year's conference. I know we're all busy but please take a few minutes to think about a presentation or poster that you'd like to give at the FLMS conference in St. Augustine. There has been so much going on in the past year, new NPDES permits, numeric nutrient criteria, BMAPs and TMDLs, not to mention the countless restoration projects and monitoring you all have going on. FLMS is the perfect venue to share your re-

search, projects, rulemaking, or anything else you'd like to discuss.

As always, I look forward to our annual conference to see all of my colleagues that I only get to see once a year and share data, resources, concepts, etc. Let's all take time to remember the tremendous value that our FLMS membership brings to us; professional colleagues and contacts, project and program ideas, data sharing and much more. But in addition to the technical and professional aspects of FLMS it's also a

Florida family of limnologists and stormwater professionals. Please take a moment to think about spreading the "stormwater family love" to other colleagues and students. We've lost some dear friends and colleagues this past year so take time to appreciate all of the friends and colleagues we still have and I look forward to seeing all of you this year at the conference.

*Shannon Carter Wetzel*

## Meet a FLMS Member

*"You can learn all the scientific facts and theories from textbooks, and still be confounded by the water quality data from a shallow Central Florida lake.."*

*~Rick Baird*



*Rick Baird, FLMS member*

Rick Baird is a long-time member of FLMS, and is retiring from his position as Clean Lakes Administrator with Orange County Environmental Protection Division this month. Rick reminisces about several FLMS members and his history with the society.

### **How long have you been a FLMS member?**

I've been a member as long as there has been a FLMS. I participated in the first symposium; it was 1988 at Rollins College, Winter Park. I gave a talk about heavy metals in the Butler Chain. I

thought it was so cool to be talking to a group of my peers. I had only been working professionally for less than ten years. This was also the first time I had an interaction with Kevin McCann. He questioned if my results weren't just an artifact of changing methodologies over the years. He made me think about the study and challenged me to make sure I really knew what I was talking about the next time I made a presentation. Kevin and I worked together on many projects and studies on Orange County and City of Orlando lakes for the next 23

years, until his retirement and subsequent passing in January 2011.

In 1990, after a very successful workshop for what would later become the Central Florida Lake Management Society, with candidates for the new position of Orange County Chairman, now Mayor, Dean Barber and another FLMS Board Director approached me about joining the Board. Dean said he was leaving the Board and he wanted to know if I was interested in completing his term on the Board. I said yes,

*(Con't. page 7)*



## FLMS Lake Grants

Every year, FLMS provides funding for several projects that either improve lake shorelines or develop an educational and restoration component for lakes used by the public. These two programs are called the Love Your Lake and Shoreline Development grants. In the fall newsletter we highlighted the results of two grants awarded to Seminole County. This time we are proud to present work completed under three other grants; two shoreline development grants to Hillsborough County and Lake County and a Love Your Lakes grant to the City of Tavares for work on Lake Becky at Aesop Park.

### *Lake County Shoreline Development Projects*

Lake Ella is a 30 acre lake located in Umatilla. The project was performed to enhance the native vegetation on the lakeshore. The homeowner already had a few native aquatic plants but wanted to create a beautiful natural shoreline to serve as an example to others. The homeowner has agreed to allow the Adopt-a-Lake Program to use photographs of the site to show others how beautiful a native shoreline can be. They removed torpedo grass from a portion of the area and installed a variety of native plants which included burr marigold, canna, cardinal flower, buttonbush, bulrush, sandcord grass, purple love

grass and a swamp dogwood tree. Existing vegetation consisted of iris, pickerel weed and a cypress tree.

Lake Florence is a 131 acre lake located in Montverde. The project was performed to add native vegetation to a barren shoreline. The project was completed with the assistance of students from Montverde Academy's environmental club. The existing shoreline consisted of a sandy beach with erosion problems. Native aquatic plants were installed along two sections of the shoreline. Plants included pickerel weed, duck potato, canna and bulrush. Green, plastic landscaping fence was installed around the plants to prevent uprooting from water ski activity on the lake, this

appeared to be very successful.

### *Hillsborough County Shoreline Development Projects*

Hillsborough had two projects on Little Lake Wilson. This is a small lake that was originally excavated from a cypress swamp in Lutz in the north part of Hillsborough County. It's a little over 7 acres, and has a voluntary Property Owners Association that covers this lake and the neighboring Big Lake Wilson. These projects were generated and accomplished by residents, though. Jeannie and Artie Taylor did some nuisance removal and planting of natives. At the same time, they also installed a



*Little Lake Wilson, Hillsborough County, Taylor project*

*(Con't. page 6)*



*Lake Florence, Montverde restoration in progress; Maryann Krisovitch, Lake County WAV*

## Coal Tar Sealant Largest Lake PAH Source



*Hwy 415 bridge over St. Johns River near entrance to Lake Monroe, Sanford*

### USGS Press Release

Coal-tar-based pavement sealant is the largest source of polycyclic aromatic hydrocarbons (PAHs) found in 40 urban lakes studied by the U.S. Geological Survey. PAHs are an environmental health concern because several are probable human carcinogens, they are toxic to fish and other aquatic life, and their concentrations have been increasing in urban lakes in recent decades.

Coal-tar-based pavement sealant is the black, shiny substance sprayed or painted on many parking lots, driveways, and playgrounds. USGS scientists evaluated the contribution of PAHs from many different sources to lakes in cities from Alaska, to Florida. The full report can be found in the journal [Science of the Total Environment](#).

USGS scientists collected sediment cores from 40 lakes, analyzed the cores for PAHs, and determined the contribution of PAHs from many different sources using a chemical mass-balance model. On average, coal-tar-based sealcoat accounted for one-half of all PAHs in the lakes, while vehicle-related sources accounted for about one-quarter. Lakes with a large contribution of PAHs from sealcoat tended to have high PAH concentrations, in many cases at levels that can be harmful to aquatic life. Analysis of historical trends in PAH sources

to a subset of the lakes indicates that sealcoat use since the 1960s is the primary cause of increases in PAH concentrations.

Coal tar is made up of at least 50 percent PAHs. Pavement sealants that contain coal tar, therefore, have extremely high levels of PAHs compared to other PAH sources such as vehicle emissions, used motor oil, and tire particles. Small particles of sealcoat are worn off of the surface relatively rapidly, especially in areas of high traffic, and are transported from parking lots and driveways to streams and lakes by storm runoff. Manufacturers recommend resealing surfaces every three to five years. Runoff isn't the only path by which PAHs are leaving parking lots. A recent USGS study found that use of coal-tar-based sealcoat on parking lots was associated with elevated concentrations of PAHs in house dust.

Sealcoat products are widely used in the U.S., both commercially and by homeowners. The products are commonly applied to commercial parking lots (including strip malls, schools, churches and shopping centers), residential driveways, apartment complexes and playgrounds. The City of Austin, Texas estimates that before a ban on use of coal-tar-based sealcoat in 2006, about 600,000 gallons of sealcoat were applied every

year in the city.

Two kinds of sealcoat products are widely used: coal-tar-emulsion based and asphalt-emulsion based. Consumers can determine whether a product contains coal tar by reading the label or asking the company hired to do the pavement application. The coal-tar products have PAH levels about 1,000 times higher than the asphalt products. National use numbers are not available; however, previous research suggests that asphalt-based sealcoat is more commonly used on the West Coast and coal-tar based sealcoat is more commonly used in the Midwest, the South, and the East. The results of the lake study reflect this east-west difference. For example, sealcoat contributes over 80 percent of PAHs in Lake Anne, Va., and PAH concentrations there are about twenty times higher than in Decker Lake, Utah, even though the areas have similar population density and level of urban development. Furthermore, PAH levels in pavement dust from sealcoated parking lots in Va. are about 1,000 times higher than those from sealed parking lots in Utah.

To learn more, visit the USGS [National Water Quality Assessment Program](#) website on [PAHs and sealcoat](#).

*"A lake is the landscape's most beautiful and expressive feature. It is earth's eye; looking into which the beholder measures the depth of his own nature."*  
~Henry David Thoreau



## In Memoriam: Kevin McCann

It is with the deepest regret that we inform you of Kevin McCann's passing in January. He was a longtime member and leader of the Florida Lake Management Society, serving on the Board of Directors from 1996-1999 and as President of FLMS in 2000. He was also pivotal in establishing the Central Chapter of FLMS. Kevin was awarded the **Richard Coleman Aquatic Resources Award in 2009** for his career work to restore, protect and advance our understanding of Florida's aquatic resources.

Kevin retired last summer after 25 years with the City of Orlando Streets and Stormwater Division. Many of us were fortunate enough to be able to work with him on

various stormwater projects and issues throughout Central Florida. Kevin was a well respected professional that many of us turned to for advice and guidance and I'm

sure we all have our "wonderful Kevin stories" that we will cherish and remember. He will be truly missed as a colleague and friend.



*Out on an Orlando lake*



*Kevin with a "big one"*



*Kevin doing one of his favorite things—showing the results of a day spent fishing*

*"I just caught a huge catfish in that golf course pond over there. Can you believe that?"*  
 ~ Kevin McCann out fishing at lunch during the FLMS conference at Sandestin 2008

## FLMS Lake Grants (con't. from page 3)



Little Lake Wilson, Taylor's project

trash collecting net. Doyle and Karen Derbe also removed nuisance species along a wooden retaining wall and replanted natives. This is part of their plan to slowly restore a more natural shoreline. They added some rock piles lake-ward of the wall and planted around them, and also planted along the top of the wall, which overtops frequently at high lake levels.

### City of Tavares Love Your Lake Project

The Aesop's Park Restoration Project consisted of surface water quality improvements entering and exiting an

existing pond (Lake Becky) and its associated treatment area within a 9.87-acre nature park in the City of Tavares. This will offer substantial improvements to fishing, public access, and health for the community. Love Your Lakes funding was used for clearing, nuisance and exotic plant removal, littoral planting, educational signage and community outreach tasks. This is part of a larger community "backyard" project that involves various nature viewing, exercise, gardening, playground and ADA accessible projects along with stormwater nutrient reduction installations that benefit not

only Lake Becky, but several other lakes downstream.

This project is located at Section 28, Township 19 South, Range 26 East, Lake County, Florida. Existing untreated residential street runoff drains into the park from Disston Ave. and is discharged into the pond through a storm pipe. The water from this pond generally overflows northeastward through a wetland area and into Lake Frances. From Lake Frances, the water travels north through Lake Juniata. Ultimately, the waters discharge from this system into Lake Eustis, an impaired water body for the Ocklawaha Basin.



Planting near the dock at Aesop Park, Lake Becky, Tavares



Planting in progress on Lake Becky at Aesop Park, Tavares



Lake Becky, Tavares



Lake Becky, Tavares



Lake Becky, Tavares



Lake Becky, Tavares



## Meet a FLMS Member (con't. from page 2)

and the rest is history. I served on the Board, in various positions, until being elected President in 2002. I plan to be an active, dues paying member in FLMS, until I can no longer remember what the acronym stands for.

### How did you find out about FLMS?

When I was in high school I was counting total coliform bacteria in the Indian River as part of a National Science Foundation Grant and by the time I started college I knew that I wanted to do something with aquatic biology. I moved to Orange County to go to school and, of course with all the fresh water lakes here, it was obvious that lakes were going to be my focus of study. When I interned with Orange County in the summer of 1973, the lakes were so full of hydrilla that no one could use them. By the time I came back in 1977, as a full time employee, the lakes were pea green, the result of very effective aquatic plant programs. Back in those days the old Fish and Wildlife Commission was very active in lake management and people like Lawson Snyder needed the help of citizen activists like Richard Coleman to bridge the gulf between the professionals who managed the lakes and the citizens who used them. Although, I don't

know for sure if it was those two who got FLMS going during the 1987 NALMS meeting in Orlando, but FLMS was chartered as a NALMS Chapter the next year. Working in the field, you either find out about professional organizations, and join them, or you don't. Today, with all the social media, outreach to schools and colleges and regional chapter activities, if anyone interested in the field doesn't know about FLMS, then they don't deserve to be in FLMS. Not really, we need to make every effort to attract new members to the Society!

### How has FLMS affected your life, or why is FLMS important to you?

In the last 34 year I have been involved in the American Society for Microbiology, the Florida Native Plant Society, the Florida Historical Society, Florida Association of Environmental Professionals, Florida Association of Environmental Analysts and probably some others. FLMS is the one that has really meant the most to me in terms of friends, interest, and passion. It is most challenging intellectually, of all the groups I have been associated with. You can learn all the scientific facts and theories from textbooks, and still be confounded by the water quality data from a shallow

read the *LakeLine* Vol. 23 No. 1 Spring 2003 issue, devoted entirely to shallow lakes, and still not be to accurately predict the next algal bloom on Bass Lake, for example.

My association with FLMS has helped me professionally and personally with the many friends I have made over the years. I remember, in the old days, before conference call meetings and budget cuts, the FLMS Board would meet all over the State and it was fun getting to see where the other Board members worked. I will never forget the times the Board held their November meeting at this neat old house in Gainesville, to accommodate the members from the north part of Florida. The house was decorated for Christmas, and appropriately cold, but Larry Battoe would take the day off from the District and stay home just for the Board meeting. He would bring warm chocolate chip cookies from home, which he had just baked. We'd have tea and coffee and cookies and other desserts, while we conducted the necessary business. Then budget cuts and practicality set in and they became just "bored" meetings.

### Who do you work for and what do you do for your living?

I have worked for the Orange

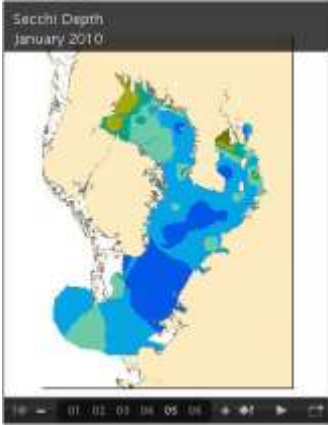


Rick Baird at Orlando Wetlands Festival answering questions

*"A lake carries you into recesses  
of feeling otherwise  
impenetrable."*

~William Wordsworth

## Water Atlas (con't.)



Contour maps available from the Water Atlas

can view them in their geographic context via interactive mapping applications. Researchers can download data for chemical, physical, and biological parameters for further analysis. Agencies can use the data to demonstrate compliance with federal and state stormwater regulations. Water resource managers can create water quality reports and maps to answer questions about the condition of resources.

Public engagement is an essential function of the Water Atlas, giving citizens easy access to water resource data that has been amassed by government agencies using taxpayer funds. Concerned citizens need not be mere consumers of Atlas content; volunteer monitors serve an essential role by submitting water quality samples, reporting on wildlife sightings, promoting and reporting on group cleanup/restoration activities, reporting polluters, and sharing photos and local history. Sponsoring organizations (counties, cities and regional agencies) use the Atlas for conservation outreach, making available informational brochures, booklets and videos, and providing notice of upcoming workshops and volunteer opportunities on the Atlas events calendar. Recreational users can find information on water body location, size and depth, water quality, suitability for recreation, location of parks,

beaches, piers and boat ramps, weather, and even fishing reports. A searchable [Digital Library](#) makes available to the public environmental assessments, watershed management plans, technical reports, historic information and links to water-related websites. Teachers can utilize the [Curriculum](#) component for Sunshine Standard class exercises and explore links to external sites with water-related lesson plans and classroom projects.

Each Water Atlas is customizable by its sponsoring organization(s), and most contain resource pages for volunteer initiatives or other special-interest topics. These include [Adopt-A-Pond](#), [Macroinvertebrate Monitoring](#), [Stormwater Education](#), [Watershed Excursion](#), [Habitat Restoration Mapping](#), [Lake Management](#), [Spring Resources](#), [Stream Waterwatch](#), [Seagrass Monitoring](#), [Oral History](#), and [Neighborhood Stewardship](#) programs.

**Data Download and Graphing:** The data download system is the primary tool on the Water Atlas website to retrieve water-related information. Available data are surface water quality, surface water hydrology, groundwater quality, groundwater hydrology, meteorological conditions and near real-time data. Data may be filtered by a combination of Water Body Name, Water Atlas, County,

Watershed, USGS Hydrological Unit, DEP Water Body Type, Station Name/ID, Data Source/Provider, Parameter Grouping, Parameter, Quality Assurance Codes, and/or Activity Depth.

**Advanced Mapping:** This interactive map has multiple, selectable GIS layers and allows a user to create, view and print custom maps. Water bodies, environmental and recreational features, land use and infrastructure, political boundaries, water quality and bathymetry, sampling locations, and aerial photography are some of the choices available.

**Real-Time Data:** This feature allows users to access water quality, hydrology, rainfall and other weather data in near-real time by clicking a station's marker on an interactive map. The most current reading is displayed, and a graph of recent values is a click away, as is "metadata" about the sampling station and the agency that placed and monitors it.

**Water Quality Contour Mapping:** This new feature has been implemented in the Tampa Bay Estuary Atlas and is being expanded to include Sarasota Bay. By using a database of sampling data and applying a Inverse Distance Weighting geospatial algorithm, a series of maps are generated that use color value to represent sampling values, allowing the user to

*"I'm an old-fashioned guy... I want to be an old man with a beer belly sitting on a porch, looking at a lake or something."  
-Johnny Depp*





## Water Atlas (con't.)

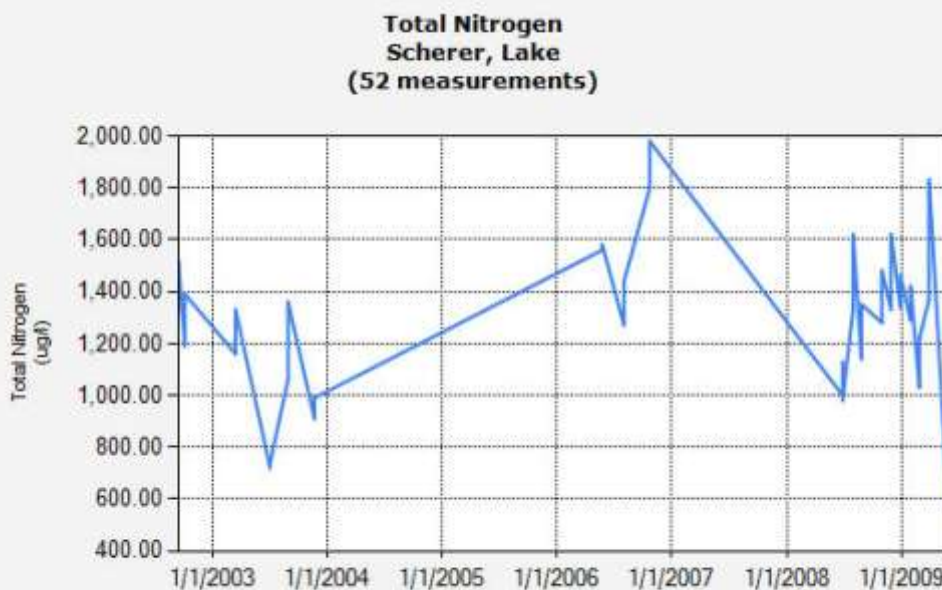
visualize spatial differences in water quality and see how they change over time. Dissolved oxygen, salinity, chlorophyll, water color and Secchi depth may be mapped in this way.

The ultimate goal of the Water Atlas Program is to have a fully-functioning Atlas for every area in the state of Florida, a dream not yet realized. In an effort to make available statewide lake water quality data, the [Florida Atlas of Lakes](#) was created. Launched in 2007 with sponsorship by FLMS and Florida LAKEWATCH, it uses the National Hydrology Database to spatially map over 5300 Florida lakes. Its structure includes individual resource pages and a main or program page. Both page types are managed through a web page

administration function that can be used by volunteers and LAKEWATCH coordinators to personalize text and add photos, and communicate via announcements and web-based forms. An interactive viewer allows users to view a map of each lake, showing its spatial relationship to county boundaries, other water bodies, LAKEWATCH sites, lake regions, subregions, swamps and marshes, and USGS subbasins.

Budget shortfalls among local governments have created a challenge to the Water Atlas program's aspirations to expand statewide. A regional approach is being pursued that will allow cost sharing among a larger set of partners in an effort to increase affordability. The Charlotte Harbor Estuary Water Atlas,

currently in the planning stage, is regional in scope by virtue of the estuary's huge watershed. Water resource issues will undoubtedly continue to be an important focus of regulatory agencies and local governments, and the Water Atlases have the potential to be important tools in statewide assessment, management and public outreach. The Florida Center for Community Design and Research is actively seeking new partners to expand its services to additional regions of Florida. To find out about opportunities to become a Water Atlas Partner call (813) 974-1068 or e-mail Jim Griffin at [griffin@arch.usf.edu](mailto:griffin@arch.usf.edu). To explore the Water Atlas websites, visit their gateway portal on the web at <http://www.wateratlas.org/>



Example of Graphs available from the Water Atlas



## Call for Papers FLMS 2011

The Florida Lake Management Society will host the 22nd Annual FLMS Conference and Meeting at the St. Johns County Convention Center from June 13-16, 2011. The 2011 Conference will include a day of workshops on Monday, June 13 covering various lake, water-

shed management and education topics. Conference sessions begin on Tuesday, June 14 and run through the morning of Thursday, June 16. We have an exciting and informative agenda with technical sessions held on a wide variety of topics related to water resources and watershed

management issues. The Conference will offer CEUs for the NALMS CLM/CLP certifications, Engineering PDHs, and FDACS CEUs.

ABSTRACT DEADLINE IS February 25, 2011. Details for submission are available at [FLMS.net](http://www.flms.net).

Workshops - June 13  
2 1/2 days of technical presentations  
June 14 - 16

Florida Lake Management Society  
**FLMS**

FLORIDA LAKE MANAGEMENT SOCIETY

Full Registration \$185  
One Day \$75

Renaissance Hotel  
Reservations  
888-740-7020  
Conference Rate \$99/night  
[www.worldgolfrenaissance.com](http://www.worldgolfrenaissance.com)

WORLD GOLF VILLAGE

22nd Annual Conference  
<http://www.flms.net>

FLMS 22nd Annual Conference  
Discovering the St. Johns River  
A River of Lakes  
June 13-16, 2010  
St. Augustine, Florida

Check back often for updates,  
excursion information  
and workshop schedules  
[www.flms.net](http://www.flms.net)

FLMS

## Meet a FLMS Member (con't. from page 7)

County Environmental Protection Division for over 34 years. The Division has broad regulatory authority over environmental activities in the County. For the last 6 years I have worked specifically in the Lake Management Section. In my role as Clean Lakes Administrator, a working title I bestowed upon myself, I oversee several million dollars worth of water quality improvement projects. It has been my responsibility to take a project from conception, to design, to bid, to construction and finally monitoring. I also serve as staff liaison with several citizen advisory boards that generate money to keep their particular lakes clean and healthy. Joining FLMS early on, when I worked in the lab and then being part of the outreach program of EPD has been a great asset to me professionally.

### **Any hobbies in your off hours that you would like to mention?**

My hobbies really have been about the environment these last 30 years. Family vacations have centered around FLMS annual conferences. FLMS Board, please don't ever forget that our conferences can also be about families, not just technical sessions. I enjoy photography, I've documented my kids growing up through Christ-

mas cards and family photos, like vacations at FLMS meetings. I also enjoy gardening and have a small native butterfly garden in my backyard, which needs rejuvenating since this winter's freezes.

### **What is the largest single problem facing lake managers today, other than financial issues?**

Some lake managers would suggest that a lack of sound scientific information is the biggest reason we still have declining water quality in some of our lakes and streams. The debate over the implementation of numeric nutrient criteria is a good example of the problem. One side argues that we shouldn't waste a lot of money until we know if the science behind the standards will produce the desired effect. The other side argues that if we wait until all the scientific evidence is in place before we implement costly rules, we will be so far behind the impairment curve that we will never accomplish the desired goals. I hear the argument that EPA science is not sound, and before that, I heard that FDEP science was not sound. I wonder who really is questioning the science of the two preeminent bodies in the science of water quality? A further complicat-

ing factor is exemplified by the observation Dan Canfield makes when he says the hardest part about lake management is getting 10 people in a room to agree on how a lake should be managed. This goes for both professionals and citizens. An example is the Lake Toho hydrilla versus snail kite management issue. The schism between water quality, wildlife management, human activities, aesthetics, and costs is, perhaps, at the root of making real progress in protecting our aquatic resources. I believe it is critical that the hard work of lake management professionals and FLMS working with citizen groups like Lakewatch, continue to bring everyone together in their appreciation of the value of our aquatic resources.



*"Perhaps the truth depends on a walk around the lake."  
~Wallace Stevens*





# Florida Lake Management Society

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Check out our website: [FLMS.net](http://FLMS.net)

You may now join FLMS by simply completing our online [form](#):

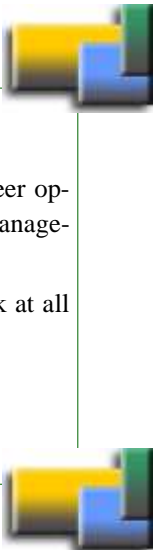
Newsletter Editor: Sherry Brandt-Williams  
Send articles or ideas to [sbrandt@sjrwm.com](mailto:sbrandt@sjrwm.com)

## JOB OPPORTUNITIES

The FLMS webpage maintains current listings of career opportunities in fields related to lake and watershed management. There are several new listings at this time.

Check back often, and while you are there take a look at all of the other useful information available.

[http://flms.net\\_job\\_posts\\_under\\_announcements](http://flms.net_job_posts_under_announcements)



## Florida Lake Management Society 22nd Annual Conference

Discovering the St. Johns River - A River of Lakes

Visit the web for more information: <http://www.flms.net/>

### Call for Papers

Abstracts due February 25, 2011  
e-mail to Kelli Levy at [klevy@pinellascounty.org](mailto:klevy@pinellascounty.org)  
Instructions at [www.FLMS.net](http://www.FLMS.net)

### June 13 workshops

Lunch provided with  
full-day Workshop registration  
Lake Vegetation Index Part I (classroom)  
Lake Vegetation Index Part II (Field)  
Great Water Odyssey Education Workshop (1/2 day)  
Water Atlas in the Classroom (1/2 day)  
NPDES and TMDL Regulatory Considerations

### June 14 technical sessions

General Conference Sessions  
Breakfast and lunch provided  
Morning and afternoon breaks  
Poster Session  
FLMS Chapter Meeting  
Exhibitor's Social

### June 15 technical sessions

General Conference Sessions  
Breakfast provided  
Morning and afternoon breaks  
Awards Banquet Lunch  
FLMS Board Meeting

### June 16 technical sessions

General Conference Sessions  
Breakfast provided  
Morning break  
Conference adjourned at Noon

# calendar of events