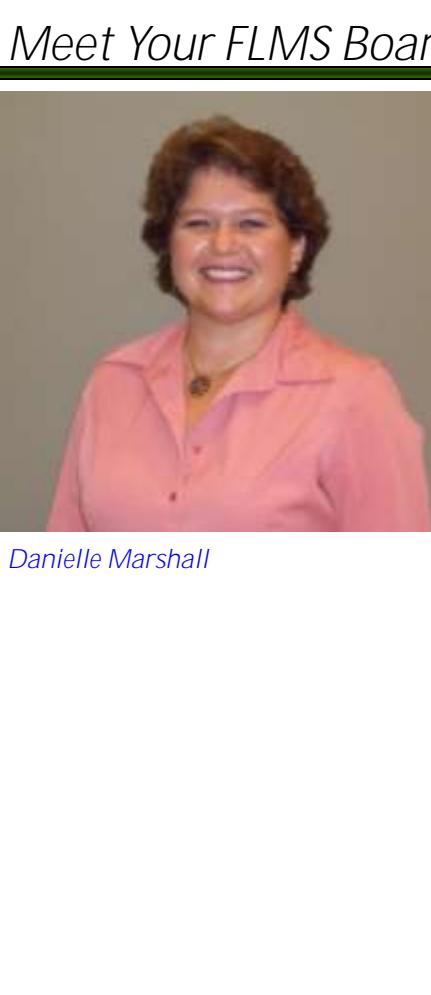




FLMS.net Fall 2013

## PRESIDENT'S MESSAGE



Jennifer Sagan exploring Ireland's water resources

We have many exciting announcements within this October newsletter! The first is that we have finalized the location of our June 2014 FLMS symposium. We will be holding the symposium in Stuart, Florida at the Hutchinson Island Marriott. The location is beautiful and from a water manager's perspective an exemplary backdrop to the intensive investigations and restoration activities in process for the imperiled Indian River Lagoon (IRL). We will have a special session dedicated to the IRL.

This leads to our second announcement. Have you noticed that the Florida Lake Management Society is much more than an organization that focuses on LAKE management? If you peruse through past proceedings, you will find a vast variety of talks covering all surface water types including estuaries, rivers, streams, springs as well as lakes. In addition, we are increasing our understanding of the complexity of groundwater and surface water interactions and dedicate many sessions not only to these investigations but to best management practices that acknowledge the connectivity of all surface water types to ground water systems. Thus, we would like to announce the addition of a new tag line onto our FLMS logo: Florida Lake Management Society – Managing Florida's Water Resources.

Aquatically Yours,

Jennifer Sagan

## Meet Your FLMS Board Members: Danielle Marshall



Danielle Marshall

**How long have you been a FLMS member?** I have been a FLMS member since 2010 and a Board of Director for a year.

**How did you find out about FLMS?** Amy Giannotti (formerly with FWC - now with the City of Winter Park) suggested I get involved with FLMS when I was faced with a hydrilla-filled Lake Lotus in the summer of 2010.

**Why is FLMS Important to you?** FLMS has really broadened my support network. I had a steep learning curve when I was named the City's lake manager in 2010 when there was an algae bloom in the City's epicenter and Lake Lotus was topped out with hydrilla. FLMS members helped me then and continue to help me learn how to be an effective lake manager.

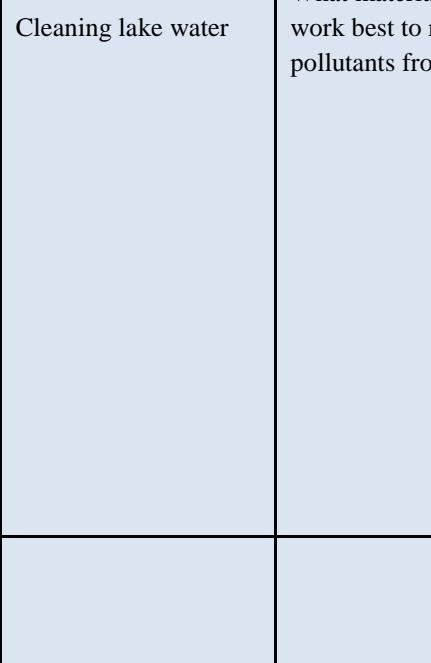
**Who do you work for and what do you do for your living?** I work for the City of Altamonte Springs. Although my official title is Compliance Coordinator, my job duties include (but not limited to) tasks associated with lake management (and all that comes with it), floodplain administration, NPDES/BMAP compliance, DRC review of stormwater design, CUP compliance and teacher in the Altamonte Springs Science Incubator program (AS2).

**Any hobbies in your off hours that you would like to mention?** My job is very demanding and extends beyond the typical 40 hour workweek. What time I have beyond work is filled with family. I have three beautiful girls, a wonderful husband and a large extended family. When I'm not helping with homework, school projects or attending swim meets, cross country meets and cheer programs I try to fit in scrapbook sessions. I do make time to play on a women's indoor soccer league on Sunday evenings though.

**What is the largest single problem facing lake managers today, other than financial issues?** This answer is as complicated as the job of being a lake manager! For me, as a lake manager in a smaller municipality, the hardest issue is educating the public and (more importantly) politicians of what and how a "lake" should be naturally and our limitations of "controlling" the natural fluctuations of these ecosystems.

**Is there anything else you would like to share with FLMS members?** Don't be afraid to reach out to other FLMS members for guidance or suggestions. I haven't met any member that wasn't willing to take the time to discuss an issue or suggest a solution.

## Hold the Date: FLMS 25th Anniversary Technical Symposium

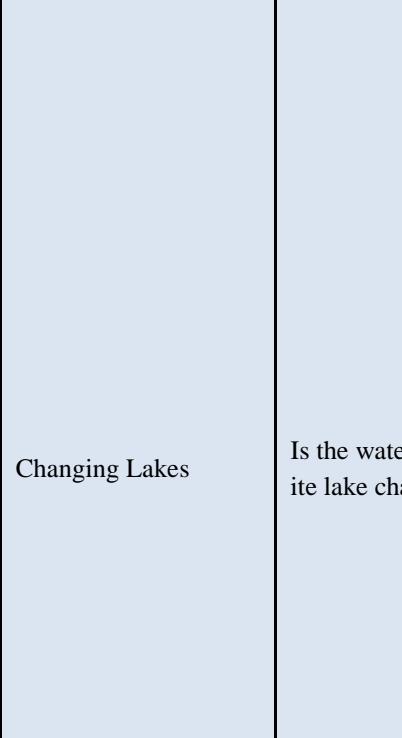


Hutchinson Island Marriott

FLMS is celebrating its 25th Anniversary this year. Mark your calendars for the week of June 16-19, 2014 for another educational conference. Our conference chair this year, Todd Olson, is making plans for engaging activities for the whole family, and Jim Griffin, the program chair, has already lined up our plenary speaker and the beginnings of several popular technical sessions. NAME, currently with xxx and formerly the xxx with xxx, will open the symposium. The venue is the Marriott on Hutchinson Island—a beautiful tropical oasis right on the beach, with a nightly rate of \$99 for government employees and \$105 for everyone else. Check the FLMS website for updates ([www.FLMS.net](http://www.FLMS.net)).

Hutchinson Island Marriott Resort is a 200-acre tropical island retreat conveniently located just 45 minutes from Palm Beach International Airport. Nestled between the Atlantic Ocean and Inter-coastal Waterway, the resort is filled with inspiring views, spectacular recreation options and trusted Marriott service. This hotel has 274 luxurious guest rooms newly renovated standard rooms, studios and suites, 25,000 square feet of function space and attentive professional staff. Amenities include a restaurant and bar, two tiki bars, executive golf course, tennis, marina and the beautiful sandy beach! [www.MarriottHutchinsonIsland.com](http://www.MarriottHutchinsonIsland.com)

## FLMS Members Offer Help for Science Fair Projects



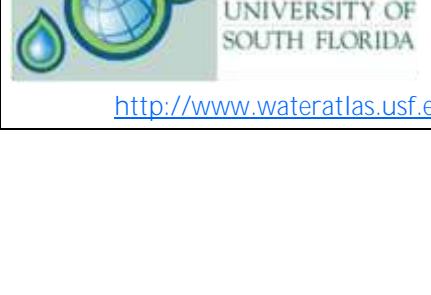
FLMS is dedicated to providing incentives and assistance to Florida's young scientists. When funding allows, we provide a cash award to the best science fair project focused on Florida's water resources. We would like to see more science fair projects looking at issues with freshwater ecosystems and have compiled some ideas and links to relatively simple projects that will teach middle and high school students a few basic facts about limnology and water quality. These projects will also be available on the FLMS website ([www.FLMS.net](http://www.FLMS.net)). Please send this information to any teacher or student you think would be interested. Check out the links below for more ideas and browse the chart provided for ideas to get this year's science fair off to a strong aquatic start.

[http://www.sciencebuddies.org/science-fair-projects/project\\_Ideas/EnvSci\\_p054.shtml?fave=no&slb=cmkOjEWNTMxOTA2LHNpZDowLHA6MsxpTpFnZTYk&from=TSW](http://www.sciencebuddies.org/science-fair-projects/project_Ideas/EnvSci_p054.shtml?fave=no&slb=cmkOjEWNTMxOTA2LHNpZDowLHA6MsxpTpFnZTYk&from=TSW)

<http://www.brazos.org/generalPdf/10-08-12-science-fair.pdf>

Title	Question?	Background Links	Suggested Experimental Method	Equipment needed	
Water clarity effect on fishing #1	What is the relationship between secchi depth and the visibility depth of various fishing lures?	<a href="http://www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html">www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html</a> <a href="http://en.wikipedia.org/wiki/Fishing_lure#Types">http://en.wikipedia.org/wiki/Fishing_lure#Types</a>	Use a bridge/dock over lake/river or use a boat to make measurements using the secchi disc and make a data table showing secchi depth and fishing lure depth	a long rope, secchi disc, fishing lures	
Water clarity effect on fishing #2	Same as #1 but what is the effect of weather conditions	<a href="http://www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html">www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html</a> <a href="http://en.wikipedia.org/wiki/Fishing_lure#Types">http://en.wikipedia.org/wiki/Fishing_lure#Types</a>	Same as #1; make a separate chart for sunny, cloudy, partly cloudy, rain	a long rope, secchi disc, fishing lures	
Water clarity effect on fishing #3	same as #1 but what is the effect of wearing different types of sunglasses	<a href="http://www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html">www.ecy.wa.gov/.../plants/management/joysmanual/secchi.html</a> <a href="http://en.wikipedia.org/wiki/Fishing_lure#Types">http://en.wikipedia.org/wiki/Fishing_lure#Types</a> <a href="http://en.wikipedia.org/wiki/Sunglasses">http://en.wikipedia.org/wiki/Sunglasses</a>	Same as #1; make a separate chart for no sunglasses, cheap, polarized, tinted (blue, yellow, amber, etc)	a long rope, secchi disc, fishing lures, sunglasses	
Is dilution the solution to pollution?	Does the addition of clean water to eutrophic water change the biological characteristics of the ecosystem?	<a href="http://www.thepondlady.com/ecology/pondecology.html">http://www.thepondlady.com/ecology/pondecology.html</a> <a href="http://en.wikipedia.org/wiki/Eutrophication">http://en.wikipedia.org/wiki/Eutrophication</a> <a href="http://www.lakescientist.com/learn-about-lakes/water-quality/eutrophication.html">http://www.lakescientist.com/learn-about-lakes/water-quality/eutrophication.html</a> <a href="http://www2.epa.gov/nutrientpollution">http://www2.epa.gov/nutrientpollution</a> <a href="http://www.cas.miamioh.edu/scienceforohio/microcosm/images/Fp1.pdf">http://www.cas.miamioh.edu/scienceforohio/microcosm/images/Fp1.pdf</a> <a href="http://www.cas.miamioh.edu/scienceforohio/microcosm/Bg.html">http://www.cas.miamioh.edu/scienceforohio/microcosm/Bg.html</a>	Set up three to four microcosms using the same size/shape water containers and identical sunlight conditions. Add water from a nearby eutrophic lake to one jar and drinking water to another jar (controls). Add half eutrophic water and half drinking water to another jar. Either change the amount of the drinking water or use water from another source to make a fourth microcosm. Take picture every day at the same time of all four jars. Note changes over at least four weeks time. Do not shake, stir or move during that time. Keep all other conditions the same. What differences did you see?	Four large identical glass jars with lids, camera, a table or shelf that gets light for six hours a day, preferably inside because heat will kill everything if left out in open sunlight	
Cleaning lake water	What materials or processes work best to remove visible pollutants from water?	<a href="http://water.epa.gov/learn/kids/drinkingwater/watertreatmentplant_index.cfm">http://water.epa.gov/learn/kids/drinkingwater/watertreatmentplant_index.cfm</a> <a href="http://www.njawa.org/kidsweb/treatment/treatment_distrib_to_home.htm">http://www.njawa.org/kidsweb/treatment/treatment_distrib_to_home.htm</a> <a href="http://www.ivkids.com/environment/cleanwater.htm">http://www.ivkids.com/environment/cleanwater.htm</a> <a href="http://pbskids.org/zoom/activities/sci/waterfilter.htm">http://pbskids.org/zoom/activities/sci/waterfilter.htm</a>	Collect several gallons of water from a nearby polluted lake—the greener the better. Cut the tops off the soda bottles and turn them upside down in the bottoms. Put a coffee filter in the top so that water poured into the bottom of the soda bottle. Before you start, take a picture of the lake water in one of the clear soda bottles and make notes about the color, the odor and any other observations about the water's appearance. Do NOT at any time drink or taste this water. Leave one filter by itself, add two to three tablespoons alum to one filter, a thin layer of sand to another and so on until you have all of your test items set up in test bottles. To test the diaper, peel the plastic liner off and use only the fluff and gel inside. Slowly pour lake water into each filter until the lower bottle is about half full. Take a picture of each 'treated' water sample and record your observations about smell and appearance just like you did with the untreated lake water. Which treatment worked best? What differences did you see or smell? In what treatment category does each of your materials belong?	Several clean gallon jugs and 2-liter clear soda bottles, coffee filters, alum (potassium aluminum sulfate used to make pickles crisp and available at drug stores or supermarkets), clean sand, aquarium gravel, a disposable diaper, other creative ideas for filters or treatment	
Why is my lake green?	If you take a bucket of pond water and set it in the sun it will turn green, why? If you add a hand full of hay to that bucket of pond water, it won't turn as green, why?	<a href="http://kitchenpantryscientist.com/?p=2291">http://kitchenpantryscientist.com/?p=2291</a>	Fill several buckets with pond/lake water and leave it in the sun, but cover it if it rains. Check them every day for a week and record your observations. Leave one bucket as is and add a handful of hay to one bucket and some leaves or grass clippings to another and repeat your observations noting all differences between the buckets. Experiment with river/stream water or water from different ponds. Take pictures of the places you from where you get your samples. If you have a microscope, look at the water and record your observations, but you can also use a magnifying glass to see some things. What is causing the green color? What is the hay providing? What is living in the pond water that you can't easily see? How would this project help lake managers?	Several clean buckets and water from a lake or stream, hay and/or other organic material such as leaves or dry dogfood or pine needles, magnifying glass and microscope if possible	
Changing Lakes	Is the water quality in my favorite lake changing and why?	<a href="http://www.unitedscience.com/biology/ecology/ecosystems/what-lake-succession">http://www.unitedscience.com/biology/ecology/ecosystems/what-lake-succession</a> <a href="http://www.wateratlas.usf.edu/">http://www.wateratlas.usf.edu/</a> <a href="http://lakewatch.ifas.ufl.edu/">http://lakewatch.ifas.ufl.edu/</a> <a href="http://www.sjrwmd.com/toolsGISdata/">http://www.sjrwmd.com/toolsGISdata/</a> <a href="http://www.sfwmd.gov/portal/page/portal/swfdmain/educators%2020students">http://www.sfwmd.gov/portal/page/portal/swfdmain/educators%20students</a> <a href="http://www.sfwmd.gov/portal/page/portal/levelthree/GIS">http://www.sfwmd.gov/portal/page/portal/levelthree/GIS</a> <a href="http://www.geoplanning.ufl.edu/links.shtml">http://www.geoplanning.ufl.edu/links.shtml</a>	keywords: lake succession, eutrophication, water quality, phosphorus and freshwater ecology, urban development and water quality, watersheds	Gather as many years water quality data on a nearby lake as you can find. The Florida Water Atlas and Lake Watch websites have all of the data you will need. Concentrate on two or important water constituents such as total phosphorus (TP) or nitrates (NO3) and graph the data using EXCEL. Add trendlines to see if these variables are increasing or decreasing. Find maps of the watershed from different time periods and see if anything has changed that might explain the changing TP or NO3. Maps and viewers are available on all water management district sites under GIS links. Look on local government sites to find changing demographics such as population growth or decline, housing permits or changes in socio-economics. Compare bathymetry maps from LakeWatch for several lakes to see if there is any relationship between depths and water quality. Compare ratios of lake surface area to watershed area for several lakes. Use EXCEL to do some simple statistical analysis. Ask your math or science teacher for help or call your local city lake or natural resource manager.	A computer with EXCEL or other statistical package and an internet connection.

## FLMS Offers Continuing Education Credits



2013 Vendor Exhibition Hall

FLMS has made arrangements with several professional groups to offer different kinds of continuing education credits to our members attending workshops and technical sessions at our conferences and has offered these at the last two conferences. The presentations at the FLMS 24TH ANNUAL TECHNICAL SYMPOSIUM AND SOUTHEAST NALMS REGIONAL CONFERENCE gained attendees a total of 20 CEUs in six categories. The coordinator for the Division of Agricultural Environmental Services, Eric Reiss, approved 20 of the 28 CEUs we submitted to the Florida Department of Agriculture and Consumer Services. FLMS is also able to offer 4 and 8-hour Professional Development Hours for engineers.

FLMS would like to offer these and other education credits at our 2014 symposium. If you are interested in earning credits for your professional certification, please contact Maryann at [FLMSHome@aol.com](mailto:FLMSHome@aol.com) and tell her what certification you require, providing contact information for your organization. If you know of teachers or other professionals looking for a venue to earn credits, please forward this newsletter to them, or send them to [www.FLMS.net](http://www.FLMS.net).

## FLMS Notes



### NORTHEAST FLMS CHAPTER MEETS NOVEMBER 18

The NE chapter will be meeting on November 18th from 11am to 3pm at the UF TREEO Center. We have three presentations planned with topics including the Paynes Prairie treatment wetland, endangered species in Florida, and Lake Apopka aquatic vegetation efforts. The workshop is FREE for all current FLMS members and \$15 for non-members and 2 PDHs will be available for engineers. Come help get the NE chapter back up and running! Please contact Maryann at [FLMSHome@aol.com](mailto:FLMSHome@aol.com) to make reservations.

### NALMS 2014 IS IN FLORIDA

North American Lake Management Society is holding its annual international symposium in Florida from November 11–14, 2014. Hold the date for now and we will provide updates in the Winter FLMS newsletter.

### NEWS ITEMS FOR FLMS NEWSLETTER

Have you completed a study or project related to water resource management? Please consider sharing the details with your fellow FLMS members. We are looking for both technical articles and news items that will keep the information exchange going all year long—not just at our conferences. If you have an idea or an already written article, please send it to [watersheds@gmail.com](mailto:watersheds@gmail.com).

## FLMS Highlights our Corporate Members and Thanks Them for their Support

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