



www.FLMS.net Summer 2017

Florida Lake Management Society
Managing Florida's Water Resources

President's Message



FLMS President Sergio Duarte

Hello fellow water resource managers,

We are still celebrating a successful 28th Annual Technical Symposium in June 2017 that went beyond my expectations in the number of presenters and record attendance compared to previous years. FLMS was able to maintain once again a solid financial status, in spite of concerns with diminishing profits caused by low cost meeting registration fees, higher hotel contract fees, meals and audio visual services. The number, quality and generosity of the water resources professionals that we have in Florida along with the friendly environment will keep us moving into the future.

As a new FLMS President, I am looking forward to carrying the legacy of past presidents and working together in revitalizing our society. There is a need to continue making FLMS more appealing to young professionals and students, because this shall determine our growth and survival in the coming years! The participation of state agencies and water districts must be renewed to the levels that we had in the past by continuing to find common topics of interest. The local FLMS chapters are playing a crucial role in the generation of venues to discuss water resources issues and to promote FLMS as an ideal networking place. Let's work together to make FLMS better every year!

Sergio

Save the date! FLMS 29th Annual Technical Symposium moves to August 2018



Mark your calendars for August 21—24, 2018 and join fellow water resource managers at Hawks Cay in the beautiful Florida Keys. This is the third time FLMS will be at Hawks Cay and it is always a favorite of our members. Since our last visit in 2005, the resort has undergone a huge renovation on the public spaces as well as the guest rooms. The conference facility features two large side by side rooms with a *fully covered walkway* between them where you can view the dolphins as you pass between rooms. (If you attended this year's symposium in Captiva you know why a *fully covered walkway* is important!)

Although we have two extra months for planning this time, your Board of Directors has already begun the process with a site visit at the end of August. They need your help too. Do you have an idea for a symposium theme or some session topics? Send them to Program Chair Rob Burnes at rburnes@pinellascounty.org.

The Call for Abstracts will be out before the end of the year. We look forward to seeing you at Hawks Cay!

Dr. Canfield seeks "Weird Lake" Pictures



You know you've got them sitting in your picture file—those photos you took out in the field of something you have absolutely no idea what it is. Or, you saw something really unusual and it took you a while to finally identify it. Well, those are the sorts of photos Dr. Dan Canfield at the University of Florida is looking for! His plan is to put together a reference for those things you come across that are just not covered in the text books and journals.

How can you help? Browse your photos and send the weird ones to Dr. Canfield at decan@ufl.edu. Be sure to send as much info as you can about when and where you took the photo and what you think it is. Think of the time and frustration you'll be saving a future water resource manager!

FLMS Board Member Presents Water Level Interpolation Technique to Society of Wetland Scientists



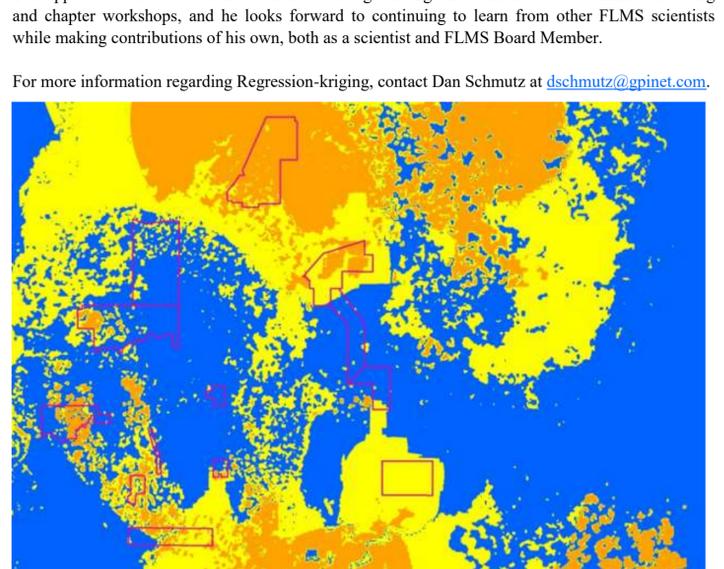
Dan Schmutz caught in the act of being first to Sign the Society of Wetland Scientists Statement on Climate Change and Wetlands in San Juan, Puerto Rico

A recent addition to the FLMS Board, Greenman-Pedersen, Inc. (GPI) Chief Environmental Scientist Dan Schmutz, was honored to present his paper "Robust Interpolation of Water Levels and Ecological Conditions at Unmonitored Wetlands using Regression-kriging" at the Society of Wetland Scientists Annual Conference, held this year in San Juan, Puerto Rico in June. Some of you may have seen a similar talk that Dan presented at the central FLMS Chapter local workshop at Circle B Bar Reserve in the Spring Workshop earlier this year. Although some people glaze over a bit when statistics are mentioned, Dan is very passionate about discovering and developing new techniques to answer questions of interest to water supply managers. He also enjoys breaking down the ideas clearly for statistical newbies so they understand why a particular technique is most useful in a particular situation and what conclusions can be safely drawn from the results.

In this case, Dan was faced with the challenge of estimating water levels at 684 unmonitored wetlands and lakes (7,900 acres) in the vicinity of groundwater wellfields in the Northern Tampa Bay Area to determine if these systems have recovered sufficiently following massive cutbacks in water production initiated to improve hydroperiods in the region. Although no water level data existed for these sites, there were approximately 400 monitored wetlands and lakes distributed around the unmonitored areas. The presence of nearby monitored sites gave Dan the idea to implement some kind of spatial interpolation technique that would assume nearby sites had similar water levels. Unfortunately, things are not that simple; past studies by Dan and others have found that systems with different surrounding soil characteristics seem to respond differently to water table drawdown caused by pumping. Other statistical techniques can use the soil type as an independent variable to help predict, but those techniques may not make use of the fact that water levels are indeed somewhat correlated at nearby sites—even after taking into account the differing soil types. Inspired by a presentation given by Andy Canion of the SJRWMD that Dan saw at the FLMS 2016 Annual Meeting and after further literature research, Dan selected the approach of regression-kriging which is a relatively recently developed hybrid statistical technique using the 200-year old method of regression to statistically model the effects of independent variables, followed by the 70-year old technique of kriging to model remaining spatial autocorrelation in the residuals. Together the two techniques yield the most precise estimate possible of the water levels at the unmonitored sites based on the available data. In this case, Dan reported cross-validated residuals from the regression-kriging model ranged from -0.66 feet to +0.40 feet for 80% of the locations, a level of accuracy considered sufficient to draw conclusions about the magnitude of water level recovery on a site-by-site basis.

Dan appreciates the value of the scientific exchange among FLMS members at the Annual Meeting and chapter workshops, and he looks forward to continuing to learn from other FLMS scientists while making contributions of his own, both as a scientist and FLMS Board Member.

For more information regarding Regression-kriging, contact Dan Schmutz at dschmutz@gpinet.com.



Preliminary results of the regression-kriging are shown for the 11 central system wellfields in the Northern Tampa Bay Area, with blue areas predicted to have wetlands with water levels within 1.8 feet of their historic high levels (recovered condition for all wetland types), yellow areas having median water levels within 3.1 feet of their historic high levels (recovered condition for some wetland types), and orange areas having still lower median water levels (not fully recovered conditions).

City of Sanibel Uses FLMS Grant for Floating Treatment Wetlands



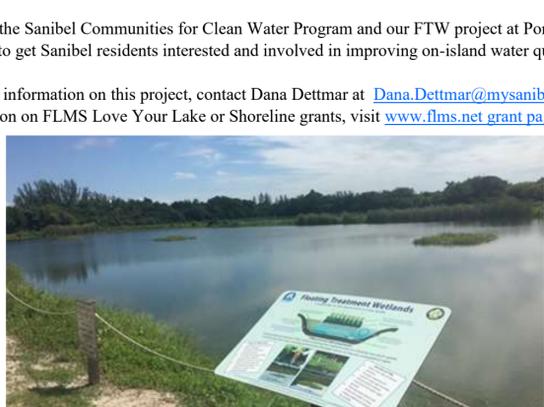
The City of Sanibel was awarded funding from the Florida Lake Management Society's Love Your Lake grant to implement a best management practice (BMP) in a public park, advancing the City closer towards meeting its water quality improvement goals. Pond Apple Park consists of a 1.62 mile nature trail that meanders through uplands and wetland communities including a pond apple slough, wetland marsh, and tropical hardwood hammock. Along the Pond Apple Park trail, visitors pass by the City's reuse ponds, which make for excellent bird watching opportunities. The City has used funding from the FLMS grant to install three 250 ft² floating treatment wetlands (FTWs) and educational signage.

This FTW project will serve multiple purposes for the City of Sanibel. First, the FTWs and educational panel at Pond Apple Park will allow visitors of the park to observe and learn about FTWs. Giving the residents of Sanibel an opportunity to view FTWs "in action" and increase their knowledge of this BMP will hopefully guide them towards the voluntary implementation of FTWs in their community lake. Second, the City will use these FTWs as a plant back to help incentivize the Sanibel Communities for Clean Water Program. The City will be able to provide residents with littoral plants, which are grown on a FTW nursery, to create or enhance the littoral zone along their community's shoreline. By providing residents with the means to implement BMPs in their backyard it increases the likelihood that they will participate in the Program to help improve on-island water quality. Finally, the FTWs in the reuse ponds will remove excess nutrients from the water before it is piped out for irrigation. The reduction in nutrient concentration in reuse irrigation water will directly benefit the water quality in the Sanibel Slough, and will help meet the nutrient reduction goals set in the Total Maximum Daily Load (TMDL) established for the Slough by the Florida Department of Environmental Protection.



Through the Sanibel Communities for Clean Water Program and our FTW project at Pond Apple Park we hope to get Sanibel residents interested and involved in improving on-island water quality.

For more information on this project, contact Dana Dettmar at Dana.Dettmar@mysanibel.com. For information on FLMS Love Your Lake or Shoreline grants, visit www.flms.net/grant.



The City of Sanibel's completed FLMS Love Your Lake grant project with educational signage in foreground and two floating treatment wetlands in the background.

Fact Sheet Series now available on the NWQMC Website

Do you need help in explaining water-quality monitoring to a non-technical audience? Are you working with decision makers who are confused by the array of monitoring programs, water databases, data portals and tools to collect and interpret water quality information?

The NWQMC Water Information Strategies workgroup has developed a series of fact sheets entitled *Water Quality Monitoring: A Guide for Informed Decision Making* intended to help explain and clarify differences in water-quality monitoring designs. Each fact sheet is organized to answer the "how", "what" and "when" questions of monitoring design. "How" is the program implemented? "What" types of questions does this design answer?" or "When" is this particular design appropriate? Examples from existing programs are provided to help guide the reader and quick links provide more in-depth information for each topic. Additionally, topics include the Water Quality Portal and tools such as Water Quality Indices and Report Cards are available to help guide you in the management and use of water quality data.

- Available Fact Sheets include:
- [Statistical \(Probabilistic\) Surveys](#)
 - [Targeted Monitoring](#)
 - [Rotating Basin Monitoring Design](#)
 - [Fixed-Site Monitoring](#)
 - [Remote Sensing](#)

An [overview of the series](#) is available to help you engage partners on website implementation.

And, other new fact sheets cover topics including [how to use the Water Quality Portal](#) and tools such as [Water Quality Indices and Report Cards](#) are available to help guide you in the management and use of water quality data.



Congratulations to this year's FLMS President's Award Recipient



Outgoing President Ron Hart (left) presenting award to incoming President Sergio Duarte

Every year, FLMS solicits nominations for its Awards of Excellence. Additionally, the President has the option to choose as person for the President's Award. This is someone whom the President feels has gone over and above the call of duty when serving FLMS and its membership. FLMS awards are presented during the annual awards luncheon at the symposium and the President's award is kept secret from everyone, including the rest of the Board. Occasionally, a recipient is unable to be in attendance. Such was the case this year. Sergio Duarte was unable to attend the symposium due to a family emergency, but it didn't keep current President Ron Hart from giving his praises during the presentation. Ron made special note of Sergio's tireless work on the symposium program for the past two years, an often thankless and time-consuming job. Sergio was kept in the dark about his award until the following month when Ron re-presented the award in front of Sergio's bosses, the Board of Trustees at the Lake County Water Authority. *Congratulations Sergio!*

Dates to Note

Reminder: If you did not attend the 3 day symposium in Captiva in June, your membership renewal is due by September 30. Visit our membership page for info and watch for a renewal notice in your inbox.

September 28, 2017: Deadline for FLMS Intent to apply for NOAA's [Marine Debris Prevention](#) funding program. [Website Link](#)

October 3, 2017—9am—3pm: **Mastering DEP's Online Data Tools, Submerged Lands & Environmental Resources Overview, and Mangrove Workshops** Marathon Council Chambers, 9805 Overseas Hwy, Marathon, FL Contact Gus Rios, program administrator at Gus.Rios@dep.state.fl.us [Registration Link](#)

November 14, 2017—9am—4pm: **Citizen Science Workshop** hosted by Lee County Hyacinth Control District and sponsored by FLMS Contact Ernesto Lasso de la Vega at llassodelavega@lchcd.org

December 1, 2017: Deadline for FLMS *Love Your Lake* grant proposals. [Website Link](#)

Continuous Monitoring Data Now Hosted by FLMS

Special note: FLMS website has just undergone a major server and software upgrade. If you notice a link not working, please let Maryann know!

The Continuous Monitoring Workgroup, Florida Department of Environmental Protection Division of Environmental Assessment and Restoration and Florida Water Resources Monitoring Council developed, compiled, and populated the data spreadsheet in late 2016-early 2017 to assist monitoring entities that need information on continuous monitoring use in Florida. Once the information was ready, the group needed a location for the data to reside for public use. Members of the group familiar with FLMS felt it would be a perfect fit and the FLMS Board was very happy to host the monitoring data. To view the spreadsheet, visit the [Continuous Monitoring tab](#) under Resources on the FLMS website.

Our Mission

The mission of the Florida Lake Management Society is to promote protection, enhancement, conservation, restoration and management of Florida's aquatic resources; provide a forum for education and information exchange; and advocate environmentally sound and economically feasible lake and aquatic resource management for the citizens of Florida.