



Florida LAKEWATCH

Spring Newsletter

Introduction to “Socio-political Influences Affecting the Management & Restoration of Okeechobeeland: Lake Okeechobee and the Greater Everglades.”

Florida LAKEWATCH Mission Statement: Work with Citizen Scientists for the purpose of monitoring Florida’s aquatic ecosystems to provide research-quality data (Research), public education (Extension) and student training (Teaching) with respect to water quality and aquatic systems management.

The research component of LAKEWATCH is the linchpin of the whole program. We need the best lake science to properly educate/inform stakeholders how to be good stewards of our aquatic systems (Extension) and to teach students how to be the best managers of these same systems (Teaching). Thus, LAKEWATCH has worked hard in the research arena to truly understand how Florida aquatic systems function.

Florida LAKEWATCH researchers Dr. Roger W. Bachmann, Dr. Daniel E. Canfield Jr. and Mark V. Hoyer have over 150 years of combined work on limnology (Figure 1). They have also published 35 peer-reviewed articles together in 10 different scientific journals, some of which are the most respected journals in the field of limnology and lake management (Figure 2). The articles cover many topics including basic water chemistry, nutrient loading, aquatic plants, fish populations, aquatic birds, sediment accumulation, sediment mixing and many others (see LAKEWATCH Bibliography: <https://lakewatch.ifas.ufl.edu/resources/bibliography/>).

These researchers have recently finished a book entitled “Socio-political Influences Affecting the Management & Restoration of Okeechobeeland: Lake Okeechobee and the Greater Everglades,” that should be an interesting read for anyone associated lake stewardship/management (see below). One of the underlying truths pointed out in the book is that the watersheds of most systems have a long history including some form of human development/occupation that cannot be removed without displacing people. Therefore, we can never really restore lakes to their predevelopment stage and the proper approach and term to use is “management” instead of “restoration.” Therefore, goals for managing our lake systems in their current status should be similar to the Mission Statement of the Florida Fish and Wildlife Conservation Commission, “Manage fish and wildlife resources for their long-term well-being and the benefit of people.”



Figure 1. Picture of LAKEWATCH researchers Dr. Canfield Jr. (left), Dr. Bachmann (center) and Mark Hoyer (Right).

Journal	Number of Publications
Lake and Reservoir Management	15
Hydrobiologia	6
Limnology and Oceanography	3
Inland Waters	3
Canadian Journal of Fisheries and Aquatic Sciences	2
Florida Scientist	2
Journal of Aquatic Plant Management	1
LakeLine	1
Environmental Monitoring and Assessment	1
Geoscience	1

Figure 2. Number of LAKEWATCH publications by journal that Dr. Bachmann, Dr. Canfield Jr. and Mark Hoyer have collaborated on.

Note from Dr. Canfield Jr., Dr. Bachmann and Mark Hoyer:

All, Each of us, either directly or indirectly, have an interest in the management of this nation's water resources. After decades, of working on issues in the State of Florida as well as nationally, we came to the realization that management of our resources is not just about the science. There are strong sociological and political forces that influence human efforts over time and these efforts have forever changed most of our natural resources. Thus, the overused term "restoration" needs to be replaced with the term "management". Additionally, before deciding how we want to manage, we first need to agree on where we are and understand how we got there. Hence in the words of George Santayana, a 1905 Spanish-American philosopher, "Those who cannot remember the past are condemned to repeat it" or as paraphrased in 1948 by Winston Churchill (Prime Minister of the United Kingdom) "Those who fail to learn from history are condemned to repeat it."

In Florida, the transformation of the environment in South Florida, specifically Lake Okeechobee and the Everglades (Okeechobeeland) is an excellent example of the interaction of sociology, science and politics. The environmental transformations at Okeechobeeland caused by humans have been a focal point of many heated debates since the human population in the area has grown, but never more so than in the 20th and 21st centuries as we attempt to manage this valuable ecosystem.

If you are interested, open the link provide below where we review some of the many socio-political and scientific influences that caused transformations in the hydrology, fisheries harvest and management, aquatic plant management, nutrient control strategies, and other environmental modifications at Okeechobeeland. These many transformations have created the current status of Lake Okeechobee.

Reading this long document will hopefully provide you the insight for understanding why we have concluded that "Restoration of Lake Okeechobee, Florida is a Mission Impossible" and why we need to focus on management strategies to provide the best ecosystem services for all the competing uses demanded from the lake.

Link -

<https://lakewatch.ifas.ufl.edu/media/lakewatchifasufledu/extension/bibliography/Sociopolitical-influences---Okeechobeeland-copy.pdf>

Citation - Canfield Jr. DE, Bachmann RW, and Hoyer MV. 2023. Socio-political Influences Affecting the Management & Restoration of Okeechobeeland: Lake Okeechobee and the Greater Everglades. Florida LAKEWATCH, School Forest, Fisheries and Geomatics Sciences, UF/IFAS. Gainesville FL. 131 pp



Welcome Dr. Gretchen Lescord!



Photo Credit: Wildlife Conservation Society, Canada

Florida LAKEWATCH is adding a new member to its team! Gretchen, will be joining and leading Florida LAKEWATCH as a new Applied Limnologist. Her position will be an Assistant Professor in the School of Forest, Fisheries, and Geomatics Sciences (SFFGS) under UF/IFAS and she will be starting in May 2023.

Dr. Lescord's background in limnology, the study of freshwater systems, makes her a valuable addition to the Florida LAKEWATCH team. She obtained her Ph.D. in Boreal Ecology, with a specialization in stressed aquatic ecosystems, at Laurentian University. Her academic research has focused on the ecology and water quality of lakes, with a special interest in contaminants, such as mercury and arsenic, and how they accumulate in freshwater fish and the food webs that support them.

Prior to joining Florida LAKEWATCH, Dr. Lescord was an Environmental Scientist at the Wildlife Conservation Society Canada and a professor at the Laurentian University, where she taught courses on aquatic ecology and biogeochemistry. She also supervised

graduate students in their research on various topics related to freshwater ecology.

As a new member of the Florida LAKEWATCH team, Dr. Lescord will bring her expertise to the organization's ongoing efforts to protect and monitor Florida's waters. She will work closely with LAKEWATCH staff continuing to collect and analyze data on water quality, aquatic plants, and wildlife populations in lakes across Florida. She will also collaborate with other UF Faculty and Florida State Agencies charged with monitoring, researching, and managing lakes with information going to inform policy decisions and promote lake management practices that benefit freshwater ecosystems and the people of Florida.

"Lakes are critical resources for communities, providing drinking water, recreational opportunities, and important habitats for fish and wildlife," says Gretchen. "I'm excited to join Florida LAKEWATCH and contribute to their mission of protecting these valuable resources."


With Dr. Lescord's expertise and dedication to freshwater ecology, Florida LAKEWATCH is well-positioned to address these challenges and continue its important work with Florida's lakes. Her appointment signals a commitment by SFFGS to stay at the forefront of University of Florida's teaching, research, and extension in the field of limnology. We welcome Gretchen and look forward to her tenure with UF and the Florida LAKEWATCH program.




July is Lakes Appreciation Month!

Every year for the past 25 years July has been Lake Appreciation Month. This designation reminds people to celebrate the waterbodies we love. It's also a chance to celebrate student artwork with the 2023 student poster contest!

LAKES APPRECIATION MONTH POSTER CONTEST



Three posters will win a \$300 cash prize!
\$250 to the artist's school or organization /
\$50 to the artist



July has been Lakes Appreciation Month for the past 25 years! This spring, students of all ages are encouraged to submit posters reflecting how important lakes are to all of us! Submitted artwork will be a big part of NALMS' celebrations through July across North America. **Show us your love for lakes - send us your artwork!**
<https://www.nalms.org/lakes-appreciation-month/poster-contest/>

Instructions:
All grades K -12 welcome to participate!
Send an electronic version of your poster artwork to lakesappreciation@nalms.org
Each entry must include student name, grade, school, and contact information
Prizes will be awarded to the top entry in each grade division
Full instructions available at <https://www.nalms.org/lakes-appreciation-month/poster-contest/>

Deadline:
June 15, 2023

July 2023
Lakes Appreciation Month
www.nalms.org



Click [here](#) for submission and prize details and make sure to use the hashtags #LakesAppreciation and #LAMPPosterContest on your socials!

Click [here](#) to learn more about Lake Appreciation Month or NALMS. You can even download a BINGO sheet for summer activities and lake facts.



Algal Toxins Put to The Test

By Jason "MO" Bennett

Warmer days are back and with them come algae blooms in waterbodies statewide. Harmful algal blooms (HAB's) have been a subject of much attention over the past few years. In volume 93 of the Florida LAKEWATCH newsletter found [here](#) we went over the Florida Department of Environmental Protection's Algal Bloom Dashboard. This is an excellent resource for filing reports and gathering information about current algae blooms. This resource is, however, only usable on public or publicly accessible waterbodies; private waterbodies must seek out other ways to test for harmful algal toxins. There are a few products commercially available for measuring the presence and concentration of microcystins. The World Health Organization (WHO) has established toxin exposure recommendations of 10µg/L (part per billion (ppb) for low probability of adverse health effects, and 20 µg/L (ppb) for moderate probability of adverse health effects in humans.

We ordered and used two of these products and documented the step-by-step process. While we used these kits as examples, we are not giving a recommendation of one over the other. This article is simply to familiarize you with some of the available options of test kits. We used the **Gold Standard Diagnostics' ABRAXIS®** Microcystins, 0-10(20) ppb, Recreational Water with QuikLyse® Feature, Dipstick, (EPA ETV) (5 pack cost \$212.93 total, not including tax) and the **Attogene Microcystin Test Kit** (Rapid-Recreational Water) (5 pack cost \$185.00 total, not including tax). The Gold Standard Diagnostics website does not have prices and ordering must be done over the phone and requires setting up an account. Ordering on the Attogene website is standard.

Both samples were taken on the same day at the same location. No harmful algae bloom was suspected at the time of sampling.



Figure 1: ABRAXIS (left) and Attogene (right) sample bottles being filled - same date and location.

ABRAXIS:



Figure 2: Components included in ABRAXIS test kit.

There are 7 components included in the ABRAXIS test kit as well as step by step instructions. There are several steps which are well explained in the instructions. Some of the steps require transferring parts of the sample with different pipettes provided. Each step requires sample rest or “incubation” time. A call to technical support explained that “incubating” can be done at room temperature and that no special incubators are needed. It means to simply let the sample rest on your counter for the time specified.



Figure 3: various steps involved in sample preparation for ABRAXIS test kit

Attogene:

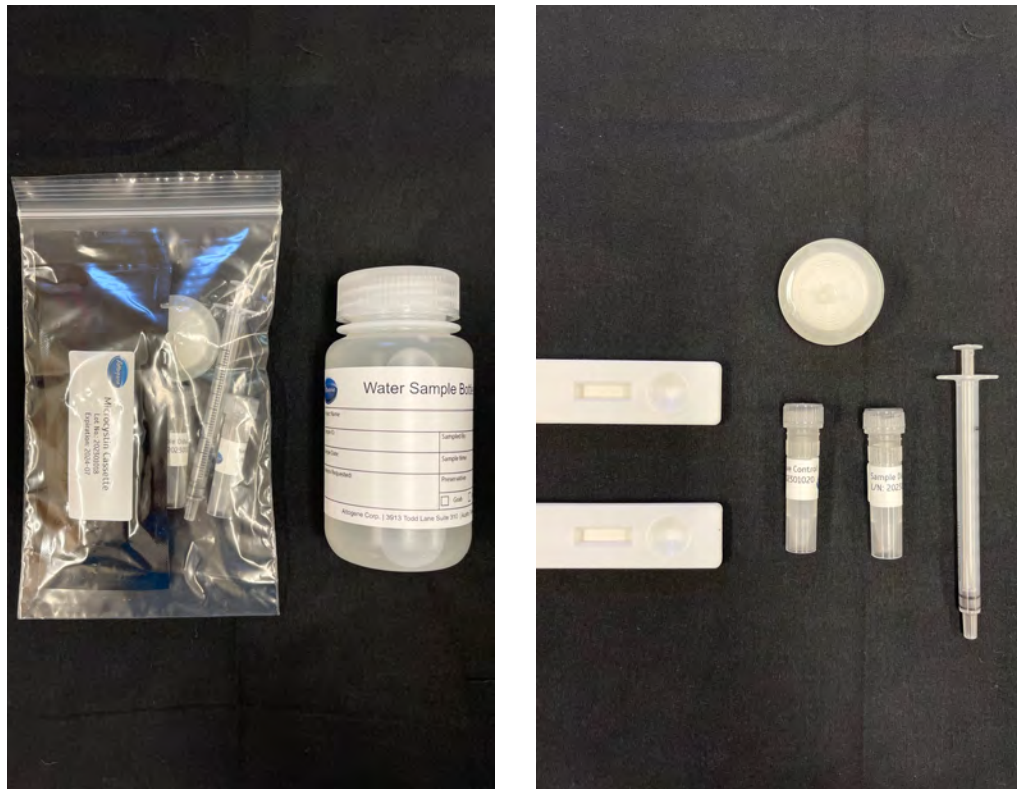


Figure 5: Components included in the Attogene test kit.

There are 6 components to the Attogene test kit as well as the instructions. This kit uses “cassettes” to run the test and display the results. The cassettes are identical, however, as part of the process a negative control is run through one of them to give a known negative result to compare the sample results to. Label the cassettes as control and sample to avoid confusion. The negative control step must be performed first to prevent contamination. Care should be taken with each step to make sure the proper amount of water is being transferred from the syringe. When following the procedures for processing the sample a filter will be used on the end of the syringe. Tip: be patient when running the water through the filter; it takes a few seconds for the water to make it's way through, but enough will make it for the test to run.

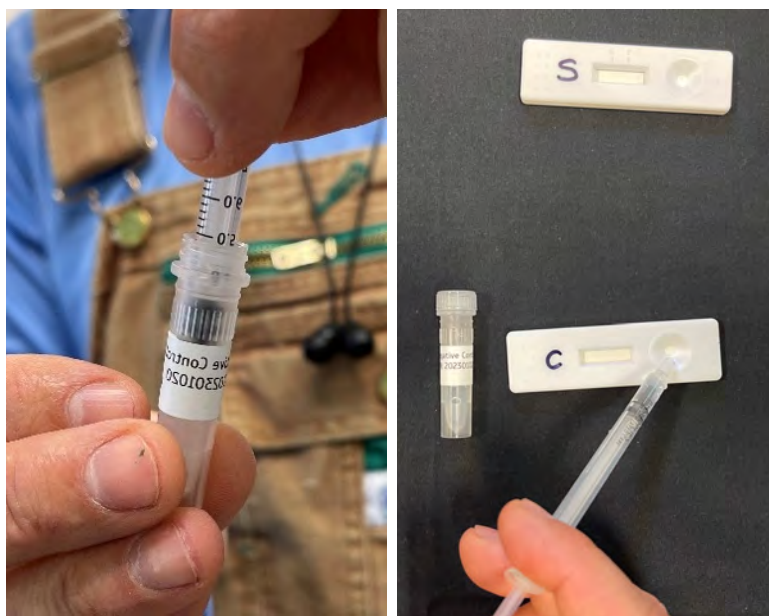


Figure 6: running the Control for Attogene test kit

Each one of the cassettes requires 10 minutes of rest time before the results can be read. However, once the negative control has been started the sample process can begin immediately, so the resting time can run mostly simultaneously. The entire process takes less than 20 minutes.

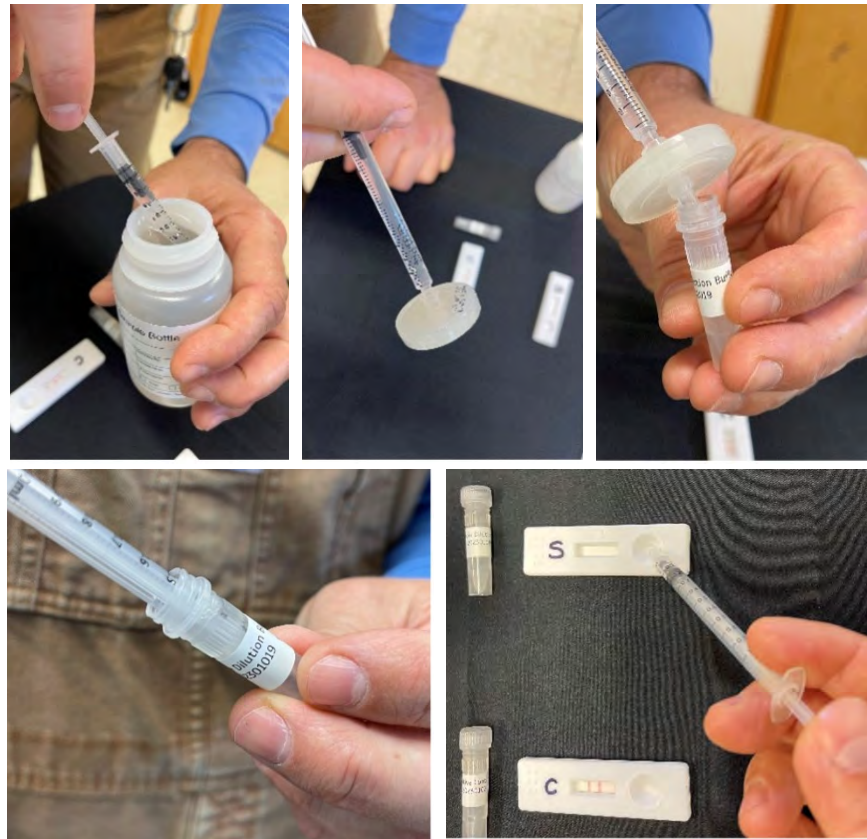


Figure 7: Various steps involved in sample preparation for Attogene test kit

Once complete the results can be compared to the negative control and against the diagram in the instructions.

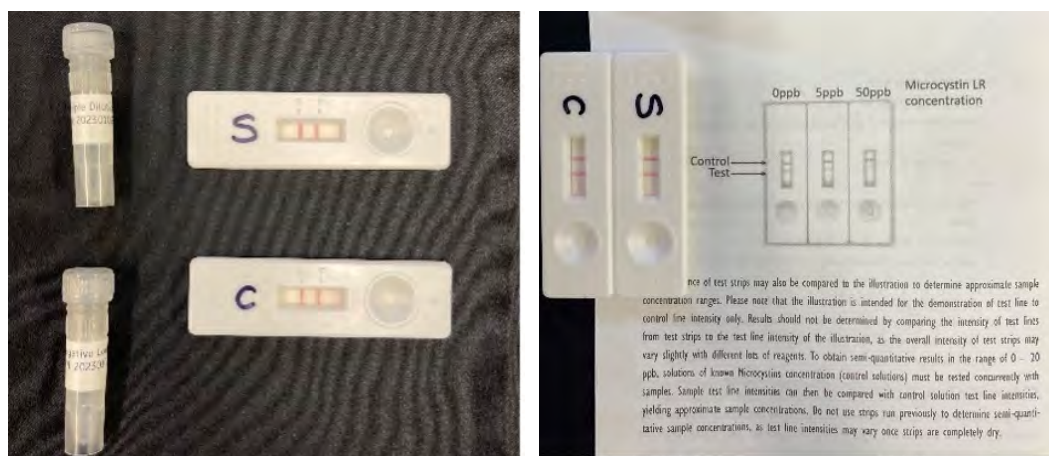


Figure 8: Test results comparing the control and sample cassettes showing no or low positive result (<5 ppb).

The two testing methods gave similar results; each showed no to very low presence of microcystin toxin. This falls below the WHO's exposure limit recommendation of 10µg/L (ppb) for recreational waters.



Congratulations David Watson!



David Watson

The Faculty Advisory Committee announced LAKEWATCH's David Watson as the winner of the Staff Person of the Month award for Feb. 2023!

David was nominated by Lab Manager, Christy Horsburgh for his outstanding work. In her nomination she stated:

"David does a superb job in the Lakewatch Lab each day. He is always willing to help other staff members with tasks along with filling in where needed in the lab. We have been short staffed in the lab and David has stepped up where needed along with sharing his expertise and experience with other staff members. He has an excellent work ethic, and he always has a positive attitude. David is an outstanding role model for all of us in the Lakewatch Lab."

Thank you, David for going above and beyond in your work!



LAKEWATCH ANNOUNCEMENTS

We are happy to announce our newest
Collection Center for Citrus County - Fort
Cooper State Park in Inverness!

Fort Cooper State Park is located at **3100 South Old Floral City Rd. Inverness, FL 34450**. The park hours are 8 AM until Sunset 365 days a year.

This location **has replaced** the East Citrus Community Center. A few of you have already reached out to tell me how much easier this location is to access, and I owe a huge thank you to park staff for helping us get set up and facilitating an easier sample drop off for everyone.

Volunteers, when you enter the park, you will approach the Rangers Station. There are a few parking spaces behind the station and outside on the back wall of the building is a plastic shed with a LAKEWATCH sticker and a pad lock. Inside the shed is the freezer and supplies. If you are just dropping off samples, you do not need to pay the park entrance fee.

If you need the lock code or have other questions/comments about this change, please email Marina Schwartz at mevanskeene@ufl.edu or call (352) 273-3640.

Who you gonna call?

Make sure you are getting in touch with the right person for you! Regional Coordinators are the support for new and existing volunteers and are usually the first point of contact for the public to ask questions about Florida's waterbodies. They train and coordinate with volunteers to collect water, help compile the data and

disseminate the information back to the volunteers and the general public. There are currently three coordinators Dan, Jason "MO", and Marina and they each serve a specific region of the state. The area and contact information for each Regional Coordinator can be found below and on our website [here](#). We look forward to assisting you!



Dan: djwillis@ufl.edu or (352) 273-3638 **Marina:** mevanskeene@ufl.edu or (352) 273-3640 **Mo:** jpb@ufl.edu or (352) 273-3639

Bottles

The LAKEWATCH Lab has been receiving nutrient bottles that are in rough shape. We reuse these bottles for as long as possible to save money for the program and keep as many lakes in the program as we can. Please follow the tips below to help us keep using these nutrient bottles.

- Please do not write on the bottles. Make sure to write on the labels only.
- Don't overfill them. The water expands as it freezes and will crack the bottles.
- Be careful when handling frozen bottles as they can crack easily.

The LAKEWATCH newsletter is edited by Marina Schwartz. You can reach out with comments or feedback at mevanskeene@ufl.edu

Credits:

Created with an image by mayudama - "オレンジ色のツツジ"

