



**Florida Lake Management Society  
33<sup>rd</sup> Annual Technical Symposium**

**August 30<sup>th</sup> - September 2<sup>nd</sup>, 2022**

**Hyatt Regency Coconut Point, Bonita Springs, Florida**

*Program Theme:*

**Turning the Tide: From Springs to Estuarine**

# **SYMPOSIUM PROGRAM**

**TUESDAY – AUGUST 30, 2022 - WORKSHOPS**

7:30 AM-5:00 PM     **Check-In and Registration** (Calusa Foyer)

8:15 – 12:00 pm     **Workshop 1 Blue Heron Room: Algal Identification in the Environment - Part 1.** Dr. Dail Laughinghouse, Assistant Professor and Dr. David Berthold, M.S., Biological Scientist – Applied Phycology, University of Florida/IFAS, Fort Lauderdale Research and Education Center. (If you have capability of bringing your own microscope, it is highly recommended but not a requirement for the workshop. FLMS will have some on hand.)

8:15 – 12:00 pm     **Workshop 2 Great Egret Room: Trend and Time Series Analysis with R – Part 1.** Dan Schmutz, M.S., Greenman Pedersen, Inc.

*All workshop food breaks are located in the Calusa Foyer*

10:00 – 10:15 am     **MORNING BREAK**

12:00 – 12:45 pm     **LUNCH** (provided with full-day Workshop registration)

2:30 – 2:45 pm     **AFTERNOON BREAK**

8:15 – 12:00 pm     **Workshop 3 Blue Heron Room: Algal Identification in the Environment - Part 2.** Dr. Dail Laughinghouse, Assistant Professor and Dr. David Berthold, M.S., Biological Scientist – Applied Phycology, University of Florida/IFAS, Fort Lauderdale Research and Education Center. (**Part 1 morning workshop required**)

12:45 – 4:15 pm     **Workshop 4 Great Egret Room: Geospatial Data Science with R – Part 2.** Dan Schmutz, M.S., Greenman Pedersen, Inc. (**Part 1 morning workshop required**)

12:45 – 4:45pm     **Workshop 5 Captiva Room: Oxygenation and Circulation Techniques to Improve Water Quality.** - Patrick Goodwin M.S., CLM – Good Aquatic, LLC.

5:00 – 7:00pm     **Citizen Science Workshop** – Ernesto Lasso de la Vega, Lee County Hyacinth Control District and Ron Hart, Surface Water Professionals, LLC

**WEDNESDAY – AUGUST 31, 2022 MORNING – SYMPOSIUM**

(\* - Denotes student paper)

7:30 AM-5:00 PM    **Check-In and Registration** (Calusa Foyer)

7:00 AM-8:30 AM    **Breakfast** (Calusa Ballroom)

**Opening Program** (Calusa Ballroom)

8:45-9:00 AM    **Welcome & Opening Remarks: Gloria Eby, Outgoing FLMS President**

9:00-10:00 AM    **Morning Keynote Address**

*An Evidenced-based Approach to Lake and Estuary Management*

David Tomasko, Ph.D., Executive Director, Sarasota Bay Estuary Program

10:00-10:45 AM    **MORNING BREAK** (Exhibit Hall - Calusa Ballroom)

**Session A1: Water Quality in Lake Management** (Calusa Ballroom)

Moderator: Ernesto Lasso De La Vega, Ed.D.

10:45-10:50 AM                    *Session Introduction*

10:50-11:05 AM    A Limnological Yardstick Based on Phosphorus Limitation- Mark V. Hoyer

11:05-11:20 AM    First Year Results of a Remote Monitoring Sonde Network in Lake Okeechobee, Florida (USA)- Daniel Marchio

11:20-11:35 AM    Estimating Nutrient Loads in Reclaimed Water Used for Irrigation in Residential Communities- L. Donald Duke Ph.D.

11:35-11:50 AM    Trends in Water Quality and Nutrient Loading to Lakes in the Upper St Johns River Basin- Joshua Papacek

11:50-12:00 PM                    *Session Q&A*

12:00-1:30 PM    Annual Business Luncheon, Board Member Induction, NALMS Update (Calusa Ballroom)

**WEDNESDAY – AUGUST 31, 2022 AFTERNOON**

(\* - Denotes student paper)

1:30-2:30 PM     **Afternoon Keynote Address** (Calusa Ballroom)  
*Conserving Audubon's Corkscrew Swamp Sanctuary Within a Developing Landscape*  
Shawn Clem, Ph.D., Research Director, Audubon Florida's Western Everglades  
Research Center

**Session A2: Springs Management** (Calusa Ballroom)

Moderator: Tiffany Trent

2:30-2:35 PM                     *Session Introduction*

2:35-2:50 PM                     Florida Springs – Where are we in 2022? - Robert Mattson

2:50-3:05 PM                     Estimating Salinization of Spring-Fed Rivers using Submerged Aquatic Vegetation  
- Madison Trowbridge Ph.D.

3:05-3:20 PM                     A Multi-Year Study of Submerged Aquatic Vegetation and Epiphytic Algal  
Coverage in the Silver River. - Tiffany Trent

3:20-3:30 PM                     *Session Q&A*

**3:30-4:00 PM                     AFTERNOON BREAK** (Exhibit Hall - Calusa Ballroom)

**Session B1: Lake Mapping** (Blue Heron Ballroom)

Moderator: Eesa Ali

2:30-2:35 PM                     *Session Introduction*

2:35-2:50 PM                     The Ecology of a Submersed Aquatic Vegetation Community under Management in  
Lake Sampson, FL - Jacob Thayer

2:50-3:05 PM                     Surveying and Mapping Florida Fresh Water Lakes with LiDAR, Multi Beam, and  
RTK GPS - David O'Brien

3:05-3:20 PM                     Using Machine Learning to Map Plant Communities in the Kissimmee Chain of  
Lakes - Camille Carroll

3:20-3:30 PM                     *Session Q&A*

**3:30-4:00 PM                     AFTERNOON BREAK** (Exhibit Hall - Calusa Ballroom)

**WEDNESDAY – AUGUST 31, 2022 AFTERNOON (Cont.)**

**Session A3: Advances in Algal Research** (Calusa Ballroom)

Moderator: H. Dail Laughinghouse IV, Ph.D.

- 4:00-4:05 PM                      *Session Introduction*
- 4:05-4:20 PM                      Algaecidal Effects on Microbial Community Structure during a Cyanobacterial Bloom in Lake Okeechobee, Florida, USA. - Forrest W Lefler\*
- 4:20-4:35 PM                      Effectiveness of USEPA-Registered Algaecides to Control the Red Tide Forming Dinoflagellate *Karenia brevis* and Brevetoxins - Jing Hu\*
- 4:35-4:50 PM                      Bioaccumulation of Cyanobacterial Metabolites in Tilapia (*Oreochromis niloticus*). - Jessica Moretto Altarugio\*
- 4:50-5:05 PM                      Effects of Herbicide Related Phosphonates on Toxic Bloom-Forming Species of Cyanobacteria - Natalia Pritchard\*
- 5:05-5:20 PM                      Spatial and Temporal Trends in Protist Communities of Lake Okeechobee and the St. Lucie Estuary (Florida, USA)- Maximiliano Barbosa\*
- 5:20-5:30 PM                      *Session Q&A*

**Session B2: Lake Management Tools** (Blue Heron Ballroom)

Moderator: Harvey Harper P.E.

- 4:00-4:05 PM                      *Session Introduction*
- 4:05-4:20 PM                      The Upper St. Johns River Basin Project: Past, Present, and Future. Evolution of a Modern-Day Multipurpose Flood Control/River Restoration Project. - Steven J Miller
- 4:20-4:35 PM                      Coastal Zone Soil Survey: A Pedological Approach to Inventorying Subaqueous Soils - Rex Ellis Ph.D.
- 4:35-4:50 PM                      Peace River Watershed Threats Assessment, Focal Area Prioritization, and Restoration - Greg Knothe
- 4:50-5:05 PM                      Solids Deposition from Alum Sediment Inactivation - Harvey Harper P.E.
- 5:05-5:20 PM                      How to Catch a Lake Killer: Cool Forensic Tools Limnologists Can Use - Lance Lumbard M.S., CLP
- 5:20-5:30 PM                      *Session Q&A*

**WEDNESDAY – AUGUST 31, 2022 EVENING**

6:00-8:00 PM      **EXHIBITORS' SOCIAL** (Exhibit Hall – Calusa Ballroom)

6:00-8:00 PM      **Poster Session** (Exhibit Hall – Calusa Ballroom)

Moderator: Rob Burnes, M.S.

1. Harmful Algal Bloom Monitoring in the Indian River Lagoon Using Continuous Water Quality Sensors  
- Ashley Parks
2. Hydrology Drives Dissolved Oxygen Fluctuations in the Upper St. Johns River Basin, Florida  
- Dean Dobberfuhr Ph.D.
3. Comparative Study of Microbial Community Structures of 45 Ponds in Bonita Bay Community  
- Haruka Urakawa Ph.D.
4. Identifying Ecosystem Control Points by Detecting Hot Spots and Moments of Denitrification in the Guana River Estuary  
- Jenna Reimer
5. Four Applications of Biobase™ Sonar Mapping Technology Used in Central Florida Monitoring Projects  
- Jim Peterson
6. A Sediment Record of Cultural Eutrophication in Shallow Subtropical Lake Conine, Florida  
- Lucy Trosper
7. Esri's Arc Hydro Hydroperiod Tool and MFLs Determination for Lakes in the St Johns River Water Management District  
- Sandra Fox
8. Banana Lake: The Efficacy of Dredging to Manage Eutrophication  
- Susan Iott
9. Expanding the Black Band Disease Genus *Roseofilum* with Description of Three New Species  
- Yi Wang
10. The Restoration of Lake Apopka: Reintroducing the Extirpated Native Species of *Potamogeton Illinoisensis*  
- Jodi Slater

**THURSDAY – SEPTEMBER 1, 2022 MORNING**

(\* - Denotes student paper)

7:30 AM-5:00 PM **Check-In and Registration** (Calusa Foyer)

7:00 AM-8:30 AM **Breakfast** (Calusa Ballroom)

**Morning Program** (Calusa Ballroom)

8:45-9:00 AM **Welcome & Opening Remarks:** Eesa Ali, Incoming FLMS President

9:00 -10:00 AM **Keynote Address**

*Florida on the Move: Coastal Conservation and Restoration*

Linda Walters, Ph.D., Pegasus Professor of Biology, University of Central Florida

10:00-10:45 AM **MORNING BREAK** (Exhibit Hall – Calusa Ballroom)

**Session A4: Approaches for Lake Management** (Calusa Ballroom)

Moderator: Ron Hart, MPA

10:45-10:50 AM *Session Introduction*

10:50-11:05 AM A Multi-decade Assessment of the Marsh Flow-Way Functionality for Improving Lake Apopka's Water Quality - *Jennifer Mitchell*

11:05-11:20 AM Lake Management within a Built-Out Watershed - *Emily Keenan*

11:20-11:35 AM The Orlando Easterly Wetlands Nutrient Removal Project - *Mark Sees*

11:35-11:50 AM Utilizing Stakeholder Input to Develop a Lake Management Plan for the Harris Chain of Lakes - *Scott Bisping*

11:50-12:00 PM *Session Q&A*

12:00-1:30 PM **FLMS Annual Awards Luncheon** (Calusa Ballroom)

**THURSDAY – SEPTEMBER 1, 2022 AFTERNOON**

(\* - Denotes student paper)

**Session A5: Sediments in Aquatic Resource Management** (Calusa Ballroom)

Moderator: Jason Danaher, Ph.D.

- 1:30-1:35 PM                      *Session Introduction*
- 1:35-1:50 PM                      Impacts of Sediment Pollution on Communities and the Environment -*Eddie Snell*
- 1:50-2:05 PM                      Development of a Science-Based Update to the Orange County Fertilizer Ordinance  
- *Mitchell Katz Ph.D.*
- 2:05-2:20 PM                      Reconstructing HABs and Cyanotoxin Production in Florida over the Last 4000  
Years: a Paleolimnological Perspective. - *Matthew Waters Ph.D.*
- 2:20-2:35 PM                      Hypereutrophic conditions on the millennial-scale: The paleolimnological record of  
Lake Wauberg, Florida - *Savvas Paradeisis-Stathis\**
- 2:35-2:50 PM                      A Paleolimnological Approach to Identifying Management Signatures in Urban  
Subtropical Lakes - *Savanna Wooten\**
- 2:50-3:00 PM                      *Session Q&A*

**Session B3: Ocklawaha 1** (Blue Heron Ballroom)

Moderator: Casey Fitzgerald

- 1:45-1:50 PM                      *Session Introduction*
- 1:50-2:20 PM                      Ocklawaha River Restoration: An Overview, A Tale of Four Ecosystems, and  
Benefits to Manatees and the Florida Wildlife Corridor- *Casey Fitzgerald*
- 2:20-2:35 PM                      A Reanalysis of the Nutrient Delivery from a Free-Flowing Ocklawaha and  
Potential Benefits to the Pelagic Ecology of the Lower St. Johns River - *John  
Hendrickson*
- 2:35-2:50 PM                      Potential Implications for Fish Populations of a Restored Free-Flowing Ocklawaha  
River - *Stephen Walsh*
- 2:50-3:00 PM                      *Session Q&A*

2:45-3:15 PM <b>AFTERNOON BREAK</b> (Exhibit Hall –Calusa Ballroom)
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**Session A6: Algae Research and Management** (Calusa Ballroom)

Moderator: Dana Stephens, Ph.D.

- 3:30-3:35 PM                      *Session Introduction*
- 3:35-3:50 PM                      Phytoplankton community composition in a Northwest Florida ICOLL - *Dana Stephens Ph.D.*
- 3:50-4:05 PM                      Routine Plankton Monitoring Project of the South Florida Water Management District: Past, Present, and Future - *Anna Swigris*
- 4:05-4:20 PM                      "So You Work on Florida Waters: Occupational HAB Exposures and How to Protect Yourself" - *Rick Clark*
- 4:20-4:35 PM                      The Have to Have for HABS: A Coordinated Response to a Harmful Algae Bloom - *Gloria Eby*
- 4:35-4:50 PM                      Microcystis Bloom Mesocosm Response to High Concentration Hydrogen Peroxide Treatment - *Taylor Hancock\**
- 4:50-5:00 PM                      *Session Q&A*

**Session B4: Ocklawaha 2** (Blue Heron Ballroom)

Moderator: Casey Fitzgerald

- 3:30-3:35 PM                      *Session Introduction*
- 3:35-3:50 PM                      Ocklawaha Restoration: A Focus on Economics, Outdoor Recreation, and Social Marketing - *Margaret Hankinson Spontak*
- 3:50-4:05 PM                      Ocklawaha Restoration and the Recovery of Silver Springs and the Twenty Lost Springs - *Robert Knight, Ph.D.*
- 4:05-4:45 PM                      Documentary: The Fellowship of the Springs (30-minute version)
- 4:45-5:00 PM                      *Session Q&A*

6:00 PM	H2O-LYMPICS STUDENT SCHOLARSHIP FUNDRAISER – Cypress Courtyard & Waterfall Pool Deck, (Sign up at Registration Desk)
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**FRIDAY – SEPTEMBER 2, 2022 MORNING**

(\* - Denotes student paper)

7:00 AM-8:45 AM **Breakfast** (Exhibit Hall - Calusa Ballroom)

8:45-9:00 AM Announcements: Eesa Ali, FLMS President

**Session A7: Innovations in Lake Management** (Calusa Ballroom)

Moderator: Rob Burnes, M.S.

9:00-9:05 AM *Session Introduction*

9:05-9:20 AM Evaluation of the Field Performance of a Baffle Box with a Bold & Gold Upflow Filter for Nutrient Removal - Mike Hardin P.E., Ph.D.

9:20-9:35 AM Phosphorus Adsorptive Media Reduces Dissolved P for Proactive HABs Mitigation - Ed Weinberg P.E.

9:35-9:50 AM Novel Technologies for Phosphorus Mitigation and Water Quality Restoration in Aquatic Systems - West Bishop Ph.D.

9:50-10:05 AM Employing Sucralose, Stable Isotopes, Microbial Communities, and Modern Statistical Methods to Determine Sources of Fecal Indicator Bacteria in a Florida River - Michael Kratz\*

10:05-10:15 AM *Session Q&A*

10:15-10:45 AM **MORNING BREAK** (Exhibit Hall – Calusa Ballroom)

**Session A8: Evaluation Methods in Lake Management** (Calusa Ballroom)

Moderator: Dan Schmutz, M.S.

10:45-10:50 AM *Session Introduction*

10:50-11:05 AM Evaluating Ecosystem Services of Urban Stormwater Ponds - Audrey Goeckner\*

11:05-11:20 AM Monitoring and Assessment of Sandhill Lakes - Chris Shea

11:20-11:35 AM Development and Implementation of a Wetland Evaluation Method for Xeric-associated Wetlands in the Northern Tampa Bay Area - Dan Schmutz, M.S.

11:35-11:45 AM *Session Q&A*

11:45 -12:00 PM Student Awards and Closing Remarks – Eesa Ali, FLMS President