Session 4: Aquatic biocontrol and product updates

8:05-8:55 **Megan Reid:** Where's the waterhyacinth? Updates on research to improve the management of a beautiful monster
FLREC IFAS, University of Florida
megan.reid@ufl.edu
Other Authors: Lyn A. Gettys, Melissa C. Smith

In invaded eutrophic aquatic systems, waterhyacinth (*Pontederia crassipes*) can become extremely problematic and requires extensive time and money to manage. In Florida, control is achieved predominantly through the repeated use of herbicides, along with self-sustaining biological control agents in the field. Although integrated pest management using both chemical and biological control has been shown to reduce the amount of herbicide required and improve management, it is important to ensure that the techniques are compatible and that they work in synergy. Additionally, the use of inundative releases of biological control agents can further improve management, while understanding the invasion biology of waterhyacinth is important to determine enhanced methods of controlling populations. In this presentation, an overview of the research projects conducted at the University of Florida Fort Lauderdale Research and Education Center in Davie, Florida, in close collaboration with USDA-ARS and other international organisations will be discussed, with the goal of boosting strategies to contain a pest that is problematic in Florida, and also throughout the world.

8:55-9:05 **Wykle Greene**: Platinum sponsor update: Orion

9:05-9:15 **Tom Warmuth**: Platinum sponsor update: BioSafe

9:15-9:20 **Rick Purcell:** Gold sponsor update: KeyColour

9:20-9:45 **Ernesto Lasso de la Vega**: Evaluation of *Rangia cuneata* (bivalve) as a biological control for algae in stormwater ponds in southwest Florida
Lee County Hyacinth Control District
ernesto@lchcd.org
Other Authors: Madeline Aadnes, Carly Centnarowicz, Laine Howard

Southwest Florida has experienced multiple hurricanes which have carried, on many occasions, saltwater surges into costal stormwater ponds. These freshwater ponds have been impacted, leaving turbid waters with microalgae blooms. A bivalve, *Rangia cuneata*, has been evaluated as a biological control organism to filter the water, thus improving environmental conditions. The biological characteristics of *Rangia cuneata* include being a native of Florida, being accustomed to a range of fresh and saltwater conditions, having a filtration rate of 20 gallons per day, and being capable of reproducing. This makes this organism suitable for biological control of microalgae blooms. Five communities are participating in this study coordinated by the Lee County Hyacinth Control District's Pond

Watch program. The study has tested the survival and growth of these clams in mesh bags for 3 months to determine suitability for the deployment of larger numbers to create clam sanctuaries. Water quality has been monitored before and after the clam deployments. We present our observations and practical applications for stormwater remediation under catastrophic conditions caused by hurricanes in coastal communities.

Session 5: Orland Wetlands Park and product updates

10:20-10:45 **Mark Sees**: Lessons learned from managing the Orlando Wetlands
City of Orlando
mark.sees@orlando.gov
Other Authors: Gary L. Foreman, Christopher Bishop

The Orlando Wetlands (OW), is an 1,800-acre facility that includes a world renowned constructed wetland treatment system in east central Florida. The OW has provided nearly four decades of insight into sustaining water quality while supporting habitat and recreation. Originally designed to polish reclaimed water prior to discharge, the system has evolved into both a critical treatment facility and a public recreational and educational facility, welcoming thousands of visitors annually. With more than 20 miles of trails, a scenic boardwalk, and a visitor center, the site demonstrates how ecological infrastructure can serve as a hub for education and recreation.

Long-term operation has highlighted the importance of active management strategies. Prescribed burning, conducted on a periodic cycles, maintain marsh conditions essential for nutrient uptake, controls invasive vegetation, and reduces fuel loads. Demucking, the removal of accumulated organic sediments, restores water depth, improves circulation, and rejuvenates aquatic habitat, ensuring the system continues to meet water quality goals. Invasive plant management is another cornerstone of operations. Species such as cattail, primrose willow, and floating invasives are regularly monitored and controlled through a combination of mechanical removal, herbicide treatment, and hydrologic manipulation. Integrated invasive species control helps preserve plant diversity, protect wildlife habitat, and sustain ecological function.

Together, these practices illustrate the value of adaptive management in a large constructed wetland. By integrating burning, demucking, and invasive plant control with public access and educational opportunities, the Orlando Wetlands demonstrates how engineered ecosystems can deliver both environmental services and community benefits. This talk will focus on some of the lessons learned both good and bad from operating and managing the OW.

10:45-11:10 **Sebastian Palmieri**: Florida's aquatic and wetland pollinators
University of Florida
palmieris@ufl.edu

The start of the presentation will cover what pollinators are and why they are important. This will lead into what pollinator biology/ecology is and what different aspects researchers look into when studying this subject. The last part of the presentation will focus on identification/key features of various groups of pollinators and their function in the ecosystem.

11:10-11:35 **Lyn Gettys:** Native plants at the Orlando Wetlands
University of Florida
lgettys@ufl.edu

Native plants play important roles in aquatic ecosystems. The Orlando Wetlands Park is designed to facilitate phytoremediation, and plant selection plays a critical role in the successful development of a created wetland such as this. In this presentation Dr. Gettys will describe the native plants included in the Orlando Wetlands and provide attendees with tips for identifying these important components of this hard-working constructed ecosystem.

11:35-11:45 **Jeff Suttner**: Platinum sponsor update: Airmax

11:45-11:55 **Wendi Nance**: Platinum sponsor update: SePRO

11:55-12:00 **Doreen Culberson**: Gold sponsor update: Brandt

Session 6: Skeeters and algae

1:20-1:45 **Mollie Davies**: Working in the weeds: *Mansonia* mosquito abundance and invasive aquatic plants in southeast Louisiana
St. Tammany Parish Mosquito Abatement District, Slidell, Louisiana
mdavies@stpmad.org

Pontederia crassipes, *Salvinia* spp., *Lemna* spp., and *Pistia stratoites* have become major nuisances in waterways in the southeast U.S., contributing to diminishing water quality and creating challenges for water recreation and fishing. In addition, these plants can provide habitat and oviposition substrates for mosquitoes in the *Mansonia/Coquillettidia* genus, which utilize emergent and floating aquatic plants throughout their lifecycle. As adults, females will adhere eggs to the underside of floating aquatic plants such as *Salvinia* spp., while larvae use a modified saw-like siphon, or breathing apparatus, to puncture the root tissue and attach themselves to the extensive root systems of these often invasive plants. While *Mansonia* are not vectors of concern, their reliance on aquatic plants and persistent, indiscriminate biting behavior, makes them a nuisance where invasive aquatic plants are abundant. Our study investigated the role of aquatic plants on the lifecycle and abundance of *Mansonia* in St. Tammany Parish, Louisiana and whether one particular plant or assemblage of plants increased the likelihood of encountering them in a particular area.

From August to November in 2024, we set mosquito traps baited with CO_2 and monitored oviposition at sites with varying plant composition and found that, overall *Mansonia* mosquitoes were most abundant at sites that contained *P. crassipes* compared to sites without. Although preliminary, our data indicate *P. crassipes* as an important factor in the abundance of *Mansonia* in our area, but further investigation into understanding the interactions between these mosquitoes and their host plants is crucial to their control.

1:45-2:10 **Ed Foley**: Going for the source: Lee County Mosquito Control District's efforts to control *Mansonia* mosquitoes by targeting aquatic vegetation.
Lee County Mosquito Control District
Foley@LCMCD.ORG

Mansonia titillans and *Mansonia dyari* are two species of mosquitoes found throughout Lee County, Florida. These species are extremely pestiferous and difficult to control. Both species have a modified siphon designed to pierce the root system of aquatic vegetation. Once there, they stay submerged and hidden throughout their juvenile life stage. This unique behavior makes larval surveillance difficult and treatments often ineffective. By targeting their source, the aquatic vegetation, LCMCD has had success in controlling their populations.

2:10-2:35 **Sam Sardes**: Filamentous algae
UPL, NA
Samantha.sardes@upl-ltd.com

This presentation will provide an overview of filamentous algae. Sam will provide tips for identifying these algae and will outline the negative impacts associated with different algal species. This presentation will also cover how to decide whether to treat algae blooms and how to determine which management options are appropriate based on algal species, water use, and other considerations.

2:35-3:00 **Dail Laughinghouse**: HABs identification and management
University of Florida
hlaughinghouse@ufl.edu

This presentation will introduce attendees to harmful algal blooms (HABs). Dr. Laughinghouse will provide tips for identifying these algae and will outline the negative impacts associated with different algal species that are responsible for forming HABs.

Session 7: Aquatic tools and techniques

3:35-3:40 **Brooks Wilson:** Diamond sponsor: Introducing the new Syngenta rep

3:40-3:45 **Paul Conti**: Gold sponsor update: Alligare

3:45-4:00 ***Business meeting***

4:00-4:25 **Kyle Rowat:** Wheels on water: Managing aquatic weeds where boats can't go
Pasco County Mosquito Control District
krowat@pascomosquito.org

The Pasco County Mosquito Control District manages a wide range of treatment sites in its mission to protect residents by controlling mosquito populations. Its Aquatics team, led by Brett Hicks, utilizes various pieces of equipment to maintain a healthy ecosystem while attempting to maintain a minimum population of invasive mosquito breeding flora that are present within the county. The team has also expanded its role to support search and rescue operations during storms and other emergency events. This presentation will highlight several key pieces of machinery we use, along with the adaptations and strategies that improve efficiency and strengthen community support. Our in-house shop plays a vital role in customizing Aquatic All-Terrain Vehicles (AATVs) to help us meet our goals safely and effectively. Since access is often the first barrier in successful treatment, we will focus on how and why we've integrated AATVs into our program, including the advantages and challenges we've encountered. We are continually exploring more versatile and innovative equipment solutions to help our department achieve its goals in a more cost-effective and energy-efficient manner.

4:25-5:15 **Kyle Rowat/Brett Hicks**: Outdoor demonstration of Pasco County's Mud Ox
Pasco County Mosquito Control District
krowat@pascomosquito.org
bhicks@pascomosquito.org

This demonstration presentation will allow attendees to see the equipment discussed in the previous presentation and to learn how this equipment could be integrated into their own vegetation management programs.