Florida Invasive Species Council 2026 Symposium Agenda

Monday, April 6

FISC Officers, Board of Directors and Committee Chairs Meeting

1:00-5:00 PM	FISC Officers, Board of Directors and Committee Chairs Meeting

Tuesday, April 7

2026 CISMA Workshop in Ballroom

8:00 AM-1:00 PM	Check in/Registration for FISC 2026 Symposium.
9:00 AM- 12:00 PM	2026 CISMA Workshop:
12:00-1:00 PM	Lunch on your own.

1:00-1:10 PM	Welcome and Opening Remarks, Lynn Proenza, Chair of FISC
1:10-2:00 PM	Keynote Address, Christina Romagosa []
2:00-2:20 PM	BREAK – 20 minutes
2:20-2:30 PM	Vendor Update –
2:30-2:40 PM	Vendor Update –
2:40-3:05 PM	Urbanization and Invasive Species Influence on Greater Everglades Biodiversity, Paul Evans
3:05-3:30 PM	Florida Feral Hog Management, Rauney Mitchell
3:30-3:55 PM	The Geography of Hope within Invasive Species Media Framing, Diane Sturgeon
3:55-4:15 PM	BREAK – 20 minutes
4:15-4:25 PM	Vendor Update –
4:25-4:50 PM	Mind the Gate: No Access, No Action, Michaela Lubbers
4:50-5:15 PM	Biological control of the Old world climbing fern, Lygodium microphyllum , Gregory Wheeler
5:15-5:30 PM	Closing Remarks and Announcements Reminder of Evening Poster Session and Social, Explain Tomorrow's Field Trips, Silent Auction, Raffle Tickets

5:30 – 7:00 PM	Evening Social and Poster Session Enjoy an evening with refreshments, networking, and poster presentations!

Wednesday, April 8

2026 FISC Field Trips (See Field Trip Section for more Details)

8:00 AM-12:10 PM	St. Sebastian River Preserve State Park Participants will explore how a well-maintained prescribed fire regime supports native vegetation, limits opportunities for invasive plants to establish and spread, and reduces overgrowth. The tour will also highlight invasive plant management considerations for gopher tortoise habitat, challenges posed by managing invasive species in fire-managed areas, and strategies for restoring sites where fire frequency has been disrupted or is not consistently applicable. This trip is ideal for resource managers and fire practitioners interested in the link between fire ecology and invasive species management.
	Samsons Island Coastal & Island Restoration Sites Weather permitting, this field trip will include a boat trip departing from the meeting location to Samsons Island, a 58-acre spoil island. Participants will learn about Samsons Island's history and observe ongoing habitat restoration efforts. The island visit will involve approximately 1–2 miles of walking to view various restoration and invasive species management sites. Participants may park on-site at the street address provided and board city boats at the dock located at the rear of the property. If weather conditions prevent a boat trip, an alternative but similar habitat restoration site visit will be provided.
	Turkey Creek Sanctuary Participants will explore a mature hydric hammock and blackwater stream system while learning about long-term invasive plant management within an urban-adjacent preserve. The tour will highlight challenges such as riparian invasive plant species, vine suppression, and restoration in sensitive wildlife corridors. Elevated boardwalks and natural trails offer excellent access for discussing integrated pest management strategies.
	Maritime Hammock Sanctuary This coastal hammock and dune system highlights effective invasive species management within a high-value shoreline ecosystem. Participants will learn about Brazilian pepper removal, dune restoration plantings, and the long-term maintenance strategies needed to sustain habitats impacted by recreation, storm events, and sea-level rise. The site demonstrates integrated pest management efforts to protect native coastal vegetation and wildlife. An optional visit to the Barrier Island Center, an interactive education facility, is available following the tour.
	Hubbs-Seaworld Research Institute/Brevard Zoo This behind-the-scenes tour highlights Hubbs-Seaworld Research Institute's marine mammal conservation work and collaborative habitat projects, including the Brevard Zoo's experimental-scale seagrass nursery. Participants will learn about marine mammal stranding response and related research, seagrass cultivation to accelerate foraging habitat restoration and the zoo's volunteer-driven approach to regional conservation. This trip is ideal for those interested in learning

	about collaborative research and community action to restore Florida's coastal ecosystems. The impact of non-native seagrasses and their contribution to marine mammal recovery will be emphasized.
	FWC Python ID and Handling This training will cover information on Burmese pythons in Florida, species identification, how to search for pythons, safe capture techniques, how to humanely kill a python, reporting pythons to the FWC, live instruction on capture techniques from a biologist, and hands-on practice with safe capture of live pythons. Live pythons will be used to provide participants with experience in handling pythons and participants will receive the opportunity to practice safe capture techniques. We are limiting the hands-on training to 30 people. Participants who are handling snakes will need to wear closed-toed shoes, pants, and shirts they do not mind getting dirty. You will also be asked to sign a waiver. Participants will be split into 3 groups of 10. Any number of people can attend the pre-capture indoor presentation, and can watch the outdoor safe capture training. Participants who are not actively learning to capture Burmese pythons will not be offered CEUs.

Wednesday 8th Afternoon Concurrent Sessions

	Ballroom I	Ballroom II
	Concurrent Session 1 –	Concurrent Session 2 –
1:00-1:25 PM	Is basal bark application possible without the oil carrier? **Stephen Enloe**	Biological control in action: Increasing control of air potato vine through releases of Lilioceris egena (Weise), **Trudi Deuel**
1:25-1:50 PM	Screening aquatic and non-aquatic labeled herbicides for efficacy on torpedograss (Panicum repens)., **Abigail Schulken**	Using Arc-GIS to visualize spatial and temporal distribution of a biological control agent on Brazilian peppertree, **Nicole Benda**
1:50-2:15 PM	Variation in spread among lineages of invasive cogongrass (Imperata cylindrica), **Ellie Whitaker**	FWC Uplands Herbicide Program, **David McNiel**
2:15-2:40 PM	Levelling up: Cuban bulrush field IPM trials in Florida, **Patrick Belk**	FWC's Invasive Plant Management Research Program**, Mariah McInnis**
2:40-3:00 PM	BREAK- 20 minutes	BREAK- 20 minutes
3:00-3:25 PM	Linking Habitat, Dispersal, and Growth to Model Cogongrass Invasion Dynamics, **Deb Tharp**	Invasive Vegetation Removal and Restoration at Seaside Park and American Beach Access, **David Herbert**
3:25-3:50 PM	Assessing Species at High Risk of Invasion in the Southeastern United States in Current and Near-Future Climate Scenarios, **Cayla Morningstar**	A local use of Integrated Pest Management in Southeast Florida, **Antoinio Rodriguez**
3:50-4:15 PM	IPM in ACTION through the FPS District 4 PANTHER team, **Tracy Muzyczka**	IPM in ACTION through the FPS District 4 PANTHER team, **Tracy Muzyczka**
4:15-4:50 PM		Field Testing the Performance and Selectivity of In-water Applications of Imazamox on Water Hyacinth (Pontederia (Eichhornia) crassipes), **Kelli Gladding**

Morning Thursday, April 9

2026 FISC Workshops

	Ballroom I	Ballroom II
	Invasive Plant Workshops	Invasive Animal Workshops
08:00-08:50 AM	EDRR and Lesser-known Invasive Plant Species Identification with Treatment Options, **Dexter Sowell**	Invasive Fishes of Florida: Identification, Impacts and Control Methods, **Earl Lundy**
08:50-09:00 AM	BREAK- 10 minutes	BREAK- 10 minutes
09:00-09:50 AM	Use of Avenza Maps for Invasive Plant Surveys, **Padraic Elliott**	Feral Hog Management in Florida, **Lanie Carter**
09:50-10:00 AM	BREAK- 10 minutes	BREAK- 10 minutes
10:00-10:50 AM	How to Navigate the Label: A Roadmap to Pesticide Stewardship, **Brett Bultemeier**	New Early Detection-Rapid Response (EDRR) Insect for Florida: yellow-legged hornet (YLH), **Katie Fairbanks & Jason Stanley** 10:25 Two-Spot Cotton Leafhopper: What the Southeastern U.S. Needs to Know, **Telmah Telmadarrehei**
10:50-11:00 AM	BREAK- 10 minutes	BREAK- 10 minutes
11:00-11:50 AM	Introduction to Sedges and Their Identification, **Erick Revuelta**	Identifying Invasive Lizards and Snakes in Florida, **Eric Suarez**
11:50 AM- 1:15 PM	Lunch on Your Own	

Afternoon Thursday, April 9

1:15-1:25 PM	Opening Remarks, Lynn Proenza, Chair of FISC
1:25-1:35 PM	Vendor Update – Invasion Science Institute
1:35-1:45 PM	Vendor Update –
1:45-2:10 PM	Know Your Invasives: The Life and Society of Feral Hogs, Keith DelValle
2:10-2:35 PM	Non-Native Fish Species in Florida: Classification, Implications, Patterns, Research, and Management, Earl Lundy
2:35-2:55 PM	BREAK – 20 minutes
2:55-4:05 PM	Invasion Science Management Experts' Panel Discussion
4:05-4:30 PM	Plant List Committee Updates, Erick Revuelta
4:30-5:15 PM	FISC General Body Assembly, Lynn Proenza and Dexter Sowell
5:30 PM	FISC BANQUET (includes Raffle Auction/Prizes)

Morning Friday. April 10

9:00-9:10 AM	Welcome and Opening Remarks, Lynn Proenza, Chair of FISC
9:10-10:10 AM	Keynote Address, Alex Dew There's No Substitute for Native Plants
10:10-10:300 AM	BREAK – 20 minutes
10:30-10:40 AM	Vendor Update –
10:40-10:50 AM	Vendor Update –
10:50-11:15 AM	Coming soon to a habitat near you, earleaf acacia. Now, what are we going to do about it?, Carey Minteer
11:15-11:45 AM	Brianna Foster- Updates to the mass rearing, release, and establishment of *Pseudophilothrips ichini* Hood (*Thysanoptera: Philaeothripidae*) for the biological control of Brazilian peppertree in Florida, Brianna Foster
11:45 AM-12:00 PM	Closing Remarks and Adjourn, Lynn Proenza, Chair of FISC

KEYNOTE & PLENARY SESSION 1

AGENDA DESCRIPTION

13:00-13:10 Lynn Proenza, FISC Chair - Welcome and Opening Remarks, Introduction of Keynote Address Speaker (no CEUs requested).

Keynote Address

13:10 - 14:00 Dr. Christina Romagosa – Burmese pythons in the Everglades (50 minutes)

ABSTRACT: Invasive Burmese pythons (*Python bivittatus*) are extremely cryptic animals native to southeastern Asia, however, there is an established invasive population inhabiting much of southern Florida throughout the Greater Everglades Ecosystem. Although their conservation status in their native range is Vulnerable, in the Greater Everglades Ecosystem (Florida, USA) they have become a dominant destructive force and usually are immediately removed whenever found. Burmese pythons have severely impacted native species and ecosystems in Florida and represent one of the most intractable invasive-species management issues across the globe. The difficulty stems from a unique combination of inaccessible habitat and the cryptic and resilient nature of pythons that thrive in the subtropical environment of southern Florida, rendering them extremely challenging to detect. Here we provide a comprehensive review and synthesis of the science relevant to managing invasive Burmese pythons. We describe existing control tools and review challenges to productive research, identifying key knowledge gaps that would improve future research and decision making for python control.

14:00-14:20 Networking Break (20 minutes)

Plenary Session 1

14:20-14:30 Vendor Update (10 minutes)

14:30-14:55 Vendor Update (10 minutes)

14:55-15:20 Paul Evans -- Urbanization and Invasive Species Influence on Greater Everglades Biodiversity (25 minutes)

ABSTRACT: Loss of habitat through urbanization serve as a critical threat to habitats for various species, both due to loss of habitat, and due to increased risk of invasion by aggressive non-native species. The presence of nonnative species encroaching from adjacent development has not been previously studied within the larger Greater Everglades ecosystem. This study explores the interactions between nonnative plant species, non-native animal species, and the numerous rare native plant and animal communities within these environments. By assessing habitat composition and species presence, and distance from urbanization edge, this research aims to illuminate potential

shifts in biodiversity, behavioral patterns, and ecological balance. The findings contribute to a broader understanding of how human-mediated landscape changes affect native and non-native species alike, with implications for conservation, management, and urban ecology.

15:05-15:30 Rauney Mitchell – Florida Feral Hog Management (25 minutes)

ABSTRACT: I will demonstrate the setup and trapping techniques of the Pig Brig trap system. This presentation will cover key aspects of the process, including site selection, conditioning, trap setting, ongoing monitoring, and effective troubleshooting. I will also discuss the strengths and weaknesses of alternative trap designs to provide a well-rounded understanding of different means of trapping.

15:30-15:55 Diane Sturgeon - The Geography of Hope within Invasive Species Media Framing (25 minutes)

ABSTRACT: Media coverage shapes public risk perception and behavioral engagement with environmental threats, yet little is known about how source geography influences invasive species framing. We analyzed 20 years of US invasive species coverage (2,353 articles, 2003-2023), classifying sources by constituent proximity into National and Regional outlets. Using Latent Dirichlet Allocation topic modeling and NRC sentiment analysis, we developed a Hope Index to quantify the balance between constructive and threat-focused emotional framing across source types. National outlets produced threat-dominant coverage at nearly three times the rate of Regional outlets. Regional sources, serving audiences with direct management stakes, employed significantly more balanced or solution-oriented framing, while National articles concentrated heavily in threat-focused messaging. These findings have applied implications. For practitioners, media source selection matters: Regional outlets may better facilitate the sustained public engagement necessary for effective invasive species management, while national coverage risks promoting learned helplessness. Future research should examine whether these framing differences translate to measurable differences in public attitudes and management support. *Co-authors include Andrew Holmes, Zach Steele, and Paul Evans.*

15:55-16:15 Networking Break (20 minutes) (no CEUs requested)

16:15-16:25 Vendor Update (10 minutes) (no CEUs requested)

16:25-16:50 Michaela Lubbers - The current Buzz on Invasive Plants and Beekeeping (25 minutes)

ABSTRACT: Effective invasive species management relies on both ecological knowledge and the ability to implement it. Public conservation programs for private lands support this implementation—but require landowners and managers to navigate the complex bureaucratic landscape to access said support. Social and cultural capital offer useful theoretical lenses to understand how land managers engage with these systems. Cultural capital, as conceived by Bourdieu, refers to a person's ability to know, understand, and thereby benefit from the implicit expectations of a particular social context. Cultural capital is generally developed through ongoing exposure to social norms and rules. The theory of social capital describes the network connections one has and how resources flow through those relationships. *Co-authors include Jennifer Jo Thompson.*

16:50-17:15 Dr. Greg Wheeler - Biological control of the Old world climbing fern, *Lygodium microphyllum* (25 minutes)

ABSTRACT: The honeybee industry plays a key role in Florida, with an economic contribution of near $100 million annually. Beyond honey production, honeybees play a vital part in crop pollination and other ecosystem services. Additionally, honeybees have faced significant obstacles from invasive insects and diseases, prompting national concern and public support for the industry. However, there is a difficult reality we face regarding the interaction of honeybees and invasive plants in Florida. Troublesome species including Brazilian peppertree, Chinese tallow, Chinese privet, and melaleuca are widely used by beekeepers. This has caused considerable tension between natural area managers and beekeepers, and it has hindered advances in biological control and active management of invasive plants on public lands where beekeepers maintain colonies. This presentation will examine these conflicts and discuss potential paths forward for finding solutions.

17:15-17:30 Lynn Proenza, FISC Chair - Closing Remarks and Announcements (15 minutes)

Keynote Address and Plenary Session 1

BIO: Dr. Christina Romagosa is a research associate professor in the University of Florida's Department of Wildlife Ecology and Conservation in Gainesville, Florida, but much of her research and fieldwork is conducted in South Florida. Her research focuses on how ecosystems respond to invasive species, or non-native species that do harm to the ecosystem. Christina has a PhD in Biological Sciences from Auburn University, and a Masters and Bachelor degrees in Wildlife Ecology and Conservation from the University of Florida.

BIO: Paul Evans is ISI's Research Coordinator, works with affiliated partners and internal and external boards to create innovative and necessary research. He studies terrestrial invasive species dispersion, community ecology, and community-based education and

reporting. He earned his bachelor's from the University of South Florida and his MSc. in Ecology and Conservation from Aberdeen. He uses wildlife education, scientific research, and public involvement to fill conservation knowledge gaps. He previously collaborated with biologists to study herpetofauna and crocodilians in South Florida, the Caribbean, and endangered Central American species. He is delighted to continue his work in Florida after raising awareness of lesser-studied species in Alaska and Scotland.

BIO: Rauney Mitchell serves as the Natural Resource Specialist for Flagler County, Florida, where he plays a pivotal role in advancing ecological sustainability and land stewardship. With a focused expertise in feral hog mitigation and prescribed fire management, Mr. Mitchell leads critical initiatives aimed at restoring and protecting the region's natural landscapes.

BIO: Diane J. E. Sturgeon is a social scientist and ORISE fellow affiliated with University of Florida's Invasion Science Institute and North Carolina State University/SE CASC. She holds an M.S. degree in wildlife ecology and conservation and a Ph.D. degree in interdisciplinary ecology from the University of Florida. Motivated by a deep interest in how people shape and are shaped by the natural world, her research explores the human dimensions of invasive species and conservation as a whole. She leads projects using social science methods such as surveys, interviews, focus groups, topic modeling, sentiment analysis, and content analysis to examine public perceptions, media narratives, and policy responses. Her research supports more effective and inclusive conservation strategies through improved science communication and public engagement.

BIO: Michaela Lubbers is the IPM & Sustainability Communications Specialist at the University of Georgia Center for Invasive Species. In this role, Michaela develops outreach websites and materials, serves as liaison for partner organizations, and wrangles scientists. She's interested in responsible, relevant public research using participatory methods, particularly related to agriculture and natural resources, and the technology that helps makes sense of the 'noise.' She is a recent graduate of the University of Georgia, where she earned an MS in Sustainable Agriculture and a certificate in Sustainable Food Systems.

BIO: Greg Wheeler is a Research entomologist who has been working for over 30 years on biological control of invasive weeds of Florida natural areas. Weed targets have been primarily, Brazilian peppertree and Chinese tallow-tree for which safe agents have been developed.

Field Trips Wednesday April 8th 2026

Concurrent Field Trip 1: St. Sebastian River Preserve State Park

08:00-12:10 Samantha McGee – Integrated pest management including prescribed fire in maintaining healthy upland habitats.

Abstract: Participants will explore how a well-maintained prescribed fire regime supports native vegetation, limits opportunities for invasive plants to establish and spread, and reduces overgrowth. The tour will also highlight invasive plant management considerations for gopher tortoise habitat, challenges posed by managing invasive species in fire-managed areas, and strategies for restoring sites where fire frequency has been disrupted or is not consistently applicable. This trip is ideal for resource managers and fire practitioners interested in the link between fire ecology and invasive species management.

BIO: Samantha McGee is the Environmental Specialist for over 20 years at St. Sebastian River Preserve State Park, and is co-chair of the Central Florida Prescribed Fire Council. She has managed invasive species with prescribed fire, herbicide applications, and, where feasible, cattle browsing leases. She received an award in 2015 by the Florida Cabinet as one of the top resource managers in the state. Her integrated pest management program has been in place for two decades at the park, and she will show participants in which ways IPM has improved habitat, where it has not worked, and discuss the threat that Florida's warming winter trends and rapid population growth mean for future invasive plant infestations at the park. She also serves on the Indian River County's Environmental Lands Acquisition Panel, providing guidance on habitat quality, rare species occurrences and potential invasive species infestations on lands proposed by the county for conservation.

Concurrent Field Trip 2: Samsons Island Coastal & Island Restoration Sites

08:00-12:10 Carley Kestranek

ABSTRACT: Weather permitting, this field trip will include a boat trip departing from the meeting location to Samsons Island, a 58-acre spoil island. Participants will learn about Samsons Island's history and observe ongoing habitat restoration efforts. The island visit will involve approximately 1–2 miles of walking to view various restoration and invasive species management sites. Participants may park on-site at the street address provided and board city boats at the dock located at the rear of the property. If weather conditions prevent a boat trip, an alternative but similar habitat restoration site visit will be provided.

BIO: Carley Kestranek is the Environmental Scientist and Sustainability & Resiliency Officer for the City of Satellite Beach, and manages over 135 acres of municipal natural areas, conducting invasive species surveys, removal, and long-term management. Carley Kestranek's professional background over the last 10 years centers on wildlife conservation, native wildlife rehabilitation with a focus on birds of prey, benthic marine and sea turtle nesting research, and environmental education. She leads a comprehensive habitat restoration program designed to establish healthy, functional ecosystems that support the City's significant population of gopher tortoises (*Gopherus polyphemus*) and enhance their long-term survivability. Carley also plays a key role in strengthening the City's storm resiliency efforts, working closely with the stormwater program to ensure natural systems and infrastructure function together to reduce flooding impacts and improve ecological stability. She regularly hosts educational talks, and workshops programs for residents of all ages, visits local schools, and serves as staff liaison to the City's Sustainability Board and the Tree & Beautification Board. In addition, she actively pursues and secures grant funding to support environmental projects for the City.

Field Trip 3 of 6: Turkey Creek Sanctuary

08:00-12:10 Tracey Wright

ABSTRACT: Participants will explore a mature hydric hammock and blackwater stream system while learning about long-term invasive plant management within an urban-adjacent preserve. The tour will highlight challenges such as riparian invasive plant species, vine suppression, and restoration in sensitive wildlife corridors. Elevated boardwalks and natural trails offer excellent access for discussing integrated pest management strategies.

BIO: Tracey wright is a park ranger and naturalist for the Turkey Creek Sanctuary. Her duties include managing 20 volunteers, conducting and supervising invasive plant control activities, provide environmental education programs for school groups as well as for the public on subjects such as birding and owl prowls, and hosting ranger-led tours of the Sanctuary. Her resource management duties include trail maintenance, boardwalk repairs, and invasive plant control and habitat restoration. She previously worked for the city of Melbourne for 12 years conducting similar work. Tracey has a Master's degree in Environmental Education and Conservation Technology from Florida Institute of Technology.

Field Trip 4 of 6: Maritime Hammock Sanctuary

08:00-12:10 Nichole Perna – Tour of Brevard Park's Maritime Hammock Sanctuary

ABSTRACT: This coastal hammock and dune system highlights effective invasive species management within a high-value shoreline ecosystem. Participants will learn about Brazilian pepper removal, dune restoration plantings, and the long-term maintenance strategies needed to sustain habitats impacted by recreation, storm events, and sea-level rise. The site demonstrates integrated pest management efforts to protect native coastal vegetation and wildlife. An optional visit to the Barrier Island Center, an interactive education facility, is available following the tour.

BIO: Nichole Perna is a Land Management Specialist and the South Beaches Land Management Superintendent. She has worked for over twenty years for Brevard County Parks, managing invasive plant species, rare species and provided educational outreach classes and tours in county parks in southern Brevard County. Nichole regularly educates the public about the threats invasive species pose to rare native coastal species.

Field Trip 5 of 6: Hubbs-Seaworld Research Institute/Brevard Zoo

08:00-12:10 Jeff Eble - Tour of the Marine Mammal Conservation & Habitat Restoration Program at Hubbs-SeaWorld Research Institute/Brevard Zoo

ABSTRACT: This behind-the-scenes tour highlights Hubbs-Seaworld Research Institute's marine mammal conservation work and collaborative habitat projects, including the Brevard Zoo's experimental-scale seagrass nursery. Participants will learn about marine mammal stranding response and related research, seagrass cultivation to accelerate foraging habitat restoration and the zoo's volunteer-driven approach to regional conservation. This trip is ideal for those interested in learning about collaborative research and community action to restore Florida's coastal ecosystems. The impact of non-native seagrasses and their contribution to marine mammal recovery will be emphasized.

BIO: Dr. Jeff Eble is a Research Scientist and Florida Program Director at Hubbs-SeaWorld Research Institute, specializing in understanding the influence of natural and anthropogenic factors on marine biodiversity. He obtained his PhD from the University of Hawaii where he worked at the Hawaii Institute of Marine Biology investigating the genetic diversity of coastal fishes. More recently, Dr. Eble has been working with collaborators to investigate the utility of environmental DNA (eDNA) as a cost-effective marine biomonitoring tool. eDNA relies on the detection of trace amounts of naturally shed DNA in sediments and water samples to determine species' presence and abundance, offering enormous potential for future assessment and monitoring of marine biodiversity.

Dr. Eble previously co-led development of the Gulf Islands Research and Education Center (GIREC) in partnership with the U.S. National Park Service Gulf Islands National

Seashore to spur new research collaborations and hands-on research experience for secondary and university students. As a Visiting Assistant Professor at Florida Institute of Technology, Dr. Eble advanced development of a $2.5M multi-disciplinary research program investigating eutrophication remediation strategies for the imperiled Indian River Lagoon.

Field Trip 6 of 6: Field Trip 6: FWC Python ID and Handling

08:00-12:10 Jenna Cole - FWC Python ID and Handling

ABSTRACT: This training will cover information on Burmese pythons in Florida, species identification, how to search for pythons, safe capture techniques, how to humanely kill a python, reporting pythons to the FWC, live instruction on capture techniques from a biologist, and hands-on practice with safe capture of live pythons. Live pythons will be used to provide participants with experience in handling pythons and participants will receive the opportunity to practice safe capture techniques.

We are limiting the hands-on training to 30 people. Participants who are handling snakes will need to wear closed-toed shoes, pants, and shirts they do not mind getting dirty. You will also be asked to sign a waiver. Participants will be split into 3 groups of 10. Any number of people can attend the pre-capture indoor presentation, and can watch the outdoor safe capture training. Participants who are not actively learning to capture Burmese pythons will not be offered CEUs.

BIO: Jenna Cole received her Master of Science in Wildlife Ecology and Conservation from the University of Florida in 2022. Her primary experience is research and management of Argentine black and white tegus, Burmese pythons, green iguanas, and various other invasive reptilian species throughout South Florida. Currently she is employed as an invasive animal biologist with the South Florida Water Management District assisting in the management of the Python Elimination Program and related invasive species management projects. Jenna's primary goals are to continue to research and improve management strategies for invasive reptile species to reduce their harmful effects on Florida's natural areas and rare plants and animals.

CONCURRENT SESSION 1

AGENDA DESCRIPTION

13:00-13:25 Stephen Enloe - Is basal bark application possible without the oil carrier? (25 minutes)

ABSTRACT: Basal bark application is a widely used technique to control woody invasive plants. It typically involves an oil soluble triclopyr formulation mixed with a bark oil carrier and applied to the lower thirty to forty-five cm around the circumference of each stem. This approach has been successfully used for over forty years. However, we are revisiting this paradigm to determine if water mixed with low concentration oil based adjuvants can provide effective control. Initial studies were conducted on Brazilian peppertree in 2024 and 2025 near Crystal River and Miles City Florida. Treatments included triclopyr (Trycera at 15% v/v) mixed with water and one of four adjuvants. These included Agri-Dex at 5.0 and 7.5% v/v, Dyne-Amic at 2.5, 5.0, and 7.5% v/v, DLZ at 5.0 and 7.5% v/v, and Cohere at 0.5% v/v. We also included a nontreated control and triclopyr mixed with Impel Red Basal oil for comparison. Data included visual evaluations of shrub defoliation, epicormic sprout counts, and mortality. At 540 days after treatment (DAT) at the Crystal River site, we observed excellent defoliation and mortality (90% or higher) with Dyne-Amic at 5.0 and 7.5% v/v and DLZ at 7.5% v/v. These were comparable in efficacy to the Impel Red treatment. Data collected out to 180 DAT at Miles City indicates reduced treatment performance with most treatments exhibiting much lower defoliation. Data is still being collected and we hope to understand the role of site differences in the outcomes. We have also operationally established two 10 acre demonstration plots in Picayune Strand utilizing Trycera at 10 and 15% v/v mixed with water and Dyne-Amic (5% v/v). Overall, initial results are promising and we will continue to investigate this reduced oil carrier approach. *Co-authors include Ben Tuttle, Ian Talty, and Patrick Belk.*

Begin Student Session

13:25-13:50 Abigail Schulken- Screening aquatic and non-aquatic labeled herbicides for efficacy on torpedograss (*Panicum repens*) (25 minutes)

ABSTRACT: Torpedograss (*Panicum repens*) is an invasive, perennial grass that has spread throughout wetland, riparian, and terrestrial habitats across the United States. Torpedograss aggressively spreads, forming dense monotypic stands through rhizomes in the soil and stems in the water, and can displace many native plants. Due to its extensive rhizome system, torpedograss can be very difficult to control with herbicides. Currently, systemic herbicides like glyphosate and imazapyr (used separately or in combination) are commonly used to control torpedograss in aquatic systems. However, both herbicides are non-selective, and their use can result in high levels of non-target plant injury. Considering aquatic plant control is typically done in natural environments, minimizing impacts on native plants is important. The objectives of this study were to assess other

labeled aquatic herbicides and screen non-aquatic labeled herbicides as selective treatment options for torpedograss that could reduce native plant injury. A greenhouse pot study was conducted to evaluate these objectives. Torpedograss stems containing at least one node were collected from a pond and placed in a container of water. Once new shoots emerged, they were potted, grown for one month in a greenhouse, and treated. Ten aquatic herbicides were screened, along with six non-aquatic labeled herbicides. Each treatment was compared to a nontreated and pretreatment control. Visual ratings were conducted at the 1-, 2-, 4-, 6-, 8-, and 12-weeks after treatment (WAT), and aboveground and belowground biomass will be collected after the 12-week rating. At 6WAT, glyphosate, imazapyr, and imazamox were the only aquatic herbicides that significantly differed from the non-treated control and had ≥90% visual control. At 6WAT, glufosinate, trifloxysulfuron, and nicosulfuron were the non-aquatic herbicides that significantly differed from the non-treated control and had greater than ≥75% visual control. While aboveground visual ratings seem promising so far, it is hard to predict long term control and resprouting potential from belowground perennial structures in a greenhouse study. However, the results indicate that while the industry standards of glyphosate and imazapyr continue to provide excellent visual control of torpedograss, there are promising alternative herbicides that warrant further research. *Co-authors include Eli Russell.*

13:50-14:15 Ellie Whitaker- Variation in spread among lineages of invasive cogongrass (*Imperata cylindrica*). (25 minutes)

ABSTRACT: To accurately predict the spread of invasive plants, variations among lineages of a species must be well understood. Intraspecific variation in functional traits and phenotypic plasticity has been observed among two lineages of invasive cogongrass (Imperata cylindrica, (L.), which was introduced to the United States through two introductions– from Japan to Alabama and from the Philippines to Florida– and has degraded longleaf pine ecosystems of the Southeastern United States. In this study, I aim to reveal whether lineage and environmental context interact to shape invasion dynamics. We established three replicates of 10 populations of the Florida- and Alabama-type lineages to be exposed to either light or shade tents, monitored for spread and growth-related metrics, and harvested the preserved above- and below-ground structures. Observations suggest that the Florida-type lineage exhibited greater plasticity and spread across different light conditions – particularly in the shade – as seen in its height and below-ground biomass. *Coauthors include Drew Hiatt and S. Luke Flory.*

14:15-14:40 Patrick Belk- Levelling up: Cuban bulrush field IPM trials in Florida (25 minutes)

ABSTRACT: Due to recent spread, Cuban bulrush (Cyperus blepharoleptos) has quickly risen to a high management priority across Florida and the Southeast. This invasive, epiphytic sedge forms dense floating mats that transform open-water ecosystems into marsh habitats, obstructing navigation and displacing native species. Insightful research

on chemical control at the mesocosm level has prompted expansion to the field-level for validation. Recent aquatic manager surveys have highlighted the widespread but under-studied use of mechanical control methods to disrupt the floating mat architecture. This new integrated research evaluates the most effective chemical control methods from mesocosm trials and pairs them with mechanical shredding at the field scale. Two field plot locations were selected based on which biotype was present in the community. Plant community composition data were collected from quadrats at regular intervals pre- and post-spraying and shredding to monitor system recovery and treatment effectiveness. Triclopyr outperformed Flumioxazin as the most effective herbicide treatment in the field. Shredding resulted in two responses: open-water formation and "pop-up" mud accumulation that hosted a seed bank of native plants absent from the original floating mat. Spraying 30 days before shredding had no considerable influence over the results compared to shredding alone. *Co-authors include Stephen Enloe, John Diaz, Gretchen Lescord, Benjamin Sperry and Christopher Mudge.*

14:40-15:00 - Networking Break (20 minutes) (no CEUs requested)

15:00-15:25 Debroah Tharp- Linking Habitat, Dispersal, and Growth to Model Cogongrass Invasion Dynamics (25 minutes)

ABSTRACT: Cogongrass (Imperata cylindrica) is a highly invasive perennial grass that threatens native ecosystems and increases management costs across natural and managed lands. Effective control is challenging because spread occurs through both aggressive vegetative growth and wind-dispersed seed, and outcomes vary with local site conditions. To support more strategic research and management, we developed a spatially explicit model that simulates cogongrass spread across a landscape by linking key biological processes with habitat suitability and environmental variability. The model uses a cellular automaton framework to represent local spread and long-distance dispersal, with submodels for vegetative growth, seed dispersal, and establishment. Vegetative growth is emphasized to reflect cogongrass' primary mode of expansion, while seed dispersal accounts for wind direction, infested area, and site-specific dispersal suitability. Establishment success depends on seed arrival, germination, and short-term survival, allowing local habitat conditions—such as light availability, competition, and soil properties—to influence invasion outcomes. Model parameters are informed by a synthesis of published research, and the modular structure allows individual processes to be updated as new information becomes available. Model outputs demonstrate how differences in habitat conditions and dispersal pathways can produce uneven invasion patterns, helping identify areas most vulnerable to rapid spread. This framework is designed to support scenario-based evaluations of management priorities, such as where early detection efforts are most critical or where containment is likely to be most effective. Ongoing and future work will incorporate survey and treatment submodels to allow direct comparison of management strategies, treatment timing, and resource allocation, providing a practical decision-support tool for invasive plant management.. *Co-authors include Dr. Michael Andreu.*

15:50-16:15 Cayla Morningstar- Assessing Species at High Risk of Invasion in the Southeastern United States in Current and Near-Future Climate Scenarios (25 minutes)

ABSTRACT: The most cost-effective way to address invasive species is with prevention and a plan for early detection and rapid response (EDRR; Reaser et al. 2020). Predicting invasive species that are of the greatest risk of establishing in new regions is often done with horizon scanning processes (Roy et al. 2014). Many such scans for the United States exist and have produced high-risk species lists (Lieurance et al. 2023, Daniel et al. 2025). However, the spatial scale and comprehensive nature of nationwide lists complicate their utility for management and policy at regional to local extents; there is a need for region-specific high-risk species lists. Herein, we use U.S. invasive species occurrence data to prioritize species most at risk of becoming established in the Southeastern United States based on their climate suitability, life histories, and pathways in current climate scenarios. We also predict where species may be likely to spread in the next thirty years using climate projections for the region. This information is invaluable for managers doing EDRR work in the region. *Co-authors include Lindsey LaBrie, Wesley Daniel, Stacy Endriss, Paul Evans, Caleb Roberts, and Brett Scheffers.*

CONCURRENT SESSION 1

BIO: Dr. Stephen Enloe is a professor and extension specialist at the IFAS Center for Aquatic and Invasive Plants at the University of Florida. He has been involved with invasive plant research and extension for the past two decades and has worked throughout the western and southeastern United States on developing innovative management strategies for many of the worst invasive tree, shrub, vine, and herbaceous species in the US. Dr. Enloe earned his PhD at UC Davis in Plant Biology, a Master's degree in weed science from Colorado State University and an undergraduate degree in Agronomy from NC State.

BIO: Abigail Schulken is currently a Master's Student at the University of Florida, where she researches how herbicides will impact off-target, native aquatic plants. She received her Bachelor of Science from Virginia Tech in 2024 and was an Agroecology Intern at Archbold Biological Station from 2024-2025.

BIO: Ellie Whitaker is a senior environmental science student and undergraduate researcher with the Flory Lab at the University of Florida. She is passionate about sharing the natural world with others by increasing its accessibility and longevity through community outreach and research.

BIO: Patrick Belk is a Master of Science student and Graduate Research Assistant at the IFAS Center for Aquatic and Invasive Plants at the University of Florida. He has worked on many research projects involving the management of invasive plants, from trees and grasses to aquatic species. Patrick's thesis research is focused on the invasive aquatic sedge, Cuban bulrush. He previously received a Bachelor of Science in Plant and

Environmental Sciences from Clemson University.

BIO: Debroah Tharp is the University of Florida's Invasive Species Extension Coordinator. She has a long and dedicated history of invasive species and vegetation management in Florida, working with many different organizations across the state-the Florida Park Service, St. Johns River Water Management District, the Nature Conservancy, Hillsborough County and Bok Tower Gardens. She is currently a Doctoral Candidate in Forest Resources and Conservation at the University of Florida and received her Masters of Science degree in the same program in 2017. She is particularly passionate about prioritization, decision support tools, addressing the implementation gap, and fire-invasive plant interactions.

BIO: Cayla Morningstar is the Research Coordinator for Southeast RISCC (Regional Invasive Species & Climate Change). She is an aquatic biologist specializing in the biogeography of mollusks and has worked with snails and mussels across the U.S., extensively in the southeast. Her research focuses on invasive species risk and has included horizon scanning and impact characterization. Before starting as the coordinator of Southeast RISCC, she was a member of the leadership team in her role as an aquatic invasive species biologist with the Nonindigenous Aquatic Species (NAS) database in Gainesville, Florida. She received her Bachelor's degrees in Zoology and Philosophy from Miami University and is currently pursuing her Master's in Fisheries and Aquatic Sciences at the University of Florida.

Biocontrol Short Session

13:00-13:25 Trudi Deuel- Biological control in action: Increasing control of air potato vine through releases of *Lilioceris egena* (Weise) (25 minutes)

ABSTRACT: *Dioscorea bulbifera* L. (Dioscoreaceae), commonly known as the air potato vine, is a species native to Asia and Africa. It is classified as a noxious invasive weed by the Florida Department of Agriculture and Consumer Services and as a Category I Invasive Plant by the Florida Invasive Species Council. This species aggressively invades disturbed and undisturbed natural habitats by forming dense, impenetrable vines that smother understory vegetation. Classical biological control has been implemented to provide long-lasting and environmentally sustainable management of this weed. The leaf-feeding beetle *Lilioceris cheni* Gressitt and Kimoto (Coleoptera: Chrysomelidae) has been released and is now well-established in Florida. Although this species effectively reduces vine growth and bulbil production, regrowth from underground tubers and remaining bulbils can persist, particularly in the southern peninsula. In 2021, the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine (USDA-APHIS-PPQ) approved an additional agent, *Lilioceris egena* (Weise), whose larvae and adults target air potato bulbils. The Florida Department of Agriculture and Consumer Services' Division of Plant Industry subsequently developed a large-scale laboratory rearing protocol for this species. Since the implementation of this program, more than 162,900 beetles have been released across Florida. In addition to field releases, we are evaluating beetle dispersal and flight capacity to better understand the behavior and effectiveness of *L. egena* under natural field conditions. The introduction of *L. egena* is expected to complement the impact of *L. cheni*, thereby strengthening the biological control of this invasive vine in Florida and other southeastern states. *Co-authors include Kate Fairbanks, Jason Stanley, and Telmah Telmadarrehei* .

13:25-13:50 Nicole Benda- Using Arc-GIS to visualize spatial and temporal distribution of a biological control agent on Brazilian peppertree (25 minutes)

ABSTRACT: Brazilian peppertree is an invasive plant found in Florida, Texas, Alabama, Arizona, California, and Hawaii. This shrub or small tree displaces native species and impacts wildlife and fire regimes. A biological control agent, *Pseudophilothrips ichini* (Thysanoptera: Phlaeothripidae) has been released in Florida since 2019. The Florida Department of Agriculture, Division of Plant Industry has collaborated with University of Florida and U.S. Department of Agriculture to disseminate this new biocontrol agent, and releasing nearly one million thrips at 124 sites across Florida in 2025. Incorporating several years of data, we have developed a comprehensive dashboard and Arc-GIS map to track and visualize spatial and temporal distribution of thrips releases and establishment. This resource will be updated as monitoring and releases continue, allowing us to monitor results and strategically select release sites, improving thrips

distribution and establishment across the landscape. *Co-authors include Carey Minteer and Dale Halbritter.*

IPM Program Short Session

13:50-14:15 David McNiel – Review of the FWC Uplands Herbicide Program (25 minutes)

ABSTRACT: Invasive upland plants continue to threaten Florida's native ecosystems and the economic value of its public conservation lands. Species such as cogon grass, melaleuca, Brazilian pepper, and non-native climbing ferns now occupy more than 1.5 million acres of public conservation property, with additional impacts extending across agricultural and private lands. These invasions jeopardize habitat quality, biodiversity, and the state's $60 billion outdoor recreation economy. The Florida Fish and Wildlife Conservation Commission's Invasive Plant Management Section (IPMS) leads statewide efforts to control invasive plants on public lands and waterways. Central to this mission is the Upland Invasive Plant Management Program, established in 1997 to coordinate regional, place based management strategies and fund projects recommended through eleven Regional Invasive Plant Working Groups. In FY 2024–2025, invasive plants covered 15 percent of Florida's public conservation lands, with an estimated 74 percent of this area under maintenance control. The program invested more than $19.4 million to treat 81,567 acres across 125 project sites, with an additional $620,600 in herbicide support. Over its 28 year history, the program has funded 3,769 operations treating 5.04 million acres, contributing $282.7 million in state investment and leveraging $92 million in partner matching contributions. This presentation highlights statewide status, funding trends, and the long-term outcomes of coordinated upland invasive plant management, and underscores the importance of sustained, collaborative efforts to protect Florida's natural resources.

14:15-14:40 Mariah McInnis- FWC's Invasive Plant Management Research Program (25 minutes)

ABSTRACT: The Invasive Plant Management Section of the Florida Fish and Wildlife Conservation Commission (FWC) administers a long-standing research program dedicated to improving invasive plant management in Florida's aquatic and terrestrial ecosystems. Since the late 1970s, the program has supported hundreds of studies and currently funds approximately 30 projects per year, representing an annual investment of about $1.3 million. Funded research spans a wide range of topics, including chemical and mechanical control strategies, biological control development, ecological and wildlife monitoring, and public education and outreach. Current projects include a statewide assessment and genetic mapping of non-native eelgrass species, multiple biological control investigations (such as the potential for inundative release of the water hyacinth agent *Megamelus scutellaris*) and the development of invasive plant treatment guides for both homeowners and land managers. This presentation will highlight the extent, impact, and collaborative

nature of the program, with the goal of informing the research and management community about available support and encouraging the submission of innovative project proposals.

14:40-15:00 - Networking Break (20 minutes) (no CEUs requested)

Land Manager Session

15:00-15:25 David Hébert- Invasive Vegetation Removal and Restoration at Seaside Park and American Beach Access (25 minutes)

ABSTRACT: Amelia Island in northeast Florida has invasive vegetation that threatens dune ecosystems. Removing it helps native plants thrive. Volunteers received invasive species management training and implemented it in natural dune area worksites, which responded well to hand-pulling and rootstock removal. Successful areas showed no invasive regrowth one year later, plus regeneration of a native plant. Invasive vegetation was mother of millions (*Kalanchoe x houghtonii*) and asparagus fern (Asparagus aethiopicus). The regenerated native plant was beach sunflower (*Helianthus debilis*). Volunteers physically removed about 1,710 lbs. of vegetation by hand-pulling all above-ground vegetation and most of the below-ground rootstocks. Removal events occurred in spring and fall and lasted about 45 minutes each. Since 2022, events trained and worked with 61 volunteers, totaling over 45 work hours. Physical removal of the asparagus fern rootstocks proved effective to prevent its spread and regrowth. Mother of millions was easily pulled out by the roots. All asparagus fern and two-thirds of the mother of millions were placed into bags and disposed in a landfill-bound dumpster. The other third, or about 250 lbs. of mother of millions was thoroughly composted. At Seaside Park and adjoining private parcels, 90% showed no invasive regrowth, and at Lewis St. Beach Access, 72% showed no invasive regrowth. Half the area at Seaside Park is now established in beach sunflower. Participants reported a 64% increase in knowledge of invasive species management, with 84% likely to apply what they learned to continue managing invasive plant vegetation (n=32). These events showed how trained volunteers can implement invasive species management and help native plants to thrive in dune ecosystems.

15:25-15:50 Antoinio Rodriguez - A local use of Integrated Pest Management in Southeast Florida (25 minutes)

ABSTRACT: Southeast Florida is a very unique place for invasive species management. It is the most densely populated region in the state, the number of verified non-native invasive species is the highest in the country, prescribed burning is rarely an option on most natural areas, and ‘edge effect’ impacts a higher percentage of these smaller sites. I will review how we use Integrated Pest Management at a local level in Palm Beach County, FL. This strategy is based on the Integrated Plant Management strategy with a local species list, re-treatment timing chart, prioritization tables, local plant life cycles,

climate cycles, local treatment knowledge, in-depth planning, constant learning, and consistent networking. We use this approach to manage over 80 non-native invasive plant species within Palm Beach County Environmental Resources Management natural areas located in Palm Beach County, Florida.

15:50-16:15 Tracy Muzyczka and Christin Meilink - IPM in ACTION through the FPS District 4 PANTHER team (25 minutes)

ABSTRACT: In November 2025, the FPS District 4 PANTHER team completed its first year since its inception in November 2024. In this talk we will demonstrate how informed planning, communication, and attention to detail is driving deliberate and efficient decision making in the restoration of the lands that we manage. *Co-authors include Chistrin Meilink (team leader) who will be a co-presenter.*

16:15-16:40 Kelli Gladding- Field Testing the Performance and Selectivity of In-water Applications of Imazamox on Water Hyacinth (*Pontederia* (*Eichhornia*) *crassipes*) (25 minutes)

ABSTRACT: Annually, up to 10,000 ha of water hyacinth (*Pontederia crassipes*) are under maintenance control in Florida. Foliar treatments with 2,4-D and diquat are the institutional standards for floating plant control, due to their high efficacy and low cost. Foliar treatments are discriminant to non-targets when hyacinth populations are small and isolated. However, larger treatments (i.e., beyond maintenance control) in mixed communities can cause significant collateral damage and controversy with stakeholders. This inspired the need to explore alternative treatment methods to reduce the negative optics from foliar herbicide treatments. Imazamox is an ALS inhibitor, registered in 2008, used primarily as foliar treatments on primrose (Ludwigia sp.) and cattail (Typha sp.) but has also been recommended for control of water hyacinth with submersed applications at 100-200 µg l-1. In general, this is considered cost prohibitive. Thus, institutional knowledge of submersed imazamox treatments is limited. From 2020-2023, several small demonstration treatments (6-12 ha) showed high efficacy and selectivity. To build on this knowledge, a scaled-up operational treatment was administered to a 58-ha section in a shallow cove on Lake Tohopekaliga with dense, mixed littoral vegetation heavily infested with water hyacinth. Mean concentration of imazamox was 212 µg l-1 at 1 DAT and had a long exposure with >20 µg l-1 measured at 42 DAT. Aerial monitoring surveys were performed using high resolution imagery for species identification and injury. Hyacinth reductions were significant and sustained, limiting the need for follow up operations. While the initial cost of imazamox administered in water is substantially higher than the foliar standards, there is a strategic opportunity gained in repurposing assets to expand coverage to other priority areas. We will discuss the economy of complementary submersed treatments building towards a more comprehensive suppression strategy. *Co-authors include Dr. James Leary.*

BIO: Trudi Deuel is a Biological Scientist with the Air Potato Beetle Mass Rearing Program at the Division of Plant Industry in Gainesville. She has over 13 years of experience working with insects across multiple disciplines, including digitization, rearing, slide mounting, and collection curation. She earned her undergraduate degree in Entomology from the University of Florida. Her current interests focus on biological control and evaluating its long-term impacts on Florida's unique environment and ecology.

BIO: Nicole Benda has worked at FDACS-DPI since 2021, initially on a biocontrol agent of Cactus moth. Since 2025, she supervises the Cactus moth biocontrol and Brazilian peppertree biocontrol programs. She is from South Florida, but is most at home in the Smoky Mountains.

BIO: David McNiel has been a biologist with the Florida Fish and Wildlife Conservation Commission's Invasive Plant Management Section (IPMS) for over 10 years. He oversees the FWC Herbicide bank that provides herbicides to public conservation lands in Florida at no cost on needs and objectives-based criteria. He assist fellow IPMS employees conduct invasive plant treatment assessments, manages the contracts within the Uplands section of the IPMS bureau. David participates in workshops and other training events to educate land and resource managers about herbicide availability, desired product use based on habitats to be treated, and mitigating off-target consequences of herbicide use.

BIO: Mariah McInnis is the Research and Outreach Coordinator for the Invasive Plant Management Section, where she oversees contracted research, leads the section's outreach and education efforts, and serves as a liaison between field staff and research partners. She holds a Bachelor of Science in Environmental Science from Florida State University and a Master of Science in Wildlife Sciences from Auburn University.

BIO: David M. Hébert is an Extension Agent I with UF/IFAS in Nassau County, specializing in Agriculture and Natural Resources. He holds a Master of Science in Agricultural Biology with expertise in soil health, integrated pest management, and invasive species. David leads educational programs on sustainable farming, composting, and ecosystem conservation, working closely with farmers, land managers, and community members to promote research-based practices. His outreach includes workshops, blogs, and hands-on demonstrations that empower residents to improve soil quality, manage pests, and protect Florida's natural resources.

BIO: Antonio Rodriguez manages the invasive plant management contract for Palm Beach County Environmental Resources Management. He currently is the Florida Invasive Species Council-Partnership, Action and Communications committee co-chair, Treasure Coast CISMA EDRR committee chair, and Native Plant Society Palm Beach Chapter board member. He was previously the co-chair for the Treasure Coast CISMA. He also runs a small business doing private invasive plant management, habitat restoration work, Florida native garden maintenance, and arborist work in Southeast Florida. Antonio has a Bachelor of Science in Biology from Palm Beach Atlantic University, commercial herbicide

license in aquatic and natural area categories, and is a certified arborist. He has lived all of his life in Palm Beach County except for 4 years serving in the Marine Corp where he was stationed at Kaneohe Bay, Hawaii. He is passionate about improving efficiency and communication within invasive species management to help preserve and manage Florida native habitats for all native organisms.

BIO: Tracy Muzyczka is a 20-year Florida park service employee. Her current role as a district biologist includes budget and contract management, unit planning, training program development, resource management consultation, mentorship, invasive plant program coordination, and herbarium curation. She holds a Master of Science in Forest Resources & Conservation from the University of Florida where her studies focused on ecological restoration. She likes plants. And animals.

BIO: Kelli Gladding is a graduate from Rollins College with a Bachelor of Science in Environmental Science. Currently, Kelli works with the University of Florida, IFAS, Aquatic and Wetland Plant Science Lab as a research biologist for over 6 years. She spent 6 years as a representative with SePRO Corporation providing technical support to aquatic plant applicators and managers throughout the State of Florida. Kelli also served as the Co-Chair for the East Central Florida Cooperative Invasive Species Management Area for 7 years and served on the Board of Directors for the Florida Aquatic Plant Management Society (FAPMS), 2015-2017 and the 2019 FAPMS President. She is currently serving as the secretary/ treasurer for the FAPMS Scholarship and Research Foundation and the liaison for the national chapter of the Aquatic Plant Management Society for FAPMS. From 2004-2014, she worked for the Florida Fish and Wildlife Conservation Commission, Invasive Plant Management Section as a Regional Biologist focused on managing aquatic invasive plants in the St. Johns River region.

Invasive Plant Workshop

AGENDA DESCRIPTION

08:00-08:50 Dexter Sowell – EDRR and Lesser-known Invasive Plant Species Identification with Treatment Options (50 minutes)

ABSTRACT: I will discuss the identification of several lesser-known invasive plant species in Florida that should be considered as Early Detection-Rapid Response (EDRR) species, including lesser roundweed (*Hyptis brevipes*), Eggers nutrush (*Scleria eggersiana*), tropical nutrush (*Scleria microcarpa*), bushkiller (*Causonis japonica*) and three-leaf cayratia (*Causonis trifolia*). A mix of potted and pressed specimens permitted for vouchering and educational outreach travel will be present at this workshop. Treatment options with commonly used herbicides will be discussed for each species as well.

08:50-09:00 Break (10 minutes)

09:00-09:50 Padraic Elliott – Use of Avenza Maps for Invasive Plant Surveys (50 minutes)

ABSTRACT: Avenza (Avenza Systems Inc.) is a free app with a paid professional option that allows users to effectively track their location on georeferenced pdf maps on personal, agency, or company phones and devices. In situations where more complex GPS recording technology is not available or appropriate, land managers, supervisors, and their subordinates can effectively record invasive species locations and track the spread of invasive species over time. We will discuss an introduction to the app, how it can be used to effectively and inexpensively record locations, the role of structured data collection, how to export data as csv, kml, or gpx files, and how to analyze the exported data to find net acres of infestations and other patterns. We also look at ways to simply and effectively write code to edit schemas. Participants will be given a pdf map, a customized and editable excel calculator (to determine net acres of infestation) and kml schema. *Participants will need to bring an Android or IOS device that can connect to the internet. A laptop is encouraged but not required.*

09:50-10:00 Break (10 minutes)

10:00-10:50 Brett Bultemeier- How to Navigate the Label: A Roadmap to Pesticide Stewardship (50 minutes)

ABSTRACT: This 50-minute presentation will cover the basics of how a pesticide label is organized. Numerous real labels will be used to demonstrate that although there is great variety in how products are used, the way the information is organized is logical and consistent. Beyond simple compliance with the label this talk will focus on proper stewardship and moving from what “can” be done to what “should” be done as it relates to using pesticides.

10:50-11:00 **Break** (10 minutes)

11:00-11:50 **Erick Revuelta** – Introduction to Sedges and Their Identification (50 minutes)

ABSTRACT: In my presentation, I will discuss the vegetative and morphological differences that distinguish sedges from grasses. The importance of native and invasive species and sedges in managing Florida's conservation lands will be discussed. I will provide photographs of species likely to be encountered in the outdoor demonstration held later in the day so workshop participants can identify these species at that time.

BIO: Dr. Dexter Sowell is the Invasive Plant Coordinator and Research Scientist working for the Florida Natural Areas Inventory (FNAI) at Florida State University. With his current role and his previous position with the Florida Forest Service, Dexter has experience with invasive species management, conducting invasive plant identification workshops, rare species surveys, conducting Florida ecosystems assessment and land management, and the use of prescribed fire and other vegetation management techniques to benefit specific wildlife and plant resources. Dexter has a Bachelor of Science in Biological Sciences from Florida State University (1995), a Master of Science in Biology from Georgia Southern University (2001), and a PhD in Biology from the University of Virginia (2010).

BIO: Padraic Elliott is an Invasive Species Field Biologist with the Florida Natural Areas Inventory (FNAI). Tasked with coordinating invasive species surveys with local, state, and federal agencies, he has experience with FISC-listed invasive plant species in most terrestrial ecosystems in a wide variety of ecological condition. When not working with invasive species, Padraic assists with gopher tortoise surveys and rare plant surveys and has prior experience in prescribed fire, ornithology, and herpetology. Padraic also assists the Apalachicola Regional Stewardship Alliance CISMA with invasive species management actions. He received his Bachelor of Science in Biological Science from Florida State University and his Masters of Science in Conservation Biology from Texas Christian University.

BIO: Dr. Brett Bultmeier is the Extension Assistant Professor and Director of the University of Florida IFAS Pesticide Information Office. He has over 25 years of experience working with pesticides. He has his Master's and PhD from the University of Florida and worked in private industry for eight years before returning to the University of Florida IFAS in 2019.

BIO: Erick Revuelta currently works as Manager of the Flagler County Environmentally Sensitive Lands and Land Management Programs. Over the last 20 years, I have worked as an environmental scientist throughout the Southeastern US. Areas of expertise include plant identification, wetland delineation, environmental resource permitting, natural resource management, ecosystem restoration and monitoring and habitat/vegetation mapping. I am also a research associate with the Fairchild Tropical Botanical Garden Conservation Team and have collaborated on research projects with faculty and investigators from Florida International University, the University of Florida, and the Texas A&M University. I have been a presenter in several plant identification workshops in Florida. I have a BA in Environmental Science from the University of Miami (2004). I am currently pursuing a Masters of Forest Resources and Conservation from the University of Florida.

Invasive Animal Workshop

AGENDA DESCRIPTION

08:00-08:50 **Earl Lundy** – Invasive Fishes of Florida: Identification, Impacts and Control Methods (50 minutes)

ABSTRACT: There are questions of whether a fish species is non-native or invasive. Control and eradication of these non-native species once established is difficult, as it is with many invasive species, and even management can be problematic. Within the state, range expansion of many species has been observed within recent years, driven by factors such as milder winter temperatures, floods, and possible multiple introductions. Invasive fishes can have various deleterious effects on the environment and habitat within water bodies: higher turbidity, increased chances of erosion, altering benthic habitats. They can also compete either directly with sportfishes or possibly cause impacts through competition with their prey species. Many invasive fishes have survival strategies that make biocontrol or eradication efforts extremely difficult. An additional issue is that detection of many of these species with commonly used techniques is difficult due to them being less susceptible to commonly used fisheries sampling methods. As with many other habitats and organisms, methods of preventing introduction are the best way to prevent establishment. Research is ongoing to ascertain the current range of many species, along with the potential for other species to become established in the State.

08:50-09:00 **Break** (10 minutes) (no CEUs requested)

09:00-09:50 **Lanie Carter** – Feral Hog Management in Florida (50 minutes)

ABSTRACT: The Florida Fish and Wildlife Conservation Commission (FWC) has a new program that can help private landowners manage invasive plants and feral hogs on their properties. The FWC Landowner Assistance Program has launched the Private Lands Tool Cache (PLTC) which provides a variety of land management tools to landowners, including prescribed fire equipment, herbicide sprayers, whole-sounder feral hog traps, and herbicide. The Private Lands Tool Cache is only available to private landowners who will commit to removing invasive species off their property and report their results to FWC Landowner Assistance Program. FWC biologists provide support and guidance to help landowners successfully trap feral hogs, treat invasive plants, and improve native groundcover in longleaf pine ecosystems. The workshop will include the origin of the program, how it works, and feral hog trapping techniques.

09:50-10:00 **Break** (10 minutes) (no CEUs requested)

10:00-10:25 **Katie Fairbanks & Jason Stanley –** New Early Detection-Rapid Response (EDRR) Insect for Florida: yellow-legged hornet (YLH) (25 minutes)

ABSTRACT: The yellow-legged hornet (YLH), *Vespa velutina* cf. *nigrithorax* Du Buysson

(Vespidae: Vespinae), native to Southeast Asia, is a devastating pest to US pollinators and the honeybee, *Apis mellifera*. First detected near Savannah, Georgia, approximately 100 miles from the border with Florida, in August 2023, sightings have since expanded into South Carolina. YLH shows a clear preference for honeybees and demonstrates specialized hunting "hawking" behaviors - hovering outside hives to intercept lone returning or departing bees. Where YLH has invaded Europe, honey yields decreased by 30%. Current detection methods in the US rely on sugar-based (grape juice and brown sugar mixtures) or protein-based (fish or chicken) traps and tracking hornet flight paths to locate nests. Nests are difficult to find due to their hidden placements, as they can occur in treetops, under foliage, or in sheltered recesses. Nest detection and removal are labor-intensive and costly. The Florida Department of Agriculture and Consumer Services' Division of Plant Industry (FDACS-DPI) is conducting research to enhance current detection and eradication capabilities. *Co-author is Jason Stanley.*

10:25-10:50 Telmah Telmadarrehei – Two-Spot Cotton Leafhopper: What the Southeastern U.S. Needs to Know (25 minutes)

ABSTRACT: *Amrasca biguttula* Ishida (Hemiptera: Cicadellidae), commonly known as the two-spot cotton leafhopper, is native to India and has expanded rapidly across Asia, West Africa, and parts of the Caribbean. This small, polyphagous, sap-feeding species attacks a wide range of agricultural and ornamental hosts. Both nymphs and adults feed on leaves, flowers, fruits, and tender stems, causing hopperburn, leaf curling, wilting, and in severe cases, defoliation. Under heavy infestations, significant yield losses have been documented in cotton, okra, and other crops. In 2024, the Florida Department of Agriculture and Consumer Services Division of Plant Industry (FDACS-DPI) reported the presence of *A. biguttula* in several Florida counties. With a multivoltine life cycle, broad host range, and rapid population growth under warm conditions, this species poses a considerable economic threat to crops in Florida and other southeastern states and indicates continued expansion of its geographic range. This workshop provides a science-based overview of the biology, ecology, and host range of *A. biguttula*, with a focus on how to detect, identify, and differentiate this species from native leafhoppers. The purpose of our research is to protect agricultural and non-agricultural crops in the region by strengthening monitoring and early detection and determining effective biological control agents that minimize non-target impacts, and reduce pesticide resistance, and lower overall management costs. *Co-authors are Jason Stanley and Kate Fairbanks.*

10:50-11:00 Break (10 minutes) (no CEUs requested)

11:00-11:50 Eric Suarez – Identifying Invasive Lizards and Snakes in Florida (50 minutes)

ABSTRACT: Florida hosts one of the highest concentrations of nonnative reptile introductions in the United States, with more than 60 established nonnative reptile and amphibian species documented statewide. This presentation provides an overview of how to identify key invasive lizard and snake species, emphasizing distinguishing physical

characteristics, behavior, and habitat associations. Attendees will be introduced to up-to-date distribution maps. These include statewide reptile atlas products showing current county-level records for priority invasive snakes and lizards. The presentation will also address which species are fully established, which are localized but spreading, and which are detected only as isolated introductions. The goal of the session is to equip participants with the tools to recognize invasive snakes and lizards in the field and in reports, understand where they are currently found across Florida, and support early detection and reporting efforts critical to managing future spread.

BIO: Earl Lundy has been with the FWC as a full-time biologist since 2003, prior to that I was an OPS employee with the FWC and FL DEP. I've been working on the middle/lower St. Johns River the entire time of my full-time employment, starting as a project biologist and now as the project leader. Our office's research has covered long-term monitoring of St. Johns River lakes and river sections, along with research into factors affecting Florida lake temperatures and the habitat preferences of Bluenose Shiners. Current project research has added in research on the invasive species Asian Swamp Eels. We've also worked on invasive fish work in local springs and spring runs, and are looking to do work on PFAS ('forever chemicals') in spring runs. Earl Lundy has a Bachelor of Science from the University of South Florida and a Master of Science from the University of Central Florida.

BIO: Lanie Carter is a wildlife biologist with the Florida Fish and Wildlife Conservation Commission's Landowner Assistance Program. She has 10 years of experience working in the environmental field and is extremely passionate about habitat management. Helping private landowners improve wildlife habitat through promoting prescribed burning, and consulting on how to manage invasive species, including feral hogs and invasive plants. She recently developed a pilot program in North Central Florida where private landowners can utilize publicly owned invasive animal and plant management equipment, e.g., pig brigs and backpack sprayer tanks, respectively. This program was so successful in the pilot program is being expanded to cover most of the state by other FWC LAP biologists. She has been the co-chair of the North Central Florida CISMA for three years. Lanie has a Bachelor of Science degree in Wildlife Ecology and Conservation from the University of Florida.

BIO: Kate Fairbanks serves as the Assistant Chief of the Bureau of Methods Development and Biological Control. In this role, she administers multiple federally funded cooperative agreements focused on invertebrate trap development and research, rearing and research of biological control agents, and developing methods to eradicate, control, or mitigate invasive species. As project administrator, she ensures objectives are met, budgets are used in accordance with funding agreements, and reports are completed on time. Ms. Fairbanks brings extensive expertise in pest detection and response, including surveying for, detecting, and identifying invasive insect species. She oversees the Techniques Development Laboratory, which is actively conducting research on YLH under this agreement. Additionally, she serves as the Science Officer leading the Science Panel on FDACS-DPI's YLH Incident Command System (ICS) response.

BIO: Jason Stanley has worked for the FDACS-DPI for over 20 years and is currently the Bureau Chief for the Bureau of Methods Development and Biological Control. He has served as the Assistant Bureau Chief for the Bureau of Plant and Apiary Inspection and the Bureau of Entomology, Nematology and Plant Pathology. He has served in various roles in emergency eradication programs for exotic fruit flies and invasive snails. These include roles as Science Officer, Planning Chief, Operations Chief, and Incident Commander. He has many years of experience serving as a scientist, regulatory official, and manager. His background includes entomology, nematology, permitting, biological control, and containment.

BIO: Telmah Telmadarrehei is a Research Scientist Supervisor in the Bureau of Methods Development and Biological Control within the Division of Plant Industry at the Florida Department of Agriculture and Consumer Services (FDACS-DPI). Her research focuses on rearing insects, evaluating biological control agents, and developing strategies to eradicate, control, or mitigate invasive species. Her current work centers on studying the two-spotted cotton leafhopper, a newly invasive pest in Florida. She previously worked as a postdoctoral research associate in the University of Florida's Entomology and Nematology Department, where she specialized in the biological control of invasive weeds.

BIO: Eric Suarez is the University of Florida's Croc Docs Research Program Coordinator. He has extensive experience in working with invasive wildlife throughout Florida. Eric has worked with the Florida Fish and Wildlife Conservation Commission as well as the University of Florida in various positions involving nonnative species research and management, imperiled species monitoring, and habitat management. In his current position, he works on multiple interagency research and management projects involving native crocodilians and invasive wildlife in Florida. Eric regularly assists the Everglades CISMA in invasive animal management efforts in the Everglades across many southeast Florida conservation lands. Eric has authored or co-authored numerous research papers on invasive species research. Eric has a Master of Science (2015) and a Bachelor of Science (2010) degrees in Wildlife Ecology and Conservation from the University of Florida.

Plenary 2

AGENDA DESCRIPTION

13:15-13:25 Lynn Proenza, FISC Chair - Opening Remarks (no CEUs requested).

13:25-13:35 Vendor Update (10 minutes) (no CEUs requested)

13:35-13:45 Vendor Update (10 minutes) (no CEUs requested)

13:45-14:10 Keith DelValle - Know Your Invasives: The Life and Society of Feral Hogs (25 minutes)

ABSTRACT: Feral swine pose one of the greatest threats to our native ecosystems, agribusiness and even our daily lives in many areas. Although we see the problem, we have not been effective in mitigating the impacts of a growing feral hog population. One issue that we do not really understand is how feral hogs live and interact. This presentation, through pictures and videos of close interaction over several years, will discuss the society of a feral hog sounder to include hierarchy, structure of the herd, language, emotions and daily life. Wild hogs play, laugh, fight and argue. They show sadness, depression, compassion and empathy. They learn from each other to include a rudimentary language and the use of tools and gifts, and show a level of intelligence that is not equaled in the wild. If we do not understand their daily lives and motivations, we will always have a difficult time in managing them. With this knowledge, we can potentially create better management options and reduce impacts to our natural resources in Florida.

14:10-14:35 Earl Lundy - Non-Native Fish Species in Florida: Classification, Implications, Patterns, Research, and Management (25 minutes)

ABSTRACT: The subject of non-native species is wide-ranging with various implications as to their establishment and impacts. For freshwater habitats, the state is rather welcoming to many non-native fish species, with some of the state's characteristic features, habitats, and climatological characteristic offering refugia for various species. There are also the questions of whether a fish species is non-native, exotic, or invasive. Control and eradication of these non-native species once established is difficult, as it is with many invasive species, and even management can be problematic. Research is ongoing to ascertain the current range of many species, along with the potential for other species to become established in the State. Within the state, range expansion of many species has been observed within recent years, driven by factors such as milder winter temperatures, floods, and possible multiple introductions. Invasive fishes can have various deleterious effects on the environment and habitat within water bodies: higher turbidity, increased chances of erosion, altering benthic habitats. They can also compete either directly with sportfishes or possibly cause impacts through competition with their prey species. Many invasive fishes have survival strategies that make biocontrol or

eradication efforts extremely difficult. An additional issue is that detection of many of these species with commonly used techniques is difficult due to them being less susceptible to commonly used fisheries sampling methods. In the end, as with many other habitats and organisms, methods of preventing introduction are the best way to prevent establishment. *Co-authors include Jamie Casteel and Noah Peterson.*

14:35-14:55 Networking Break (20 minutes) (no CEUs requested)

14:55-16:05 Invasion Science Management Experts' Panel Discussion – (70 minutes)

ABSTRACT: A panel discussion including invasive species management at multiple scales, integrated pest for both plants and animals, research including biocontrols, and private and public control programs. Panel members include Linda King (FWC Uplands Program), Antonio Rodriguez (Palm Beach County ERM Lands), Carey Minteer (UF IFAS Biological Control Research), Michael Meisenburg (Kestrel Ecological Services Invasive Plant Management/IPM and Mike Kirkland (SFWMD Invasive Animal IPM).

16:05-16:30 Erick Revuelta – Invasive Plant Species Updates (25 minutes)

ABSTRACT: The Florida Invasive Species Council's Plant List Committee (PLC) is the organization that makes determinations for which non-native plant species are having negative impacts on Florida's natural areas. I will discuss recent changes in how frequently the Invasive Plant Lists are updated, and explain how symposium attendees can proposed species be added to the Invasive Plant list. I will highlight a few of the recently added species to the Invasive Plant list. Lastly, I will discuss future plans the PLC has to better collaborate with the University of Florida's *Assessment of Non-native Plants in Florida's Natural Areas* and with the Florida Department of Agriculture and Consumer Service's Division of Plant Industry to have PLC-ranked invasive plant species afforded legal restrictions on use and propagation.

Plenary 2

Plenary Speakers

BIO: Earl Lundy has a Bachelor of Science from the University of South Florida and a Master of Science from the University of Central Florida. I've been with the FWC as a full-time biologist since 2003, prior to that I was an OPS employee with the FWC and FL DEP. I've been working on the middle/lower St. Johns River the entire time of my full-time employment, starting as a project biologist and now as the project leader. Our office's research has covered long-term monitoring of St. Johns River lakes and river sections, along with research into factors affecting Florida lake temperatures and the habitat preferences of Bluenose Shiners. Current project research has added in research on the invasive species Asian Swamp Eels. We've also worked on invasive fish work in local

springs and spring runs, and are looking to do work on PFAS ('forever chemicals') in spring runs.

BIO: Keith DelValle is a US Naval Academy graduate and retired from the US Navy and the Federal Government. He worked as a senior Executive for State and Federal agencies, and served as a consultant for many Fortune 500 companies and Federal agencies. He is currently the CEO of a startup biotechnology firm focused on developing immunocontraception solutions for invasive animals such as feral hogs.

Invasive Species Management Expert Panelists Biographies

BIO: Linda King is the Florida Fish and Wildlife Conservation Commission (FWC), Upland Invasive Exotic Plant Management Program's Subsection Administrator. The Upland's subsection funds contracted treatment of invasive plants on approximately 11 million acres of public conservation land. In 2024, she was nominated by her peers and won FWC's Above and Beyond Award for her contributions to improving wildlife habitat through the actions of the Upland's invasive plant management program. Linda studied Fish and Wildlife Management in North Carolina and started her career working with endangered species in Southeast Asia. In 2002, Linda moved to South Florida where for the next 10 years she was a land manager in the FWC Wildlife and Habitat Management Section. During this time, Linda served as the District Biologist over several Wildlife Management Areas in South Florida that totaled approximately 102,000 acres.

BIO: Antonio Rodriguez manages the invasive plant management contract for Palm Beach County Environmental Resources Management. He currently is the Florida Invasive Species Council-Partnership, Action and Communications committee co-chair, Treasure Coast CISMA EDRR committee chair, and Native Plant Society Palm Beach Chapter board member. He was previously the co-chair for the Treasure Coast CISMA. He also runs a small business doing private invasive plant management, habitat restoration work, Florida native garden maintenance, and arborist work in Southeast Florida. Antonio has a Bachelor of Science in Biology from Palm Beach Atlantic University, commercial herbicide license in aquatic and natural area categories, and is a certified arborist. He has lived all of his life in Palm Beach County except for 4 years serving in the Marine Corp where he was stationed at Kaneohe Bay, Hawaii. He is passionate about improving efficiency and communication within invasive species management to help preserve and manage Florida native habitats for all native organisms.

BIO: Dr. Carey Minteer received her PhD in Entomology in 2012 from the University of Arkansas. She is currently an associate professor at the University of Florida Indian River Research and Education Center. Dr. Minteer leads research on classical biological control of invasive plants at the UF Hayslip Biological Control Research and Containment Laboratory in Fort Pierce, Florida where she specializes in invasion ecology and the

biological control of some of the most damaging invasive plant species in the Southeastern United States. Dr. Minteer has particular interests in investigating the potential indirect effects of biological control, integrating classical biological control with other weed management techniques, and educating the public about invasive species.

BIO: Michael Meisenburg, along with his business partner Erick Smith, started Kestrel Ecological Services 18 years ago. Since their beginning, Kestrel has been an FWC Uplands invasive plant contractor as well as for other agencies. They also do other vegetation management tasks, such as controlling plants around threatened and endangered plant species, upland restoration, and wetland mitigation maintenance. Michael received his Bachelor of Science and Master of Science from the University of Florida before working as a research biologist for Ken Langeland at University of Florida IFAS Center for Aquatic and Invasive Plants.

BIO: Mike Kirkland is the Senior Invasive Animal Biologist with the South Florida Water Management District, with more than 17 years' experience working on Everglades restoration projects. He is the principal developer and manager of the Python Elimination Program, convening member and contributing author for the Florida Python Control Plan, Steering Committee Member of the Everglades Cooperative Invasive Species Management Area (ECISMA), Contract Manager for the University of Florida's Everglades Invasive Reptile and Amphibian Monitoring Program, and panel member on the Florida Fish and Wildlife Conservation Commission's Technical Assistance Group. He holds a Master of Science Degree in Environmental Policy and Management, and a Bachelor of Science Degree in Biology.

BIO: Erick Revuelta is the Public Lands and Natural Resources Manager for Flagler County. I have a Bachelor of Arts in Environmental Science from the University of Miami (2004). Over the last 20 years, I have worked as an environmental scientist throughout the Southeastern US. Areas of expertise include plant identification, wetland delineation, environmental resource permitting, natural resource management, ecosystem restoration and monitoring and habitat/vegetation mapping. I am a research associate with the Fairchild Tropical Botanical Garden Conservation Team and have collaborated on research projects with faculty and investigators from Florida International University, the University of Florida, and Texas A&M University. I have been a presenter in several plant identification workshops. I'm currently pursuing a Masters of Forest Resources and Conservation from the University of Florida.

KEYNOTE & PLENARY SESSION 3

AGENDA DESCRIPTION

Second Keynote & Plenary Session 3 is 185 minutes, with 140 minutes eligible for CEUs.

09:00-09:10 Lynn Proenza, FISC Chair- Opening Remarks, Introduction of Keynote Address Speaker (no CEUs requested).

Keynote Address

09:10 - 10:10 Alex Dew – There's No Substitute for Native Plants (60 minutes)

ABSTRACT: Negative impacts from non-native plants are often considered to be limited to the physical disturbances from their overgrowth. This presentation highlights examples of the unique and very specialized interactions that native plants have within the ecosystem, showcasing the fact that even a "well-behaved" exotic plant cannot support or deliver a fraction of the biodiversity that a native plant does. The presentation will explore interactions from native plants and insects, predators, hyper-predators, parasitoids, fungi, and other plants. Each interaction represents just a fragment of a food chain, all being 100-percent reliant on the presence of a specific plant species.

10:10-10:30 - Networking Break (20 minutes) (no CEUs requested)

Plenary Session 3

10:30-10:40 Vendor Update (10 minutes) (no CEUs requested)

10:40-10:50 Vendor Update (10 minutes) (no CEUs requested)

10:50-11:10 Dr. Carey Minteer - Coming soon to a habitat near you, earleaf acacia. Now, what are we going to do about it? (20 minutes)

ABSTRACT: Earleaf acacia is a fast-growing invasive tree from Australia. This species has been expanding its distribution in Florida very quickly in the last 20 years. Will this species be the "new" Brazilian peppertree? Or is there a plan to slow the spread and keep the plant in check? A biological control program for this invasive tree has been in development since 2015. Three candidate biological control agents are currently under study at the UF/IFAS Hayslip Biological Control Research and Containment Laboratory and the USDA-ARS Invasive Plant Research Lab. Studies investigating the host range, target impact, and biology of the beetle, *Calomela intemerata*, have been completed and a petition for release has been submitted. Two other candidate agents, a galling wasp, *Trichilogaster* spp., and a leaf tying moth, *Macrobathra callipetala*, are currently under study as well.

11:10-11:30 Brianna Foster - Updates to the mass rearing, release, and establishment *of Pseudophilothrips ichini* Hood (Thysanoptera: Philaeothripidae) for the biological control of Brazilian peppertree in Florida (20 minutes)

ABSTRACT: Brazilian peppertree (BP) is an aggressive invasive species in Florida that disrupts native ecosystems by outcompeting local flora and altering habitats. Since 2019, *Pseudophilothrips ichini* Hood (Thysanoptera: Phlaeothripidae), a host-specific thrips species native to South America, has been released as a biological control agent to mitigate Brazilian peppertree's impact. The USDA IPRL has mass reared *P. ichini* and released approximately 950 release points across the state. Thrips are primarily mass reared in 1.8 x 1.8 x 1.8m Lumite® 280 µm screen cages on six 11.4 L plants using 1,500 adult thrips. These large screen cages can produce approximately 15,000 thrips per cage resulting in around 30,000 thrips per week at peak production. However, several factors are likely to influence thrips populations within the cages such as temperature, humidity, plant pests, and predators. Despite such challenges, mass production has allowed the release of almost 5.5 million thrips by USDA IPRL. In addition to tracking thrips release sizes and locations, post-release monitoring involves quantifying thrips recovery, thrips BP damage, BP damage by other insects, and the percentage of live BP vegetative meristems. Preliminary trends indicate that release size does not impact on the persistence of *P. ichini* in the field but may be due to other factors such as the number of repeat releases, the quality of BP for thrips, or environmental changes. Further exploration of release timing and specific release point characteristics may elucidate the factors driving establishment success and persistence of thrips populations. Future research will aim to understand the effect of environmental factors, plant quality, and thrips genetic diversity to rearing and release operations. While broader landscape-level success remains under observation, we hope our current findings can improve our understanding of *P. ichini*'s potential as a sustainable tool for Brazilian peppertree management. *Co-authors include Jorge G. Leidi, Carly A. Cogan, and Dale A. Halbritter.*

11:30-11:50 Patrick Belk – Levelling up: Cuban bulrush field IPM trials in Florida (20 minutes)

ABSTRACT: Due to recent spread, Cuban bulrush (*Cyperus blepharoleptos*) has quickly risen to a high management priority across Florida and the Southeast. This invasive, epiphytic sedge forms dense floating mats that transform open-water ecosystems into marsh habitats, obstructing navigation and displacing native species. Insightful research on chemical control at the mesocosm level has prompted expansion to the field-level for validation. Recent aquatic manager surveys have highlighted the widespread but under-studied use of mechanical control methods to disrupt the floating mat architecture. This new integrated research evaluates the most effective chemical control methods from mesocosm trials and pairs them with mechanical shredding at the field scale. Two field plot locations were selected based on which biotype was present in the community. Plant community composition data were collected from quadrats at regular intervals pre- and post-spraying and shredding to monitor system recovery and treatment effectiveness. Triclopyr outperformed Flumioxazin as the most effective herbicide treatment in the field. Shredding resulted in two responses: open-water formation and "pop-up" mud accumulation that hosted a seed bank of native plants absent from the original floating mat. Spraying 30 days before shredding had no considerable influence over the results compared to shredding alone. *Co-authors include Stephen Enloe, John Diaz, Gretchen Lescord, Benjamin Sperry, and Christopher Mudge*.

11:50-12:05 Lynn Proenza, FISC Chair - Closing Remarks and Announcements (15 minutes) (no CEUs requested)

Keynote Address and Plenary Session 3

BIO: Alex Dew graduated with a Bachelor of Science in Zoology from Massey University in New Zealand and a Master of Science in Ecology from Umeå (oo-may-oh) University in Sweden. He got his start in invasive species biology during his undergraduate years and began specializing in the spatial ecology of invasive plants while working on his Master's thesis. He has been with the FWC Invasive Plant Management Section of Florida Fish and Wildlife Conservation Commission since the beginning of 2016 and is currently serving as the Aquatics Subsection Administrator.

BIO: Dr. Carey Minteer received her PhD in Entomology in 2012 from the University of Arkansas. She is currently an associate professor at the University of Florida Indian River Research and Education Center. Dr. Minteer leads research on classical biological control of invasive plants at the UF Hayslip Biological Control Research and Containment Laboratory in Fort Pierce, Florida where she specializes in invasion ecology and the biological control of some of the most damaging invasive plant species in the Southeastern United States. Dr. Minteer has particular interests in investigating the

potential indirect effects of biological control, integrating classical biological control with other weed management techniques, and educating the public about invasive species.

BIO: Brianna Foster is a Postdoctoral Associate with the University of Florida IFAS Fort Lauderdale Research and Education Center in Davie, FL. She manages mass rearing operations, coordinate field releases of biocontrol agents, and coordinates with land managers from various agencies to identify and access release sites. Conduct site surveys to quantify plant damage, agent population assessments, and quantification of environmental variables. Data collection, formal analysis, dissemination, and publication of results from field and lab studies and other related research activities. She has previously worked for the USDA Agricultural Research Service (Research Ecologist). She has a PhD in Entomology from Michigan State University, and a Bachelor of Science in Fisheries an Wildlife (Conservation Biology specialty). Brianna's areas of interest are evolutionary applications in biological control, restoration ecology, and molecular ecology.

BIO: Patrick Belk is an MS student and Graduate Research Assistant at the IFAS Center for Aquatic and Invasive Plants at the University of Florida. He has worked on many research projects involving the management of invasive plants, from trees and grasses to aquatic species. Patrick's thesis research is focused on the invasive aquatic sedge, Cuban bulrush. He previously received a Bachelor in Science in Plant and Environmental Sciences from Clemson University.